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INTRODUCTION

Historical Overview

The decade of the 1970s was one of great creativity and change for the Department of Mental Health’s research program. Although there were some setbacks, the overall outcome was forward progress in the development of new knowledge for the mental health system. The very early 1970s saw a continuation of the program of basic research which was developed in the 1960s. Our scientists were studying fatty acid metabolism, the neurobiology of aging in animals, brain lipids, and accumulated minerals and trace elements in the blood.

In Fiscal Year 1973 we took a critical look at our research program and found that it was not addressing the kinds of problems and questions the Department was facing in the present or expected to be facing in the future in our attempts to develop and deliver better services. While our research was concentrated in basic sciences, our questions were of a more immediate and applied nature. During Fiscal Year 1974 we phased out almost all of the basic research program and undertook a priority-setting process to determine those areas needing research through the remainder of the 1970s. Those areas were: community-based services, planning, prevention, geriatrics, children’s services, administration, institution-based services, training, forensic psychiatry and drug abuse.

In Fiscal Year 1975 we launched a major developmental effort to build an applied research program to address questions in these ten priority areas. In this process, we also attempted to stimulate diversity in the types of settings in which Department of Mental Health research projects are conducted, because it is our belief that a multidisciplinary research program, in a variety of settings, will elicit a wider range of theories and approaches applicable to our problems.

The development effort in Fiscal Year 1975 was successful. By the close of that year research projects had been commissioned in eight of the ten priority areas, and we had achieved substantial progress in developing research in diversified settings. In addition to our Research Center in Cleveland, projects were being conducted under the sponsorship of seven of our institutions, three universities, eleven local community mental health boards and agencies, plus Central Office. Inquiry was in progress in such areas as the effects of Ritalin on hyperactive children, new techniques to correct learning disabilities, the prediction of dangerousness, the effects of the physical environment on hospitalized patients, and the interface between institutional and community mental health services. Procedures of proposal review were instituted by the Office of Program Evaluation and Research which insured a high level of quality in each research project funded. Findings were beginning to be reported which not only impacted our own services, but also achieved recognition in a number of national journals.

The 1976-1977 Biennium saw much of the forward momentum of the developing program in applied research halted. Competing pressures for scarce resources resulted in a focus on immediate service needs and a corresponding decline in emphasis on strategies which would yield knowledge for the future. The research budget was cut by more than 55 percent. Many projects were halted in progress, and others were terminated before they began. In contrast to the single Fiscal Year 1975, when 33 pieces of research were in progress in eight of our priority areas, the two-year period of the 1976-1977 Biennium found only 24 projects in operation, covering six areas.
In contrast to the bleak outlook of the previous biennium, Fiscal Year 1978 saw a revitalization of the research program. A substantial amount of the cut budget was restored, and efforts were renewed to develop research projects which could make a significant contribution to the knowledge base of the mental health system. As a result, Fiscal Year 1978 found 38 projects in progress in our Research Center, four of our institutions, seven universities, Central Office, one private research organization, and five community agencies and boards. The projects covered seven of our ten priority areas and focused on such topics as organizational analysis of our institutions, programs to rehabilitate individuals with drug problems, factors affecting psychiatric admissions to inpatient services, and the mental health effects of mass tragedy and mass unemployment.

In Fiscal Year 1979 the forward momentum of the Department’s research program continued. During that year, 48 projects were in operation, in nine out of ten priority areas. The diversification of project settings was increased, and projects were being conducted in our Research Center, eight universities, six of our institutions, Central Office, two private research organizations, seven community agencies and boards, and a metropolitan hospital. Fiscal Year 1979 projects covered a wide range of topic areas, including the variables associated with successful transition of released patients back into the community, the effects of various types of hospital organizational structure on staff and patient outcomes, and the development of instrumentation to measure more effectively the treatment progress of community aftercare clients.

During the last few months of Fiscal Year 1979, we began to look ahead and assess the needs for research in the 1980s. The Office of Program Evaluation and Research conducted a statewide needs assessment, including a series of interviews with key individuals within the mental health system throughout the state, to determine those topical areas where applied research could be most beneficial to the Department’s efforts. This survey resulted in the identification of fourteen areas which were consistently seen as having major significance for the improvement of mental health care over the next ten years. The fourteen areas were designated as our priorities in the search for new knowledge in the decade of the 1980s. An additional area--biological and nutritional research--was added by the General Assembly in its budget deliberations, and these fifteen priorities guided the research program during the 1980-1981 Biennium:

1. The “revolving door” phenomenon
2. New treatment modalities
3. The effects of legislation on the mental health system
4. Community attitudes and citizen involvement in mental health
5. The interaction between mental health and other human service areas
6. Prevention
7. Clients with the dual diagnosis of mental illness and mental retardation
8. Psychotropic drugs
9. Treatment needs of special populations such as aggressive, violent or suicidal clients or long-term institutionalized patients
10. Treatment needs of emotionally disturbed children
11. Treatment needs of the geriatric client
12. Drug abuse
13. Mental health manpower and manpower development
14. Mental health system studies and the development of treatment evaluation instruments
15. Biological and nutritional research
Although it suffered from the state’s fiscal crisis in the last half of Fiscal Year 1981, as did the overall mental health system, the research program was very active in the 1980-1981 Biennium and produced a substantial number of achievements. Sixty-seven projects were in operation in twelve universities, eight community agencies or boards, four of our hospitals, Central Office, three general hospitals, three private research organizations, and the Research Center.

A number of the major projects were studying the transition of clients from hospital to community settings. Through the funding of several pieces of research concentrating on different aspects of this issue, we put in place a mechanism to yield new knowledge about how the service system was working and where it could be improved. In the 1980-1981 Biennium the research program received national recognition from the American Psychiatric Association for the work of the Architecture/Research/Construction Group in the development and testing of therapeutic physical environments for both hospital and community treatment settings.

After more than two decades of significant achievements, the research program was largely destroyed in the 1982-1983 Biennium. The overall state budget for 1982-1983 was developed at a time of severe fiscal crisis in Ohio. A number of agencies received substantial cuts in their requested allocations, including the Department of Mental Health, however research was the Department’s only program singled out by the Office of Budget and Management for total elimination. Hence, the Mental Health budget was sent to the General Assembly with no allocation for research, and there followed an arduous six-month battle to get the program reinstated. In the end, the immediate battle was won but the long-term war was lost. We were successful in reinstating a budget for research, but it was a cut of 78 percent from the 1980-1981 program level.

Fiscal Year 1982 saw only the designated ongoing projects in operation. During Fiscal Year 1983, the completion of some of those allowed a few new projects to begin, primarily dissertation research in the Small Grants Program. In total during the 1982-1983 Biennium, twenty-one projects were funded in three universities, four community service or planning agencies, three general hospitals and two private research organizations. The Research Center was closed.

Highlights of the 1982-1983 Biennium were projects on the involvement of clients in the design and implementation of program evaluation in a mental health agency, the impact of different models of case management on treatment outcomes, the tracking of a cohort of 550 individuals released from two acute psychiatric hospitals into the community mental health system as well as the larger social service system, and the rights of patients to participate in decisions about the use of psychotropic medications in their treatment.

In 1983, our Architecture/Research/Construction Group was again honored for its work on the development and testing of therapeutic physical environments. This time they won a Progressive Architecture Award, the top national honor in the field of architecture. It is an extraordinary achievement for a single research effort to win national acclaim in two different fields of endeavor, and we feel fortunate to have been able to fund the group’s work for over a decade.

Research funds were even more limited in the 1984-1985 Biennium. Twenty-four projects were funded under the Regular Research Grants Program and seven were funded under the Small Grants Program for dissertation research. These projects were operating in seven different universities, seven community service or planning agencies, two general hospitals and one private research organization. Two major dissemination efforts occurred in this biennium, involving the Client Oriented Program.
Evaluation group’s successful development of a reliable and valid treatment outcome instrument based on clients’ feelings, and findings from research on case management and its impact on client outcomes.

Despite our very active efforts to reinstate some of the budget cuts of previous years, allocations for research in the 1986-1987 Biennium were held by the General Assembly at 1984-1985 levels. Twenty-four projects were funded in five different universities, six community agencies, three private research organizations, and the Office of Program Evaluation and Research. Researchers studied the Department’s Informed Consent Policy being tested at two state hospitals, individuals who sought services at a psychiatric emergency room but who were not admitted for inpatient care, the phenomenon of postpartum depression, interorganizational networks in the mental health service delivery system, and the formal and informal networks of family members of mentally ill individuals and their use of mental health services.

In the 1988-1989 Biennium, despite continued very active efforts to reinstate part of the Department’s research budget, the General Assembly again held the research line item at 1984-1985 levels. This erosion of real dollars limited both the size and scope of projects we could fund. Twenty projects were funded in seven different universities, five community agencies and boards, one private research organization, and the Office of Program Evaluation and Research. Work continued on assessing the impact of the Department’s Informed Consent Policy for the administration of medications, as the policy was implemented in all our hospitals. Studies were also in progress concerning severely emotionally disturbed children and adolescents, the impact of several facets of housing, and the extent of family burden for different types of caregivers.

Early in 1989, the Department began an extensive planning process for developing research to assess the impact of the Mental Health Act of 1988—the omnibus legislation that mandated extensive changes in Ohio’s mental health system. As a first step in that process, Office of Program Evaluation and Research staff conducted focus group sessions with representatives of 16 different constituency groups about framing the most important questions needing to be researched. Feedback came from consumers, family members, community mental health board staff, judges, county commissioners, advocates, legislators, labor unions, community mental health agency staff, community representatives, hospital CEOs and various professional organizations. In addition, a group of national leaders added their input about what questions individuals outside Ohio were asking about the impact of changes taking place in our mental health system.

Areas of research seen as most important by the various constituency groups were: the organization and structure of the mental health system; outcomes for clients; the role and function of hospitals and state-operated services; the impact upon staff, costs, families and special population groups; and the impact of community commitment, particularly on clients’ rights. These areas of research were established and promulgated as the Department’s research agenda for the decade of the 1990s.

In light of the importance of assessing the impact of the Mental Health Act of 1988 on the lives of Ohio consumers of mental health services, the Department made research a top budget priority for the 1990-1991 Biennium. Efforts to restore some of the budget were finally successful, and this infusion of new funds allowed an increase in the number of projects and in the diversity of topics being addressed by researchers. In the 1990-1991 Biennium, 30 projects were funded in 12 different universities, five community agencies or boards, one state hospital, one private research organization, and the Office of Program Evaluation and Research.
Researchers were studying the impact of housing programs and the comparative costs of providing mental health services and housing in the community vs. hospital settings, enhancing social networks of mental health consumers, the transition of severely emotionally disturbed youth to adulthood, the process of case management in community treatment teams, and the impact of a community support system for persons with long-term hospitalization.

This biennium the Office of Program Evaluation and Research received a grant from the National Institute of Mental Health for a four-year study “Services in Systems: Impact on Client Outcomes.” The research was designed to ascertain the service mixes being delivered to Ohio’s severely mentally disabled population; the extent to which the characteristics of clients, systems, and community environments were associated with these service mixes; how the service mixes were related to outcomes in clients’ lives and how all of these relationships changed over time. Since it was a longitudinal study, it enabled us to evaluate changes in the mental health system and client outcomes over a longer period of time than that studied by most of the prior research in the field.

The 1992-1993 Biennium saw a very active research program, with 33 projects funded in 12 universities; 10 community agencies, boards or hospitals; one private research organization, and the Office of Program Evaluation and Research. Projects were underway addressing important aspects of the impact of the Mental Health Act of 1988, including research on community mental health/ADAMHS board responses, and an in-depth study of persons involuntarily committed to boards, the services they received, and the outcomes they experienced, from their own perspectives and those of their families. A number of projects were focusing on population groups with distinctive mental health problems or needs, including African-American clients, elderly nursing home residents, mentally ill individuals involved in the criminal justice system, and children and adolescents.

During the 1994-1995 Biennium, we funded 43 projects--a very healthy increase! Sixteen were master’s theses or doctoral dissertations, funded under our Small Grants Program for graduate student research. Research projects were funded to 14 different universities, six community agencies, boards or hospitals, one private research organization, and the Office of Program Evaluation and Research.

We had a particular focus on knowledge dissemination, since a number of projects were completed in this biennium. Research Results Briefing 1994: Knowledge for a New Era of Mental Health attracted over 300 people for a two-day symposium in which results from 23 different projects were presented. Our NIMH “Services in Systems” study was completed during this biennium and was featured at Research Results Briefing 1994 as well as in a number of national conference venues, including the National Conference on State Mental Health Agency Services Research and Program Evaluation, APHA and IAPSRS. The study provided so much valuable information and so many interesting new questions that we decided to extend and reconfigure it as part of our own research program, under the title “A Longitudinal Study of Mental Health Services and Consumer Outcomes in a Changing System.”

During the 1996-1997 Biennium, we funded 29 projects. Eight were funded under our Small Grants Program. Research projects were funded to 10 different universities, two community agencies or mental health boards, one private research organization, and the Office of Program Evaluation and Research.

A major focus of this biennium’s research program was recovery from serious mental illness, and ways in which recovery can be enhanced. The Department’s Office of Consumer Services funded four demonstration projects, and our office funded universities to develop research around the projects’ interventions. We are particularly pleased that, in all four instances, the research became a genuine
collaboration between consumers and university staff. There were also a number of projects which focused on a wide range of topics concerning family members of adults with mental illness or children with emotional disturbances, indicating our commitment to family members as an important source of support in consumers’ lives and to developing knowledge that will improve services for families as well as consumers.

During the 1998-1999 Biennium, we funded 37 projects. Eleven of those were funded under our Small Grants Program. Research projects were funded to 12 universities two community agencies, two private research organizations and the Office of Program Evaluation and Research. At the beginning of the biennium we held Research Results Briefing 1997: Knowledge for Services and Systems in an Era of Change, our triennial two-day symposium in which the results of our research programs are presented to the Ohio mental health system.

Our research portfolio for 1998-1999 reflected our commitment to understanding the characteristics and needs of consumers and families, particularly adults with severe mental illnesses and children with serious emotional disturbances, and to determining the services that work effectively to help people recover.

During the 2000-2001 Biennium, we funded 34 projects, 11 of which were funded under our Small Grants Program. Research projects were funded to 13 universities, three community agencies or boards, two private research organizations and the Office of Program Evaluation and Research.

In this biennium, the Department’s Office of Consumer Services funded a group of eight demonstration projects designed to embed the principles of Recovery into board and agency operations in local mental health systems. Our office funded research to ascertain the impact of these interventions in seven of the demonstrations. The research portfolio this biennium also began to address the Department’s Quality Agenda, which is seeking to improve the quality of mental health services in Ohio through 1) increasing the use of evidence-based practices, 2) shifting from a quality assurance approach to a continuous quality improvement approach, and 3) consistently measuring consumer outcomes.

It has been clear for some time that having research which proves that a new treatment modality is effective is not a sufficient motivation for organizations to adopt it. Other complex factors come into play, and the new Innovation Diffusion and Adoption Research Project (IDARP) was beginning to look at those factors.

During the 2002-2003 Biennium, we funded 35 projects, nine of which were funded under our Small Grants Program. Research projects were funded to 10 universities, three community agencies or boards, two private research organizations, and the Office of Program Evaluation and Research.

In this biennium, we continued our focus on evidence-based practices that would provide more effective treatments within the mental health system and in other venues where people with mental illness find themselves. A number of projects found that it is difficult to establish an innovative approach such as Recovery within an organization, and our Innovation Diffusion and Adoption Research Project (IDARP) was studying issues around the adoption and successful implementation of innovative practices by behavioral healthcare provider organizations.

During the 2004-2005 Biennium, we funded 27 projects, seven of which were funded under our Small Grants Program. Research projects were funded to 10 universities, two community agencies, two private research organizations and the Office of Program Evaluation and Research.
In this biennium, almost all of our research projects were concentrated in three general areas: 1) studying the effectiveness of specific service programs or the effectiveness of already-established evidence-based practices when extended to new types of consumers, 2) understanding consumers’ experiences with their illnesses and recovery pathways, and 3) sharpening the measurement tools, such as the Ohio Mental Health Consumer Outcomes System instruments, which clinicians use to plan services for consumers and assess their effects.

The 2006 – 2007 Biennium

During the 2006-2007 Biennium, we funded 29 projects, six of which were funded under the Small Grants Program. Research projects were funded to nine different universities, three community agencies or boards, two private research organizations and the Office of Program Evaluation and Research.

In this biennium we continued our focus on studying the effectiveness of specific service programs or the effectiveness of already-established practices when extended to new types of consumers. We also had a number of projects aimed at achieving a deeper understanding of the lives and challenges facing consumers, particularly those in specific diagnostic categories. In addition, this biennium saw some researchers studying issues of importance at the mental health system level.

In the service effectiveness arena, David Biegel and Bob Ronis and their colleagues at Case Western Reserve University are assessing the impact of supported employment for consumers with co-occurring mental and substance use disorders; Rick Shepler and Helen Cleminshaw and their colleagues at the University of Akron have been comparing different treatment programs for youth with these co-occurring disorders; Jeremy Shapiro and his colleagues at Applewood Centers have contrasted the effects of an evidence-based practice against naturally occurring therapy, with some very interesting results; and Wes Bullock and his colleagues at the University of Toledo have found that the Wellness Management and Recovery Program achieves significant improvements in adult consumers’ quality of life, symptom distress, empowerment and progress in recovery.

In a fascinating study, Patricia Kerig of Miami University looked at bullying behavior, which has become a very significant problem in the lives of a substantial number of school children and others in the United States. As opposed to studying illness characteristics, Bill Rubin and his colleagues at Synthesis, Inc., are studying the strengths present in families that bring various types of children and adolescents to the community mental health system for treatment. The existence of unresolved traumatic events in the lives of mental health consumers has begun to emerge as a very important factor in their recovery trajectories, and this biennium has seen three studies funded in this area.

Some of our researchers are studying issues that are important at the mental health system level. Bob Gitter is following up his previous study of the cost of case manager turnover in community agencies with a second study about the determinants of turnover and retention within this very important segment of the mental health workforce. Karen Slovak and Karen Carlson, of Ohio University, looked at issues surrounding whether social workers do assessments of firearm safety and counseling in this area with clients, in an era when over half of all suicides occur with firearms.

In 2007, New Research in Mental Health, Volume 17 received the Best Health Policy Research Award for an Independent Scholar or Practitioner from the Health Policy Institute of Ohio (HIPO). HIPO is an independent, nonpartisan, statewide organization that is committed to improving the health and well-being of all Ohioans through informed policy decisions. In addition to presenting four annual research
awards to recognize excellence in research that informs policy decisions, the organization carries out health trend forecasting, health issue analyses, research and communicates important health information to policymakers, state agencies and other decision-makers throughout Ohio.

This volume of New Research in Mental Health contains abstracts of each of the projects funded by the Department’s research program which were in progress during the 2006-2007 Biennium (Chapter One) as well as projects in progress funded by federal and other sources (Chapter Two). The abstracts were written by the researchers, and they represent varying perspectives as well as varying stages of project progress. It is my hope that some of these projects are addressing problems and concerns you in the mental health system are experiencing, and that the results of the research will give you new ideas and assistance in improving the quality and effectiveness of services. Please feel free to contact the researchers or the Office of Program Evaluation and Research for further information or to discuss any questions you may have. An appendix at the end of this book gives locating information for all principal investigators.

We in the Department of Mental Health believe that research is a valuable and a necessary tool in the task of enhancing the quality and effectiveness of the mental health system. By bringing the rigor of good research methodology to bear on the kinds of pressing problems and issues facing us, we can develop new strategies and techniques, move toward best practices in the public mental health system, and achieve a better understanding of the needs of those we serve.

It is one of the functions of the Office of Program Evaluation and Research to develop linkages between problems and questions within the mental health system which need research, and universities and other resources capable of developing research projects which will provide answers. To this end, we are actively engaged in an ongoing process to encourage researchers in settings throughout Ohio to apply their talents and expertise to the many priority questions which remain unsolved in all of the areas of public mental health. We would like to hear from any researchers who wish to explore these challenges with us.

This is the eighteenth and last volume of New Research in Mental Health I will have the pleasure of working on, since I will be leaving the Department of Mental Health at the end of this month. I hope that you will find this book both interesting and challenging and that you will be able to integrate some of the results of our research into the ongoing operation of mental health programs, in order that the citizens of Ohio will receive higher quality and more effective services.

Dee Roth, MA
Chief
Office of Program Evaluation and Research
April 2009
Chapter One
ODMH - Funded Research
The field of children’s mental health is characterized by a gap between research and practice (Garland, Hurlburt, & Hawley, 2006). Although there have been hundreds of studies of highly structured, manualized interventions delivered under carefully controlled conditions, there has been little research on everyday therapy as it is practiced in community clinics, offices, and centers. Few practitioners report using empirically supported treatments on a routine basis (Gotham, 2004). The field has only recently begun to study what happens when evidence-based treatments (EBTs) are transported from academic to community clinical settings.

**Theoretical Framework and Study Design**

There is a basic question about how psychotherapy should be conducted that is at the center of the research/practice gap: Should clinicians conduct therapy by following manuals for EBTs, or should they improvise treatment for each client on the basis of their clinical judgment? Of course, a combination of these two approaches is possible, but then the question becomes how heavily to weight these two types of information.

Proponents of EBTs have marshaled strong arguments in favor of providing clients with interventions that have received support from outcomes studies. The small amount of outcomes research focusing on non-research, community therapy for youths has not produced encouraging results. Although some positive findings have been obtained (Angold, Costello, Burns, Erkanli, & Farmer, 2000), the preponderance of evidence collected so far suggests little benefit of usual community-based services (Bickman, 1999). In contrast, a number of research-based, manualized therapies have received clear support from outcomes studies (see review by Chorpita et al., 2002). This issue has important policy implications. The National Institutes of Health and several state Medicaid programs have launched initiatives to encourage use of EBTs by practitioners in the community.

Most studies that have investigated treatment dissemination have documented successful transporting of EBTs from research to community settings (e.g., Merrill, Tolbert, & Wade, 2003). However, this has not always been the case, and interventions sometimes lose effectiveness when transported from the laboratory to the clinic (e.g., Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002). There have been calls to investigate the factors that facilitate and inhibit successful adoption of EBTs in community settings (Schoenwald & Hoagwood, 2001).
The powerful movement to disseminate EBTs notwithstanding, the question of the comparative effectiveness of research-based and clinic therapy has not been definitively settled. The more one delves into the details of these studies, the closer the race seems to be, because methodological biases have consistently favored research therapy. Weisz, Jensen-Doss, and Hawley (2006) performed a meta-analysis of hundreds of randomized controlled trials (RCTs) and found typical effect sizes in the .5 to .8 (i.e., medium to large) range. However, while research therapies consistently produced better outcomes than waiting lists and placebo conditions involving attention but no genuine attempt to treat, when Weisz et al. restricted their meta-analysis to comparisons between target interventions and bona fide clinic therapies, they obtained an effect size of .30 (small/medium range). Thus, large effect sizes have generally been obtained only when interventions were compared with “straw man” comparison conditions that no one would expect to be helpful. Finally, when Weisz et al. discounted the allegiance effect by excluding studies in which the EBT’s developer was an investigator, the average effect size was .09, which was not significantly different from zero.

Most past studies comparing specific treatments to usual care have made no attempt to specify the content of this care. The present study sought to address this gap in our knowledge base by elucidating the clinic therapies to which target interventions are frequently compared. Our methodology was naturalistic in the sense that we assessed therapeutic strategies as they occurred in sessions without constraint by research requirements. We studied the effects of various techniques not by experimentally manipulating them, but by measuring them.

The manualized intervention we examined was called Helping the Noncompliant Child (HNC), by McMahon and Forehand (2003). McMahon and Forehand reviewed dozens of studies, conducted over the last 30+ years, that found positive effects of program components and of the treatment package that evolved based on these studies. Increases in child compliance generalized to school settings, were maintained in follow-up assessments, and were associated with improvements in a variety of problem behaviors including tantrums, aggression, crying, and so forth. But although HNC has garnered an impressive amount of empirical support, these studies generally occurred in research, not community clinic, contexts. The present research aimed to address this gap by conducting an effectiveness study of HNC in a community clinical setting.

**Research Objectives**

The purpose of our study was to contribute to a bridging of the gap between research and practice in the mental health field. Specifically, our objectives were:

1. To develop and implement a method of measuring the techniques used by therapists working in community mental health settings when unconstrained by research protocols

2. To transport into a community clinic a research-based, manualized intervention that has received empirical support under controlled conditions

3. To compare the outcomes produced by the manualized intervention and the outcomes produced by treatment as usual in the clinic

4. As a supplementary objective, we examined the Ohio Scales as an outcomes measure by assessing its sensitivity to therapeutic change
Methodology

Participants were 194 families with children aged three to nine years old who were diagnosed with a disruptive behavior disorder. There were 124 children in the treatment-as-usual arm of the study, and 70 children in the manualized treatment condition. The mean (SD) age of participants was 6.23 (1.74) years. Seventy-three percent were male. Fifty-nine percent were African American, 25 percent Caucasian, 10 percent Biracial, and five percent Hispanic. Thirty percent of the children had diagnoses of Oppositional-Defiant Disorder, 62 percent Disruptive Behavior Disorder Not Otherwise Specified, and six percent Adjustment Disorder with Disturbance of Conduct. Comorbidity was common; there was an average of 1.5 (.6) Axis I diagnoses per participant, with Attention Deficit Hyperactivity Disorder as the most common comorbid diagnosis (33%). Participant characteristics showed negligible differences between the two arms of the study.

Measures included the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001); the Ohio Scales (OS; Ogles, Melendez, Davis, & Lunnen, 2001); the Parent Client Satisfaction Questionnaire (PCSQ), which is an adaptation of the Youth Client Satisfaction Questionnaire (Shapiro, Welker, & Jacobson, 1997); and an adaptation of the Life Events Checklist (Johnson & McCutcheon, 1980).

We developed an instrument called the Therapeutic Methods Coding System (TMCS) to assess treatment procedures used in naturally occurring child and family therapy. The TMCS is completed by coders on the basis of audiotaped therapy sessions. The instrument has three parts, which measure three dimensions of therapy: modality (e.g., individual and family therapy), activity (e.g., therapeutic games and pure conversation), and strategy (e.g., solution-oriented therapy and subtypes of behavior therapy). Coders rank-ordered the extent to which these procedures were used during each session.

Two raters (JPS & JKY) scored audiotapes for 30 therapy sessions. We computed intraclass correlations between their codings. The results indicated excellent inter-rater reliability for our system of coding therapeutic procedures.

We did not use the traditional method of random group assignment to determine what type of therapy would be received by each client. Instead, we used a sequential method: We collected data for the Treatment as Usual (TAU) condition first, enrolling all families in this arm of the study. Then we began the manualized treatment arm, enrolling all ensuing participants in this condition.

There were three components to training the therapists to conduct HNC: (1) a two-day training by Rex Forehand and Nicholas Long, two primary developers of HNC, (2) provision of a treatment manual providing precise, step-by-step instructions in implementing the intervention, and (3) consultation with the Co-Investigator (JKY) upon the clinician’s request. In order to minimize the allegiance effect, Drs. Forehand and Long had no contact with the study after they provided their training.

Baseline measures were administered as part of the intake appointments that preceded therapy. Post-therapy measures were administered to parents by a research staff member, after termination of therapy, as a telephone interview.

There were several different indices of treatment fidelity, all of which were collected through the clinician’s use of the treatment manual. First, clinicians checked each step of the intervention as they completed it, thus providing a measure of how much of the protocol had been delivered to each family by
the time of termination (whether planned or unplanned). Also, the checklist included two additional items for each of the seven modules. One item asked the therapist to evaluate the parent’s understanding of the module’s material. The final item asked clinicians to note whether they departed from the manual by adding improvised therapeutic activities or strategies to their implementation of HNC. The clinicians were neither encouraged nor discouraged from adding therapeutic techniques that were not part of manual.

Table 1. Strategies Used in Treatment as Usual (TAU) (N = 124 cases)

<table>
<thead>
<tr>
<th>Technique</th>
<th>Score</th>
<th>SD</th>
<th>Used At All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child/family inquiry</td>
<td>2.82</td>
<td>2.31</td>
<td>75%</td>
</tr>
<tr>
<td>Child/family relationship building</td>
<td>1.68</td>
<td>1.99</td>
<td>57%</td>
</tr>
<tr>
<td>Parent case management</td>
<td>1.53</td>
<td>1.67</td>
<td>63%</td>
</tr>
<tr>
<td>Parent guidance</td>
<td>1.41</td>
<td>1.48</td>
<td>64%</td>
</tr>
<tr>
<td>Child/family emotional exploration</td>
<td>1.36</td>
<td>1.68</td>
<td>56%</td>
</tr>
<tr>
<td>Parent behavioral training</td>
<td>1.32</td>
<td>1.77</td>
<td>52%</td>
</tr>
<tr>
<td>Parent inquiry</td>
<td>1.18</td>
<td>1.76</td>
<td>44%</td>
</tr>
<tr>
<td>Child/family behavioral suggestion</td>
<td>1.05</td>
<td>1.41</td>
<td>52%</td>
</tr>
<tr>
<td>Child/family life education</td>
<td>1.04</td>
<td>1.30</td>
<td>51%</td>
</tr>
<tr>
<td>Child/family behavior therapy: operant</td>
<td>.67</td>
<td>1.04</td>
<td>39%</td>
</tr>
<tr>
<td>Child/family psychoeducation</td>
<td>.48</td>
<td>.82</td>
<td>37%</td>
</tr>
<tr>
<td>Parent psychoeducation</td>
<td>.42</td>
<td>.96</td>
<td>31%</td>
</tr>
<tr>
<td>Child/family social skills training</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent counseling</td>
<td>.25</td>
<td>.84</td>
<td>13%</td>
</tr>
<tr>
<td>Child/family therapist self-disclosure</td>
<td>.24</td>
<td>.68</td>
<td>21%</td>
</tr>
<tr>
<td>Child/family, behavior therapy: physiological</td>
<td>.24</td>
<td>.66</td>
<td>21%</td>
</tr>
<tr>
<td>Child/family other strategy</td>
<td>.24</td>
<td>.67</td>
<td>17%</td>
</tr>
<tr>
<td>Child/family systemic: non-directive</td>
<td>.24</td>
<td>.84</td>
<td>13%</td>
</tr>
<tr>
<td>Child/family systemic: directive</td>
<td>.23</td>
<td>.64</td>
<td>16%</td>
</tr>
<tr>
<td>Child/family problem solving</td>
<td>.22</td>
<td>.82</td>
<td>15%</td>
</tr>
<tr>
<td>Child/family cognitive therapy: conceptual</td>
<td>.19</td>
<td>.51</td>
<td>18%</td>
</tr>
<tr>
<td>Child/family solution-oriented</td>
<td>.19</td>
<td>.71</td>
<td>11%</td>
</tr>
<tr>
<td>Child/family cognitive therapy: scripted</td>
<td>.17</td>
<td>.49</td>
<td>17%</td>
</tr>
<tr>
<td>Child/family suggestion: mental</td>
<td>.14</td>
<td>.36</td>
<td>18%</td>
</tr>
<tr>
<td>Child/family supportive</td>
<td>.10</td>
<td>.34</td>
<td>12%</td>
</tr>
<tr>
<td>Parent problem solving</td>
<td>&lt;.10</td>
<td></td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Child/family behavior therapy: exposure</td>
<td>&lt;.10</td>
<td></td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Child/family narrative therapy</td>
<td>&lt;.10</td>
<td></td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Child/family systemic: directive</td>
<td>&lt;.10</td>
<td></td>
<td>&lt;10%</td>
</tr>
</tbody>
</table>

**Discussion of Results**

Table 1 presents descriptive data on the therapeutic strategies delineated by the TMCS. Perhaps the most notable theme in these data is the comparatively infrequent use of strategies that correspond to empirically supported interventions. The most frequently scored category that corresponds to an EBT, Behavioral Parent Training, was the sixth most extensively used strategy in our sample. Subtypes of behavior therapy, cognitive therapy, and family therapy appear in the 10th to 29th places in our list of strategies. The gap between research and practice was certainly replicated in our results.
Table 2. Main outcomes (N = 194 cases; 124 TAU versus 70 Manualized Treatment)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Group</th>
<th>Pretest M (SD)</th>
<th>Post-test M (SD)</th>
<th>Improvement (Cohen’s $d$)</th>
<th>Difference between groups</th>
<th>Partial Eta-squared</th>
<th>Power</th>
<th>Main Effect for Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBCL Total Problems</td>
<td>TAU</td>
<td>68.7 (8.4)</td>
<td>64.3 (11.3)</td>
<td>.44</td>
<td>$F = .02$, n.s.</td>
<td>.000</td>
<td>.052</td>
<td>$p &lt; .0005$</td>
</tr>
<tr>
<td></td>
<td>Manual</td>
<td>68.7 (8.8)</td>
<td>64.3 (11.1)</td>
<td>.44</td>
<td>$p = .883$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBCL Externalizing</td>
<td>TAU</td>
<td>71.3 (9.9)</td>
<td>66.9 (11.2)</td>
<td>.42</td>
<td>$F = .20$, n.s.</td>
<td>.001</td>
<td>.073</td>
<td>$p &lt; .0005$</td>
</tr>
<tr>
<td></td>
<td>Manual</td>
<td>71.5 (9.4)</td>
<td>67.7 (11.2)</td>
<td>.37</td>
<td>$p = .655$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBCL Internalizing</td>
<td>TAU</td>
<td>60.8 (9.1)</td>
<td>57.2 (11.0)</td>
<td>.36</td>
<td>$F = .43$, n.s.</td>
<td>.002</td>
<td>.100</td>
<td>$p &lt; .0005$</td>
</tr>
<tr>
<td></td>
<td>Manual</td>
<td>62.0 (10.2)</td>
<td>57.4 (11.0)</td>
<td>.43</td>
<td>$p = .512$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio Scales Functioning</td>
<td>TAU</td>
<td>41.8 (14.8)</td>
<td>50.2 (14.5)</td>
<td>.58</td>
<td>$F = 1.99$, n.s.</td>
<td>.005</td>
<td>.157</td>
<td>$p &lt; .0005$</td>
</tr>
<tr>
<td></td>
<td>Manual</td>
<td>38.4 (17.4)</td>
<td>43.4 (14.5)</td>
<td>.31</td>
<td>$p = .344$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio Scales Severity</td>
<td>TAU</td>
<td>33.9 (14.3)</td>
<td>24.0 (14.5)</td>
<td>.69</td>
<td>$F = 3.73$, n.s.</td>
<td>.019</td>
<td>.485</td>
<td>$p &lt; .0005$</td>
</tr>
<tr>
<td></td>
<td>Manual</td>
<td>32.8 (14.5)</td>
<td>27.3 (15.1)</td>
<td>.37</td>
<td>$p = .055$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

aBased on the time*treatment interaction effect.

As indicated by Table 2, both TAU and HNC produced statistically significant reductions in parent-reported behavior problems. CBCL Total Problems T-scores decreased by roughly four points (Cohen’s $d = .44$) in both conditions. The table presents the effect sizes for all of the outcome measures, including OS Problem Severity and Functioning as well as CBCL Externalizing, Internalizing, and Attention Problems scales. There were no statistically significant differences between outcomes in the two treatment conditions, with the largest $F = 3.73, p = .055$, and an associated effect size of eta-squared = .02 (corresponding to a “small” effect size for the difference between treatments). The overall pattern of findings was not changed by adjusting for age, comorbidity, or number of life events impinging on the youth during the course of treatment. The results were not affected by the child’s gender, age, or ethnic group.
The comparative sensitivity to change of the OS and CBCL can be assessed by examining the results presented in Table 2, which presents effect sizes (Cohen’s $d$) for the OS and CBCL in the two treatment arms of the study. The CBCL Total Problems scale showed an average effect size of .44. For the OS, the Functioning index also had an average effect size of .44, and the Problem Severity index had an average effect size of .53. These results support the OS’s sensitivity to change, that is, its ability to detect improvements in client functioning in the course of treatment. Although the OS is briefer than the CBCL, and it does not have the significant purchase costs of the older instrument, the OS seems similarly effective as a measure of treatment outcomes.

The results within the TAU arm of the study were notable for their lack of significant relationships between the therapeutic methods used by clinicians and both the outcomes and levels of parent satisfaction associated with therapy. Among the large number of correlations between methods and outcomes measures, only six percent were statistically significant with $p < .05$, which is similar to what would be expected on the basis of chance. Thus, within the practice of treatment as usual at the agency, there was no evidence that different treatment methods led to different outcomes or levels of parent satisfaction. One possible explanation is that the typically brief, fragmentary ways in which the strategies were implemented resulted in their lack of distinctive effects. Another possible interpretation is that the array of methods common in everyday practice has similar levels of effectiveness (a pattern sometimes called “the dodo bird effect;” Luborsky et al., 2002).

Although there were no overall differences in outcomes between the two arms of the study, there were interesting results within the manualized arm. We operationally defined treatment fidelity in different ways, and these different definitions of adherence to the manual showed contrasting relationships to our indices of treatment success. When fidelity was defined as the proportion of the manual that was delivered to clients (with length of treatment statistically controlled), adherence was significantly, consistently, and positively related to therapeutic effectiveness. Also, the subset of HNC clients who received at least part of every module showed substantially more improvement than HNC clients who received less than half of the intervention. When fidelity was defined as not using methods from outside the manual – in other words, as not deviating from the protocol – there was no relationship with either outcomes or parent satisfaction. Interestingly, there was no correlation between the amount of the manual the clinicians delivered and the amount of session time they spent on other methods. Apparently, introduction of non-HNC procedures was more a matter of addition than replacement, in that time spent on these procedures did not result in reduced delivery of the manualized intervention. The aspect of fidelity that seemed important was how much of the intervention the therapists implemented, not whether they used other procedures as well.

The relationship between treatment dose and response was different in the two arms of the study. In the TAU condition, there were no relationships between number of sessions and measures of outcomes (although more sessions were associated with higher satisfaction). In the manualized arm, treatment quantity was consistently correlated with both outcomes and parent satisfaction. HNC’s unsurprising lack of impact when it was implemented to a minimal degree probably diluted the difference in outcomes that might otherwise have occurred between the two treatment conditions. If implementation fidelity had been consistently high, it is likely that HNC would have produced more positive outcomes, possibly to the point at which overall group differences would have been significant.

**Implications of the Findings for the Mental Health System**

These results suggest that there is no automatic benefit conferred by providing non-compliant children with a research-based, manualized intervention. Instead, outcomes seem to depend on the level at which the intervention is implemented. In our study, there was no magic to providing therapists with
training and a manual, and these resources did not reliably result in better outcomes for families. However, when practitioners made use of the training and manual by translating their content into action, the research-based intervention did produce major gains for children with disruptive behavior disorders.

These findings seem to have important implications for mental healthcare policy concerning children with disruptive behavior disorders – but decisions about what to do on the basis of these implications might not be simple and easy for policy-makers. One implication of our findings is that mandates or incentives for community organizations to implement EBTs, by themselves, might not accomplish much of value for consumers. Mandates or incentives would probably produce some type of compliance, but our results suggest that EBTs implemented without high fidelity are no more effective than treatment as usual.

The training + manual method of dissemination, which is what we used in our study, seems to be the most common method of transporting therapies from the lab to community settings (Sholomskas et al., 2005), but this method is not ideal. Research-based interventions are transported to clinics with greater fidelity if, in addition to initial training, there is ongoing support for therapists in the form of booster trainings, supervision, monitoring of sessions with feedback and, optimally, financial incentives for maintaining high levels of fidelity (Stirman, Crits-Christoph, & DeRubeis, 2004). Unfortunately, these forms of support entail significant costs to agencies in the form of reduced hours of direct client contact and, therefore, reduced revenue.

As a practical matter and a matter of policy, there might be no obstacle to EBT-dissemination more important than the lack of financial incentives for implementation fidelity. Now that research has ascertained the importance of these forms of professional support, policy-makers must grapple with the question of what to do about these findings.

**REFERENCES**


**Other Presentations of the Research**

Bipolar spectrum disorders (BPSD) are characterized by cycles of extreme mood swings, often including periods of depression and periods of mania or hypomania. Bipolar spectrum disorders include bipolar I (BP I), bipolar II (BP II), bipolar disorder not otherwise specified (BP NOS), and cyclothymia. Until recently, we knew very little about how common BPSDs were in youth, and they were rarely diagnosed. While still scant, the available data suggest that the prevalence of BPSD is likely to be similar in adolescents as in adults, and somewhat lower in children.

In adults, bipolar disorders are typically recurrent (70 to 90%; Goodwin & Jamison, 1990; Kessing, Andersen, Mortensen, & Bolwig, 1998). In addition, BPSDs cause impairment across a wide range of areas including marital, parental, occupational, and possibly, neuropsychological functioning (Zarate, Tohen, Land, & Cavanagh, 2000). For children, the impact of BPSD can be even more severe, as the disorder may interfere with success in the classroom and mastery of important developmental tasks, such as emotion regulation and establishment of social relationships (Nottelmann & Jensen, 1995). Moreover, such difficulties in forming interpersonal relationships and becoming self-sufficient can significantly increase the risk for suicide (Craddock & Jones, 1999). Indeed, the rate of completed suicide for individuals with BPSD is 30 times that of the normal population. In fact, 19 percent of individuals with BPSD die from suicide (Isometsa, 1993). Given these factors, BPSD has been ranked as the sixth most debilitating disorder across physical and psychiatric disorders (Murray & Lopez, 1996).

Given the severity and chronicity of BPSD, along with its impact on families and society, it is imperative that empirically-validated interventions are available for youth diagnosed with these mood disorders. Although significant research has been dedicated to developing and evaluating treatments for adult bipolar disorder, interventions for pediatric BPSD have only begun to emerge in the literature in the past decade. There is consensus in the field that combined psychopharmacological and psychosocial interventions are optimal for treatment of adults with BPSD, (American Psychiatric Association, 1994; Wilkinson, Taylor, & Holt, 2002) with recent national efforts focusing on developing consensus on a template for treatment of BPSD in children and adolescents (Carlson et al., 2003). Despite the call for psychosocial interventions with children and adolescents by clinicians, researchers, and families living with BPSD, the severity of BPSD symptoms and outcomes, and the amount of attention given to its psychosocial treatment with adults (e.g., Basco & Rush, 1996; Miklowitz, Frank, & George, 1996), empirically-supported psychosocial interventions for children and adolescents with BPSD have been limited to multifamily psychoeducation groups for mood disorders (Fristad, Goldberg-Arnold, & Gavazzi, 2002). Thus, individual, empirically-based interventions aimed at symptom reduction are a priority.

Cognitive behavioral interventions have been shown to be effective in adults with BPSD in individual (Cochran, 1984; Lam et al., 2000) and group therapy formats (e.g., Patelis-Siotis et al., 2001). Despite these promising efficacy findings in adults, no studies have been published to date evaluating...
cognitive behavior therapy (CBT) for youth with BPSD. The majority of the research for unipolar depression has found CBT to be efficacious in adolescents (Asarnow, Jaycox, & Tompson, 2001; Birmaher, Ryan, Williamson, Brent, & Kaufman, 1996; Curry, 2001; Reinecke, Ryan, & DuBois, 1998). As empirical evaluation of these treatments has been positive, it indicates that psychosocial interventions can be useful in the treatment of mood disorders in youth.

Despite the promising format and findings of psychosocial interventions for the treatment of unipolar depression, it is unlikely these treatments would be sufficient for the treatment of BPSD, since these disorders involve symptoms and other factors that are different from unipolar depression. For example, an intervention targeted at treating BPSD disorder in children or teens would require sessions/modules that addressed education regarding how to recognize manic episodes, the importance of medication compliance, and the substantial potential for substance abuse. A manual to treat youth with BPSD has been developed and a small efficacy trial indicates that it is likely to be effective in treating this population (Danielson, Fenny, Youngstrom, & Findling, 2002; Feeny, Danielson, Schwartz, Youngstrom, & Findling, in press). In addition, the psychoeducation groups being conducted with families of youths with BPSD are important; however, interventions that focus more specifically on helping the youth cope with the disorder and its symptoms are needed.

**Goals of the Study**

While treatment guidelines recommend psychotherapy for youth with BPSD, we know very little about what psychosocial treatments are most effective with these children and adolescents. Indeed, no randomized controlled trials (RCTs) have been conducted evaluating individual treatments for these at-risk youth. Thus, the primary aim of this study is to investigate the effectiveness of a manualized, evidence-based cognitive behavioral therapy (CBT) (Feeny et al., in press; Danielson et al., 2002) for youth with BPSD treated in a community mental health setting, Applewood Centers Inc. We are conducting an RCT in which youth ages 7 to 18 with BPSD (including, BPI, BPII, BP NOS, and cyclothymia) will receive treatment as usual (TAU) or 12 sessions of CBT and we will compare outcomes of the groups.

Primary hypotheses include: 1) Subjects who receive the 12-session CBT will show more improvement on measures of functioning and behavior at the post-treatment assessment than those who received TAU; 2) Subjects who receive the 12-session CBT intervention will show more improvement on measures of mania and depression at the post-treatment assessment than those who received TAU; 3) Those who received the 12-session CBT will show maintenance of gains at a three-month follow-up. In addition, we intend to conduct exploratory analyses with regard to treatment satisfaction and expectancy, session attendance, and homework compliance to understand how they relate to treatment outcomes.

**Methodology**

This is a randomized controlled trial, the primary aim of which is to provide youth (ages 7 to 18) with bipolar spectrum disorders (BPSD; including, BPI, BPII, BP NOS, or cyclothymia) either Treatment as Usual (TAU) or 12 sessions of cognitive behavioral therapy (CBT) and to compare outcomes of the groups. TAU will consist of treatment by an Applewood clinician and will include talk therapy, appropriate case management, and referrals (e.g., psychiatry). The 12-session CBT will be skills-oriented and will focus on learning information about bipolar disorder and the medications used to treat bipolar disorder, learning how to monitor changes in mood, and developing problem-solving and communication skills with family members.
Youth (age range 7 to 18 years) will be recruited through Applewood and Case Western Reserve University’s collaborative ongoing NIMH funded “Assessing Bipolar Disorder: A Community Academic Blend (ABACAB). (Principal Investigator is Dr. Eric Youngstrom). This grant aims to improve assessment and detection of BPSD and uses state-of-the-art interviews and self-report measures (the same assessment tools that we propose in this effectiveness trial). Youth will be identified through these assessments, and eligible youth will be randomized to CBT or TAU with a 1:1 ratio. We will continue enrollment until we have 50 subjects with initial and 12-week assessments or 66 total participants (whichever comes first). Based upon the ABACAB grant thus far, we anticipate the sample in this study to be approximately 60 percent male and 85 percent African American, 8 percent Caucasian, and 7 percent other ethnicity.

Subjects must meet DSM-IV criteria for BPI, BPII, BP NOS, or cyclothymia as determined by a structured clinical interview (the Kiddie Schedule for Affective Disorders and Schizophrenia--Present and Lifetime Version, K-SADS-PL plus) and confirmed by a psychologist. We will allow youth taking psychotropic medications in the study as long as these medications have been stable (i.e., same medication, same dose) for one month prior to entry. We chose to exclude participants who have switched medications or dose within the past month because a change in medication during the active therapy trial would confound the results and we would be unable to separate recent changes in mood due to therapy or medication change. New referrals to psychiatry for both treatment groups will be made with an attempt to schedule their first appointment after the 12 weeks of treatment unless it is urgent that they be seen immediately. Exclusions include youth diagnosed with a substance-induced mood disorder or medically induced mood disorder, youth who are psychotic and warrant additional treatments, suicidal youth with intent and plan, youth who are actively dependent on substances, or have a Pervasive Developmental Disorder (PDD). Based on existing Applewood and ABACAB data, we expect that the percentage of youth who are excluded for these reasons will be quite small (less than 10%) and thus the results will be quite generalizable to the public mental health system.

Primary outcomes measures include the Ohio Scales (OS), Child Behavior Checklist (CBCL), Youth Self Report (YSR), Family Global Environment Scale (FGES), and Children’s Global Assessment Scale (CGAS). The Short Form of the Ohio Scales will be completed by the parent, worker and adolescent at pre-treatment and 12 weeks. We will examine the Functioning and Problem Severity subscales of the OS. The CBCL will be completed by the parent at pre- and post-treatment (12 weeks). The Youth Self Report will be completed by youth 11 and older at each time point. This instrument assesses the same behavior problems as does the CBCL, and the item content is identical for the majority of the items. The Family Global Environment Scale (FGES) is a one-item, rater completed instrument that provides data about the overall functioning of the family. Children’s Global Assessment is a one-item, rater-completed instrument that provides data about the overall functioning of the child/adolescent being assessed.

Mood symptom measures include the General Behavior Inventory (GBI), Young Mania Rating Scale (YMRS), and the Clinical Global Impressions Scale (CGI). The GBI will be completed by youth and the youth’s parent at pre-treatment and 12 weeks. It will also be completed at the 24-week follow-up for those in CBT. The GBI is a 73-item self-report inventory with items focusing on mood-related behaviors (depression, hypomania, and biphasic symptoms) over the past week. The measure has demonstrated excellent reliability and good discriminant validity with child populations through parent report (Youngstrom, Findling, Danielson, & Calabrese, 2001) and adolescent self-report (Danielson et al., in press). The YMRS will be completed by both a trained research assistant and the parent at pre-treatment (baseline) and 12 weeks. It will be completed at the 24-week follow-up as well for those in
CBT. The YMRS is an 11-item measure administered via interview in which the rater is asked to rank symptoms of mania on five explicitly defined grades of severity. Adequate reliability and validity of the YMRS in adult populations (Young, Biggs, Ziegler, & Meyer, 1978), and child populations (Youngstrom, Danielson, Findling, Gracious, & Calabrese, 2002) have been established. The CGI is a seven-point scale that assesses for global severity of psychiatric illness. It is also a seven-point scale that assesses for global improvement of psychiatric illness. It will be completed by the rater conducting the research assessments.

Lastly, other clinically relevant measures include the Expectancy of Therapeutic Outcome, Client Satisfaction, and The Youth Client Satisfaction Questionnaire, Additional Treatment Inventory, Homework Completion, and Session Attendance.

**Preliminary Results**

This is an ongoing study; at present we have 17 CBT and 25 TAU cases enrolled. Age ranges from seven to 17 years ($M = 12$ years); participants are 74 percent African American, 16 percent European American, 5 percent Latin American, and 5 percent Other ethnicities; 52 percent are male and 95 percent were eligible for Medicaid services.

Preliminary results reveal that both the CBT and TAU groups are significantly improving, with moderate to large effect size reductions in all mood ratings by parents ($p < .04$). (Clinician ratings have not been analyzed yet). Across parent ratings of behavioral and emotional outcomes, there are no significant differences between the two treatment groups. Notably however, TAU is showing greater improvement than typically seen at this clinic. (Five years of TAU data collected at Applewood for all outpatient diagnoses show an average three-point improvement on the CBCL versus 6.5 for TAU and 4.6 for CBT.) Differences were not seen between CBT and TAU in the acceptability of the treatments--similar numbers of sessions were attended and similar levels of satisfaction with the treatment were reported. Furthermore, similar and low amounts of additional treatment were sought across treatment groups.

**Significance and Implications**

There is a growing demand that research show the effectiveness and utility of empirically-validated treatments in more typical, “real world” patients (Norquist, Leibowitz, & Hyman, 1999). Indeed, the field of treatment outcomes research has begun to expand its focus to examine whether interventions with demonstrated efficacy can affect meaningful outcomes for “typical” patients, assessing a broader range of post-treatment outcomes including functioning, disability, and quality of life (Street, Niederehe, & Lebowitz, 2000). In spite of the importance of establishing the external validity of treatments, most studies have been primarily concerned with the internal validity of their results (i.e., efficacy studies). Experts have called for research that examines the external validity of such empirically-supported treatments (i.e., effectiveness research; Barlow, 1996; Howard, Moras, Brill, Martinovich, & Lutz, 1996; Seligman, 1995). There is an especially pronounced lack of effectiveness research in child settings (Hoagwood, Hibbs, Brent, & Jensen, 1995). Given the severity and chronicity of BPSD, along with its impact on families and society, it is imperative that empirically-validated interventions are available for youth diagnosed with these mood disorders. Although significant research has been dedicated to developing and evaluating treatments for adult bipolar disorder, interventions for pediatric BPSD have only begun to emerge in the literature in the past decade. This grant responds to this need for effectiveness research in several ways: delivering our intervention in a community mental health setting, utilizing broad inclusion criteria, including youth with multiple comorbidities, and comparing a manualized intervention to flexibly delivered TAU.
Given the broad inclusion criteria and the amount of co-morbidity amongst the clients in this study, it is good news that we see moderate to large improvements in outcomes across both treatment groups. Mood disorders are often underdiagnosed or misdiagnosed in African Americans (Neighbors et al., 2003 & 2007). The clients in this study were diagnosed with a half-day to a full-day K-SADs interview, and feedback was provided to the therapists for the cases eligible for this treatment study. Thorough and appropriate diagnoses of mood disorders in community mental health among minorities through the K-SADs may be contributing to higher than expected improvements in TAU, and gains across both treatment groups.

Given the results obtained here, we are considering qualitatively interviewing the clinicians and the clients who participated in the cognitive behavior treatment to elicit suggestions to remove obstacles to effectiveness implementation and possibly edit the treatment manual to improve the feasibility and acceptability.

REFERENCES


**Presentations of the Research**

AN EVALUATION OF THE IMPACT AND EFFECTIVENESS OF URBAN SCHOOL-BASED MENTAL HEALTH SERVICES OVER AN EIGHT-YEAR TIME PERIOD

Beech Brook

David L. Hussey, PhD

In 2002 the Ohio Department of Mental Health funded this study to learn more about the utility of urban school-based mental health service delivery models that are funded through routine public sector sources such as Medicaid. Eight years of behavioral rating data were analyzed on youth referred to the Beech Brook School-Based Mental Health Program. The study sample encompasses school-referred children from over 30 Cleveland Municipal School District (CMSD) schools, who were enrolled in the Beech Brook school-based mental health program at any point in time between the years 1995 to 2003. Current research in school-based mental health has done little to empirically examine child mental health treatment outcomes over time.

Description of Intervention

Upon referral from school personnel (usually a teacher or vice-principal), a diagnostic assessment is completed by a licensed mental health professional, and an Individualized Service Plan (ISP) is developed in concert with the child, parent, or caretaker. Community support program (CSP) services (now referred to as CPST or community psychiatric supportive treatment) are active mental health interventions specific to each child’s needs as identified and recorded on the ISP. Program staff intervene with youth by providing clinical services and supports to children and their families in their natural settings such as home, school and community. These interventions are primarily intended to improve prosocial competence, reduce aggressive behavior, and reduce symptoms of emotional/behavioral disturbance which interfere with daily living, personal development and school performance.

Research Objectives and Study Design

There are four core research objectives addressed in this report. These objectives are addressed by analyzing client demographic, service, and outcomes data using the Devereux Scale of Mental Disorders (DSMD, Naglieri, LeBuffe, & Pfeiffer, 1994). The four research objectives are:

1) to identify and profile the child, family, and service characteristics for a sample of approximately 1,800 targeted youth receiving School-based Mental Health (SBMH) services between 1995 and 2003;
2) to evaluate the effectiveness of the Beech Brook SBMH model in reducing psychiatric symptomatology for targeted youth;
3) to model the differential impact that client profile characteristics have on predicting behavior change;
4) to test the hypothesis that varying levels of intervention intensity will differentially impact psychiatric symptomatology in targeted groups of youth.
The primary constructs of interest are change over time in levels of psychiatric symptomatology utilizing client and service characteristics as predictor variables. Child, family, and service characteristics provide predictor variables to help model dynamic change phenomena, and identify intersecting treatment matching mechanisms associated with youth outcomes. Two child (history of physical abuse and history of sexual abuse) and two family variables (parental substance abuse and inter-partner domestic violence) are summed into a critical risk index which is used to model psychosocial risk or adversity in longitudinal analyses.

**Methodology**

Cross-sectional and longitudinal statistical analyses are used to describe and compare changes in the psychiatric status of youth. Child psychiatric symptomatology and behavioral functioning is measured using the Devereux Scales of Mental Disorders (DSMD). The DSMD (Naglieri et al., 1994) is the primary research instrument administered at intake and every 90 days thereafter while youth are enrolled in services. The DSMD is a 111-item standardized behavior rating scale designed to evaluate behaviors related to psychopathology in children and adolescents. The instrument has three composite domains, each made up of two subscales. Composite domains include externalizing (conduct and attention deficit/hyperactivity problems), internalizing (depression and anxiety), and critical pathology (acute problems such as fire setting and psychoses, and autistic spectrum disorder behaviors). The DSMD total and composite scores have excellent internal reliability (e.g., Cronbach’s alpha of .97 for the Total Scale) and test-retest reliability (.96 for the Total Scale). A total score of 60 has been empirically determined to be the best cut-score for differentiating clinical from non-clinical samples. Generally DSMD t-scores can be interpreted as follows: 40 to 55 average; 56 to 59 borderline range; 60 to 69 elevated; and 70 or greater very elevated.

In addition to descriptive statistics and cross-sectional analyses (research objective 1), Hierarchical Linear Modeling (HLM), or growth curve analysis (Bryk & Raudenbush, 1992), was used for multivariate modeling to analyze the differential change rate of behavioral rating scores (i.e., DSMD scores) over time (research objective 2). The HLM analyses used the DSMD parent rating scores to address research questions regarding baseline functioning, shape, and direction of behavioral change (research objective 3). HLM analyses were conducted on ratings made by one parent or caregiver rater. If a child had more than one rater’s scores, scores made by one rater were randomly selected.

Two analytical strategies were employed to measure the impact of service use (research objective 4). Strategy one was to sum (dosage) the total units of time (hours) a child received any type of mental health service (including medication/somatic services) provided through the SBMH model. Strategy two analyzed only those children who used community support program (CSP) services (individual and group) and therapy services (individual and group). The sample for strategy one was comprised of 922 children. The sample for strategy two was comprised of 902 children, 20 subjects were deleted due to not using CSP. Since the two study samples are almost identical, and the group receiving medication/somatic services without CSP was small, analyses explored the impact of CSP and CSP plus therapy on client outcomes.

Analyses explored the shape of change rate on a statistical basis that tests linear and quadratic terms (fixed and random effects) in the HLM process. Significant interactions of predictor variables and change rates were used to identify which groups of children had a differential change rate that was statistically significant (research objective 3).
**Results**

Descriptive and cross sectional analyses (Research objective 1). The sample contains descriptive data on 2,449 children assessed by mental health staff. A subset of the 2,449 School Based Community Support Program (SBCSP) children \( n = 626 \) received only assessment and consultation services. These children were not seen for continued treatment which included ongoing DSMD ratings at 90 day intervals. DSMD ratings were available for 1,823 unique children enrolled from November 5, 1995 to December 19, 2003. Of the children who have two or more parent ratings, there are 4,626 ratings for 1,197 children. Each child has an average of 4.68 ratings made by parents and/or teachers. The sample and descriptive analyses use data from multiple sources--parent, teacher, and worker--including information from the diagnostic assessment. Table 1 displays client demographic and descriptive data for the entire sample.

DSMD descriptive results showed that upon referral, 70.6 percent of children rated by parents and 76.6 percent of children rated by teachers, scored in the borderline or above range (> 56) on the conduct subscale of the DSMD, with more than 35.5 percent of parent-rated children and 30.9 percent of teacher-rated children scoring a 70 or above, or in the very elevated range of clinical impairment.

Table 2 presents sample descriptive statistics for the subset of youth \( n = 922 \) included in the HLM analysis. The mean age at entry was 9.47. The majority of the study children was male (74.4%), African American (80%), and had mother as a primary caregiver (74.4%). The mean number of total out-of-home placements was 0.38, and the mean critical risk index was 0.32. The median of total service use was 55.85 hours; the median of total number of CSP use was 54.93 hours, and the median of total number of therapy use was 0.00 with a mean of 0.61.

Only children who had at least two rating scores were included in the study in order to depict change in a meaningful way. The mean number of ratings was 3.9, and the median was three. The median length of stay was 262 days. Since the majority of children (88.9%) stayed in the program less than two years, a two-year study period was used to show the change of behavioral measures over time in graphic presentations.

Behavioral change over time: Overall (Research objective 2 – Fixed effects). Table 3 presents results of the HLM analysis of all children, using the total number of service hours as a dosage variable (i.e., strategy one). All models show quadratic change, indicating a curvilinear change trajectory. Table 3 presents the results for the DSMD Total Score with those results that are statistically significant at the \( p < .05 \) discussed below. One exception to this is the discussion regarding the interaction effect of time by foster or adoptive parent caregiver. Even though the DSMD Total Score was only significant at the \( p < .10 \) level, the DSMD Externalizing Score was significant at the \( p < .05 \) level, and therefore worth noting in the discussion.
Table 1. Client Demographics (Total Sample)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>682</td>
<td>27.8%</td>
</tr>
<tr>
<td>Male</td>
<td>1,767</td>
<td>72.2%</td>
</tr>
<tr>
<td>Race</td>
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<td></td>
</tr>
<tr>
<td>African American</td>
<td>1,992</td>
<td>81.5%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>358</td>
<td>14.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>15</td>
<td>0.6%</td>
</tr>
<tr>
<td>Native American</td>
<td>7</td>
<td>0.3%</td>
</tr>
<tr>
<td>Asian</td>
<td>3</td>
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<tr>
<td>Other</td>
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<tr>
<td>Unknown</td>
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</tr>
<tr>
<td>Custody Status</td>
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<tr>
<td>Cuyahoga County (CCDCFS)</td>
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<td>7.1%</td>
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<tr>
<td>Other</td>
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<tr>
<td>Relative-Guardian</td>
<td>331</td>
<td>13.5%</td>
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<tr>
<td>Parent</td>
<td>1,908</td>
<td>77.9%</td>
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<tr>
<td>Unknown</td>
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<td>0.6%</td>
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<tr>
<td>History of Physical Abuse</td>
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<td>History of Sexual Abuse</td>
<td>134</td>
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<tr>
<td>History of Inter-Partner Domestic Violence</td>
<td>202</td>
<td>8.5%</td>
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<tr>
<td>History of Parental Substance Abuse</td>
<td>443</td>
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</tr>
<tr>
<td>Mean Age</td>
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<tr>
<td>Mean # of Out of Home Placements (OHP)</td>
<td>.55 (SD = .54)</td>
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<tr>
<td>Mean Length of Stay (LOS)</td>
<td>283 (SD = 268)</td>
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<tr>
<td>Median Length of Stay (LOS)</td>
<td>196</td>
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Table 2. Hierarchical Linear Modeling (HLM) Sample Descriptive Statistics

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<th>Variable</th>
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<th>Median</th>
<th>$N$</th>
<th>%</th>
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<tr>
<td>All</td>
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<td>922</td>
<td>100</td>
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<tr>
<td>Age at entry</td>
<td>9.47(2.48)</td>
<td>9.21</td>
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<tr>
<td>5-7</td>
<td>275</td>
<td>29.8</td>
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<tr>
<td>8-10</td>
<td>422</td>
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<td>11-13</td>
<td>171</td>
<td>18.5</td>
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<td>14-18</td>
<td>54</td>
<td>5.9</td>
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<td>Gender</td>
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<tr>
<td>Male</td>
<td>684</td>
<td>74.4</td>
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<td>Female</td>
<td>238</td>
<td>25.6</td>
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<td>Race</td>
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<tr>
<td>White</td>
<td>145</td>
<td>15.7</td>
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<tr>
<td>African American</td>
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<td>80.0</td>
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<td>Other</td>
<td>39</td>
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<tr>
<td>Primary Caregiver</td>
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<td></td>
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<tr>
<td>Mother (Stepmother)</td>
<td>686</td>
<td>74.4</td>
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<td></td>
</tr>
<tr>
<td>Father (Stepfather)</td>
<td>47</td>
<td>5.1</td>
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<tr>
<td>Grandparent</td>
<td>108</td>
<td>11.7</td>
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<tr>
<td>Other Relative</td>
<td>34</td>
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<td>Foster or Adoptive Parent</td>
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<td>2.3</td>
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<td>Legal Guardian, Non-relative, Unknown</td>
<td>26</td>
<td>2.8</td>
<td></td>
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</tr>
<tr>
<td>Total Number of Out-of-home Placements</td>
<td>.38 (.94)</td>
<td>0.00</td>
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<td></td>
</tr>
<tr>
<td>Critical Risk Index</td>
<td>.32 (.60)</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Number of Services</td>
<td>90.40 (104.45)</td>
<td>55.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Number CSP Hours (N=902)</td>
<td>89.64 (103.94)</td>
<td>54.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Number of Therapy Hours (N=902)</td>
<td>.61 (2.96)</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Ratings</td>
<td>3.90 (2.11)</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of Stay in Program Based on Rating Dates (In Days)</td>
<td>363.6 (304.5)</td>
<td>262.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 3. Estimated Coefficients of the Quadratic Model of Behavioral Change: HLM Sample

<table>
<thead>
<tr>
<th>Fixed and Random Effects</th>
<th>Model of DSMD Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Effect</strong></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>59.99 ***</td>
</tr>
<tr>
<td>Time</td>
<td>-0.025 ***</td>
</tr>
<tr>
<td>$\text{Time}^2$</td>
<td>0.000026 ***</td>
</tr>
<tr>
<td>Age at entry</td>
<td>-0.20</td>
</tr>
<tr>
<td>Gender (Female)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>-3.23 **</td>
</tr>
<tr>
<td>Race (African American)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>1.45</td>
</tr>
<tr>
<td>Other</td>
<td>2.86</td>
</tr>
<tr>
<td>Total Number of Out-of-Home Placements</td>
<td>1.14 *</td>
</tr>
<tr>
<td>Critical Risk Index</td>
<td>0.87</td>
</tr>
<tr>
<td>Primary Caregiver (Grandparent)</td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>1.28</td>
</tr>
<tr>
<td>Father</td>
<td>-3.06 +</td>
</tr>
<tr>
<td>Other Relative</td>
<td>2.59</td>
</tr>
<tr>
<td>Foster or Adoptive Parent</td>
<td>2.16</td>
</tr>
<tr>
<td>Other Caregiver</td>
<td>1.27</td>
</tr>
<tr>
<td>Total Number of Services</td>
<td>0.01 **</td>
</tr>
<tr>
<td><strong>Interaction Effect</strong></td>
<td></td>
</tr>
<tr>
<td>Time by Critical Risk Index</td>
<td>-0.007 **</td>
</tr>
<tr>
<td>Time by Foster or Adoptive Parent (Grandparent)</td>
<td>-0.018 +</td>
</tr>
<tr>
<td>Time by White</td>
<td></td>
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<tr>
<td>Time by Other Caregiver</td>
<td></td>
</tr>
<tr>
<td><strong>Random Effect</strong> (Variance Component)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>111.82 ***</td>
</tr>
<tr>
<td>Temporal Change</td>
<td>0.0001 *</td>
</tr>
</tbody>
</table>

*Note.* Reference group of the categorical variable is shown in parentheses. The prediction was made based on the estimated linear and quadratic models of change of the DSMD scores, which employed the estimated coefficients of “time” and “time-square” while set all other predictor variables at the sample mean level and assumed zero random effects.

*** $p<.001$, ** $p<.01$, * $p<.05$, $+$ $p<.10$
Figure 1 depicts the overall change for the DSMD Total score. The observed mean DSMD total score of the study sample at baseline was 61.06 (SD = 13.51), and the same mean score at the last rating was 56.52 (SD = 13.81). Clearly, children’s mean total score decreased over time. As Figure 1 shows, the change trajectory was curvilinear. In general, the model-predicted mean trajectory of the study children constantly declined in the first year, and reached a lowest point of 54.14 on the 450th day; after that, the predicted mean trajectory started to increase. Based on the model-estimated change rates (i.e., the linear and quadratic terms), we calculated the following piecewise change rates of the total score: on day 90 the average change was decreasing at a rate of 0.6002 units per month; on day 360 the average change was decreasing at a rate of 0.1790 units per month; on day 480 the average change was increasing at a rate of 0.0082 units per month. Since the majority of children (about 68.9%) stayed in the program less than 450 days, the majority of this sample’s behavioral problems as measured by the Total Score declined.

Figure 1. Model-based prediction of the change of behavioral outcomes over time.

![Graph showing the change in DSMD Total Score over time.]

Note. The prediction was made based on the estimated linear and quadratic models of change of the DSMD scores (Table 3), which employed the estimated coefficients of “time” and “time-square” while set all other predictor variables at the sample mean level and assumed zero random effects. The change rate at any particular day is calculated by taking the first derivative of the quadratic growth model evaluated at that day. For instance, the following equation shows the calculation of the change rate of total score using the estimated coefficients shown in Table 3: Change rate of total score at day $t = -0.024686 + 2(0.000026)t$. Multiplying the daily change rate by 30 resulted in the monthly change rate.

Behavioral change over time: Other significant predictors (Research objective 3 - Fixed effects). Gender differences were evidenced on the DSMD Total Score. Other things being equal, a male’s DSMD Total score is on average 3.23 points lower than that of female’s at any point in time ($p < .01$). Other things being equal, a one-placement increase in the number of out-of-home placements increases the Total Score by 1.14 points ($p < .05$). On average, other things being equal, at any point in time, a one-hour increase in total number of services received by a client increases the Total Score by 0.01 units ($p < .01$).
Behavioral change over time: Significant predictors (Interaction effects). Figure 2 shows that children with different critical risk index scores followed differential change trajectories ($p < .01$). At the baseline the children’s predicted DSMD Total Score was similar, but by the 720th day children with a risk score of zero had a mean total score that is 7.67 units higher than children with a risk score of 2.

Figure 2. Model-based prediction of the interactive effects of change and critical risk index on the DSMD Total Score.

![Graph showing DSMD Total Score across different risk indices and time points.](image)

Note. The prediction was made based on the estimated quadratic model of change of the DSMD total score (Table 3), which employed the estimated coefficients of “time”, “time-square”, “critical risk index” and interaction of “time” and “critical risk index” while set all other predictor variables at the sample mean level and assumed zero random effects.

Figure 3 shows interactive effects of primary caregiver and change. Children whose primary caregiver was a foster or adoptive parent had a mean total score by the 720th day; that is 10.66 points lower than children whose primary caregiver was grandparent ($p < .10$). Even though this difference is not statistically significant at the $p < .05$ level for the DSMD Total Score, it was significant for the DSMD Externalizing Score (-0.024 units per month; $p < .05$).

Behavioral change over time for children who used CSP and/or therapy services (Research objective 4). Both CSP and therapy service hours are summed and used as dosage variables (i.e., strategy two). Since this sample only deleted 20 subjects who did not use CSP-group and CSP-individual services, the sample was almost identical to the analysis for all children, which included those who also received medication/somatic services. Due to the similarity with the total samples, only the findings regarding the dosage variables (CSP and therapy) need to be interpreted. With regard to the DSMD Total Score, other things being equal, a one-hour increase in CSP use increased the DSMD Total Score by 0.007 units per month ($p < .10$); and a one-hour increase in therapy use increased the DSMD Total Score by 0.43 units per month ($p < .01$).
Discussion and Implications

SBMH programs that directly provide a flexible and individualized array of mental health services can meet significant community mental health needs as represented by the high rates of youth scoring in the borderline and clinical ranges on the DSMD. The model appears to provide an effective service delivery platform reaching a large volume of at-risk youth who are in need of mental health services. Estimates of penetration rates indicate that in 2004 approximately 6.7 percent of all children in the Cuyahoga County mental health system were served by this Beech Brook program. Keep in mind that today Beech Brook is only one (although one of the largest) of seven provider agencies delivering school-based mental health services through a School Community Mental Health Services consortium convened by the Cuyahoga County Community Mental Health Board, the Cleveland Metropolitan School District, and the Center for Community Solutions. This urban school-based mental health initiative appears to be one of the largest public/private school-based programs in the country.

Clearly the SBMH program targets youth with substantial mental health needs. Seventy percent were in the borderline clinical range or above on the DSMD as rated by parents and/or teachers. Program data indicated that clients are primarily males with externalizing disorders, although the majority of youth have both internalizing and externalizing disorders. In a review of critical risk factors and other social adversities, 21 percent of youth were not in custody of their parents at the time of program entry. Other custodians included foster and adoptive parents, other relatives and grandparents, and other legal guardians. This is important to consider in designing services for this population. Generally much of the critical risk information is thought to be conservative due to the fact that it was not extracted from chart reviews but from a large client information system data set. Typically, mental health workers input this information shortly after completion of the initial diagnostic assessment. When the investigator has conducted chart reviews in the SBMH and other Beech Brook programs, the prevalence of critical risk
factors such as physical abuse, sexual abuse, parental substance abuse, and inter-partner domestic violence is typically two to three times higher.

Due to sampling selection requirements needed to model change over time (i.e., two or more DSMD ratings by the same caregiver) the HLM subset are youth who stayed in the program longer. While HLM analyses revealed a curvilinear change trajectory, the vast majority of youth showed statistically significant decreases in psychiatric symptomatology from the start to the end of services. This includes changes in externalizing behaviors (i.e., conduct disorder and attention deficit symptoms), internalizing behaviors (i.e., depression and anxiety symptoms, and critical pathology behaviors (autism and acute problem symptoms). The curvilinear trend indicates that a small subset of youth who remain in the program multiple years evidence increases in psychiatric symptomatology after experiencing significant reductions during the first 360 to 450 days. This subset may be a particularly chronic and complex, requiring other more intensive treatment options beyond the school-based model.

Significant predictors of behavior change. In general, females were more psychiatrically impaired than males across the DSMD Total Score (3.23 points higher) and composite domains, inclusive of internalizing, externalizing, and critical pathology measures. Mental health staff may need to be particularly sensitive to the heightened psychiatric needs of females referred for school-based mental health services and their comorbid internalizing and externalizing presentations. Longitudinal research on youth with externalizing disorders has primarily focused on males. Far less is known about females and their long term outcomes.

Each out-of-home placement increased the DSMD total (1.14 points) and composite scores by approximately one unit at any point in time. This is a very robust predictor variable pointing to the significant impact that out-of-home placements (OHPs) have on psychiatric functioning. The number of out-of-home placements is likely reflective of seriousness of abuse and neglect factors, leading to disruptions in caretaking relationships which result in removal from one’s biologic family. The reason that the OHP variable was modeled separately from the critical risk index variables was due to the power of its predictive ability as demonstrated by other studies (Hussey & Guo, 2005; Hussey & Guo, 2002a; Hussey & Guo, 2002b). It is also possible that the diagnostic assessment does not do as good a job in identifying the extent of critical risk factors, as it does noting placement moves. Much of the critical risk information surfaces over the course of ongoing therapeutic work, when mental health workers have more time to observe children and families, and when the children and families in turn begin to trust and share more information with staff. More comprehensive and in-depth assessment of social adversity factors (e.g., violence exposure, maltreatment, etc.) would seem to be indicated.

Intensity (dosage) and type of mental health services. Youth who received more mental health services were, on average at any point in time, higher on DSMD measures. Of the youth who received only CSP services, those who received more CSP services were, on average at any point in time, higher on the DSMD Total Score at the p < .10 level, and higher on the Critical Pathology Score at the p < .05 level. Youth who received therapy in addition to CSP services were, on average at any point in time, higher on the Total and all the DSMD composite measures (i.e., Externalizing, Internalizing, Critical Pathology scales). There appears to be a logical rationale to service intensity and dosage such that youth who are more impaired receive more services. By far, the major service utilized was individual CSP (now referred to as CPST), followed by group CSP. Therapy services appear to be appropriately used as an augmentation strategy for the more psychiatrically impaired youth.

Interaction effects by time. HLM analyses revealed that youth with more critical risk factors evidenced different change trajectories on DSMD total score (as well as the internalizing, -0.006 units per
month; \( p < .01 \), and critical pathology scores, -0.012 units per month; \( p < .001 \) over time. For instance, while they started at a similar baseline, children with more risk factors were 7.67 units lower at 720 days on the total DSMD score than children with no critical risk factors. This finding seems paradoxical in that youth with more critical risk factors would be expected to function more poorly. As mentioned previously, it is common for risk factors such as victimization, parental substance abuse, and domestic violence to be significantly underreported at intake, which would reduce the predictive validity of the critical risk variable in the HLM analyses. Conversely, it is also possible that the program is particularly effective in addressing critical risk issues, thereby reducing psychiatric symptomatology for youth who have documented histories of physical or sexual abuse, parental substance abuse, and/or domestic violence. The interactive caregiver by time effects noting the steepest declines for children in foster or adoptive placements seem to support this interpretation. Perhaps these children are also receiving other services (e.g., treatment foster care case management, summer therapeutic programming) which, when augmented with school-based mental health services, have a more pronounced treatment effect. The steepest declines for the foster and adoptive parent youth were actually noted in the youth’s externalizing behaviors (-0.24 units per month; \( p < .05 \)), often the major concern of these caregivers.

Limitations and future directions. While caution needs to be exercised in generalizing these findings beyond this naturalistic sample of consecutively admitted children, the accumulated body encompassing eight years of DSMD outcomes data strongly support further investment in the SBMH model. The use of this type of platform appears to be particularly successful at engaging clients in therapeutic relationships, and delivering adequate levels of mental health services across time. This model represents a potentially powerful public health platform that can effectively provide early intervention and treatment services to large numbers of at-risk youth living in urban communities. Clearly, the use of control groups is necessary to advance SBMH research by conducting comparisons with other treatment conditions. Ideally, the routine SBMH model would be compared to selected evidence-based practices, as well as wait-list control groups, with youth randomly assigned across treatment conditions. Such designs, however, are difficult to implement in practice settings due to funding, logistic, and ethical considerations. In addition to using comparison groups in future research, investigators also must explore the relationship between mental health and behavioral functioning, and academic achievement. From an educational framework where academic achievement is foremost, SBMH services can be conceptualized as a series of supports and strategies that reduce barriers to learning. Addressing the complex interplay between academic and behavioral supports may be particularly important in meeting the educational needs of urban youth, who are often enter the school-house doors with higher levels of social adversity and cumulative disadvantage.

REFERENCES


**Other Publications of the Research**


**Presentations of the Research**


Hussey, D. (October, 2005). *Evaluation and sustainability of Safe Schools/Healthy Students projects*. Invited presentation for the Ohio Safe Schools/Healthy Students Summit, Cleveland, OH.

Hussey, D., & Burgess, K. (2005, March). *Exploring the least restrictive alternative in children’s mental health treatment*. Paper presented at the 7th All-Ohio Institute on Community Psychiatry 2005, Beyond Evidence: Trauma, Treatment, Resiliency and Recovery. Case Western Reserve University, School of Medicine, Department of Psychiatry, Cleveland, OH.


The author wishes to express thanks to the administration and staff at Beech Brook for their dedication and commitment to serving children and families through school-based mental health services. Special thanks to Shenyang Guo, Ph.D., Associate Professor, School of Social Work, University of North Carolina, for consultation regarding HLM analyses.
Less than 25 percent of consumers with mental illness in Ohio are working or volunteering and only 16 percent reported that they received income from working (Ohio Mental Health Commission, 2001). Approximately 50 percent of consumers suffering from mental illness also suffer from substance abuse (Sengupta, Drake, & McHugo, 1998). For consumers with co-occurring mental and substance disorders, barriers to employment may be hard to overcome (Mitchell, Betts, & Epling, 2002). Individuals with co-occurring disorders are likely to experience higher rates of unemployment (Hamilton, 2004) and to have fewer experiences with working (Pickett-Schenk et al., 2002).

Traditional vocational approaches, focusing on prevocational services, are largely ineffective because they keep consumers out of competitive employment too long (Bond, Becker, Drake & Vogler, 1997). The focus on services for consumers with mental illness has shifted to a new type of vocational program commonly referred to as Supported Employment (SE). SE is an evidence-based practice that is designed to assist consumers who want to work to find competitive employment. SE helps these individuals locate a job that matches their preferences and provides them with the level of professional assistance needed to obtain and sustain that job or move to other types of work (Bond et al., 2001). Although there have been some studies examining employment for adults with co-occurring diagnoses, there is a need for additional research (Bell, Greig, Gill, Whelahan, & Bryson, 2002).

**Research Objectives, Research Questions and Hypotheses**

The purpose of this three-year study is to improve our understanding of the impact of a Supported Employment intervention for adult consumers with co-occurring mental and substance use disorders.

RQ1: What are the effects of consumers’ demographic and socioeconomic characteristics, mental health and substance use status, functioning and life status, work history and work interest, and agency organizational characteristics on referral of consumers with mental and substance disorders for Supported Employment services?

RQ2: What are the effects of consumers’ demographic and socioeconomic characteristics, mental health and substance use status, functioning and life status, work history and work interest, use of
Supported Employment services, and agency organizational characteristics on competitive employment of consumers with co-occurring mental and substance use disorders?

Methodology

Study design and procedures. This study utilizes a longitudinal quasi-experimental research design with three data collection points (baseline, 6, & 12 months after enrollment). The study period for the analyses described here is baseline through the first six months. Study participants include 131 consumers with co-occurring substance use and mental disorders who have been referred for Supported Employment services from Integrated Dual Disorder Treatment teams (IDDT) in four mental health agencies in Ohio. The comparison group consists of 94 randomly selected consumers from these same IDDT teams who have not been referred for SE services. Of the 225 consenting consumers, all but one completed interviews at baseline. For these analyses, 17 consumers from the Supported Employment group and 13 from the comparison group were excluded due to missing data or because they were employed at baseline. The final sample was 194 consumers (n = 113 in the SE group and n = 81 in the Comparison group).

Data Analysis. The univariate data were reviewed for dispersion, variation, and normalcy of distribution. Because of the large number of predictor variables in relationship to sample size, bivariate tests were utilized to identify variables that showed a significant relationship (p < .05) to the dependent variable used to address each research question. Significant variables were tested for multi-collinearity. Logistic regression was used to represent the relationship between predictor variables and the dependent variable. (See Biegel, D. E., Ronis, R. J., & Boyle, P. [2007]. New Research in Mental Health, Volume 17, for a fuller discussion of the problem statement, literature review, research questions, hypotheses, and methodology.)

Findings

Descriptive Results. The study participants ranged in age from 18 to 68 with a mean age of 40.0 years (SD = 9.96). Almost two-thirds (63.0%) of study participants had a high school education or greater. Most (60.3%) of the study participants were White; the remaining were African American (35.1%) or of other origin (4.5%). Males made up 61.9 percent of the study population. Three-fifths (60.8%) of the study population received monthly entitlement income. Of those who did, the median income was $603.00. The most common primary mental illness diagnosis was Bipolar disorder (26.8%), followed by Schizoaffective disorder (24.2%), Depression (20.6%), and Schizophrenia (17.0%). The most common substance use diagnosis was related to alcohol only (35.1%). Of consumers who were referred to SE services, 35.4 percent were competitively employed during the first six-month study period, with 46 percent of referred consumers being competitively employed within twelve months from baseline.

Research Question 1. Bivariate analyses showed that as compared with consumers who were not referred to SE services, consumers who were referred were less likely to be non-White, to receive entitlement income, to report higher financial status, to live independently, to have a diagnosis of substance dependence, and to self-report as being disabled. Consumers who were referred were more likely to have a diagnosis of Schizophrenia, were more likely to have previous work experience and more likely to be receiving services at an agency with higher IDDT and SE fidelity scores.
A logistic regression model included all of the variables that were found to have a significant relationship at the bivariate level, with the exception of IDDT fidelity, which was excluded from the regression model after it was identified as being highly correlated with the SE fidelity measure ($r = .89$). A test of the full model versus the model with intercept only was statistically significant $\chi^2 (9, N = 194) = 61.04, p < .001$. The model was able to correctly classify 63.0 percent of those who were assigned to the Comparison group and 82.3 percent of those who were referred to SE, for an overall success rate of 74.2 percent. Table 1 shows the logistic regression coefficient, Wald test and odds ratio for each of the predictors. Three coefficients were significant predictors controlling for other variables. First, consumers with previous work experience were almost five times more likely to be referred as consumers with no previous competitive employment experience. Second, consumers who self-identified as disabled were half as likely to be referred. Finally, consumers who had a substance use diagnosis of dependence were 60 percent less likely to be referred to Supported Employment.

### Table 1. Summary of Logistic Regression Analysis for Variables Predicting Referral to Supported Employment ($n = 194$)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE</th>
<th>Odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic and Socioeconomic Characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race (White = 0)</td>
<td>-0.062</td>
<td>0.419</td>
<td>0.940</td>
</tr>
<tr>
<td>Entitlement income (Yes = 1)</td>
<td>-0.345</td>
<td>0.395</td>
<td>0.708</td>
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<tr>
<td>Housing status (Lives Independently = 1)</td>
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<td>0.369</td>
<td>0.711</td>
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<tr>
<td><strong>Mental Health and Substance Abuse</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Diagnosed with Schizophrenia (Yes = 1)</td>
<td>-0.386</td>
<td>0.496</td>
<td>0.680</td>
</tr>
<tr>
<td>Substance Use Diagnosis (Dependent = 1)</td>
<td>-0.997*</td>
<td>0.399</td>
<td>0.369</td>
</tr>
<tr>
<td><strong>Consumer Functioning and Life Status</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Financial Adequacy scale</td>
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<td>0.204</td>
<td>0.719</td>
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<tr>
<td><strong>Work History / Work Interest</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Employment History (Previous Work = 1)</td>
<td>1.585**</td>
<td>0.370</td>
<td>4.881</td>
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<tr>
<td>Self-identity as Disabled (Yes = 1)</td>
<td>-0.773*</td>
<td>0.361</td>
<td>0.462</td>
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<td><strong>Organization</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Supported Employment Fidelity</td>
<td>0.047</td>
<td>0.036</td>
<td>1.048</td>
</tr>
</tbody>
</table>

* $p < .05$, ** $p < .01$, based on Wald $\chi^2$ test

**Research Question 2.** Bivariate analyses showed that as compared with consumers who were not competitively employed, consumers were who were competitively employed were less likely to be non-White, to have a diagnosis of Schizoaffective disorder, and to self-report as disabled. Consumers who were competitively employed were more likely to have lower symptom distress, lower financial adequacy, previous work experience, used more SE services, and more likely to have been referred for SE services.

A two-step logistic regression was used to explore the relationship between the predictor variables and the dependent variable, entrance into competitive employment. Since referral to SE services was the focus of the first research question, and a number of variables were found to be
significant in the bivariate level and in the regression analysis, two steps allowed us to look at the relationship of the other significant variables without referral to SE services (a mediating variable) in the initial step. An additional variable, substance dependence, was included in the logistic regression model. Although not significant at the bivariate level with the dependent variable, competitive employment, substance dependence was significant in the first research question discussed above and significant differences in substance dependence were found between the SE and comparison groups. Thus, the substance dependence variable was included to determine if there was a relationship with entry into competitive employment.

The full test of the first step of the logistic model versus the model with intercept only was statistically significant $\chi^2 (8, N = 194) = 36.998, p < .001$. The model was able to correctly classify 92.6 percent of those who were not competitively employed and 32.6 percent of those who were competitively employed, for an overall success rate of 78.4 percent. Table 2 shows the logistic regression coefficient, Wald Chi-Square test and odds ratio for each of the predictors.

The results of the two-step logistic regression are presented in Table 2. In the initial step of the logistic regression model, controlling for other variables, four variables were significant at the $p < .05$ level based on the Wald $X^2$ test and were therefore predictive of the variance in competitive employment during the first six months of the study. Those participants who were diagnosed with Schizoaffective disorder were 65.7 percent less likely to be competitively employed than those who were not diagnosed with Schizoaffective disorder. For every one unit increase in the Symptom Distress scale (indicating more distress) participants were 3.7 percent less likely to enter competitive employment. Those who were previously employed were 2.9 times more likely to enter competitive employment than those who were not previously employed. Participants who self-identified as disabled were 56.8 percent less likely to enter competitive employment.

The second step of the logistic regression model introduced being referred to SE services as a predictor variable of competitive employment. The full test of the second step of the logistic model versus the model with intercept only was statistically significant $\chi^2 (9, N = 194) = 44.729, p < .001$. The model was slightly better than the first step of the model and correctly classified 93.2 percent of those who were not competitively employed and 34.8 percent of those who were competitively employed, for an overall success rate of 79.4 percent. Table 2 also shows the logistic regression coefficient, Wald test and odds ratio for each of the predictors.

The inclusion of referred to SE services was significant, as were diagnosed as Schizoaffective and the Symptom Distress score. However, the employment history and self-identified as disabled variables were no longer significant in this second model. Both employment history and self-identified as disabled were found in the first question to be significant predictors of referral to SE. In this model, referred to SE services mediates the effect of both employment history and self-identified as disabled on competitive employment. The findings for the second step for diagnosed as Schizoaffective and Symptom Distress scale were very similar to the initial step. Those who were diagnosed as Schizoaffective were 66 percent less likely to be competitively employed than those who were not diagnosed as Schizoaffective. For every one unit increase in the Symptom Distress scale (indicated more distress) participants were 3.5 percent less likely to enter competitive employment. Finally, those who were referred to SE services were slightly more than four times more likely to enter competitive employment than those who were not referred into SE.
Table 2. Summary of Logistic Regression Analysis for Variables Predicting Competitive Employment 
\((n = 194)\)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Step 1</th>
<th></th>
<th>Step 2</th>
<th></th>
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<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>Odds ratio</td>
<td>B</td>
</tr>
<tr>
<td>Demographic and Socioeconomic Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race (White = 0)</td>
<td>-0.686</td>
<td>0.429</td>
<td>0.504</td>
<td>-0.715</td>
</tr>
<tr>
<td>Mental Health and Substance Abuse</td>
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<td></td>
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<td></td>
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<tr>
<td>Diagnosed with Schizoaffective (Yes = 1)</td>
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<td>0.540</td>
<td>0.343</td>
<td>-1.079*</td>
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<td>Symptoms Distress Scale (Range 15-75)</td>
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<td>0.017</td>
<td>0.963</td>
<td>-0.036*</td>
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<td>Substance Use Diagnosis (Dependent = 1)</td>
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<tr>
<td>Consumer Functioning and Life Status</td>
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<td>Self-identity as Disabled (Yes = 1)</td>
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<td>1.434**</td>
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<td>4.195</td>
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<td>Average Minutes of SE</td>
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<td>Model Chi-Square</td>
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* \(p < .05\)  ** \(p < .01\), based on Wald \(X^2\) test, *** \(p < .001\)

**Limitations**

This study did not utilize an experimental design, as participants self-selected into the SE group when expressing interested in competitive employment and receiving SE services to help them achieve competitive employment. Another limitation was the heavy reliance on agency staff for the data collection. In addition, a fair amount of self-report data from participants was reported to agency staff as part of the data collection process. When possible, data from multiple agency staff was compared for accuracy, such as entry into competitive employment.

A limited number of study sites (four) and small sample size did not allow for a more in-depth examination of the impact of agency and community characteristics on predictors of competitive employment. Additionally the IDDT and SE fidelity scores showed a lack of full implementation of these evidence-based practices by the agencies in our study. Therefore, lack of full implementation could have an effect on the predictors of competitive employment as well as the SE services received by consumers.

Future research should focus on expanding data collection to a larger number of agencies and include a larger number of participants. Collecting other forms of data to corroborate self-reports may also strengthen the data findings. Further monitoring of the degree of implementation of services at
agencies is also important when evaluating the impact of SE on entry into competitive employment for consumers with co-occurring disorders.

**Discussions and Implications**

*Consumers’ employment history had an indirect effect on competitive employment through referral to Supported Employment.* Consumers without previous work histories in competitive employment may be less likely to accept referrals for services because of fear that having a job will be too stressful or because they do not believe they can be successful in employment. Consumers without previous work experience may have been in a “contemplation” stage about employment; that is, interested but not ready for referral to SE services. Alternatively, agency staff may be less likely to refer such consumers because of concerns of consumer readiness or employability. Agencies should consider holding educational sessions for consumers and staff about employment to discuss potential fears and concerns of both groups. Agencies should monitor case managers’ commitment to the SE model and evaluate case managers’ knowledge and skills of motivational techniques.

*Consumers self-identification as disabled had an indirect effect on competitive employment through referral to Supported Employment.* Consumers who self-identify as disabled may not view themselves as capable of competitive employment. Programs can work to increase self-efficacy of consumers. Consumers who identify as disabled are less likely to have been employed previously. Additionally, such consumers are more likely to receive entitlement income and are more likely to consider their financial status adequate. Educational sessions highlighting benefits counseling could help address concerns that consumers and their families might have about effects of employment on entitlement income.

*Consumers with a diagnosis of Schizoaffective disorder were two-thirds less likely than those with other mental health disorders studied to enter competitive employment.* Schizoaffective disorder is a complex disorder affected by both mood and cognitive components. As a result, consumers with this disorder can be less stable in terms of both mood and thought processes. On the other hand, a diagnosis of Schizoaffective disorder may reflect confusion or lack of certainty on the part of the diagnostician as to the true diagnosis. Consumers with this disorder may have less confidence in their ability to be successfully employed. Consumers’ treatment needs may vary over time and need to be tailored to address specific barriers to employment.

*Consumers with higher levels of psychiatric symptom distress were slightly less likely to enter competitive employment.* Consumers who have higher levels of psychiatric distress may be more hesitant to accept employment because they lack confidence that they can be successfully employed. Agency staff may have similar concerns and may be reluctant to place such consumers with employers. However, findings from previous research indicate that competitive employment can reduce psychiatric symptoms.

*Consumers’ substance use status was not a predictor of competitive employment.* The Supported Employment model has a zero exclusion policy, so the finding that consumers’ substance use status was not related to competitive employment should be seen as a positive finding. However, two thirds of consumers in this study were diagnosed with substance dependence and consumers with substance dependence were less likely to be referred to Supported Employment. The relationship between substance dependence and referral to Supported Employment needs further study. Some questions for future research might include: Are case managers less likely to refer consumers with a diagnosis of substance dependence for Supported Employment services because they do not accept the program’s zero exclusion
policy or because they feel that employers are less likely to hire these clients? Are consumers with substance dependence more likely to miss appointments with case managers because they are harder to reach, or are agencies ineffective in their outreach services? Are consumers with substance dependence less likely to accept referrals for Supported Employment services?

Agency fidelity on IDDT and SE was not a predictor of Competitive Employment as anticipated. This lack of statistical significance may be due to the limited number of study agencies and because only one of the four agencies scored in the “Adequate Fidelity Implementation” range of the IDDT fidelity scale and none of the four agencies scored in the “Full Implementation” range of the SE fidelity scale.

REFERENCES


Presentations of the Research

session presented at the Research SHOWCASE, Case Western Reserve University, Cleveland, OH.


Biegel, D. E., Beimers, D., Stevenson, L., Ronis, R., & Boyle, P. (2008, February). Predictors of referral to supported employment and employment of consumers with co-occurring mental and substance disorders. Executive research briefing presented at the Ohio Department of Mental Health, Columbus, OH.


Understanding how to change a practice is arguably as important as understanding why to change it. Putting a new practice into place is often referred to as ‘implementation’; in 1996, the National Center for the Dissemination of Disability Research indicated that notions of implementation vary from perceiving the creation and use of new knowledge as linear mechanical processes transferring packaged knowledge, to characterizing the process as nonlinear/iterative and interactive. Over ten years later, similar definitional variation remains across micro-focused, evidence-based practice and social policy literatures. However, there are also several areas of agreement:


- System influences and infrastructures can pose barriers to practice changes (Farhall & Cotton, 2002; Fadden, 1997; Haynes & Haines, 2002).

- There is a need for more research on the layers of interrelated activities and processes through which an implementation occurs (Fixsen et al., 2005; Lennon & Corbett, 2003).

Ohio’s public mental health system is currently undergoing numerous multi-level implementation efforts pertaining to the use of evidence-based practices and the transformation into a mental health recovery-driven system. In a state-by-state mental health system analysis conducted by the National Alliance for Mental Illness (2006), the Ohio public mental health system was ranked as one of the two best in the nation, based upon numerous indicators including continually striving toward consumer-centered, evidence-based, and mental health recovery-oriented practices. Ohio’s public mental health system contains numerous related implementation endeavors occurring in complex, naturalistic systems.

Through the use of institutional ethnographic methodology, participants in this study shared information about frontline experiences and interrelated, cross-system processes entailed in the implementation of a particular state mental health policy and related practice change. The policy being implemented is known as the Ohio Consumer Outcomes Initiative, which mandates a change in treatment planning and quality assurance through requiring the use of standardized mental health recovery instruments, collectively referred to as the Consumer Outcomes Surveys. To limit scope and focus in this study, one particular instrument was focused on: the Adult Consumer Form. The Adult Consumer Form is a 67-item, closed-ended question, Likert scale instrument. Four subscales are encompassed in the
Adult Consumer Form; one subscale focuses specifically on psychiatric symptoms and related distress, and the other three subscales focus on broader mental health recovery constructs such as empowerment.

Through convenience and snowball sampling techniques, a group of adult mental health consumers \((n = 17)\), Community Psychiatric Supportive Treatment (CPST) clinicians \((n = 9)\), and administrative/others \((n = 22)\) were recruited. The group of administrative/others was comprised of clinical supervisors, quality assurance staff, program managers, agency directors, information technology staff, and county board staff.

Thematic analysis was used to analyze transcribed field notes and interviews. Processes related to consumer and clinician understandings, experiences, and their uses of the Adult Consumer Form were traced and identified. Two system-wide processes figured prominently: compliance-driven organization of time and a paradigm conflict between mental health recovery and “medical necessity.” Textual analysis and the tracing of processing of texts identified by participants were particularly useful in seeing how implementation manifested in everyday practice experiences.

For example, specific texts used at the front lines were related to different policy regulations, and the confluences of these regulations created tensions and in part, structured frontline experiences. Findings illustrate how confluences of system-related processes can partially structure and limit frontline capabilities to implement a desired change in practice; findings also support claims in the implementation literature regarding multi-level phenomena and system infrastructure issues. Findings, however, are limited by the research design; empirical generalization, validity and reliability need further development.

**Methods**

Ethnography has been referenced as a method of choice for generating process information (Shore & Wright, 1997; Smith, 2005 & 2006; Wedel, Shore, Feldman, & Lathrop, 2005). Institutional ethnography (IE), the type of ethnography used in this study, differs from traditional ethnography. While a traditional ethnographic field is usually geographically defined, the IE ethnographic field is considered to be a complex of social processes within a given institutional field (Smith, 2005). IE thus seemed particularly suited to generating information about system processes in a given implementation effort.

The individuals participating in this implementation effort and study spanned four urban community mental health agencies and two counties in Ohio. In keeping with the tenets of IE, participant observation, semi-structured interviews, and document review were used to collect data. CPST staff \((n = 9)\) and adult mental health consumers living with a severe mental illness \((n = 17)\) were recruited at four large, urban community mental health centers in Ohio that were in the process of implementing the Ohio Consumer Outcomes Initiative. Participant-observation of consumer-clinician dyads was conducted over a period of ten months, collecting data on frontline experiences, understandings, and uses of the Adult Consumer Form.

A total of sixteen consumer-clinician survey administrations were observed; twelve administrations were done orally (“doing the survey together”) in response to expressed consumer preference, and four administrations occurred through the consumer silently reading and completing the surveys (“doing the survey by myself”). Individual semi-structured interviews with participating consumers and clinicians were then completed, further elucidating subjective understandings and experiences of the survey and related tasks. As part of the Adult Consumer Form process interviews, snowball sampling techniques were utilized to elicit names of people, referred to as administrators/others,
whose work and activities interconnected with that of respective clinicians and consumers. These administrators/others were contacted and interviewed, and snowball sampling was continued, until new names were no longer generated.

Data analysis began with line-by-line coding of all field notes, interview transcripts, and relevant documents obtained from working with CPSTs and mental health consumers. Codes were sorted according to broader themes, and this process continued until no new codes were being generated and all data were accounted for. Through this thematic analysis, specific consumer and CPST “doing the Outcomes” processes emerged across all four agencies. Participant member checking was used to help ensure that the analysis accurately represented CPST and consumer experiences. Interview information from administrators/others \((n = 22)\) was then coded, compared and contrasted with CPST and consumer themes, and used to trace and elucidate the interconnected processes connected to and embedded in CPST and consumer “doing the Outcomes” processes.

### Findings & Discussion

Frontline understandings, experiences and uses. Through thematic analysis, distinct, detailed processes emerged pertaining to CPST and consumer understandings and experiences of “doing the Outcomes”. To keep the findings as close to participants’ experiences as possible, in vivo language will be used whenever possible in discussing/describing findings; for example, participants typically referred to the Adult Consumer Form as “the Outcomes” and/or “the surveys”. Consumers identified four processes involved in “doing the Outcomes”: making sense of what the Outcomes are for; “filling out the survey”; getting/understanding results; and “understanding myself better”. CPSTs identified six related processes involved in “doing the Outcomes”: “knowing about the Outcomes”; “fitting the survey in”; “tracking the survey”; “filling out the survey”; “getting and understanding the results”; and “documenting”.

CPST processes: “Doing the Outcomes”. CPSTs identified two primary sub-processes within “knowing about the Outcomes”: knowing what the Outcomes were for, and knowing how to do the Outcomes. “Fitting the survey in” similarly encompassed two sub-themes: fitting the completion of the survey in with emergent client issues typically referred to as “real client needs”; and fitting the non-symptom-related content of the survey in with treatment planning documents. Participating CPSTs indicated that the treatment plans needed to be “symptom-focused” in order to meet “medical necessity” criteria, and stressed that they had difficulty making the non-symptom Outcomes information “fit” with the symptom-focused treatment plans.

“Tracking the survey” was a process talked about at length by CPSTs across agencies. CPSTs discussed at length the use of various “tracking reports”, which they compared and contrasted; CPSTs typically referenced their own reports, reports sent to them by quality assurance staff, and reports maintained by their supervisors. In particular, CPSTs expressed frustrations with “completion dates” and “anniversary dates” discrepancies when tracking consumers by such date lists. Dealing with “ongoing pressure” to “get them done when they’re due” was also conveyed as a sub-process under “tracking the survey”. “Pressure” was typically experienced through e-mails, supervisory discussions, staff meetings, and memos.

“Filling out the survey” encompassed the physical act of completion and the actual work of “translating” what the survey meant. The physical act of completion was something done “together” (CPST reading questions orally to consumer) or “by yourself/their selves” (the consumer reads the
questions silently to self); completion also varied regarding whether it was done electronically via computer or via paper and pencil. While “filling out the survey”, CPSTs talked about two different kinds of “translating” work: translating “confusing questions”; and translating consumers’ answers into the abstract response categories when consumers answered by giving a specific life situation rather than one of the abstract response categories.

“Getting results” varied substantially across agencies, whereas “understanding results” was similarly experienced. Across all four agencies, “understanding results” was described as a struggle. CPSTs identified a need for “less numbers, more words”; “pictures or graphs”; and to “have it tell us something, like a paragraph about the consumer”. A graphical comparison of previous and current results was also suggested by numerous CPSTs. “Getting results” primarily varied by method of administration: paper survey or electronic survey. Three of the four agencies used paper administrations, which entailed the CPST sending the completed survey via interoffice mail to another person for entry and report generation. At two of these agencies, CPSTs indicated that results could come “weeks or months later, or sometimes never...”. At the third agency, CPSTs stated that results were placed in their mail boxes approximately five weeks before the next consumer treatment plan, as part of an integrated treatment planning packet. CPSTs at this agency expressed concern regarding how the sequencing of due dates for the respective documents (Adult Consumer Forms and treatment plans) and the need to coordinate and comply with due dates would sometimes lead to their getting “old” survey results (results of surveys completed months earlier).

CPSTs at the agency where results were presented with a treatment plan packet viewed the Outcomes as “part of the chart”, in contrast to CPSTs at the other three agencies who generally conveyed that Outcomes were separate from the chart. Across sites, “chart management”, explained as keeping various documents such as treatment plans “in compliance”, was ascribed high importance by CPSTs. The agency where the CPSTs viewed the Outcomes as “part of the chart” had a high survey completion rate; however, CPSTs at this agency did not demonstrate any greater clarity regarding how the non-symptom Outcomes information “fit” into treatment planning.

“Documenting” was described as writing a progress note indicating completion of the Outcomes. Progress notes typically focused on survey completion rather than clinical use of survey-generated information; for instance, “completed Outcomes survey,” “did Outcomes with client”. While treatment plan documents at all agencies had text fields or check boxes to indicate use of Outcomes information in treatment planning, CPST staff did not reference the completion of such text fields as part of documenting “doing the Outcomes”.

Consumer processes: “Doing the Outcomes”. Consumers identified four processes involved in “doing the Outcomes”: making sense of what the Outcomes are/are for; “filling out the survey”; getting/understanding results; and “understanding myself better.” Three of these four consumer processes overlapped with CPST processes and contained much of the same institutionalized/system-wide processes. Consumers identified only CPSTs and their interactions with CPSTs as the ways in which they externally interfaced with the Adult Consumer Form. However, the process of “understanding myself better” in “doing the Outcomes” was unique to consumers, likely because the questions in the Adult Consumer Form pertained to the consumer’s life experience.

With regard to making sense of what the Outcomes are/are for, consumers diverged on whether they believed that “doing the Outcomes” would directly help them, or indirectly help them by “helping the agency to do a better job with what I need.” All of the consumers essentially understood “doing the
Outcomes” as something that was “done when it was due, because it need to be done”. One consumer explicitly linked “doing the Outcomes” to a policy mandate, referring to “No Consumer Left Behind.”

“Filling out the survey”, while overlapping CPST processes in some ways, also encompassed processes unique to consumers. When offered a choice, twelve consumers requested “together/oral administrations; one of these referenced difficulties with reading glasses, and the remaining consumers cited relational reasons and a perception of easier survey completion. While filling out the survey, consumers cited two interrelated processes: translating their unique life situations into abstract question categories and being reminded, through answering questions, of issues that they wished to talk with their respective CPSTs about.

“Getting and understanding results” echoed, for consumers, many of the themes that were part of CPST processes. Consumers who received survey results expressed a desire for narrative and graphic information, as opposed to numerical information, and this was similar to CPST perceptions. “Understanding myself better” was explained by consumers as introspective as well as dialogical (with their CPST staff). Examples of consumer “understanding myself better” expressions were 1) a clear expression of hope and expectation of improvement in mental health, and 2) a sense of empowerment conveyed through being willing to dispute the results and reflect on why the results were felt to be inaccurate. CPSTs explored and supported such critical evaluations of survey reports. Both CPSTs and consumers indicated that measuring outcomes in general was a good idea; it could be that the very act of measuring outcomes conveys an expectation of potential change/improvement in mental health, which is congruent with mental health recovery philosophy.

**Explicating system processes embedded in CPST and consumer experiences.** Unlike the introspective consumer process of “understanding myself better,” the other “doing the Outcomes” processes identified by consumers and CPSTs can be tied to the trans-local, trans-temporal work of others in a textually mediated way. Institutional processes created a textually-mediated context for CSPT and consumer experiences: 1) a compliance-driven organization of time which typically displaced consumer-centered practice, with regard to when and how documentation (including Outcomes administration) was conducted; and 2) a textually-mediated paradigm conflict between the medical model (understood by CPSTs as “medical necessity” and “focusing on the symptoms of the mental illness only; goals and interventions must be tied to symptoms”) and mental health recovery; which encompassed the medical model but also other non-medical model constructs such as empowerment.

**Paradigm conflict between medical model and mental health recovery.** Medical model and mental health recovery ideas were easily traced (through the mapping of explicit implementation processes pertaining to the Outcomes) to specific “regulatory texts”. The narrower medical model (“medical necessity”) paradigm is contained in Medicaid rules. In a similar fashion, the Ohio Administrative Code description of the Adult Consumer Form contains explicit references to mental health recovery. These paradigms are at least in part introduced into the everyday experiences and understandings of CPSTs and consumers via what Smith (2006) refers to as “subordinate texts”; “subordinate texts” (e.g., symptom-focused treatment plan) are texts that are created in part to comply with and relate back to specific “regulatory texts” (e.g., Medicaid rules pertaining to “medical necessity”).

Across all four agencies, a group of subordinate texts, connected to regulatory texts such as Medicaid rules, private accreditation standards, and state certification standards, were collectively referred to as “the chart”. Most notably referenced were the diagnostic assessment, individualized service plan (ISP), annual review, and progress notes. In everyday CPST and consumer work, the subordinate
text referencing the Ohio Consumer Outcomes Initiative was the Adult Consumer Form, and to a lesser extent its reported results. The divergent medical and recovery paradigms, represented via different administrative and regulatory texts, were primarily manifest in CPST experiences as disjunctures, or points of tension, when workers tried to make “non-symptom” aspects of recovery fit into the medical paradigm. Specifically, across all settings, CPSTs voiced a sense that the “non-symptom” questions of the Adult Consumer Form were “not fitting with medical necessity”.

CPSTs at one agency, who received Outcomes results as part of a packet containing ISP information, viewed “the Outcomes” as part of “the chart”, differing from CPSTs at the other three agencies who viewed “the Outcomes” as distinct from and less important than “the chart”. Because CPSTs across agencies ascribed high importance to “chart management” (keeping the chart documents up-to-date), there may be a relationship between how CPSTs view “doing the Outcomes” in relation to the chart, and rates of survey completion. CPSTs who viewed “doing the Outcomes” as part of “chart management” were at the agency with a high rate of survey completion. However, despite the difference in ascribed importance to survey completion, CPSTs across all agencies expressed a sense that the “non-symptom” questions on the Adult Consumer Form were “not fitting” with the symptom aspects of the ISP and diagnostic assessment. Thus, in treatment planning under everyday practice conditions, the use of the Adult Consumer Form was substantially undermined by the confluences of textually-mediated, divergent system processes that pertained to two differing paradigms: 1) a symptom-focused medical model, and 2) a mental health recovery philosophy that encompassed symptoms and what were perceived by participants to be non-symptom constructs, such as empowerment.

Compliance-driven organization of time. Compliance-driven organization of time was a theme consistent across agencies and throughout consumer and CPST experiences. In viewing the extended processes tied to consumer and CPST Adult Consumer Form activities, it is apparent that nearly all of the extended processes were compliance-focused and related to one or more regulatory bodies. Quality assurance staff were referenced more during snowball sampling than any other stakeholder group, further illustrating the compliance focus of Outcomes survey communications.

As stated earlier, none of the CPSTs referenced their consumers when asked who they communicated with about the Adult Consumer Form and related work. Yet during field observations, CPSTs consistently appeared to be very consumer-centered in their everyday work with consumers; consumers also conveyed this when they talked about their relationships with their respective CPSTs. Hence, with regard to the Adult Consumer Form, the absence of consumers referenced in CPSTs’ answers is not related to how these CPSTs regarded their consumers, rather, it points to an outward-directed compliance focus.

Compliance with governing entities is a fact of life in any human service providing entity. From participant observation, participants’ self-report, and the nature of the interrelated processes connecting to frontline experiences, the everyday experiences of participating consumers and CPSTs (regarding the Adult Consumer Form and other forms of clinical documentation) seemed organized around and dominated by compliance rather than consumer need. That is, documentation seemed to be conducted primarily for the sake of compliance, and secondarily for clinical purposes. This compliance focus was most compellingly illustrated in the cross-agency language of consumers

- …my CPST said my treatment plan is due, so I came in to do it…
- …it’s time to do the Outcomes survey again.....
Oral survey administrations: Illustrating the system processes. Oral survey administrations were one kind of frontline experience in which the system processes described above (medical model versus mental health recovery paradigm conflict and compliance-driven time) were highly visible. Oral survey administration was the expressed preference of twelve consumers. Below, a consumer is asked an abstract survey question and she responds by sharing a specific scenario in her life that her CPST was unaware of:

CPST: “I feel powerless most of the time.” (Reading survey question)
Consumer: “I am bogged down, I’m not helping my daughter… my daughter’s school isn’t responding to my calls, I’ve met with her teachers over and over, I don’t think they’re giving her medicine but they say they are and she just looks worse and worse to me… she sits in her room, doesn’t talk with me, let alone tell me if she’s getting her medicine at school… and my daughter’s counselor here isn’t calling me back… I don’t know what else to do....” (Consumer begins to cry)

(The CPST ceases reading the survey questions and begins to question consumer further about this situation; she obtains the counselor’s name, and asks the consumer if she would like the CPST to attempt to contact her child’s counselor after they finished the survey. The consumer says “yes, please,” and the CPST notes the information about the consumer’s daughter on a piece of notebook paper and clips the notebook paper to a blank release of information which they fill out after the survey is completed.)

CPST: “Back to the question, ‘I feel powerless most of the time’.”
Consumer: “Every day, because of my daughter’s situation.”
CPST: “So, ‘Agree’, or ‘Strongly Agree’?”
Consumer: “There are times I feel like I can do something about it, though.”
CPST: “So….?”
Consumer: “Agree”

In the twelve dyads who completed the survey orally/“together”, at least one exchange like that illustrated above was observed, in which consumers proffered a specific life situation in response to a survey question read by their respective CPSTs. CPSTs typically responded by exploring the concern and making informal notes on notebook paper or “post-its” when consumers shared specific worries in response to survey questions; they would then revisit the scenarios after the survey was completed. When questioned about their experiences of such situations, CPSTs repeatedly voiced a tension between “wanting to explore the concern raised” and “needing to get the survey done.”

Time constraints often presented a problem when addressing the consumer-generated concern; an additional appointment or contact was often scheduled to address the concern that had emerged during the oral survey administration. In a very real way, compliance-driven uses of time might be seen as displacing “real client need.” In contrast, there were no observations of consumers sharing specific life concerns when consumers filled out surveys “by themselves”. Numerous exchanges were observed in which CPSTs were asked by consumers, doing the survey “by themselves,” to “translate” what was meant by a specific survey question; CSPTS always gave their interpretation. However, the activity of doing the survey on their own never evoked from these consumers a verbalization of a specific life concern.
Meanwhile, although the vast majority of observations of clinical interactions related to Outcomes-generated information occurred during oral survey administrations -- via discussions of specific situations consumers shared in response to survey questions -- such interactions were typically not recognized or documented by CSPTs as clinical work. Rather, a compliance/completion focus dominated the content of observed progress notes relating to the Adult Consumer Form. This became fiscally punitive for provider agencies, which were unable to bill for oral administrations without a documented, symptom-related rationale for the mode of administration. If a progress note was written indicating “completed Outcomes survey” without a symptom-related justification for completing the form orally, and that interaction was submitted for billing, it would be construed as “not medically necessary” during a chart audit and would result in agencies paying back billing revenue for that particular service encounter.

While not considered “medically necessary,” twelve consumers, when given a choice, requested oral survey administration. One consumer cited vision difficulties as the reason for his preference; the remaining consumers did not evidence any symptom barrier that necessitated oral administration. Consumer choice and honoring consumer preferences are both key elements of mental health recovery philosophy. Thus, in a very real way, CPSTs were confronted with a tension between completing the Adult Consumer Form in a consumer-centered fashion, and completing the Adult Consumer Form based upon what was construed as “medically necessary”.

**Practice Implications**

In considering the information shared by participants in this study, several immediate practice implications emerged:

- A need to alter the format of the results to incorporate more narrative and graphic depictions; and/or a need to educate provider agencies regarding the desirability and/or availability of such existing formats.

- A need to bring consumer-centered practices to the forefront in documentation (currently driven primarily by compliance) in a way that is compatible with an agency’s financial solvency and compliance with required regulations; reducing and coordinating existing documentation requirements is also pointed to as important.

- A need to document and understand oral survey administrations in a way that encourages and financially compensates for consumer-initiated clinical dialogues. Regarding the need for advocacy for the expansion and/or reinterpretation of Medicaid law to include mental health recovery constructs, a longer-term implication is also apparent.

What Smith (2006) referred to as “buried dialogues” (regarding consumer-generated, specific life concerns) occurring during oral administrations need to be identified, optimized, and documented as billable mental health interventions. Documentation could be done in a way that is mindful of the actual consumer-elicited concerns during oral survey administration and makes the intervention that occurred explicit and textually visible (i.e., “facilitated collaborative assessment of consumer needs via interactive completion and discussion of the Consumer Outcomes Survey questions and answers”), rather than compliance-focused (i.e., “completed the Outcomes survey”). From conversations with board staff, it seems that such a documentation of an oral survey administration could meet the “mind to mind connection” litmus test for determining whether a mental health intervention occurred; that is, the
consumer and CPST were clearly and actively connecting around and dialoging about the consumer’s mental health concerns. Furthermore, the ongoing assessment of needs and monitoring of symptoms are both listed as billable interventions in the Ohio Administrative Code.

**Conclusion**

In this study, institutional ethnography (IE) was to understand how system-related processes manifest in frontline clinician and consumer efforts to implement the Ohio Consumer Outcome Initiative via “doing the Outcomes”. It was hoped that through employing this method specific information would be generated that would be helpful to stakeholders attempting to implement the Ohio Consumer Outcomes Initiative, and that findings could also be related to the current literature on implementation science.

In considering the literature on implementation, this study can be situated in terms of the existing work that it supports and in terms of what it contributes. This study was consistent with claims regarding infrastructures as implementation barriers (Bower, 2002; Fadden, 1997; Farhall & Cotton, 2002; Haynes & Haines, 2002) through explicating in detail how confluences of system processes (compliance-organized time, medical-model-dominated documentation/funding) undermined frontline attempts to implement the Adult Consumer Forms in a clinically relevant way.

Findings from this study were also consistent with claims of implementation as a multi-level phenomenon (Fixsen et al., 2005; Panzano et al., 2003; Proctor, 2004). Although the primary focus of this study was on system-wide, cross-agency (macro) processes, agency-specific (meso) processes were also identified on a limited basis. However, because explication of meso processes was extremely limited by IRB requirements of deductive disclosure, (i.e., revealing the actual agency where the study was conducted), this study is very limited in explicating how the three levels of practice specifically interfaced.

With regard to the existing state of knowledge on implementations, Fixsen et al. (2005) asserted, “…there is little evidence related to organizational and systems influences on implementation, their specific influences, or the mechanisms for their impact, but there is little doubt as to their having an impact (p. 70).” Findings from this study offer a contribution in terms of explicating system influences (compliance-driven time, medical-model-dominated documentation/funding) for a particular implementation endeavor, as well as mechanisms for influence (primarily textually-mediated social processes, driven by compliance and funding).

In conclusion, further work is needed in implementation science, particularly work that explicitly avoids “practitioner blame” (Shaw, 2005). During implementation endeavors, we need to understand how confluences of larger system processes organize, structure and resource everyday practice experiences, particularly from the vantages of those at the front lines who are trying to implement the desired changes “where the rubber meets the road.” And, making problematic confluences of system processes explicit in given practice contexts may help empower service users and frontline practitioners to better understand, negotiate within, and transform such contexts.
REFERENCES


**Other Publications of the Research**


**Presentations of the Research**

SUBJECTIVE EXPERIENCE OF BIPOLAR DISORDER, TREATMENT ADHERENCE AND STIGMA

Case Western Reserve University Department of Psychiatry
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The Burden of Bipolar Disorder

Bipolar Disorder is a persistent and severe mental illness that is associated with significant impairment in function, increased rate of suicide, and high utilization of health care services. Type I bipolar disorder, characterized by episodes of severe depression and full-blown manic episodes occurs in 0.4 percent to 1.6 percent of the U.S. population, affecting somewhere in the order of 1 to 3.5 million individuals (Bourdon, Rae, Locke, Narrow, & Ringer, 1992; Regier et al. 1984). Because of severe, chronic disability and difficulty maintaining employment, individuals with bipolar disorder are overrepresented in public sector mental health care settings such as state mental health and VA health care systems.

In the area of psychiatric disorders, subjective experience of illness incorporates an individual’s attitudes, ideas, affects and attributions in relation to illness, as well as symptoms and insight into illness. Because of the broadly encompassing nature of subjective experience of illness, it is critical to clearly specify domains of interest in evaluating subjective experience as it relates to treatment of psychiatric disorders and treatment outcomes. The aim of this project was to identify key features of subjective illness experience among men and women with bipolar disorder being treated in the Ohio Department of Mental Health (ODMH) inpatient system, as it relates to past and current treatment, treatment adherence and the experience of stigma. A unique and positive feature of this study is that the results of this qualitative analysis will be compared to results of similar analyses already conducted or ongoing, involving individuals with bipolar disorder being treated in 1) an academic specialty mental health clinic, and 2) a county community mental health agency. This preliminary report describes the study design, the study population and quantitative findings of a state hospital population with bipolar disorder. Qualitative analysis is not yet completed, however qualitative findings from a study population using the same inclusion/exclusion criteria are presented at a later point (Chapter Two) in this volume of research results.

Study Design, Hypotheses, and Methods Overview

This was a cross-sectional, exploratory, qualitative study to evaluate illness experience as it relates to treatment attitudes, treatment adherence and perception of stigma in men and women with bipolar disorder being treated in the ODMH system. Thirty inpatient subjects with bipolar disorder were recruited from the Northcoast Behavioral Healthcare System (NBH), Cleveland and Northfield campuses.
We hypothesized the following among men and women with bipolar disorder being treated in the ODMH care system:

1) Women with bipolar disorder will have more concern for having and maintaining intimate social relationships, which will strengthen psychosocial supports as they relate to features of illness recovery (including treatment adherence). Women will also be more concerned with the adverse medication effect of weight gain, which will have a negative effect on treatment attitudes and adherence.

2) Men with bipolar disorder will more often perceive positive effects on irritability or impulsivity as a result of medication which will have a positive effect on illness experience, treatment attitudes and treatment adherence, while at the same time they will more often report using alcohol or drugs to manage symptoms of bipolar disorder.

3) Both men and women with bipolar disorder will perceive substantial societal negative attitudes in the form of stigma—this is likely to affect treatment attitudes, treatment adherence, and the types of support individuals perceive as useful.

All study participants met the following inclusion criteria: 1) Subjects had a clinical diagnosis of Bipolar Disorder Type I determined by a standardized diagnostic interview, the Mini-International Neuropsychiatric Interview (MINI) (Sheehan et al., 1998). Subjects all had illness of at least two years duration; 2) Subjects had an index depressive episode, or mixed mania with depressive symptoms; 3) Subjects received treatment (prior to hospitalization and/or while hospitalized) with medication to stabilize mood for at least six months; and 4) Subjects had to be able to participate in psychiatric interviews and be able to give written, informed consent to study participation. Subjects were excluded from study participation if it was determined, in the clinical opinion of the investigator or the treating physician, that they were unable/unwilling to participate in psychiatric interviews, or if they were unable/unwilling to give written, informed consent to study participation.

The measures were a combination of standardized, quantitative measures of known psychometric quality as well as a qualitative assessment of subjective illness experience. Qualitative analysis was focused on culturally contextualized accounts of subjective experience, primarily evaluated with the Subjective Experience of Medication Interview (SEMI) (Jenkins, 1997), a qualitative instrument that addresses current and past treatment, personal orientations toward life and illness experience. Themes from the SEMI are identified based upon a transcribed interview text. All relevant entries for a particular patient are grouped together under a specified thematic content area.

Selected quantitative instruments included the Drug Attitude Inventory (DAI) (Awad, 1993), the Attitudes toward Mood Stabilizer Questionnaire (AMSQ) (Adams, & Scott, 2000), the Insight and Treatment Attitudes Questionnaire (ITAQ) (McEvoy, Aland, Wilson, Guy, & Hawkins, 1981), Interpersonal Support Evaluation List (ISEL) (Cohen, Marmelstein, Kamarch, & Hoberman, 1985), and the Multidimensional Health Locus of Control Scale (MHLC) (Wallston, Wallston, & Devellis, 1978) which measures specific indices of subjective experience of BPD. Symptom status and functional status were measured with the Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1962), Hamilton Depression Rating Scale (HAM-D) (Hamilton, 1960), and The Clinical Global Impressions Scale (CGI) (Guy, 1976), all widely accepted and utilized instruments to measure psychopathology and functionality in patients with bipolar disorder.
Table 1 outlines clinical characteristics and rating scale scores for the 30 study participants. Mean age of the sample was 36.47 years. Global psychopathology was relatively severe as might be expected from a hospitalized population. The mean HAM-D score was 18.31 and mean CGI score was 4.67. Qualitative analysis has not yet been completed for this sample.

**Significance and Implications**

This sample was recruited from a state hospital population of individuals with bipolar disorder who have substantial psychotic and depressive symptoms, as well as variable attitudes toward mood stabilizing medications and insight into illness. The study population is relatively balanced in terms of gender (56.7% male) and ethnicity (24.1% African-American, 10.3% other, 65.5% Caucasian) allowing for an analysis that is representative of a state hospital population with serious mental illness. The results of this study are intended to increase our understanding of how subjective experience of illness relates to
treatment attitudes in bipolar disorder. Optimizing or treating factors that appear to shape illness experience, such as attitudes toward medication treatments and substance abuse, may help speed the recovery process for individuals with bipolar disorder.

Additionally, a better understanding of perceived societal stigma among individuals with bipolar disorder may help to plan interventions that can potentially offset the damaging effects of stigma. Since prior work by this team of investigators has utilized similar methodologies to evaluate individuals with bipolar disorder treated in an academic and a community mental health clinic, the results of prior work will serve as a control comparison for individuals with bipolar disorder receiving treatment in the ODMH system when a larger data set of 90 individuals with bipolar disorder is qualitatively assessed. A preliminary subgroup of individuals with bipolar disorder receiving care at an academic psychiatry clinic is presented later in this volume.

Historically, individuals in state hospital settings have been understudied and underrepresented in traditional research analyses. Paradoxically, it might be argued that the state hospital population should in fact receive the highest degree of research attention and evaluation as these individuals represent the portion of seriously and persistently mentally ill individuals who are most disadvantaged, most ill and have the greatest burden of human suffering.

REFERENCES


**Presentations of the Research**

Sajatovic, M., Smith, D., Singer, E., Meyer, W., Cassidy, K., & Jenkins, J. (2006, October) *Subjective experience of bipolar disorder and stigma*. Poster presented at ODMH Research Results Briefing 2006: Knowledge to Transform Mental Health Services in Ohio, Columbus.


Meyer, W., Sajatovic, M., Smith, D., Singer, E., Cassidy, K., & Jenkins, J. (2007, March) *Subjective experience of bipolar disorder and stigma*. Poster presented at the All-Ohio Institute on Community Psychiatry, Cleveland, OH.
Psychiatric diagnoses and mental health treatments affect a large number of American families. It is important to understand these problems from the perspective of affected families. To that end, this study investigated the meanings and experiences of behavioral and emotional disorders among children and their families living in northeastern Ohio.

Conceptual Framework

This study is informed by (1) the growing public health significance of behavioral and emotional disorders in youth; (2) the need for mental health research in racial and ethnic minority populations; (3) recognition of the complex biological, psychological, social, and cultural matrix in which these disorders are produced and experienced, and (4) the need for understanding of how mental health problems in youth are situated within family dynamics.

Public health significance. Mental, behavioral, and emotional problems affect large numbers of American children and families. According to national estimates, nine to 13 percent of children and adolescents in the U.S. are diagnosed with serious emotional and behavioral disturbances (USDHHS, 1999). A widely cited community school survey of 14 to 18-year-olds found that one percent met criteria for bipolar disorder or cyclothymia and an additional 5.7 percent had experienced periods of distinctive mood disturbances that may constitute bipolar-NOS (Lewinsohn, Klein, & Seeley, 1995). The Centers for Disease Control estimates that 7.8 percent of U.S. children ages four to 17 had ever had ADHD diagnosed (Visser & Lesesne, 2005). Within the U.S., rates of diagnosis for bipolar disorder and ADHD in youth have increased. As recently as the mid-1990s, bipolar disorder was one of the least frequent diagnoses among children hospitalized with psychiatric conditions; by 2004, it was the most common diagnosis in this population (Blader & Carlson, 2007). In the 1990s, the number of children diagnosed with ADHD also increased dramatically. According to one estimate the number of office-based visits documenting a diagnosis of ADHD increased from 947,208 in 1990, to 2,357,833 in 1995 for U.S. children ages five to 18 (Robinson, Sclar, Skaer, & Galin, 1999). Coupled with increases in diagnoses, there have been substantial increases in the pharmacological treatment of behavioral and emotional disorders across classes of medication (Zito et al., 2003). Rates of office visits that resulted in a psychotropic prescription increased from 3.4 percent in 1994 to 1995 to 8.3 percent in 2000 to 2001; by 2001, one out of ten office visits by adolescent males resulted in a prescription for a psychotropic medication (Thomas, Conrad, Casler, & Goodman, 2006).

The public health importance of researching familial perspectives on mental health problems is further supported by the striking underutilization of mental health services by youth. National estimates
indicate that 70 percent of children and adolescents in need of treatment do not receive mental health services (U.S. Office of Technology, 1986); 75 to 80 percent of children with a serious emotional disturbance failed to receive specialty mental health services and most failed to receive any services at all (USDHHS, 1999). With respect to bipolar (BP) spectrum disorders, Lewinsohn et al. (1995) found that only 41 percent of young adults with BP-II and cyclothymia and 27 percent with subsyndromal BP symptoms utilized mental health treatments. Likely reasons for underutilization include dissatisfaction with services, costs associated with treatment, perceptions that treatments are not relevant, reluctance to seek services, and stigma associated with seeking help (USDHHS, 1999). Research into the sociocultural context and subjective experience of youth mental disorders, mental health treatment, psychotropic medications, and stigma is crucial to improve services and to reduce underutilization of mental health services.

The need for research with minority populations. Decades of research in medical anthropology and transcultural psychiatry have demonstrated that culture shapes nearly every aspect of mental illness, from identification and diagnosis to symptomatology, from timing and onset to course and outcomes; and social responses to, and cultural meanings of, illness (WHO, 1973, 1979; Kleinman & Good, 1985; Kleinman, 1988; Jenkins & Barrett, 2004). More recently, the “main message” of a report by the Surgeon General is that “culture counts” (USDHHS, 2001). Recent reports have called attention to striking disparities borne by racial/ethnic minorities: (a) Minorities have less access to mental health services, (b) minorities are less likely to receive needed mental health services, (c) minorities in treatment often receive a poorer quality of mental health care, (d) minorities are underrepresented in mental health research (USDHHS, 2001; Smedley, Stith, & Nelson, 2003). Yet, “More is known about disparities than the reasons behind them” (USDHHS, 2001, p. 3). By providing an ethnographic account of the sociocultural context and the subjective experience of an ethnically and socioeconomically diverse group of youth and families, this study may shed light on racial and ethnic disparities in multiple ways, including: (a) identification of families’ attitudes toward, and experiences with, mental health services; (b) differing conceptualizations of problems from the points-of-view of youth and families—in particular, how these understandings may vary along sub-cultural lines, and (c) identification of social contexts in which African-American and Euro-American youth and their families perceive and experience stigma.

The biopsychosocial matrix. Psychopathology in children and adolescents arises from a complex, multilayered interaction between the child (including biological, psychological, and genetic factors), his or her environment (including parent, sibling, and family relations, peer and neighborhood factors, and the broader sociocultural context), and the interaction and mutual influence of these factors in the course of a child’s development (USDHHS, 1999). This study contributes knowledge of the familial and sociocultural environment of youth diagnosed with ADHD and bipolar spectrum disorders and their families.

Mental health issues and family dynamics. For decades, the family has been a central site for the investigation of the social and cultural mediation of illness experience (Bateson, Jackson, Haley, & Weakland, 1956; Brown, Birley, & Wing, 1962, 1972; Henry, 1971; Jenkins, 1991; Jenkins & Karno, 1992; Karno et al., 1987; Leff & Vaughn, 1985; Laing & Esterson 1964; Lidz, Fleck, & Cornelison 1985; Lidz & Lidz 1949; Minuchin, Montalvo, Guerney, Rosman, & Schumer, 1967; Singer & Wynne 1965a, 1965b; Wynne & Singer 1963a, 1963b). Yet more recently the intensification of biological explanations for mental illness appears to have supplanted considerations of the role of families in the production, course, meaning, and experience of mental distress. The importance of considering the roles of families in relation to psychopathology is underscored by recent psychosocial literature that finds familial conflict, parental psychopathology, and emotional atmosphere to be associated with risk for developing ADHD
and bipolar disorder and relapse among youth (Biederman et al., 1995; Geller et al., 2000, 2003; Sisson & Fristad, 2001). Despite the remarkable advances of biological psychiatry, there remains a substantial void in contemporary psychiatric research and discourse. The current slippage between knowledge of the “what” of mental illness (identification, diagnosis, symptomatology, course) and knowledge of the “how” and “why” of mental illness leaves unexplored an understanding of how mental illnesses are experienced and become meaningful within the everyday lives of families. In this study we sought to redress this gap in scientific knowledge about children’s psychopathology by seeking the perspectives of parents and youth on the everyday lived experience of contending with these conditions.

**Research Objectives**

The specific aims of the study were to: (a) examine how participants perceive the bodily experience and cultural meaning of ADHD and bipolar spectrum disorders, psychotropic medications, and treatment; (b) describe features of the sociocultural context, specifically sex, ethnicity, and family emotional atmosphere, that may mediate the illness experience; (c) explore aspects of clinical characteristics, specifically diagnosis, that may mediate the illness experience, and (d) provide an account of the subjective experience of behavioral and emotional disorders in youth and their families using ethnographic methods of informal and semi-structured interviews as well as naturalistic observation in clinic and home settings.

**Methods**

**Sample.** Participants included 20 families (25 parents/guardians and 20 children) from ethnically and socio-economically diverse backgrounds (see Table 1). Nineteen children in the study were diagnosed with bipolar spectrum disorders and/or attention-deficit hyperactivity disorder (ADHD) according to research diagnostic criteria (see Table 2). ADHD diagnoses included hyperactive/impulsive, combined, or inattentive type. Bipolar spectrum disorders included strict DSM-IV diagnoses of bipolar I, bipolar II, cyclothymia, or bipolar NOS where the youth either shows one too few symptoms but adequate duration consistent with Lewinsohn et al. [1995], or an adequate number of symptoms but with briefer episode duration consistent with Findling et al. [2001] or Leibenluft et al. [2003]. One child who had been classified as ADHD at the time of recruitment had their diagnosis changed to Oppositional Defiant Disorder [ODD] at a consensus conference, which occurred after the family had been enrolled in this study. Diagnoses were assessed through the K-SADS-PL Plus, an adapted version of the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (Kaufman et al., 1997) with youth and parent/guardian. The diagnostic assessment was conducted as part of another research study, “Improving the Assessment of Juvenile Bipolar Spectrum Disorder” (National Institutes of Health [NIH], 5R01 MH066647 Principal Investigator: E. Youngstrom).

**Recruitment.** Families were recruited from the NIH study from July 2005 to June 2006. Participating families were recruited from two sites: Applewood Centers, Inc. of Cleveland, Ohio (E. 22nd St. branch) \( n = 13 \) and from University Hospitals (UH) in Cleveland, Ohio \( n = 7 \). Families were recruited to the ODMH-funded study through their participation in Dr. Youngstrom’s ongoing NIH-funded assessment study through a three-pronged strategy of (a) in-person recruitment following the K-SADS evaluation, (b) culling eligible families from the database of past NIH participants, or (c) by enlisting the aid of research assistants for the NIH study to inform eligible families during the final K-SADS evaluation of the ODMH study and coordinating with the assistants to receive families’ contact information. Families recruited through the second and third approaches were contacted by telephone.
Midway through the study, a subset of eight families was selected from the overall sample to participate in intensive ethnographic observations across home, community, and clinic contexts. Participants were recruited for this portion of the study beginning in February 2006 and contact was maintained through August 2006.

Table 1. Sociodemographic of Adult Interview Participants (N = 25)

<table>
<thead>
<tr>
<th>Participant</th>
<th>Sex</th>
<th>Age&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Ethnicity&lt;sup&gt;b&lt;/sup&gt;</th>
<th>SES</th>
<th>Marital Status&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Household Composition&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F</td>
<td>41</td>
<td>A-A</td>
<td>Working</td>
<td>Married</td>
<td>2 adults, 3 children</td>
</tr>
<tr>
<td>1</td>
<td>M</td>
<td>39</td>
<td>A-A</td>
<td>Working</td>
<td>Married</td>
<td>2 adults, 3 children</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>34</td>
<td>A-A</td>
<td>Lower</td>
<td>Single</td>
<td>3 adults, 5 children</td>
</tr>
<tr>
<td>3</td>
<td>F</td>
<td>34</td>
<td>A-A</td>
<td>Working</td>
<td>separated</td>
<td>1 adult, 1 child</td>
</tr>
<tr>
<td>4</td>
<td>F</td>
<td>28</td>
<td>A-A</td>
<td>Working</td>
<td>Single</td>
<td>2 adults, 2 children</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>36</td>
<td>A-A</td>
<td>Working</td>
<td>Single</td>
<td>1 adult, 7 children</td>
</tr>
<tr>
<td>6</td>
<td>F</td>
<td>32</td>
<td>A-A</td>
<td>Working</td>
<td>Single</td>
<td>1 adult, 2 children</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>38</td>
<td>E-A</td>
<td>Working</td>
<td>Single</td>
<td>1 adult, 2 children</td>
</tr>
<tr>
<td>8</td>
<td>F</td>
<td>45</td>
<td>A-A</td>
<td>Lower</td>
<td>separated</td>
<td>1 adult, 1 child</td>
</tr>
<tr>
<td>9</td>
<td>F</td>
<td>--</td>
<td>E-A</td>
<td>Middle</td>
<td>Married</td>
<td>2 adults, 5 children</td>
</tr>
<tr>
<td>9</td>
<td>M</td>
<td>46</td>
<td>E-A</td>
<td>Middle</td>
<td>Married</td>
<td>2 adults, 5 children</td>
</tr>
<tr>
<td>10</td>
<td>F</td>
<td>38</td>
<td>E-A</td>
<td>Middle</td>
<td>Married</td>
<td>2 adults, 4 children</td>
</tr>
<tr>
<td>10</td>
<td>M</td>
<td>41</td>
<td>E-A</td>
<td>Middle</td>
<td>Married</td>
<td>2 adults, 4 children</td>
</tr>
<tr>
<td>11</td>
<td>F</td>
<td>42</td>
<td>E-A</td>
<td>Upper</td>
<td>Married</td>
<td>2 adults, 2 children</td>
</tr>
<tr>
<td>12</td>
<td>F</td>
<td>37</td>
<td>A-A</td>
<td>Middle</td>
<td>boyfriend</td>
<td>2 adults, 4 children</td>
</tr>
<tr>
<td>13</td>
<td>F</td>
<td>55</td>
<td>E-A</td>
<td>Lower</td>
<td>Married</td>
<td>2 adults, 1 child</td>
</tr>
<tr>
<td>14</td>
<td>F</td>
<td>38</td>
<td>E-A</td>
<td>Middle</td>
<td>Married</td>
<td>2 adults, 3 children</td>
</tr>
<tr>
<td>15</td>
<td>F</td>
<td>36</td>
<td>E-A</td>
<td>Middle</td>
<td>Married</td>
<td>2 adults, 2 children</td>
</tr>
<tr>
<td>16</td>
<td>F</td>
<td>37</td>
<td>E-A</td>
<td>Upper</td>
<td>Married</td>
<td>2 adults, 3 children</td>
</tr>
<tr>
<td>16</td>
<td>M</td>
<td>43</td>
<td>E-A</td>
<td>Upper</td>
<td>Married</td>
<td>2 adults, 3 children</td>
</tr>
<tr>
<td>17</td>
<td>F</td>
<td>40</td>
<td>E-A</td>
<td>Lower</td>
<td>live-in partner</td>
<td>3 adults, 1 child</td>
</tr>
<tr>
<td>18</td>
<td>F</td>
<td>45</td>
<td>E-A</td>
<td>Middle</td>
<td>Married</td>
<td>2 adults, 2 children</td>
</tr>
<tr>
<td>18</td>
<td>M</td>
<td>48</td>
<td>E-A</td>
<td>Middle</td>
<td>Married</td>
<td>2 adults, 2 children</td>
</tr>
<tr>
<td>19</td>
<td>F</td>
<td>41</td>
<td>Latino</td>
<td>Middle</td>
<td>Married</td>
<td>2 adults, 2 children</td>
</tr>
<tr>
<td>20</td>
<td>F</td>
<td>36</td>
<td>A-A</td>
<td>Lower</td>
<td>Single</td>
<td>1 adult, 5 children</td>
</tr>
</tbody>
</table>

Notes. Shading indicates participants drawn from same family.

<sup>a</sup>Age at time the family was recruited to the study.

<sup>b</sup>Ethnicity abbreviations: A-A = African American, E-A = Euro-American.

<sup>c</sup>Marital status at time of the interview. This changed for one family (#03) in the course of the study when the woman reunited with her husband.

<sup>d</sup>Multiple adults living in the household does not, in all cases, reflect romantic relationships. Other adults living in the house included a brother (#02), a brother’s girlfriend (#02), a friend (#12), and a grandmother (#17).

<sup>e</sup>In addition to her own 3 children this woman was raising 4 nieces and nephews following the murder of her sister.
Table 2. Sociodemographic and Clinical Characteristics of Child Interview Participants ($N = 20$)

<table>
<thead>
<tr>
<th>Participant</th>
<th>Sex</th>
<th>Age$^a$</th>
<th>Ethnicity$^b$</th>
<th>Diagnoses$^c$</th>
<th>Medications$^d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>10</td>
<td>A-A</td>
<td>ADHD-NOS</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>12</td>
<td>A-A</td>
<td>ADHD-I</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>8</td>
<td>A-A</td>
<td>ADHD-NOS</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>11</td>
<td>A-A</td>
<td>BP-2, ADHD-C</td>
<td>Adderall XR</td>
</tr>
<tr>
<td>5</td>
<td>M</td>
<td>10</td>
<td>A-A</td>
<td>ODD$^*$</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>F</td>
<td>12</td>
<td>A-A</td>
<td>ADHD-C</td>
<td>Adderall XR, Adderall (+), Clonidine (+)</td>
</tr>
<tr>
<td>7</td>
<td>M</td>
<td>9</td>
<td>Multi</td>
<td>ADHD-I</td>
<td>Risperdal (+) ➔ Abilify, Adderall XR ➔ Concerta, Clonidine (+), Risperdal (+)</td>
</tr>
<tr>
<td>8</td>
<td>F</td>
<td>9</td>
<td>A-A</td>
<td>Cyclothymia</td>
<td>Adderall XR, Trileptal ➔</td>
</tr>
<tr>
<td>9</td>
<td>M</td>
<td>12</td>
<td>E-A</td>
<td>BP-1, ADHD-H</td>
<td>Geodon</td>
</tr>
<tr>
<td>10</td>
<td>M</td>
<td>11</td>
<td>E-A</td>
<td>BP-NOS$^{**}$</td>
<td>Prozac</td>
</tr>
<tr>
<td>11</td>
<td>F</td>
<td>10</td>
<td>E-A</td>
<td>ADHD-C</td>
<td>Concerta, Lexapro, Risperdal (+)</td>
</tr>
<tr>
<td>12</td>
<td>F</td>
<td>13</td>
<td>A-A</td>
<td>ADHD-C</td>
<td>Concerta, Depakote, Risperdal, Ritalin ➔ Concerta ➔ Ritalin, Zoloft</td>
</tr>
<tr>
<td>13</td>
<td>F</td>
<td>12</td>
<td>E-A</td>
<td>BP-1, ADHD-C</td>
<td>Concerta, Abilify</td>
</tr>
<tr>
<td>14</td>
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<td>BP-NOS, ADHD-I</td>
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<tr>
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<td>13</td>
<td>A-A</td>
<td>ADHD-C</td>
<td>Concerta</td>
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$^a$Age at time the family was recruited to the study.
$^c$Diagnostic abbreviations: ADHD-I = inattentive sub-type, ADHD-H = hyperactive/impulsive sub-type, ADHD-C = combined sub-type, ADHD-NOS = ADHD not-otherwise-specified, BP-1 = bipolar 1 sub-type, BP-2 = bipolar 2 sub-type, BP-NOS = bipolar not-otherwise-specified.
$^d$Medication codes: (+) = medication added during the course of the study; ➔ medication changed.

* When this child was recruited to the study, he was classified as ADHD in the diagnostic database. Upon a later review of the database, his diagnosis was Oppositional Defiance Disorder (ODD).
** This child had a rule-out of ADHD-NOS.
*** This child did not meet criteria for ADHD through the K-SADS, but had received an ADHD diagnosis at his initial intake at the community mental health center.
Instruments/Procedures. The study necessitated access to interpretations and experiences of both youth and parents. Data relating to attitudes, perceptions, and lived experience is best obtained through building long-term relationships with participants. Experiences and cultural meanings of behavioral and emotional disorders were explored through naturalistic observation and informal and semi-structured interviewing of families in home, clinic and community settings.

The Subjective Experience of Illness and Medication in Youth (SEIMY) interview was administered to parents and children from all 20 families. The SEIMY is a semi-structured interview adapted from the Subjective Experience of Medications Interview (SEMI) (developed for use in NIMH R01 grant MH-60232; PI: J.H. Jenkins). The SEIMY was adapted for use with adults and children respectively. The SEIMY investigates (a) conceptions of problems, (b) personal agency and responsibility in relation to problems, (c) perceptions and experiences of treatments and services for problems, (d) awareness of stigma, and (e) the everyday lives of children and families.

SEIMY interviews were conducted by the ethnographer (ECS) in the homes of participants and were audiotaped for later transcription and analysis. Following each interview session the ethnographer took field notes detailing the interaction. The Parental SEIMY was conducted with the parent/guardian most involved in the day-to-day care for the child or, if desired by the family, with both parents. The Youth SEIMY was conducted with the child identified with the behavioral or emotional disorder. Interviews were conducted over multiple sessions; 102 home visits were made to complete the interviews. The pace of interviews and number of research contacts was determined principally by participants. Maintaining a flexible, participant-driven structure facilitated trust and rapport. Conducting interviews over multiple sessions provided also opportunities to observe the home environment.

In addition to collecting interview data, the ethnographer conducted intensive participant observation with a subset of eight families selected from the overall sample to maximize diversity by ethnicity, gender, and diagnosis of the child. Participant observation provided crucial information regarding (1) family dynamics/emotional atmosphere, (2) neighborhood environment, and (3) clinical interactions. Efforts were made to see families at least once per month. If a family desired more contact with the ethnographer, they were seen as frequently as the family wished. When families could not be seen once per month due to families’ schedules the ethnographer maintained regular contact by telephone.

Ethnographic visits were wholly participant-driven and included a range of contexts and activities. In families’ homes, the ethnographer helped prepare and shared meals, played games, watched television, and did household chores. Families invited the ethnographer to accompany them in running daily errands, eating out, swimming at the local recreation center, and attending religious services. Following these visits the ethnographer wrote detailed ethnographic field notes that systematically recount the visit as well as the subjective responses of the ethnographer to reflect her own sense of the social and physical environment (e.g., physical discomfort or crowding, tension or strain in social relations) and interactions with the participants. If a family had a child currently receiving treatment for his or her disorder, the ethnographer observed their clinical appointments. These visits included a range of clinicians, including pediatricians, psychiatrists, therapists, and case managers. When possible, clinical interactions were tape-recorded; otherwise, extensive field notes were taken following the appointment to systematically describe the verbal exchanges of families and providers, appearance and manner of families and providers, affective displays, social interaction, and activities.

Data analysis. SEIMY interviews were analyzed with the aid of Atlas.ti, a qualitative coding software program. Transcripts were reviewed for concepts of interest and themes were developed
through a combination of researcher-driven and inductively-derived analytic categories. Broad themes such as “explanatory model,” “power/control over problem,” and “medication experiences” were gradually refined according to nuances emergent from the data.

**Results**

Our analyses describe four principal themes pertaining to families’ subjective experiences of behavioral and emotional disorders: (1) parents’ conceptualizations of behavioral and emotional problems, (2) parents’ orientations to power/control and family dynamics in relation to problems, (3) children’s conceptualizations of problems, and (4) children’s understandings and experiences of mental health treatment. Below, we summarize the main findings of each theme. For a more exhaustive review of findings, including narrative examples, please refer to the list of publications/presentations.

**Parental conceptualizations of behavioral and emotions problems.** Parents described a wide range of problems occurring with children and within their families. Problems occur in different relational contexts (e.g., family, peer) and developmental contexts (e.g., home, school). Problems also differ in their perceived severity and consequences. Parents in the study described problems occurring in relation to family, peers, school, moods, community, and “social pathologies” of pervasive violence, poverty, and discrimination. Explanations for these types of problems were various among parents in the study, including biological, parental, familial, and social. Biological explanations attribute causation for the disorder to genetic, neurological, or biochemical factors. Parental explanations link children’s disorders to unfulfilled parental responsibilities and perceived faults of parents. Familial explanations locate reasons for the child’s disorder in family dynamics. Finally, social explanations link problems to neighborhoods, peer relationships, or school environment.

Parental narratives also illustrated how the meanings of behavioral and emotional problems may vary along ethnocultural lines. Specifically, African-American parents ascribe less to clinical and biomedical views of children’s problems than their Euro-American counterparts and instead call attention to social and institutional explanations for problems. In contrast, many Euro-American families readily invoked diagnostic language and clinical understandings of problems. It is important to note, however, that understandings of problems are not static. Explanations frequently shift within parental narratives, pointing to an underlying uncertainty regarding the nature of these types of problems among parents. Parental narratives suggest that diagnosis and treatment frequently introduce new problems, including the substantial uncertainty of trying to find the “right diagnosis” and navigating treatment options.

**Parent orientations to power and control.** Another facet of understanding parental perspectives on mental health problems involves issues of power and control over behavioral and emotional problems. Parents were asked in the SEIMY to reflect on if they thought their child had any personal power or control over his or her problems with feelings and/or behavior. African-American parents strongly advocated for self-control and personal responsibility in relation to problems occurring with their children, with many stating unequivocally that their child has control (or should have control) over his/her behavior or feelings. In contrast, some Euro-Americans were equally confident that their child did not have control noting, for example, “criss-crossed wires” that are “beyond their control” (#17 Mother, E-A). Most Euro-Americans expressed doubt that their child had control over problematic behavior or moods. On the whole, the narrative accounts of Euro-American parents were characterized by greater uncertainty and equivocation on these issues. Parents in the study were also asked if they thought that they, as parents, had any power or control over problems with feelings and/or behavior. African-American parents showed a marked tendency to endorse the notion that they had control over problems occurring
with their children. Most Euro-American parents expressed a lack of control; their narratives reflect a pervasive sense of helplessness.

Children’s conceptualizations of the problem. We found that children rarely employ clinical or diagnostic language, and medicalized views of problems hold little salience for the youth in this study. The two most commonly described problems by youth in the study were “being bad” and “getting mad.” In contrast to biomedical models of problems, children focused on social interactions with family, peers, and teachers. Most felt that problems arose in response to others that “annoy” them, make them “mad,” or “distract” them. Most youth in the study did not view behavioral or emotional problems as things external to themselves, but rather were talked about as characteristics or actions of the self—I don’t pay attention, I can’t focus, I don’t listen to my Mommy. Even troublesome feelings like sadness were often felt to be a “part of who I am.”

Children’s perceptions of mental health treatment. Children’s accounts of treatment for mental health problems reflected a broad range of creative interpretations. Therapy was often described as “going to see a lady” or a time to “talk about problems” and was often associated with “fun” such as playing games or receiving small treats like candy or stickers. Most children expressed either positive or neutral feelings about therapy. Only one boy (#15, E-A, age 8) expressed a dislike of therapy. It made him “super angry” to have to go to sessions because he missed out on play opportunities. Children’s interpretations of pharmaceuticals illustrated tremendous creativity. Some children imagined that psychotropic medications helped them to run faster or might relieve a sore throat. Common descriptions of what medications do among children included that they “help me to focus,” “calm me down,” and “control my anger.” Two children in the study recounted how taking psychotropic medications had substantially affected them. For 13-year-old Youth A, she disliked taking Risperdal and Depakote because they “slow me down” and have made her “feel like a statue.” For 11-year-old Youth B, however, he feels like the “smartest kid in the fifth grade” since starting Concerta. Yet he also worries about what the future holds, hoping that he will not have to take medication for the rest of his life because “that’s just sad that a 35-year-old can’t control his actions.”

Youth in the study also expressed an acute awareness of the social danger of revealing information pertaining to your problems, receiving mental health treatment, or (especially) that you are taking medication. Fears of being teased and ostracized on account of “having problems” or “taking pills” were commonly cited by children. Children’s own perspectives suggest that mental health treatment cuts two ways: It holds the potential to help, but also exposes children to potential stigma.

**Discussion: Implications of Findings for the Mental Health System**

This study aimed to improve treatment interventions for behavioral and emotional disorders by identifying how youth and families understand, interpret, and experience these disorders in their daily lives. Knowledge of the subjective experience of these conditions provides insight into the challenges of utilization of mental health services, provision of culturally-appropriate care, treatment adherence, and stigma from the point of view of youth and their families.

In this study, understandings of problems occurring with children were highly varied among families. Knowledge of how families’ orientations to problems and experiences/expectations of treatment vary along sub-cultural lines may hold implications for understanding the documented underutilization of mental health services among ethnic minorities in the U.S. Such knowledge should also aid in the development of culturally appropriate services. The general reluctance to medicalize problems that we
found among African-Americans may be linked to a reluctance to cede control over problems to professionals. What appears from a clinical perspective to be treatment “non-compliance” may be rooted in a strong sense of personal responsibility for what happens in one’s family and with one’s child. How families conceptualize problems and their orientations to child-rearing appear to hold implications for attitudes toward, and utilization of, mental health services. In this study, we found Euro-American families, on the whole, were substantially involved with mental health services. Euro-American children commonly had a “team” of professionals (school counselors, therapists, psychiatrists) treating them. By contrast, most African-American families had very tangential contact with treatment and during the course of the study several stopped treatment altogether. Many African-American families voiced skepticism of mental health services, calling into question the necessity or helpfulness of treatment. One African-American father admitted that he viewed his son’s therapy session as a “joke.” Most Euro-Americans, by comparison, expressed faith in mental health treatment. If dissatisfied with mental health services, Euro-American families in the study did not stop treatment altogether but instead switched practitioners or hoped that a medication adjustment would address their concerns.

The cultural salience of self-control and personal responsibility among ethnic minority families in the study strongly suggests the need for mental health services to resonate with and support parents’ efforts to cultivate personal responsibility and a sense of agency in their children. Services that do not correspond to families’ expectations for parenting and childrearing may discourage families from continuing treatment. According to many ethnic-minority families in the study, seeking and continuing treatment also ran counter to prevailing norms in their respective cultural communities. For example, a Latina mother explained that among older Puerto Ricans there is a perception that mental illness is a “white people thing” and hence, a “sign of weakness.” Instead of seeking professional help for problems, it is expected that “you deal with it.” Some ethnic-minority parents also articulated perceptions of discrimination that pose barriers to access. For example, an African-American mother felt that her son did not receive the same quality health services while this family received state benefits. She also recounted difficulty filling prescriptions for stimulant medication and cited pharmacists rebuffing her, “All the little black boys need their medication.”

The differences found between African-American and Euro-American parents’ understandings and orientations to behavioral and emotional problems should not overshadow the commonalities among families in this study. In particular, we wish to highlight the common struggle to contend with diagnostic uncertainty, concern regarding effects of medications, and continuing ambiguity regarding the nature of their children’s problems. Mental health professionals can play a key role in acknowledging the difficulty of navigating services, validating parents’ experiences of frustration and doubt, and recognizing degrees of uncertainty involved in diagnosis and treatment.

Our findings suggest the need for mental health services to distinguish different contexts and consequences of problems experienced by families. Family narratives call attention to social pathologies of poverty and violence that may further complicate family dynamics and/or exacerbate symptoms. We found among many families, particularly African-Americans, that “life struggles” often loom equally as large as mental health problems as challenges in their everyday lives. Problems may arise if the emphasis within treatment is limited to diagnosis and symptoms. Compartmentalized services that do not attend to the “real problem” from the perspective of families will be viewed as irrelevant and are likely to be terminated. Social pathologies and even more pedestrian challenges of everyday life can be a part of the clinical conversation. Entering the mental health system may be a first step in a longer, and more comprehensive, process of receiving multimodal help.
This study provides unique information regarding youths’ own perceptions and experiences of mental health problems and treatment. In line with previous anthropological studies of children’s illness experiences (Bluebond-Langner, 1978; Dell Clark, 2003), our findings show that children are active stakeholders in their health and are working to understand problems associated with behavior and emotions in ways that make sense to them. Of particular clinical relevance are children’s accounts of the personal costs associated with diagnosis and treatment as well as the acute awareness of the stigma associated with mental health problems and treatment in their social worlds.

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**Other Publications of the Research**


Presentations of the Research


Carpenter-Song, E. A. (2007, November). *Caught in the psychiatric net: Experiences of behavioral and emotional disorders among U.S. children and families.* Paper presented to the Friday Morning Seminar, Department of Social Medicine, Harvard Medical School, Boston, MA.


Carpenter-Song, E. A. (2007, March). *Revisiting the ‘double bind’ and the ‘iron ring of negation’.* Paper presented to the Psychodynamic Seminar, Department of Anthropology, UCSD, La Jolla, CA.


Youngstrom, E. A., Carpenter-Song, E., & Jenkins, J. (2006, September). *Subjective experience of ADHD and bipolar spectrum disorders in youth and families.* Paper presented at Research Results Briefing 2006: Knowledge to Transform Mental Health Services in Ohio, Ohio Department of Mental Health, Columbus, OH.


Carpenter-Song, E., Nordquest, M., & Youngstrom, E. (2006, October). *Subjective experience of behavioral and emotional disorders in children and families.* Poster presented at NIMH Pediatric Bipolar Disorder Conference, Chicago, IL and at Research ShowCASE, CWRU, Cleveland, OH.

THE EFFECT OF MOTIVATION ON JOB SEARCH AND WORK OUTCOMES
AND THE DEMAND FOR SUPPORTED EMPLOYMENT SERVICES

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The unemployment rate for adults with severe mental disabilities (SMD) is among the highest for any distinct population segment with disabilities. Two out of three adults with SMD are without jobs, despite data that suggest most of these individuals want to work, many of them could work (President’s New Freedom Commission on Mental Health, 2003), and most would benefit from employment.

The Ohio Department of Mental Health (ODMH) has identified work or involvement in a meaningful activity as one of nine essential components of the recovery process among adults with SMD (Townsend et al., 2000). Consequently, ODMH has committed to dramatically increase competitive employment rates for adults with SMD over the next several years. For example, ODMH has funded a Coordinating Center of Excellence to promote Supported Employment (SE), an evidence-based practice (Hyde, Falls, Morris, & Schoenwald, 2003) that focuses on moving adults with SMD rapidly into the workforce while providing a wide range of supports to maximize the chances of success on the job. Research indicates that vocational programs founded on SE principles are significantly more effective than traditional programming when it comes to securing competitive employment for adults with SMD.

While SE programming is effective, it also can be costly and difficult to access. This may be due, in part, to the criteria that define effective SE programs. According to these criteria, SE programs should 1) have no admission requirements for participants beyond the desire to be competitively employed, 2) have modest staff/client ratios (i.e., no greater than 25:1) and, 3) offer continuous and time-unlimited services to clients. As a result, as demand for admission to SE programs grows, programs that maintain strict adherence to the core principles of SE are likely to face demands that exceed availability. Therefore, it is important to identify variables that may enhance or hinder the effectiveness of SE for program participants.

Hypotheses

This research hypothesizes that motivational factors will account for differences in employment outcomes for adults with SMD who are involved in vocational programming, including SE programs. Specifically, we predict that an individual’s motivation to get a job will be positively related to 1) the amount of effort invested in the job search process and 2) success in securing a competitive job. For those who obtain competitive employment, we predict that the motivational properties of the job itself as determined by several key attributes (e.g., variety of tasks involved, opportunities to get feedback) (Hackman, Oldham, Janson, & Purdy, 1975) will explain variability in outcomes that are important to the
worker and the employer (e.g., job satisfaction, thoughts of quitting). Finally and for exploratory purposes, we examine the relationships among motivation to get a job, the motivational property of the job, and the amount of supported employment services provided during the job search and employment periods.

Methods

Participants in this longitudinal research study were primarily recruited from two vocational programs offered by the Center of Vocational Alternatives (COVA), the Rehabilitation Readiness (RR) Program and an SE program. Research findings pertaining to the RR program were reported in a previous volume of this publication (Finch et al., 2007). This manuscript extends that report and focuses on findings connected to adults affiliated with COVA’s SE program known as the Employment Services (ES) program. The ES program has high fidelity (Finch et al., 2005) to the core principles of the SE approach known as Individualized Placement and Support (IPS) (Bond, Drake, Mueser, & Becker, 1997). Almost 90 percent of the people in the ES program at COVA have been diagnosed as SMD and/or as having substance abuse problems.

Adults who gave informed consent to participate in the study were asked to complete up to three versions of the Job Profile Questionnaire (JPQ). These instruments have been described in greater detail in an earlier volume of this publication (Finch et al., 2007). The JPQ-Preview version was administered upon intake to the ES program and was primarily used to assess the individual’s motivation to work and related issues (e.g., barriers to getting a job). For adults who got jobs during the course of the study, the JPQ-Current version was administered at four weeks on the job and again at 12 weeks, assuming employment lasted that long. The JPQ-Current evaluates the motivational property of the job, psychological reactions to the job, and worker views about a variety of employment outcomes (e.g., intention to quit and job satisfaction) (Hackman et al., 1975).

If an individual left a job for any reason, the JPQ-Last version was administered in place of the JPQ-Current. The content of the JPQ-Last version mirrors the content of the JPQ-Current version with two noteworthy exceptions: 1) items are worded in the past tense to refer to a former job rather than an existing job, and 2) an additional question is included that deals with the reason the job ended.

Data about services received (e.g., types and amounts of SE services) and several objective measures of employment outcomes (e.g., duration of job search, rate of pay) were obtained from COVA’s management information system. SE services provided during the job search included vocational case management (such as coordinating meetings between clients and service providers) and job development services (such as contacting an employer about a specific job opportunity). Once the client secured competitive employment, vocational case management continued to be provided but was supplemented with various types of job support services (e.g., follow-along, on-the-job coaching).

Finally, during the job search process, Career Developers affiliated with COVA’s ES program provided monthly assessments of the level of effort invested by each client in job search activities. These ratings were made without any knowledge of (i.e., independent of) clients’ self-reported levels of motivation to get a job as assessed by the JPQ-Preview upon intake to the ES program.
Results

As noted earlier, results reported below are based on the complete dataset but focus on study participants who were admitted to the ES program at COVA.

Participants. During the 21 months of this research project, 227 individuals entered COVA’s ES Program, of which 203 (89.4%) provided informed consent to participate in the research and 24 (10.6%) declined. Slightly more than half (51.5%) of participants were female, and participants’ ages ranged from 18 to 70 ($M = 40.48, SD = 11.05$). Participants identified themselves as Caucasian (59.7%), African American (35.7%) or identified with other ethnic groups (4.6%). Most (82.6%) were single, separated or divorced, while 17.4 percent were married or had a live-in partner. Participants lived independently (61.6%), with relatives or a friend (27.7%), in group or subsidized housing (7.9%) or were homeless (2.8%). Finally, participants’ educational level included some high school (13.0%), a GED or high school diploma (37.3%), an Associate Degree or other post-high-school training (22.8%) or an undergraduate or graduate college degree (26.9%).

Of the 203 participants, 197 (97.0%) completed the JPQ-Preview and 134 (66.0%) obtained employment. Ninety (67.2%) of the working participants completed the JPQ-Current ($n = 82; 91.1$%) or the JPQ-Last ($n = 8; 8.9$%) after 30 days on the job. It is important to note that resource constraints limited us to making three attempts to make contact with the 134 individuals who obtained employment. This accounts, in part, for why we obtained JPQ-Current or Last data for only about two-thirds of the 134 individuals. However, comparisons reveal no systematic differences in key variables between working adults who completed the JPQ-Current or Last and those who did not. These two groups did not differ in terms of demographic variables such as age ($t = .33, ns$, $df = 126$) and education ($t = -1.50, ns$, $df = 125$). In addition, the groups did not differ in terms of self-reported motivation to get a job ($t = -1.18, ns$, $df = 126$) as assessed by the JPQ Preview upon intake to COVA’s ES program.

In addition, 54 individuals also completed a JPQ-Current ($n = 32; 59.26$%) or JPQ-Last ($n = 22; 40.74$%) after 90 days on the job. Comparisons reveal no significant differences on demographic variables such as age ($t = .06, ns$, $df = 82$) or education ($t = - .94, ns$, $df = 81$) between the 54 working participants who completed both the 30-day and 90-day JPQ-C/L and the 36 who completed the 30-day but did not complete the 90-day JPQ-C/L.

Internal consistency of JPQ scales. Internal consistency of scales was examined using Cronbach’s alpha (Cronbach, 1983). Scale reliabilities were sufficient to proceed with hypothesis testing (see Table 1). Bivariate correlations and $t$-tests were used to test hypotheses at the individual level of analysis.

Hypothesis testing. The set of hypotheses related to motivation to get a job and variables connected to the job search received mixed support. As expected, motivation to get a job at intake to SE programming was positively related to initial ($r = .25; p < .01$) and mean ($r = .18; p < .05$) monthly ratings of participants’ job search efforts as judged by Career Developers (see Table 2.) However, contrary to expectations, there were no significant differences ($t = -1.91, df = 195, ns$) in motivation to get a job between the 134 participants who became employed ($M = 6.25, SD = .70$) and the 69 who did not ($M = 6.13, SD = .64$).
Table 1. Descriptive Statistics and Scale Reliability

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<th>Scalesa</th>
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<th>M</th>
<th>SD</th>
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<td>.87</td>
<td>2.84</td>
<td>1.72</td>
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a All scales are based on Likert-type items with 7-point response choices, except for the effort scale which is based on items with 6-point frequency response categories.

b Sample size (i.e., n) in some cases is based on multiple administrations of an assessment. For example, Effort Ratings were gathered monthly during the job search process and JPQ-C/L ratings typically were administered twice (i.e., at 30 days on the job and at 90 days or upon departure).

c This scale was measured with the JPQ Preview Version whereas other scales, with the exception of Effort Ratings, were measured with the JPQ Current and JPQ Last Version.

Table 2. Pearson Product – Moment Correlations between Motivation to Get a Job and Job Search Effort

<table>
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*p < .05; **p < .01.
Table 3. Pearson Product – Moment Correlations between Motivational Property of the Job and Reactions to the Job

<table>
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</tbody>
</table>

***\( p < .005 \); ****\( p < .001 \).

Hypotheses related to the link between the motivational property of the job and work outcomes received strong support (see Table 3) based on a longitudinal design in which the independent variable (i.e., motivational property of the job) and the dependent variables (e.g., work outcomes such as job satisfaction) were measured at two different time periods. As hypothesized, the motivational property of the job assessed at 30 days on the job was positively related to a range of desirable outcomes measured at 90 days or upon leaving the job (whichever came first) including job satisfaction (\( r = .55, p < .001 \)), perceived job performance (\( r = .71, p < .001 \)), investment in the job (\( r = .75, p < .001 \)), perceived health improvements (\( r = .50, p < .001 \)) and commitment to the supervisor (\( r = .51, p < .001 \)). Similarly, support was found for hypothesized negative relationships. Specifically, the motivational property of the job was negatively related to thoughts of quitting (\( r = -.45, p < .001 \)) and job strain (\( r = -.38, p < .005 \)).

Finally, exploratory analyses revealed that during the job search phase, motivation to get a job was negatively related to the amount of vocational case management services provided (\( r = -.19, p < .05 \)). However, it was not linked to the amount of job development services provided during job search phase or to the amount of vocational case management or job support services provided to working clients.

**Discussion**

The study findings have some important implications for SE programs and practices and for vocational programming in general. The relationship between participants’ motivation to get a job and their effort in the job search process suggests that the JPQ-Preview can be a valuable planning tool for professionals involved in service planning activities. For example, estimates of needed service intensity might be informed by information about motivation to get a job (e.g., lower motivation associated with higher intensity).

Furthermore, although no support was found for the hypothesis that motivation to get a job is linked to success finding a job, this finding may be important in its own right. In retrospect, it is reasonable to believe that vocational service professionals effectively intervene with clients who reveal low levels of motivation to get a job (as assessed by the JPQ Preview upon intake). That is, with support from these professionals it may be that motivation to get a job increases during engagement in vocational programming and over the course of the job search process. In order to investigate this possibility, future
studies should assess motivation to get to a job upon intake to vocational programming but also over the course of the job search process.

The finding that the motivating property of the job (as assessed by the JPQ-Current at 30 days) was strongly related to employment outcomes at 90 days is significant because the motivating property of a job can be impacted in several ways. Much has been written about how specific attributes of a job can be adjusted in order to increase its motivational value (Hackman et al., 1975). For example, periodic check-ins with a supervisor could be scheduled in order to increase the level of feedback the worker gets on his/her job performance. Alternately, interventions can be designed to change workers’ perceptions of the job. For example, unappreciated aspects of the work can be made more salient to the worker (e.g., the supervisor can point out the positive impact the worker has on customers) in order to make the job more meaningful and motivating.

Finally, we found, for the most part, motivation to get a job and the motivating property of the job were not related to the amount of services received during the job search or employment. These findings are explainable, at least in part, by the limited variability in the type and amounts of SE services provided to study participants.

Conclusions

There is increasing interest in and attention to the impact of motivational factors on the employment experiences of adults with SMD. This study offers evidence that assessing motivation to get a job can be a valuable part of the rehabilitation planning process. In addition, findings suggest that it is important to consider the motivational property of the job. This information can be used to redesign jobs to make them more stimulating and meaningful and/or to emphasize important aspects of the job that may be overlooked by the worker.

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**Presentations of the Research**


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THE INNOVATION DIFFUSION AND ADOPTION RESEARCH PROJECT (IDARP):
SUSTAINING THE SUCCESSFUL IMPLEMENTATION OF EVIDENCE-BASED
AND OTHER INNOVATIVE MENTAL HEALTH PRACTICES (IMHP)

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The U.S. Surgeon General (1999), U.S. Department of Health and Human Services (2001), and the President’s New Freedom Commission on Mental Health (2003) have emphasized the importance of implementing mental health programs that have a track record of leading to valued outcomes. The Ohio Department of Mental Health (ODMH) also has taken a strong stance in support of implementing evidence-based practices (EBPs) by funding several Coordinating Centers of Excellence (CCOE). CCOEs are based in universities and/or firms in metropolitan areas around Ohio. Each CCOE concentrates on one EBP or a small number of compatible EBPs and serves as a resource in Ohio for the practice(s). The shared goal of CCOEs is to encourage the adoption and facilitate the implementation of EBPs by providing education, training, technical assistance, etc.

While mental health leaders agree that the quality of care will be improved by introducing EBPs into systems of care, the decision to adopt a best practice is complex and may not be right for every organization. A host of factors such as fit, timing, and cost must be weighed in deciding whether or when to adopt a particular EBP. Yet, studying only the adoption decision “can be misleading because not all innovations are fully or even partially implemented. Implementation is the critical follow-up to adoption that ultimately determines the success of innovations...It is in implementation that organizations perfect the promise of innovation...In implementation, organizations put ideas, designs and visions to work” (Real & Poole, 2005, pp. 63–64).

The Innovation Diffusion and Adoption Research Project (IDARP) has allowed ODMH to make important strides in understanding factors related to a) organizations’ decisions to adopt/not adopt an EBP (e.g., Carstens, Panzano, Massatti, Roth & Sweeney, in press; Panzano & Roth, 2006; Panzano et al., 2007), and b) the successful initial implementation of EBPs among adopting organizations (e.g., Panzano et al., 2005; Seffrin, Panzano & Roth, in press). These findings are based on longitudinal data that pertain to the adoption decision-making and implementation processes of four EBPs affiliated with CCOEs in Ohio: The Dartmouth Integrated Dual-Disorder Treatment Model (IDDT), the Ohio Medication Algorithm Project (OMAP), Multi-systemic Therapy (MST), and Cluster-based Planning.

Studies such as IDARP have put theoretical models of implementation to the test (e.g., Klein & Sorra, 1996) and have added to our understanding of what it takes to mount a successful implementation effort. However, little is known about the extent to which factors accounting for initial implementation success also explain success in the long run. For example, although the literature demonstrating the effectiveness of various EBPs both in the context of clinical trials and in usual care settings is growing, few studies focus on the sustainability of such programs over the long term (e.g., Blasinky, Goldman, & Unutzer, 2006). In addition, efforts to implement EBPs on a broader scale in contexts such as large-scale field studies (e.g., Drake & Bond, 2007) often focus primarily on scaling up for successful
implementation during the course of the study…“without creating assurances of life-of-innovations after extramural funding” (Johnson, Harp, Center, & Daley, 2004, p. 135) or other forms of support have ended. Implementation research must extend its reach to understanding factors accountable for the sustained success of implementation efforts. That is the intent of this phase of the IDARP research.

This phase will build upon IDARP’s rich, longitudinal database, and findings reported to date (e.g., Panzano & Roth, 2006) to address four inter-related research questions related to the sustained implementation of innovative mental health practices (IMHP), including EBPs:

1. What factors account for the extent to which an organization sustains or persists with the implementation of an IMHP over time?
2. In situations in which implementation is sustained, what factors account for the extent to which an IMHP is implemented successfully (e.g., with fidelity)?
3. In situations in which implementation is sustained, what factors account for the extent to which desired outcomes of implementation are achieved (i.e., innovation success)?
4. Does prior success (i.e., favorable innovation outcomes) hurt or hinder the effectiveness of subsequent efforts to implement an IMHP?

**Expanding the investigation from adoption and implementation to sustained use**

Thirty years ago, Yin (1977) recognized the challenges related to implementing innovative programs and policies in public sector contexts. He argued that the success of implementation efforts cannot be judged prematurely: “the implementation problem extends beyond the adoption and early use of innovations” (p. 383). Instead, he asserted that successful implementation must ultimately be defined as the incorporation or routine use of an innovation, as designed, by an organization. He viewed assimilation as the ultimate indicator of the successful implementation of an innovation. In other words, the incorporation of an innovation into routine use was seen as the true indicator of its usefulness to an organization.

From that point forward, organizational scholars have echoed the message that assimilation or the long term incorporation of innovations into routine organizational practice is an important stage in the life cycle of innovation implementation and may serve as an indicator of the true value of the innovation to an organization (Meyer & Goes, 1988; Yin, 1977). This idea seems to be gaining both momentum and currency as fiscal constraints and public accountability bring organizations’ decisions to adopt innovative products, services and practices under increased scrutiny by taxpayers and stockholders. Recent scholarly interest in the topics of sustainability (e.g., Blasinky et al., 2006) and assimilation of innovations by organizations (e.g., Repenning, 2002; Panzano et al., 2004) provides some concrete evidence of the growing interest in the life cycle of innovations under usual care or business-as-usual conditions.

**Defining sustainability and related terms**

Johnson and his colleagues (2004) “identified eleven terms in the literature that deal with the process of continuing an innovation beyond a trial or demonstration period” (p. 137). Those terms include: confirmation, continuation, durability, incorporation, institutionalization, level of use, maintenance, routinization, stabilization, sustainability and sustained use. We propose a twelfth term be added to the list, assimilation (e.g., Meyer & Goes, 1988; Yin, 1977). Johnson and colleagues assert that the term ‘sustainability’ is the best term to use in order to describe the overarching construct because they believe it “is broad enough to incorporate the essential elements of the other constructs, especially the concept of institutionalization” (p. 137).
We have adopted the terms sustained use and assimilation in our research to convey the idea that implementation of an innovation has continued beyond an initial trial, start-up or demonstration period. However, we assert that it will be important to discriminate between full and partial continued use of an innovation. Similarly, it will be critical to distinguish whether the approach to sustained use is consistent with the prescriptions of innovation developers in the case of evidence-based innovations. Finally, the term sustainability, which is likely to be a context-specific judgment, will be used to capture the extent to which the implementation of an innovation is likely to continue within a specific context or family of contexts.

**Factors and processes expected to explain variability in the sustained use and sustainability of IMHPs**

A number of broad factors are expected to explain variability in the sustained use and sustainability of IMHPs. These factors and examples of peer-reviewed papers that speak to the likely relevance of each factor are noted below. It is important to note that many of these factors were found to explain variability in the initial success of implementation efforts (Panzano et al., 2004).

1. Stakeholder buy-in (e.g., Nutt, 1992; Johnson et al., 2004; Prochaska, Prochaska, & Levesque, 2001; Glisson & Schoenwald, 2005) is expected to be conducive to sustained use,

2. Ongoing stakeholder involvement in decision making and planning pertaining to implementation of the innovation (e.g., Glisson and Schoenwald, 2005; Johnson et al., 2004; Nutt, 1992; Vroom and Yetton, 1973; Yin, 1977) is expected to facilitate sustained use,

3. Fit or compatibility of the innovation with the organization as a whole (e.g., goals, treatment philosophy, mission), existing programming (e.g., competing or complementary), and staff attitudes and capability (e.g., Aarons, 2004; Holahan, Aronson, Jurkat, & Schoorman, 2004; Klein & Sorra, 1996; Majahan & Peterson, 1979) are expected to support sustained use,

4. Breadth and strength of motivation(s) for implementing (e.g., Oliver, 1990; Panzano & Roth, 2006; Yin, 1977) are expected to be positively related to sustained use,

5. Favorable attitude toward change (e.g., Damanpour, 1991; Dunham, 1994; Panzano et al., 2005; Senge, 1990) is expected to contribute to sustained use,

6. IMHP-specific climate for implementation (e.g., Holahan et al., 2004; Klein & Sorra, 1996; Klein, Conn & Sorra, 2001; Klein & Knight, 2005; Lewin, 1958; Meyer & Goes, 1988; Panzano et al., 2005) which includes a broad array of implementation-enhancing factors is expected to be positively related to sustained use,

7. Reinvention or adaptation (e.g., Yin, 1977; Rogers, 1995) is expected to be positively related to sustained use but may be negatively related to effectiveness (e.g., Dusenbury, Brannington, Falco, & Hansen, 2003; Panzano et al., 2005), and

8. Prior success of efforts to implement the innovation may contribute to (e.g., Blasinky et al., 2006) or detract from (e.g., Repenning, 2002) sustained use.

Evaluating the extent to which these variables account for sustained use of the IMHPs examined in the IDARP study is the major goal of this phase of the research.
**Methods**

In order to examine factors that account for sustained use of the focal EBPs, a fourth round of data gathering began in the late fall of 2008. Involvement of key informants affiliated with the 45 projects that were still implementing one of the four focal EBPs examined in IDARP (e.g., Panzano, Roth et al., 2007) as of the third round of data gathering was sought for the final round of data collection. Those four EBPs are: 1) Cluster-Based Planning (CBP), a research-based consumer classification scheme; 2) Integrated Dual Diagnosis Treatment (IDDT), an EBP tailored for individuals with mental illness and substance; 3) Multi-Systemic Therapy (MST), an EBP involving intensive home-based treatment for youth, and 4) Ohio Medication Algorithm Project (OMAP).

It is likely that we will discover that some of the 45 projects examined in the sustainability study will have discontinued or de-adopted the practice since our last point of contact (i.e., the third contact). Even so, a concerted effort is being made to encourage informants associated with these projects to participate in the study. This will allow us a) to compare the experiences of sustainers with de-adopters, and b) to evaluate the extent to which our earlier findings (e.g., Massatti, Sweeney, Panzano, & Roth, 2008) compare with information gathered during the fourth round of data gathering.

For each project examined in the sustainability study, the research team is attempting to gather data from at least two or three key informants. We are seeking the involvement of informants who are knowledgeable about resource issues and who are privy to ongoing decision making related to sustaining the practice (or not) (e.g., CEO, Medical Director). In addition, we are seeking the involvement of informants who are knowledgeable about or involved with the implementation of the practices (e.g., psychiatrists, MST Team leaders).

As in the past (e.g., Panzano & Roth, 2007), interviews and follow-up surveys are being used as the primary methods for gathering data from key informants. However, in contrast to past efforts, interviews are being conducted via telephone rather than face-to-face. A lead interviewer is assisted by a scribe in this process. These interviews include structured and open-ended questions, including a comprehensive list of questions related to the fidelity of implementation. These questions also are being posed to key informants associated with the CCOEs in an attempt to triangulate findings related to fidelity of implementation. Follow-up surveys include questions related to the factors identified above that are expected to explain variability in sustainability. Three versions of the survey have been developed to accommodate different subgroups of key informants: 1) a decision maker version, 2) an implementer version, and 3) a version for informants who are knowledgeable about both ongoing decision making pertaining to sustaining the practice and implementation efforts.

**Expected Value of the Research**

Investigating the sustainability of IMHP implementation in the context of the ongoing IDARP study presents a rare opportunity because IDARP is one of the few prospective studies of the innovation implementation process which does not employ a case-study approach and which considers more than one innovation (e.g., Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). In addition, IDARP is one of only a few longitudinal studies of the implementation of innovations that systematically considers factors related to the adoption decision-making process in explaining the success of implementation efforts. Consequently, this phase of IDARP will result in the creation of an extremely rare dataset that tracks factors related to the adoption decision and to the course and outcomes of innovation implementation over several years. We anticipate that findings will be seen as valuable by scholars, policy makers and
practitioners committed to making evidence-based interventions more accessible to the people who need them. In addition, findings are expected to contribute to the ongoing development of models of sustainability.

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TREATMENT OF TRAUMATIC STRESS FOR SERIOUSLY IMPAIRED INDIVIDUALS

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The present study aimed to test the efficacy of prolonged exposure (PE) therapy (Foa & Rothbaum, 1998) at decreasing Post-Traumatic Stress Disorder (PTSD) symptoms, increasing psychosocial functioning, and reducing frequency and duration of psychiatric hospitalizations among seriously impaired, traumatized individuals. Although well-controlled research studies have shown high success rates for PE treatment, little is known about the effectiveness of PE in clinical settings. Many issues arise in real-world settings that are controlled for in research. For instance, patients who have multiple traumas, co-occurring disorders, or do not show-up weekly for appointments are excluded or dropped from controlled studies. How do these complications influence PE treatment? This study addressed these questions.

Post-Traumatic Stress Disorder (PTSD) is a commonly occurring disorder that often persists for many years. The impairment associated with PTSD in U.S. samples is comparable to, or greater than that of, other seriously impairing mental disorders (Kessler, 2000). According to the U.S. National Comorbidity Survey (NCS), people with PTSD are six times as likely as matched controls to attempt suicide (Kessler, Sonega, Bromet, Hughes, & Nelson, 1995). For anxiety disorders in general, which includes PTSD, the annual cost of psychiatric treatment in the U.S. is estimated to be 13.3 billion dollars (Greenberg et al., 1999). Due to the high costs of this disorder for the individual and society, effective treatments must be evaluated to determine what works for whom in clinical settings. Further, findings must be disseminated among mental health clinicians (not just researchers) so that seriously impaired individuals with PTSD can receive the best possible care. Women treated with PE had clinically and statistically significant reductions in PTSD and fewer hospitalizations during or in three months after treatment, despite their frequent pre-treatment hospitalizations.

Synopsis of Program

We conducted a therapy intervention designed for individuals who were experiencing difficulties related to trauma and were experiencing severe dysfunction in all major aspects of their lives. We examined the impact that prolonged exposure therapy (Foa & Rothbaum, 1998) had on their symptoms, functioning, and need for inpatient hospitalizations. This study was conducted in Northeastern Ohio at the Summa-KSU Center for the Treatment and Study of Traumatic Stress (CTSTS). CTSTS is the only public treatment center in Northeastern Ohio specializing in trauma. CTSTS faculty have international reputations in the field and are involved in service delivery and training pre and postdoctoral psychology trainees and psychiatrists in the treatment of traumatic stress. This study helped in being able to identify the best care for reducing impairment for individuals with severe mental illness.

Symptoms and Prevalence of PTSD. PTSD occurs when (a) an individual experiences a traumatic event, (b) reacts with intense fear, helplessness or horror; and (c) displays a constellation of symptoms
grouped into three general clusters: re-experiencing, avoidance and numbing, and hypervigilance (American Psychiatric Association, 1994). In addition, PTSD is associated with elevated odds for high school and college failure, teenage childbearing, marital instability, unemployment, suicide attempts, and inpatient hospitalization (psychiatric and nonpsychiatric) (Greenberg et al., 1999; Kessler, 2000). PTSD is estimated to affect more than ten million American children and adults at some point in their lives (National Center for PTSD, 2000). The NCS has estimated that the lifetime prevalence of PTSD in the United States is 7.8 percent (Kessler et al., 1995).

PTSD treatment. Research suggests that, by far, the most promising treatment for PTSD involves clearly-defined therapies that include prolonged exposure. The treatment program typically consists of 10 sessions conducted one to two times weekly. Each session lasts between 60 and 120 minutes. Treatment procedures include education about common reactions to trauma, breathing retraining, prolonged (repeated) exposure to trauma memories, repeated in-vivo exposure to avoided situations due to trauma-related fear, and discussion of thoughts and feelings related to exposure exercises.

Over the last 20 years, exposure therapy has been repeatedly demonstrated to be effective in treating anxiety disorders, including PTSD. Further, the International Consensus Group on Depression and Anxiety recently selected exposure therapy as the most appropriate form of treatment for PTSD (Ballenger et al., 2000). PE therapy aims to reduce the fear or anxiety associated with the trauma by encouraging patients to repeatedly confront fear-evoking stimuli. A number of mechanisms have been proposed through which exposure is thought to lead to improvement in PTSD symptoms (Foa & Rothbaum, 1998). First, repeated imaginal exposure facilitates habituation and reduction of anxiety associated with the traumatic memory. Second, by imagining and discussing the traumatic event with a supportive therapist, the patient begins to realize that thinking about the trauma is not dangerous. Third, through imaginal exposure to the trauma memory and in vivo exposure to external cues, the patient begins to differentiate the traumatic event from other situations, decreasing generalization of fear responses. Finally, following repeated exposure, the patient achieves a sense of mastery that contradicts the typical view of symptoms reflecting weakness (Foa & Rothbaum, 1998).

PE therapy has been found to be effective in the treatment of PTSD and comorbid symptoms across several controlled studies (Boudewyns & Hyer, 1990; Cooper & Clum, 1989; Foa et al., 1999; Foa, Rothbaum, Riggs, & Murdock, 1991; Keane, Fairbank, Caddell, & Zimering, 1989; Resick, Nishith, Weaver, Astin, & Feuer, 2002; Taylor et al., 2003), and has been found equally efficacious in African-Americans and Whites (Zoellner, Feeny, Fitzgibbons, & Foa, 1999). Further, PE has been found to be effective in treating victims from a wide range of traumas including war experiences (Boudewyns et al., 1990; Cooper & Clum, 1989; Keane et al., 1989), rape (Foa et al., 1991; Jaycox, Zoellner, & Foa, 2002; Resick et al., 2002), assault (Feeny, Zoellner, & Foa, 2002; Foa et al., 1999), crime (Hembree & Foa, 2003), and samples including victims of a variety of different traumas (Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998; Taylor et al., 2003; van Minnen & Hagenars, 2002). PE therapy has also been found to be effective in treating individuals who have been multiply traumatized and patients who suffer from complex PTSD (Cloitre, Koenen, Cohen, & Han, 2002; Resick et al., 2002). Comparison studies have revealed that PE is more effective and efficient than relaxation training, eye movement desensitization and reprocessing (EMDR), counseling, stress inoculation training (SIT), and combination therapy involving both PE and SIT, especially at longer-term follow-up assessments (Foa et al., 1999; Foa et al., 1991; Taylor et al., 2003).
Goals and Hypotheses

The efficacy of PE therapy at reducing/treating PTSD in individuals with more severe presentations (e.g., multiple psychiatric hospitalizations, comorbidity) in real-world settings has not been examined. Therefore, this study was designed to provide preliminary data testing the efficacy of PE at treating severely impaired individuals with PTSD in a more flexible, less controlled, and hence, more realistic setting. This study provides new knowledge as to what extent previous research findings are applicable for more severe PTSD patients in a clinical setting.

It was hypothesized that patients receiving PE therapy will report significantly fewer PTSD symptoms and will be less likely to meet diagnostic criteria following the intervention. It was further hypothesized that participants receiving PE therapy will demonstrate an increase in psychosocial functioning and reduced need for psychiatric hospitalizations. PE has also reliably produced reductions in symptoms of depression and anxiety (Foa et al., 1991; Foa et al., 1999); therefore, it was hypothesized that patients receiving PE will report fewer of these comorbid symptoms.

Specific hypothesis were as follows:

H1. Participants will exhibit significant decreases in PTSD and comorbid symptoms from baseline to post-treatment and follow-up.

H2. Participants will exhibit a significant increase in quality of life indicators.

H3. Participants will not need any psychiatric hospitalizations from baseline to post-treatment and follow-up. Although there are not previous findings that support or discount this hypothesis, we hypothesize that a reduction in symptoms and an increase in functioning will translate to an elimination of need for psychiatric hospitalizations.

Methodology

This study was conducted at the Summa-Kent State University Center for the Treatment and Study of Traumatic Stress (CTSTS). All assessments and interventions were conducted individually in a private therapy room.

Participants. Twenty-eight adults who met PTSD diagnostic criteria and who had at least two psychiatric hospitalizations some time after the occurrence of trauma and in the past five years were recruited for the proposed project. All qualified participants received prolonged exposure (PE) therapy. In this open trial, there were no comparison or control groups. Exclusion criteria included (1) inability to communicate fluently in English, (2) current or previous diagnosis of organic mental disorder or schizophrenia, (3) history of heavy dissociation (PE is contraindicated), (4) being in a current abusive relationship or ongoing intimate relationship with one’s assailant, and (5) mental retardation. If not already clear from the other assessment measures, each patient was specifically asked about exclusionary information (e.g., “do you have current contact with ________ [name of assailant]).

Initial screening. Those individuals who contacted CTSTS to participate in the research program or who were inquiring about treatment were assessed as to whether they met inclusion/exclusion criteria during their first scheduled appointment which consisted of administering the Structured Clinical Interview for the DSM-IV (SCID: First, Gibbon, Spitzer, & Williams, 1996). The SCID is routinely
given to all CTSTS patients during their first visit. Those individuals who met criteria were told about the study and asked to participate. After obtaining informed consent, participants began with the pretreatment assessments that were specific to this proposed pilot study. Individuals who did not meet study criteria were eligible for other CTSTS services and were also given referrals to other mental health agencies as appropriate.

Pretreatment assessment. All eligible participants completed the pretreatment assessment prior to beginning prolonged exposure therapy. Assessments were a combination of structured interviews and self-report questionnaires to assess severity of symptoms (PTSD, depression, anxiety) and psychosocial functioning (employment, family and interpersonal relationships, quality of life). Further, we obtained information regarding hospitalization stays (number of admissions) based on participants’ report and hospital records. The following measures were used:

1. Ohio Mental Health Consumer Outcomes System Adult Consumer Form A (Ohio Department of Mental Health, 2006). This 67-item questionnaire contains scales to assess consumer’s level of distress caused by psychiatric symptoms, and their feelings of empowerment and perceptions of their quality of life. Adult Form A also includes demographic items and questions about consumer’s perceptions of their safety and health. The Symptom Distress and Empowerment scales have demonstrated good reliability ($\alpha = .86$ and $\alpha = .86$, respectively), whereas the Quality of Life scale has demonstrated excellent reliability ($\alpha = .93$) with adult consumers with severe mental illness (Ohio Department of Mental Health, 2004 & 2008).

2. The Structured Clinical Interview for the DSM-IV with psychotic screen (SCID; First, Gibbon, Spitzer, & Williams 1996) is a structured interview that enables trained interviewers to make psychiatric diagnoses based on DSM-IV criteria. Initial interviews average 90-120 minutes to complete. The SCID is part of standard protocol at CTSTS, so whether the participant is eligible for this study or not, the SCID was used to guide treatment.

3. PTSD Symptom Scale—Self Report (PSS-SR; Foa, Riggs, Dancu, & Rothbaum, 1993) is a self-report measure of the severity of PTSD symptoms. The Kappa coefficient for agreement of PTSD diagnosis has been reported to be .73. Foa et al. (1993) reported test-retest reliability to be .74 and internal consistency to be .91.

4. Beck Depression Inventory (BDI; Beck, Ward, Mendelsohn, & Erbaugh, 1961) is a 21-item inventory measuring depression. It has a split-half reliability of .93. Correlations with clinician ratings of depression range from .62 to .66 (Foa et al., 1993).

5. Positive Affect (PANAS-J; Watson, Clark, & Tellegen, 1988) is an eight-item inventory measuring positive affect “during the past few weeks”. Internal consistency is reported to be high, ranging from .86 to .90.

6. Treatment Utilization (Keller et al., 1987). To measure the utilization of mental health services before, during, and after the intervention, we used the treatment section of the Longitudinal Interval Follow-up Evaluation (LIFE). Some items have been modified to address the specific time period of interest. The LIFE is an interview based instrument and has been used successfully in multiple longitudinal studies.

7. Patient Information. The treating clinician completed a summary sheet of all pertinent demographic information after completing the assessment.
Intervention. Each participant received a minimum of 10 individual sessions of PE based upon Foa, Hembree, and Dancu’s (2002) treatment manual. Each session lasted between 60 and 120 minutes. Treatment procedures included education about common reactions to trauma, breathing retraining, prolonged (repeated) exposure to trauma memories, repeated in vivo exposure to situations the client was avoiding due to trauma-related fear, and discussion of thoughts and feelings related to exposure exercises. This discussion addressed unrealistic beliefs about the self and the world. Each session began with a review of the homework assignment and presentation of the agenda for that session, and ended with the assignment of homework. Sessions 1 and 2 were devoted to information gathering, education about common reactions to trauma, and fostering therapeutic alliance. Sessions 3 to 10 consisted of interventions, including reviewing homework, imaginal reliving of the trauma and processing of the reliving experience, and development of in-vivo exercises.

Although the therapists adhered to the manual as much as possible, we acknowledge that some modification of the intervention was necessary given our more severe sample. For example, if the patient reported or demonstrated any safety risks, an entire session may have been devoted to assessing and planning for safety. As with any research protocol, patient safety was always the first priority. However, with this sample, we were prepared to have safety issues emerge more frequently than in typical research samples. We also anticipated that more than one traumatic memory may be targeted throughout the therapy. However, in a 10-session standard treatment there is usually only enough time to target one or two memories in imaginal exposure. Individuals whose PTSD symptoms had not decreased by at least 70 percent after 10 sessions were offered up to eight additional sessions (possible 18 total). Sessions 11 to 18 (if applicable) followed the same format as Sessions 3 to 10 and included a focal trauma not already processed. We instituted a more flexible, “real-world” approach while still adhering to the PE protocol to the best of our abilities. This approach tested the efficacy of PE when it is modified to accommodate the unique needs of the more severe patient. The intervention was conducted individually by a psychologist or Ph.D. level psychology extern. All staff and students at CTSTS have received extensive training and have extensive experience conducting the PE intervention. Further, students received weekly individual and group supervision by a licensed psychologist.

Post-treatment and follow-up assessments. A postdoctoral fellow or psychology extern in clinical psychology who was not involved in the intervention conducted post-treatment, six-, and 12-month follow-up assessments. Post-treatment and follow-up data were analyzed to examine the impact of treatment on symptoms, functioning, and psychiatric hospitalizations. During follow-ups, participants continuing to meet criteria for a mental disorder received appropriate referrals. The following measures were used at post-treatment and follow-ups:

- Ohio Mental Health Consumer Outcomes System-Adult Consumer Form A
- PTSD Symptom Scale-Self Report
- Beck Depression Inventory
- PANAS-J
- Treatment Utilization

Analysis of Data

Primary statistical analyses. There were 28 patients who consented to participate in this research. The sample was primarily women with 25 women (90%) and three men (10%), averaged 40 years old (SD = 10, range 23 to 41), and was primarily white (96%). The sample was highly symptomatic and generally low functioning. The average participant reported two traumas in the last 12 months, had two DSM-IV
diagnoses, and reported three psychiatric hospitalizations in the past five years. Most participants also reported a history of childhood abuse, alcohol and/or substance abuse, and that they received some financial public assistance.

At the baseline assessment, participants reported an average PSS score of 34 ($SD = 9.8$) and an average BDI score of 22 ($SD = 9.3$) suggesting a high level of PTSD, depressive symptoms, and functional impairment. Persons who score in these ranges are in severe distress and clearly meet criteria for PTSD. The means and standard deviations of each of the outcomes measures are shown in Table 1.

Table 1. Means and Standard Deviations of Outcomes Measures by Time Point

<table>
<thead>
<tr>
<th>Measure</th>
<th>Baseline ($n = 28$)</th>
<th>Post-Treatment ($n = 21$)</th>
<th>6 mo. Follow-up ($n = 9$)</th>
<th>12 mo. Follow-up ($n = 3$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M (SD)$</td>
<td>$M (SD)$</td>
<td>$M (SD)$</td>
<td>$M (SD)$</td>
</tr>
<tr>
<td>PSS</td>
<td>33.9 (9.8)</td>
<td>17.7 (13.4)</td>
<td>11.6 (14.4)</td>
<td>17.0 (12.8)</td>
</tr>
<tr>
<td>BDI</td>
<td>24.1 (9.3)</td>
<td>17.0 (12.7)</td>
<td>9.1 (10.9)</td>
<td>10.3 (5.5)</td>
</tr>
<tr>
<td>PANAS</td>
<td>21.8 (6.7)</td>
<td>N/A</td>
<td>26.4 (7.5)</td>
<td>30.0 (7.5)</td>
</tr>
<tr>
<td>Hospitalizations (prior to and after tx)</td>
<td>3.3 (4.6)</td>
<td>N/A</td>
<td>0.44 (0.88)</td>
<td>0.00 (0.00)</td>
</tr>
</tbody>
</table>

For this research, repeated measures analyses were performed to compare how the mean scores of participants differed at post-treatment, six-, and 12-month follow-up while accounting for baseline values. At the time of this analysis, 21 participants had completed the treatment portion of this study, nine had completed their six-month follow-up, and three had completed their 12-month follow-up. The following analyses were computed using these values.

For the PSS, a repeated measure analysis comparing baseline and post-treatment found a significant decrease ($t[20] = 5.49, p < 0.001$). This significance was also found between the baseline and six-month follow-up ($t[8] = 4.31, p = 0.003$). Statistical significance was not maintained for the small 12-month follow-up sample ($t[2] = 2.63, p = 0.12$), but the mean of 17.0, down from the baseline mean of 33.9, would suggest continued clinical improvement.

For the BDI, a repeated measure analysis comparing baseline and post-treatment found a significant decrease ($t[20] = 3.05, p = 0.006$). This significance was also found between the baseline and six-month follow-up ($t[8] = 2.52, p = 0.036$). Statistical significance was again not maintained for the small 12-month follow-up sample ($t[2] = 2.18, p = 0.16$) but the mean of 10.3, down from the baseline mean of 24.1, would suggest continued clinical improvement.

For the PANAS, a repeated measure analysis did not find a significant increase when comparing baseline and six-month follow-up ($t[8] = -1.16, p = 0.28$), or when comparing baseline and 12-month follow-up ($t[2] = -1.21, p = 0.35$). However, while the mean increase was small, 21.8 to 26.4 at six-month and 30.0 at 12-month, there was an increase, suggesting some clinical improvement.

For the number of psychiatric hospitalizations, there was no statistical significance between the baseline and first follow-up time point when a repeated measure analysis was used ($t[8] = 1.72, p = 0.12$) for the six-month follow-up, but the comparison of the baseline to 12-month follow-up period was
borderline significant ($t(2) = 3.46, p = 0.07$). However, the clinical significance of averaging 3.3 hospitalizations per before treatment to averaging less than one should not be ignored as clinically significant. Also, the reduction in hospitalizations indicates that there is no reason to believe that exposure therapy with at-risk psychiatric samples such as ours is counter-indicative.

**Discussion**

This study was meant to enhance the state of knowledge of trauma treatment by determining to what extent previous PE efficacy studies are applicable to a real-world sample, specifically involving the most severe PTSD patients. This study specifically investigated whether PE would be effective in reducing patients’ trauma and depressive symptoms, as well as improving their overall mood, and reducing the need of psychiatric hospitalizations following treatment.

It was found that using PE with a sample of severe PTSD patients was effective and beneficial in treating their symptoms. At the end of PE treatment, patients had significantly fewer trauma symptoms and reported significantly fewer depressive symptoms. Further, these gains were maintained, as evidenced by follow-up assessments in which patients’ reported trauma and depressive symptoms continued to be significantly lower than before PE treatment. Also in these follow-up assessments, patients reported improved overall mood and markedly fewer psychiatric hospitalizations when compared to their baseline assessments.

Moving from using a psychological treatment, such as PE, from empirical research studies to a real-world, clinically severe population can be a daunting challenge for many clinicians. This study demonstrated it can be done, and that the benefits can be very powerful at the conclusion of treatment and can be maintained. This is strong evidence that using PE for patients with mild, moderate, or severe PTSD can and should be used whenever possible.

**REFERENCES**


The purpose of this study was to address a significant problem affecting children’s emotional, behavioral, and academic adjustment in the schools—the problem of bullying. Based on recent research that sheds new light on the roles that children play in the bullying process, as well as the psychological and social factors that contribute to these behaviors, this study examined the predictors of various forms of bullying and aggression. In addition, this study investigated social and individual factors related to prosocial behavior in the bullying context, including victim defending.

Conceptual Framework

Compelling evidence exists that a positive school climate contributes in important ways to children’s psychological health and academic success (Stipek, 2001; Weist, Evans, & Lever, 2003). In light of these facts, the call has been made for investigators and mental health professionals to increase their attention to the emotional and behavioral needs of children in the schools (Ohio Department of Mental Health, 2003; President’s New Freedom Commission, 2003). One of the most significant and prevalent threats to children’s well-being in schools is the problem of bullying. As many as 31 percent of U.S. children report being bullied during the course of a single school year (Nasel, Overpeck, Pilla, Ruan, et al., 2001) and 75 percent report experiencing bullying at some time during their elementary and middle school years (Haynie, Nasel, Eitel, Crump, et al., 2001). Children who are the victims of bullies suffer considerable academic and emotional ill-effects. It is estimated that as many as 160,000 children in the U.S. stay home from school in a given month because of their fear of bullies and half of those endure bullying on a weekly basis (National Education Association, 1993). Further, significant anxiety, somatic problems, low self-esteem, inattention, and even suicide can result (Olweus, Limber, & Mihalic, 1999).

In response to this problem, anti-bullying programs have been developed and widely adopted across the country. Among the most well-supported of these is the Olweus Bullying Prevention Program (Olweus et al., 1999), which has garnered impressive empirical support for reducing bullying across a number of different school settings and cultures. However, despite the relative effectiveness of anti-bullying programs, there is a subgroup of recalcitrant bullies who appear to be unresponsive to these interventions (Sutton, Smith, & Swettenham, 1999). For example, whereas the Olweus program has demonstrated reductions in bullying by as much as 60 percent, 40 percent of bullying behavior continues unabated.

Recent advances in bullying research have offered insights that might help us to better understand and intervene with these recalcitrant bullies. Whereas in some cases there is validity to the popular stereotype of the lone bully as a “social oaf”—socially unskilled, verbally limited, and alienated from peers (Crick & Dodge, 1999)—investigators have also identified another type of bully who is in fact socially and cognitively skilled (Kaukianen et al., 2002). The socially adept bullies are more likely to be identified as ringleaders, who act as leaders within the peer group (Rodkin, Farmer, Pearl, & Van Acker,
In contrast, other children may play the role of passive observers, going along with the bully in order to fit in with the group and conform to social expectations. By attending to the social roles that children play in the bullying process, we may be better able to identify what motivates their behavior and to develop strategies to alter it.

What are the motivations and processes underlying ringleader bullying? Sutton and colleagues (1999) noted that successful ringleader bullies must engage in a variety of behaviors that require social acuity, including building alliances, winning the loyalty of followers, engaging in interpersonal manipulation, and other actions that require what has been termed a form of “Machiavellian intelligence” (Kerig & Sink, in press; Repacholi, Slaughter, Pritchard, & Gibbs, 2003). Consistent with this supposition, research has established that ringleader bullies evidence superior performance on tasks assessing their social intelligence (Kaukianen et al., 2002) and understanding of the motivations, intentions, and mental states of others, commonly termed theory of mind (TOM) (Sutton et al., 1999).

However, the presence of effective social intelligence does not explain why some children would choose to use their skills in the service of hurting, intimidating, or dominating others. An important new contributor to our understanding of proactive forms of aggression such as ringleader bullying is the burgeoning literature on psychopathic traits in children (Forth & Mailloux, 2000; Frick, Cornell, Bodin, Dane, Barry, & Loney, 2003; Moffitt, Caspi, Harrington, & Milne, 2002). Extending downward the research on psychopathy among adult offenders, investigators have identified a subset of aggressive children who demonstrate a lack of emotionality, remorse, or compassion for others, while displaying high levels of self-importance or narcissism. Consistent with the adult research, psychopathic traits in children and adolescents are related to the violence of their offenses and are predictive of the likelihood that they will reoffend (Forth, Hart, & Hare, 1990). Further studies with clinical samples have shown that, whereas children with “garden variety” conduct problems tend to have cognitive deficits, particularly in verbal intelligence, this is not true of conduct disordered children with psychopathic traits. Children with psychopathic traits show a decreased sensitivity to punishment in comparison to peers (Barry et al., 2000). They are also are lower in empathy and are less distressed by the negative effects of their behavior on others, have lower levels of moral reasoning, expect to gain more benefits from their aggressive acts, and engage in more proactive, predatory forms of aggression (Frick et al., 2003). Therefore, it may be that psychopathic traits represent an important predictor of the more intractable forms of bullying.

In summary, when combined with social acuity, psychopathic traits may provide youth with both the motivation and necessary skills to exercise their leadership in the service of humiliating and intimidating others. Whereas the association between callous/unemotional (C/U) traits and bullying is a compelling and logical one, it is not one that has been directly investigated in research to date.

Further, research to date has only begun to investigate what motivates children to behave prosocially in the face of bullying behavior (Rigby & Johnson, 2006). Whereas the majority of children report that they feel sorry for the victims and want to help, only a minority report actually attempting to intervene when they observe bullying. Parallel to the predictors of ringleader bullying, victim defending may require a combination of the necessary motivation (e.g., moral engagement) and the requisite skills (e.g., social self-efficacy; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996a). Moral engagement may serve as a key motivating factor for prosocial behavior (Bandura et al., 1996a; Gini, 2006), whereas disengagement from moral standards is related to aggression and bullying behaviors (Ando, Asakura, &
Simons-Morton, 2005; Menesini, Sanchez et al., 2003). Research has also highlighted the role that perceived self-efficacy plays in relation to help-giving behaviors, including intervening in bullying situations (Rigby & Johnson, 2006). However, the literature to date has not attended to the relations among moral disengagement, perceived self-efficacy related to interpersonal situations (e.g., social self-efficacy), and victim defending behaviors.

Recent attention in the study of victimization has focused on understanding children who are both perpetrators and victims of peer aggression, termed bully/victims. Although there is consistent evidence that bullies engage in proactive aggression (Camodeca, Goosens, Terwogt, & Schuengal, 2002), the literature lacks consensus regarding the type of aggression exhibited by bully/victims or aggressive victims. Some studies suggest that these children exhibit high levels of both types of aggression (Camodeca et al., 2002; Salmivalli & Nieminen, 2002), while others suggest that they are more likely to be reactively aggressive compared to bullies (Unnever, 2005). However, a more important question concerns the underlying mechanism that might account for the relationship between bullying and victimization in bully/victims or aggressive victims. One likely candidate is the inability to regulate emotions (Schwartz, Proctors, & Chien, 2001). Studies have shown that children who cannot regulate their emotions tend to be rejected by their peers (Baumeister, DeWall, Ciarocco, & Twenge, 2005). Further evidence suggests that aggressive victims or bully/victims, who are often rejected by their peers (Pellegrini, Bartini, & Brooks, 1999), are rated lower in emotion regulation when compared to bullies (Toblin, Schwartz, Gorman, & Abou-esseddine, 2005), and evidence poorer self-regulation skills when compared to victims (Unnever, 2005). Due to an inability to regulate their emotions during interpersonal conflict, these are children who may become highly aroused and turn aggressive. Therefore, this study examined whether emotion regulation moderates the relationship between victimization and peer aggression.

**Research Objectives and Hypotheses**

The first goal of this project was to investigate the roles of psychopathic traits and social acuity in the prediction of ringleader bullying behavior. Based upon previous theory and our research with clinical samples (Stellwagen, Kerig, & Saunders, 2005), we hypothesized that the ringleader bullying in normative community children would be predicted by youths’ scores on measures of psychopathy and TOM.

A second goal of this study was to ensure that research on bullying is not limited to the study of overt physical aggression, but is informed by recent investigations of gender differences in the ways that youth aggress against others. For example, Crick and her colleagues (1995) have shown that female victimization of peers is most likely to take the form of relational aggression: threatening to hurt others by harming their relationships through such behaviors as excluding them from the peer group, spreading rumors, and withdrawing friendship. Therefore, we included measures of relational bullying in order to capture this important construct.

A third goal of the project was to widen our net in order to capture a broader spectrum of social roles associated with bullying. Therefore, we examined the predictors and correlates not only of ringleader bullying but also of engagement in victim and defender roles (Salmivalli et al., 1996). We investigated the roles of social acuity, social skill, empathy, and prosocial motivations in predicting victim defending behavior, as well as emotion regulation as a factor in the prediction of victimization.
Methodology

Participants. A total of 258 middle school students were recruited for this study, including 32 sixth-graders, 107 seventh-graders, and 119 eighth-graders. Among the sample, 57 percent were female and 43 percent were male, and 95 percent were Caucasian, two percent were African American, and three percent represented other ethnicities. The sample was reflective of the racial and social class distributions of the schools from which participants were included.

Procedure. Active consent procedures were used with parents and teachers, and children’s informed assent was obtained. Every student in grades 6 through 8 in classrooms whose teacher consented was eligible for participation in the study. Homeroom teachers provided confidential ratings of children’s bullying and social behavior. An honorarium of $5 was provided to teachers for each packet of measures completed. Child-report questionnaires were administered during individual interviews with a trained research assistant (RA). In order to decrease the likelihood of socially desirable answers, children recorded their responses privately on their own questionnaires while RAs read each question aloud.

Measures. Teachers completed a packet of measures for each child participant including measures of the Participant Roles in the Bullying Process (Salmivalli et al., 1996), Proactive and Reactive Aggression (Dodge & Coie, 1987), Children’s Social Experiences (Crick & Grotpeter, 1995), Antisocial Process Screening Device (Frick & Hare, 2001), Machiavellianism Scale for Young Children (Slaughter & Pritchard, 2000), and Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1995).

Child-report measures included the adapted Advanced Test of Theory of Mind (ATTM; Happé, 1994) with the inclusion of scenarios developed for younger children by Sutton, Smith, and Swettenham (1999), Revised Children’s Manifest Anxiety Scale (Reynolds & Richmond, 1978), Narcissistic Personality Inventory for Children (Barry, Frick, & Killian, 2003), Moral Disengagement Scale (Ando et al., 2005), and Social Self Efficacy (Bandura, Barbaranelli, Caprara, Pastorelli, 1996b). In order to account for children’s verbal intelligence, the Verbal scale of the Wechsler Abbreviated Test of Intelligence (WASI; The Psychological Corporation, 1999) was administered. Other covariates included age, gender, and ethnicity.

Results

Gender and age effects. Table 1 displays mean scores separated by gender, and Table 2 displays this information by grade. Results showed that boys were rated higher than girls in total psychopathy, impulsivity, and all forms of bullying, whereas girls were rated higher than boys in prosocial behavior. Seventh grade students were rated higher than their peers in psychopathy, C/U, and ringleader bullying.

Psychopathic traits as predictors of bullying and childhood aggression. Table 3 displays the correlations between the predictor and outcomes variables. Consistent with hypotheses, overall psychopathy was found to be significantly positively associated with all forms of aggression and negatively associated with prosocial behavior and victim defending. Similarly, the correlations between the dimensions of psychopathy and the dependent variables were also high and in the expected directions.
Table 1. Means and Standard Deviations by Gender

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Psychopathy</td>
<td>11.60 (7.39)</td>
<td>5.86 (4.99)</td>
<td>5.66*</td>
</tr>
<tr>
<td>C/U Traits</td>
<td>4.14 (2.43)</td>
<td>1.98 (2.01)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Narcissism</td>
<td>2.95 (2.94)</td>
<td>1.56 (2.03)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>4.14 (2.43)</td>
<td>1.96 (2.01)</td>
<td>4.70*</td>
</tr>
<tr>
<td>Bullying</td>
<td>8.82 (4.10)</td>
<td>6.32 (2.11)</td>
<td>9.79**</td>
</tr>
<tr>
<td>Ringleader Bullying</td>
<td>3.37 (4.70)</td>
<td>0.75 (1.96)</td>
<td>4.24**</td>
</tr>
<tr>
<td>Reactive Aggression</td>
<td>6.28 (2.71)</td>
<td>5.11 (2.05)</td>
<td>6.51*</td>
</tr>
<tr>
<td>Relational Aggression</td>
<td>10.05 (4.04)</td>
<td>10.33 (4.20)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Prosocial Behavior</td>
<td>12.09 (3.57)</td>
<td>14.75 (3.11)</td>
<td>8.25**</td>
</tr>
<tr>
<td>Victim Defending</td>
<td>2.91 (2.87)</td>
<td>4.94 (2.67)</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01.

Table 2. Means and Standard Deviations by Grade

<table>
<thead>
<tr>
<th></th>
<th>6th Grade</th>
<th>7th Grade</th>
<th>8th Grade</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Psychopathy</td>
<td>8.10 (6.64)</td>
<td>8.81 (7.23)</td>
<td>8.07 (6.44)</td>
<td>4.40*</td>
</tr>
<tr>
<td>C/U Traits</td>
<td>2.27 (2.34)</td>
<td>3.53 (2.44)</td>
<td>2.61 (2.40)</td>
<td>3.64*</td>
</tr>
<tr>
<td>Narcissism</td>
<td>2.45 (2.32)</td>
<td>2.20 (2.84)</td>
<td>2.04 (2.38)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>2.97 (2.36)</td>
<td>2.85 (2.57)</td>
<td>2.98 (2.17)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Bullying</td>
<td>8.48 (3.49)</td>
<td>7.04 (3.51)</td>
<td>7.40 (3.17)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Ringleader Bullying</td>
<td>1.76 (3.77)</td>
<td>2.02 (4.27)</td>
<td>1.89 (3.09)</td>
<td>6.59**</td>
</tr>
<tr>
<td>Reactive Aggression</td>
<td>6.48 (2.56)</td>
<td>5.26 (2.53)</td>
<td>5.66 (2.24)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Relational Aggression</td>
<td>11.15 (4.72)</td>
<td>9.27 (4.22)</td>
<td>10.34 (3.71)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Prosocial Behavior</td>
<td>13.70 (2.88)</td>
<td>13.64 (3.74)</td>
<td>13.47 (3.65)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Victim Defending</td>
<td>4.66 (3.03)</td>
<td>4.26 (2.78)</td>
<td>3.62 (2.93)</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01.
Table 3. Correlations among Psychopathy Scales and Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>Bullying</th>
<th>Ringleader Bullying</th>
<th>Reactive Aggression</th>
<th>Relational Aggression</th>
<th>Prosocial Behavior</th>
<th>Victim Defending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Psychopathy</td>
<td>.76***</td>
<td>.77***</td>
<td>.64***</td>
<td>.56***</td>
<td>- .67***</td>
<td>-.53***</td>
</tr>
<tr>
<td>C/U Traits</td>
<td>.50***</td>
<td>.55***</td>
<td>.36***</td>
<td>.33***</td>
<td>- .64***</td>
<td>-.57***</td>
</tr>
<tr>
<td>Narcissism</td>
<td>.74***</td>
<td>.72***</td>
<td>.57***</td>
<td>.55***</td>
<td>- .51***</td>
<td>-.36***</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>.65***</td>
<td>.66***</td>
<td>.63***</td>
<td>.54***</td>
<td>- .51***</td>
<td>-.45***</td>
</tr>
</tbody>
</table>

***p = <.001.

Table 4 displays the results of the regression analyses used to determine the differential value of the three psychopathy dimensions in predicting aggressive behavior. The results of these analyses show that narcissism acts as the strongest predictor of both forms of bullying. Whereas all three dimensions of psychopathy were significant predictors of both bullying variables, narcissism was by far the most significant predictor. In comparison, C/U traits and impulsivity demonstrated fairly modest abilities to predict bullying and ringleader bullying. The results also demonstrate support for our hypothesis that impulsivity and narcissism would act as the strongest predictors of reactive aggression. Both impulsivity and narcissism demonstrated significant associations with reactive aggression (impulsivity most strongly), while C/U traits did not. Likewise, our hypothesis that impulsivity and narcissism would be the strongest predictors of relational aggression was supported. Both impulsivity and narcissism acted as significant predictors of relational aggression, whereas C/U traits did not demonstrate a significant association.

In summary, multiple regressions indicated that the three factors associated with psychopathic traits in childhood (C/U traits, narcissism, and impulsivity), were significant predictors of all forms of aggression measured in this study (Stellwagen & Kerig, 2007a). In contrast to previous research that has focused on C/U traits in children, in this sample narcissism served as the strongest predictor of both ringleader and solitary bullying. Further analyses demonstrated that Machiavellianism was an even stronger predictor of bullying than narcissism (Stellwagen & Kerig, 2007b). Hierarchical multiple regressions demonstrated that Machiavellianism mediated the relationship between narcissism and relational aggression, as well as mediating the relationship between C/U traits and proactive aggression (Kerig & Stellwagen, 2007; Kerig & Sink, in press).

Table 4. Summary of Regressions of Psychopathy scales on Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>Bullying</th>
<th>Relational Bullying</th>
<th>Reactive Aggression</th>
<th>Relational Aggression</th>
<th>Prosocial Behavior</th>
<th>Victim Defending</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/U Traits</td>
<td>.14*</td>
<td>.21**</td>
<td>-.04</td>
<td>.00</td>
<td>-.49***</td>
<td>-.47***</td>
</tr>
<tr>
<td>Narcissism</td>
<td>.55***</td>
<td>.51***</td>
<td>.28***</td>
<td>.36***</td>
<td>-.22**</td>
<td>-.05</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>.19**</td>
<td>.20**</td>
<td>.47***</td>
<td>.28***</td>
<td>-.10</td>
<td>-.14</td>
</tr>
<tr>
<td>R²</td>
<td></td>
<td>R²</td>
<td>R²</td>
<td>R²</td>
<td>R²</td>
<td>R²</td>
</tr>
<tr>
<td>Model</td>
<td>.60***</td>
<td>.59***</td>
<td>.44***</td>
<td>.34***</td>
<td>.48***</td>
<td>.35***</td>
</tr>
</tbody>
</table>

* p = <.05; ** p = <.01; ***p = <.001.
Predictors of victim defending. Multiple regression analyses also were conducted to investigate the predictors of victim defending. As the results shown in Table 5 indicate, gender differences were found, with empathy playing a stronger role in the prediction of victim defending for girls, and social acuity (theory of mind) playing a stronger role for boys (Moeddel, Vanderzee, Volz, Sink, & Kerig, 2007).

Table 5. Results for Multiple Regression Analysis by Gender

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Beta</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prosocial behavior</td>
<td>.675</td>
<td>8.863</td>
<td>.000</td>
</tr>
<tr>
<td>Social acuity</td>
<td>.177</td>
<td>2.312</td>
<td>.023</td>
</tr>
<tr>
<td>Callous/unemotional traits</td>
<td>-.071</td>
<td>-1.314</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>Females:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prosocial behavior</td>
<td>.338</td>
<td>3.982</td>
<td>.000</td>
</tr>
<tr>
<td>Social acuity</td>
<td>.051</td>
<td>.862</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

Multiple regressions also were performed to investigate the relationships among social self-efficacy, moral disengagement, and victim defending. As displayed in Figure 1, the results indicated that social self-efficacy moderated the relationship between moral disengagement and victim defending, with those low in moral engagement increasingly likely to intervene as their level of social self-efficacy increased (Sink, Kerig, & Flaspohler, 2007; Kerig, Stellwagen, Sink, Moeddel, & Vanderzee, 2008).

Figure 1. Social self-efficacy moderates relationship between moral disengagement and victim defending.
Predictors of victimization. We also investigated predictors of victimization, in particular the so-called “bully-victims” who both aggress and are aggressed against. Tests of a moderational model (see Figure 2) showed that victims of bullying were most likely to retaliate with aggression when they were low in emotion regulation skills (Volz, Vanderzee, Sink, Arnzen, & Kerig, 2007).

Significance and Implications

Psychopathic traits as predictors of childhood bullying. One of the primary purposes of the present study was to examine the relationship between psychopathic traits and bullying. Results indicated that, whereas all three dimensions of psychopathy were predictive of bullying, narcissism was the strongest predictor. This finding is consistent with Salmivalli’s (2001) description of narcissistic individuals as lacking the empathetic concern for others that acts as an important inhibitor of interpersonal exploitation. These results also contribute to a growing recognition of the importance of narcissism for understanding aggressive behavior in children (Barry, Kerig, Stellwagen, & Barry, in press). In addition, a relatively new contribution of this study to the bullying literature is the inclusion of the construct of Machiavellianism (Kerig & Sink, in press). Machiavellianism appears to be important particularly for understanding forms of aggression that require social acuity, such as relational aggression. For example, proactive aggression comprises a more cold and calculating form of aggression in which others are used to meet some instrumental goal; moreover, the initiator of the aggression is not necessarily negatively perceived by the social group. Relational aggression, in contrast, represents a particularly psychologically sophisticated form of harming others, in that the aggressor needs to understand what will hurt this individual emotionally and to be able to manipulate the social situation in order to achieve the goal of rejecting or humiliating the other. As Repacholi and colleagues (2003) note, the successful manipulation of others that is the hallmark of Machiavellianism requires interpersonal perceptiveness and social skill.

When victims strike back: The relationship between bullying and victimization. The results of the analyses regarding bully-victims indicated that emotion regulation was a significant moderator. Emotion regulation moderated the relationship between victimization and proactive aggression, as well as the relationship between victimization and bullying. It appears that when children are victimized, those
with poor emotion regulation skills tend to turn their anger toward others. In contrast, victimized children with good emotion regulation skills seem able to inhibit any inclinations to retaliate with aggressive behavior. Therefore, it may be important for intervention efforts to target children’s emotion regulation skills so as to prevent the negative transactions that perpetuate the bullying process.

**Insights into prosocial behavior:** Children who defend the victims of bullying. A second goal of this study was to investigate the dynamics underlying youths’ intervening in bullying, in hopes that this would provide insights into ways to increase the effectiveness of bullying prevention efforts in schools. Gender differences were found, with empathy playing a stronger role in the prediction of victim defending for girls and social acuity playing a stronger role for boys. In addition, consistent with previous research regarding prosocial behavior (Bandura et al., 1996a), moral engagement was associated with the highest levels of victim defending. When youth are morally engaged and acknowledge the harm that can result from bullying, they are more likely to try to help victims rather than joining in or passively standing by. Therefore, it is important for intervention efforts to encourage moral engagement, such as by educating youth about the more subtle manifestations of bullying (e.g., relational aggression), the euphemisms used to obscure it (e.g., “it’s just joking”), and the social processes that promote and excuse victimization (e.g., “it’s no big deal, everyone does it”). If youth recognize that they are contributing to an environment conducive to bullying, even if indirectly, their perceived responsibility for intervening may increase.

Social self-efficacy also was positively correlated with defending behavior, suggesting that students high in perceived social effectiveness are likely to try to help victims of bullying (Ando et al., 2005). Therefore, it is important for schools to promote children’s skills for resolving problems in relationships. Orpinas and Horne (2006) suggest that interventions that cultivate social skills, problem-solving abilities, and emotion recognition are all likely to enhance youths’ skills in interacting with others. In addition, having students engage in activities that promote working toward a shared goal would allow students to practice their interpersonal skills while engaging cooperatively with one another.

In addition, the combination of social self-efficacy and moral engagement predicted the highest levels of victim defending (Sink, Kerig, & Flaspohler, 2007). Although children with high levels of moral engagement intervened no matter what their level of social self-efficacy, for children who were morally disengaged, very high levels of social self-efficacy were needed to overcome their reluctance to intervene on behalf of victims. These results are consistent with Heider’s (1958) model of effective personal force, which suggests that the decision to take action is based on a combination of motivation and ability. Thus, whereas youth who are highly morally engaged are likely to step in regardless of their confidence about their ability to solve the problem, for youth who lack the moral motivation to step in, confidence in their social skills is essential. These results also suggest that, in addition to cultivating moral engagement, prevention efforts should focus their attention on promoting social competence and interpersonal problem-solving skills to ensure that youth are not only motivated to take a stand but also have the ability to do so effectively. It is intriguing that some youth lacking in moral motivation nevertheless stepped in to defend victims the victims of bullying. Perhaps other motivations drive the helping behavior of these morally disengaged youth; for example, they may have more self-focused goals, such as the desire to be perceived as a leader or to play the role of “hero.”

In summary, enhancing individual social skills, promoting prosocial attitudes, and creating a positive school environment all are important to encouraging moral engagement and social self-efficacy. Efforts to increase moral engagement include raising students’ awareness of the consequences of bullying and the group process that underlies bullying. Efforts to increase interpersonal effectiveness include
enhancing social skills, problem-solving skills, and emotional regulation. However, essential to promoting both moral engagement and social self-efficacy is a positive school climate (Orpinas & Horne, 2006). A positive school climate fosters positive relationships, which in turn, increases youths’ confidence about their ability to negotiate interpersonal problems. In addition, creating a sense of community and caring among youth may prevent youth from morally disengaging from their schoolmates. Youth who feel a sense of connectedness to one another may be less likely to accept or justify transgressions towards their fellow students, and in turn, be more likely to stand up for peers in the face of bullying.

**Limitations.** There are a number of limitations that should be considered when interpreting the results of this study. Measures were largely limited to mono-informant and mono-method reports, including the use of teacher ratings for the majority of dependent measures. To confirm the current results, future studies should employ additional methods of assessing youths’ behavior (e.g., observation, parent ratings, and peer report). Studies inquiring about how youths intervene in bullying situation would be important, as types of intervention may vary greatly across different types of bullying and between the sexes. In addition, although representative of the community from which it was drawn, the present sample was limited in diversity and thus not generalizable to other populations.

**Conclusion.** This line of research has promise for increasing our understanding of the dynamics driving bullying behavior and for informing intervention efforts that will be effective in reducing this significant threat to children’s mental health. Machiavellianism, a concept that has only begun to capture the attention of researchers on childhood aggression, appears to be particularly important for predicting forms of aggression that require social acuity, such as ringleader bullying and relational aggression. In turn, these results suggest that the promotion of prosocial behavior and victim defending will be enhanced by the promotion of moral engagement (e.g., positive youth development) and the enhancement of interpersonal skills (e.g., social and emotional skills training). The long-term goal and overarching purpose of this work is to increase our understanding of these forms of bullying in order to inform intervention efforts. By better understanding the dynamics that underlie intervention-resistant bullying, we will be better able to design interventions that are effective across the wider spectrum of bullying behavior.

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SESSION IMPACT AND ALLIANCE IN ONLINE TEXT-BASED PSYCHOTHERAPY: COMPARISON TO FACE-TO-FACE THERAPY AND INFLUENCE OF PARTICIPANT FACTORS

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Currently, the most common modes of delivery for online psychotherapy are asynchronous text-based e-mail and synchronous text chat (Chester & Glass, 2006). These modes of delivery would be expected to be less stimulus-rich than conventional face-to-face therapy (i.e., to lack the nonverbal cues), but it may not necessarily impair interaction quality (Grohol, 1999). Indeed, anecdotal reports have indicated that clients and therapists may evaluate text therapy as similar to traditional therapy. For example, Fenichel and his colleagues (2002) noted the “… similarity between a text-based transcript and a comparable office session” and more specifically on “…the expressiveness and depth of the text-based communication” (p. 26).

We focused on session impact and alliance in the two different modalities of text-based online therapy, e-mail and text chat. Session impact encompasses participants’ evaluations of their session and their post-session affective state (Stiles et al., 1994). The alliance is widely regarded as a vehicle for conveying therapy's active ingredients and perhaps a key active ingredient itself (Bordin, 1979).

Among the few studies that have attempted to compare these modalities, Cohen and Kerr's (1998) therapy analogue study examined a single meeting between face-to-face psychotherapy and text chat psychotherapy for anxiety. Clients (24 undergraduate volunteers as clients and 6 male counseling graduate students as therapists) scored higher on post-session Arousal measured by the Session Evaluation Questionnaire (SEQ) after face-to-face sessions than after online sessions.

Cook and Doyle (2002) compared Working Alliance Inventory (WAI) scores after the third session between 15 Internet (93% female, median age = 41.40; 80% e-mail) therapy consumers and a representative archival sample of 25 traditional face-to-face therapy clients. They found that Internet therapy consumers' scores on the goal subscale and composite score of the WAI were significantly higher than those of face-to-face therapy clients.

Leibert, Archer, Munson, and York’s (2006) study surveyed 81 clients using online therapy (83% female, 82.7% Caucasian, 42% depressed, median age = 29.4; 73% e-mail and 41% text chat) at various points in their treatment process. They compared 52 clients’ Working Alliance Inventory-Short Form (WAI-S) scores with a corresponding archival sample of 46 face-to-face therapy clients. Clients established weaker working alliances (composite and all three subscales) when working with counselors online.

We were also interested in identifying participant factors that would moderate online session impact and alliance, and we searched the literature for variables that had affected these things in face-to-face studies. Studies in which participant factors influenced face-to-face SEQ or Agnew Relationship...
Measure (ARM)/WAI findings included effects of client pre-session distress on session Smoothness (Jones & Markos, 1997), therapist experience on several alliance subscales and on session Depth (Mallinckrodt & Nelson, 1991; Cummings, Slemon, & Hallberg, 1993), and client social support on overall alliance (Mallinckrodt, 1991).

A hypothesized calming influence of the online environment (i.e., lower Arousal than in face-to-face therapy) has been demonstrated for therapists’ ratings by one previous online psychotherapy study. Reynolds and Stiles (2007) examined 27 (67% female, 41% depressed, median age = 22) clients assigned nonrandomly to one of 32 (72% female, 84% Caucasian, median age = 32) clinical graduate students for a minimum of six weekly face-to-face sessions of eclectic/integrative therapy. On average, therapists who typically reported within two hours of their session evaluated their present mood as less Aroused as opposed to those therapists who typically reported more than two hours after their session. The authors hypothesized that participants experienced the online environment as more calm than the face-to-face milieu (Lewis, Coursol, & Wahl, 2004).

Study Design, Research Hypothesis, and Rationale

We report results regarding the comparability of alliance and session impact ratings of online therapy conducted via asynchronous (e-mail) and synchronous (chat) text with previously published results from ratings of face-to-face psychotherapy sessions. We compared means and standard deviations of each of the SEQ and ARM indexes for the two sets of ratings. With one exception, we expected that participants using online text therapy would evaluate their relationships and session impacts similarly to participants in face-to-face therapy. This expectation was based on the common factors notion that similar outcomes are found for the various theoretical orientations in face-to-face therapy (e.g., Wampold, 2001) because it suggests that similar processes (which mediate outcomes) would be found for various modes of conducting psychotherapy. The one exception is that clients and therapists would report text exchanges as less Arousing than did corresponding clients and therapists engaged in face-to-face therapy (Cohen and Kerr, 1998; Reynolds & Stiles, 2007). That is, the online calming hypothesis proposes that therapists and clients feel less excited and aroused after therapy in the online environment than after therapy in the face-to-face milieu.

In addition, we anticipated that participant factors previously found influential in face-to-face therapy would play a role in online clients’ and therapists’ evaluations of their text exchanges and therapeutic relationship. We employed linear mixed modeling analytic techniques to estimate average (and individual) participants’ text exchange trajectories for each of the SEQ and ARM indexes. Following previous findings, we also expected that therapists of more symptomatic clients would report lower Smoothness during their exchanges (Jones & Markos, 1997), more experienced therapists would report higher Partnership (Mallinckrodt & Nelson, 1991), less experienced therapists would evaluate their exchanges as Deeper (Cummings et al., 1993), and clients with more social support would report higher Overall alliance ratings (Mallinckrodt, 1991).

Method

Participants. Therapists (N = 30) each saw from one to two clients (Mdn = 1) for a total of 394 therapist-rated weeks of exchanges, whereas clients (N = 30) had a total of 475 rated weeks of exchanges.

The therapists were primarily female (70%), Caucasian (90%), ranged in age from 28 to 62 years (Mdn = 48), and were married/partnered (67%). They were predominantly licensed to practice in the United States (n = 20 therapists) and worked mainly from a Cognitive/Behavioral perspective (33%).
The 30 clients’ ages ranged from 19 to 55 (Mdn = 43) with 83 percent female, 73 percent Caucasian, and 40 percent married/partnered. All except one client had completed high school. Their most common self-reported presenting problems (given the option to report multiple problems) were depression (12 clients), anxiety (5), and low self-esteem (4).

**Measures**

**Demographic Questionnaire.** The demographic questionnaire requested information on the respondent's e-mail address, date of birth, marital status, gender, ethnicity, highest year of education, and either client’s presenting problem or therapist’s full name, geographical location of face-to-face therapy licensure, and theoretical orientation.

**Session Evaluation Questionnaire (SEQ).** The SEQ (Form 5; Stiles, Gordon, & Lani, 2002) consists of 21 seven-point bipolar adjective items on which respondents were instructed to “Please select the appropriate number to show how you feel about your therapeutic exchanges this week:”

The stem “The therapeutic exchanges this week were:” precedes the first eleven session evaluation items. There is one global item (i.e., bad-good). Five items comprise the Depth scale (i.e., valuable-worthless, deep-shallow, full-empty, powerful-weak, and special-ordinary), and five items comprise the Smoothness scale (i.e., easy-difficult, relaxed-tense, pleasant-unpleasant, smooth-rough, and comfortable-uncomfortable).

The stem “Based on the therapeutic exchanges this week, I feel:” precedes the second 10 post-session mood items, aggregated into two additional scales. Five items comprise the Positivity scale (i.e., happy-sad, pleased-angry, definite-uncertain, confident-afraid, and friendly-unfriendly) whereas five items comprise the Arousal scale (i.e., moving-still, excited-calm, fast-slow, energetic-peaceful, and aroused-quiet).

**Agnew Relationship Measure (ARM).** The ARM version used in this study was a 12-item short form (Stiles, Hardy, Cahill, Barkham, & Agnew-Davies, 2003) of the 28-item ARM (Agnew-Davies, Stiles, Hardy, Barkham, & Shapiro, 1998). Both versions are rated on parallel forms by clients and therapists using a seven-point scale anchored “strongly disagree” to “strongly agree.” Instructions on the online short form read, “Thinking about your therapeutic exchanges this week, please indicate how strongly you agreed or disagreed with each statement by clicking on the appropriate response.” The short form ARM includes four factor-based scales, named Bond (e.g., “I feel friendly towards my therapist”), Partnership (e.g., “My therapist and I agree about how to work together”), Confidence (e.g., “I have confidence in my therapist and his/her techniques”) and Openness (e.g., “I feel I can only express my thoughts and feelings to my therapist”).

**The Social Support Questionnaire (SSQ).** The SSQ version used in this study was a 12-item short form (Sarason, Sarason, Shearin, & Pierce, 1987) of the 27-item SSQ (Sarason, Levine, Basham, & Sarason, 1983). Clients provided ratings by completing two types of questions. The first type asked clients to list up to nine individuals (and their relationship to the client) whom they counted on for support in the manner suggested by one of the six specific questions. The second type asked clients to indicate how satisfied they are with the specified type of support using a six-point scale anchored “very satisfied” to “very dissatisfied.” Instructions on the forms e-mailed to clients partially read, “…. For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described … For the second part, circle how satisfied you are with the overall support you have.”
The short form SSQ includes two factor analytically derived subscales, named perceived Availability (SSQN; e.g., “Whom can you really count on to be dependable when you need help?”) and Satisfaction (SSQS; includes the six questions of “How satisfied?”).

The Global Assessment Scale (GAS). The GAS (Endicott, Spitzer, Fleiss, & Cohen, 1976) is a scale ranging from one to 100 that was used by therapists to evaluate their clients’ overall level of functioning. The GAS is anchored at each 10-point interval with a clinical description that includes level of occupational and social functioning, as well as subjective distress. The anchors varied from “… superior functioning …” (100 to 91) to “… needs constant supervision for several days to prevent hurting self or others …” (10 to 1). Instructions on the forms e-mailed to therapists partially read, “Rate the subject's lowest level of functioning for the first week of your online therapeutic interactions/exchanges (most likely prior to your first week reported on in this study) by selecting the lowest range which describes his functioning on a hypothetical continuum of mental health-illness.”

Internet-based Site. The online system developed for this study presented the demographic questionnaire and the SEQ and ARM measures. All participants were allowed to access the site from any location with internet access (cf. Davis, 1999).

Procedure

Therapist-client pairs were recruited online from private practitioner sites, e-clinics, online counseling centers, and mental health related discussion boards with the assistance of an undergraduate research team and external investigators. Interested therapists had the option to invite current clients to take part. However, either the therapists or the clients could participate alone. On their initial visit to the study’s online site, participants chose to accept the terms of a consent form and then completed the demographic forms. A subsequent weekly e-mail with an embedded link to the login screen was sent on Mondays to all participants who had yet to complete the forms for the previous week. When providing their ratings for a given week of exchanges, they entered either the number of weekly text chat exchanges or the number of sent and received e-mails, completed the SEQ and ARM, and returned to an updated status screen. When participants logged out, they were reminded to visit again next week. Upon study completion, participants replied to an e-mail requesting evaluations of their clients’ symptom severity (GAS) if the therapist, and occupation and social support (SSQ) if the client.

Results

Descriptive statistics and internal consistencies for means. Table 1 shows that the means of almost all the online SEQ and ARM scales were above the midpoint of 4.0, indicating that, on average, dyads considered their sessions and alliance as positive. The alpha coefficients showed that the five-item SEQ indexes were generally reliable whereas the three-item ARM indexes were generally less reliable. We decided to combine the Bond and Partnership indices because their alpha coefficients were low and their intercorrelations were high.

Mean comparisons. Online therapy session impact ratings were generally comparable or numerically greater than the reported averages for face-to-face therapy from the previous studies with a couple exceptions (see Table 1). Therapists' online Arousal mean was below the range of the means from the face-to-face studies, and the clients' online Openness mean was below the range of means from the face-to-face studies.
Table 1. Clients’ and Therapists' Internal Consistency Reliabilities (Coefficient Alpha), Means, Standard Deviations, and Previous Studies’ Range of Means for Session Evaluation Questionnaire (SEQ) Indexes and the Agnew Relationship Measure (ARM) Indexes

<table>
<thead>
<tr>
<th>Index</th>
<th>No. of items</th>
<th>Alpha</th>
<th>M</th>
<th>SD</th>
<th>Previous Range of Means$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client ratings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>5</td>
<td>.94</td>
<td>5.51</td>
<td>1.54</td>
<td>4.65 to 5.85</td>
</tr>
<tr>
<td>Smoothness</td>
<td>5</td>
<td>.92</td>
<td>4.83</td>
<td>1.69</td>
<td>4.13 to 5.28</td>
</tr>
<tr>
<td>Positivity</td>
<td>5</td>
<td>.92</td>
<td>5.03</td>
<td>1.72</td>
<td>4.38 to 4.88</td>
</tr>
<tr>
<td>Arousal</td>
<td>5</td>
<td>.46</td>
<td>4.20</td>
<td>.96</td>
<td>4.12 to 4.40</td>
</tr>
<tr>
<td>ARM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bond/Partnership</td>
<td>6</td>
<td>.86</td>
<td>6.12</td>
<td>1.17</td>
<td>5.88 to 6.43</td>
</tr>
<tr>
<td>Confidence</td>
<td>3</td>
<td>.83</td>
<td>6.43</td>
<td>1.01</td>
<td>5.74 to 6.29</td>
</tr>
<tr>
<td>Openness</td>
<td>3</td>
<td>.64</td>
<td>5.26</td>
<td>1.55</td>
<td>5.39 to 5.75</td>
</tr>
<tr>
<td><strong>Therapist ratings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>5</td>
<td>.88</td>
<td>5.31</td>
<td>.96</td>
<td>4.25 to 5.10</td>
</tr>
<tr>
<td>Smoothness</td>
<td>5</td>
<td>.92</td>
<td>5.09</td>
<td>1.36</td>
<td>3.86 to 4.52</td>
</tr>
<tr>
<td>Positivity</td>
<td>5</td>
<td>.85</td>
<td>5.49</td>
<td>1.03</td>
<td>4.38 to 5.16</td>
</tr>
<tr>
<td>Arousal</td>
<td>5</td>
<td>.45</td>
<td>4.05</td>
<td>.75</td>
<td>4.18 to 4.58</td>
</tr>
<tr>
<td>ARM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bond/Partnership</td>
<td>6</td>
<td>.72</td>
<td>5.98</td>
<td>.91</td>
<td>5.24 to 5.89</td>
</tr>
<tr>
<td>Confidence</td>
<td>3</td>
<td>.77</td>
<td>6.00</td>
<td>.89</td>
<td>4.85 to 5.31</td>
</tr>
<tr>
<td>Openness</td>
<td>3</td>
<td>.63</td>
<td>5.19</td>
<td>1.30</td>
<td>4.70 to 5.70</td>
</tr>
</tbody>
</table>

Note. $n = 475$ and $n = 394$ weeks of exchanges for clients and therapists (respectively). Indexes were calculated as the mean of clients’ and therapists’ ratings on constituent items. SEQ and ARM items could range from 1 to 7. Alpha = internal consistency measured by coefficient alpha.

$^a$The previous means were culled from several prior studies of the SEQ (Cummings, Slemon, & Hallberg, 1993; Dill-Standiford, Stiles, & Rorer, 1988; Kivlighan, Angelone, & Swafford, 1991; Nocita & Stiles, 1986; Reynolds, Stiles, Barkham, Shapiro, Hardy, & Rees, 1996; Stiles et al., 1994; Stiles, Shapiro, & Firth-Cozens, 1988; Stiles & Snow, 1984; Tryon, 1990) and ARM (Agnew-Davies, Stiles, Hardy, Barkham, & Shapiro, 1998; Stiles, Agnew-Davies, et al., 2002; Stiles, Hardy, Cahill, Barkham, & Agnew-Davies, 2003).

Descriptive Statistics for Average Starting Points and Slopes. The starting points of the average therapist and average client ratings on session impact and alliance were near but mostly above the midpoint of each subscale. (Mid point was 4.0 for the SEQ and ARM indexes; please contact the authors for further details on analyses involving the starting points and slopes.) Average therapists’ and average clients’ slopes for session impact and alliance scores were essentially flat during the course of their online text exchanges, ranging (i.e., rate of growth per day multiplied by seven) from -0.0004 to 0.0010 units increase/decrease in session impact/alliance per week with none significantly increasing or decreasing.

Starting Points and Slopes. Participants’ starting points and slopes are conceptually related to variance components. They provide an index of the amount of variation attributable to (1) differences among therapists, (2) differences among clients of each therapist, and (3) remaining variation, including exchange-to-exchange variation, measurement error, and other sources. Participants’ starting points tested
whether there was more variation among (i) therapists, (ii) clients, or (iii) exchanges (including remaining sources) than would be expected by chance. Although we calculated therapists’ and clients’ starting points and slopes for all subscales of session impact and alliance, only statistically significant findings are reported.

Table 2. Fixed Effects of Fitted Linear Mixed Model for Client and Therapist Session Impact(SEQ) and Therapeutic Alliance (ARM) Evaluations of Their Text Exchanges

<table>
<thead>
<tr>
<th>Index/item</th>
<th>Client Ratings</th>
<th>Therapist Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coefficient</td>
<td>SE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>5.3005</td>
<td>.3840</td>
</tr>
<tr>
<td>Time</td>
<td>-.0001</td>
<td>.0005</td>
</tr>
<tr>
<td>Smoothness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.8211</td>
<td>.4534</td>
</tr>
<tr>
<td>Time</td>
<td>.0004</td>
<td>.0007</td>
</tr>
<tr>
<td>Positivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.4434</td>
<td>.4404</td>
</tr>
<tr>
<td>Time</td>
<td>.0004</td>
<td>.0007</td>
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<tr>
<td>Arousal</td>
<td></td>
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<tr>
<td>Intercept</td>
<td>3.9204</td>
<td>.2545</td>
</tr>
<tr>
<td>Time</td>
<td>-.0002</td>
<td>.0003</td>
</tr>
<tr>
<td>ARM</td>
<td></td>
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<tr>
<td>Bond/Partnership</td>
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<td></td>
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<tr>
<td>Intercept</td>
<td>6.0752</td>
<td>.2708</td>
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<tr>
<td>Time</td>
<td>.0002</td>
<td>.0005</td>
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<tr>
<td>Confidence</td>
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</tr>
<tr>
<td>Intercept</td>
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<td>Time</td>
<td>.0002</td>
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<td>Openness</td>
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<tr>
<td>Intercept</td>
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<td>.5158</td>
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<tr>
<td>Time</td>
<td>.0003</td>
<td>.0011</td>
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<tr>
<td>Overall</td>
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<td>Intercept</td>
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</tr>
<tr>
<td>Time</td>
<td>.0003</td>
<td>.0005</td>
</tr>
</tbody>
</table>

Note. n = 475 and n = 394 weeks of exchanges for clients and therapists (respectively).

Therapists’ SEQ and ARM starting points evidenced a client effect. That is, there was more variation among therapists’ starting points for their clients than would be expected by chance. For therapists’ SEQ and ARM subscales examined at the clients-within-therapist level, starting points ranged from .0784 (p < .01; Arousal) to .5376 (p < .03; Smoothness) and accounted for a significant 14.01 percent to 45.50 percent of therapists’ total rating variation for a given SEQ or ARM subscale. Most of the clients’ SEQ and ARM starting points evidenced a client effect. For clients’ SEQ and ARM subscales examined at the clients-within-therapist level, starting points ranged from .0764 (p = .20,
Participant Factors Influencing Average Therapists’ and Clients’ Ratings. Analyses were used to determine whether average therapists’ and clients’ ratings of the qualities of their online text exchanges and their therapeutic relationship with each other were influenced by participant factors. Although we calculated average therapists’ and clients’ slopes for all subscales of session impact and alliance with each of the participant factors that influenced therapists’ and clients’ ratings, only statistically significant findings are reported. Therapists with more symptomatic clients experienced their text exchanges as significantly less Smooth and Positive (t[387] = 3.03, p < .01 and t[387] = 2.23, p < .05, respectively) and their relationship as having significantly less Bond/Partnership (t[387] = 2.45, p < .05). Cognitive/behavioral therapists (as opposed to “other” orientation therapists) perceived their clients as having significantly more Confidence (t[387] = 2.24, p < .05). Clients with more perceived social supports evaluated their weekly text-based exchanges with their therapists as more comfortable and less distressing than did clients with less perceived social supports (i.e., significantly more Smooth, t[472] = 2.28, p < .05).

Table 3. Random Effects of Fitted Linear Mixed Model for Client and Therapist Session Impact (SEQ) and Therapeutic Alliance (ARM) Evaluations of Their Text Exchanges

<table>
<thead>
<tr>
<th>Index/item</th>
<th>Client Ratings</th>
<th>Therapist Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimated Coefficient</td>
<td>SE</td>
</tr>
<tr>
<td>SEQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoothness</td>
<td>.3961</td>
<td>.3239</td>
</tr>
<tr>
<td>Positivity</td>
<td>.7525</td>
<td>.4963</td>
</tr>
<tr>
<td>Arousal</td>
<td>.9596**</td>
<td>.3246</td>
</tr>
<tr>
<td></td>
<td>.3363**</td>
<td>.1367</td>
</tr>
<tr>
<td>ARM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bond/Partnership</td>
<td>.0764</td>
<td>.0912</td>
</tr>
<tr>
<td>Confidence</td>
<td>.1881</td>
<td>.1958</td>
</tr>
<tr>
<td>Openness</td>
<td>1.1667*</td>
<td>.5881</td>
</tr>
<tr>
<td>Overall</td>
<td>2.619**</td>
<td>.1010</td>
</tr>
</tbody>
</table>

Note. n = 475 and n = 394 weeks of exchanges for clients and therapists (respectively). *p < .05. **p ≤ .01.

Discussion

Summary. Our results suggested that alliance and impact were as strong in these online text therapies as in face-to-face therapies studied previously. Twelve of the 14 mean session impact and
alliance index comparisons indicated that online therapy participants rated their exchanges the same as or higher than their face-to-face therapy counterparts. The previously-observed online calming effect, manifested in the lower Arousal ratings of online therapists and clients relative to their face-to-face counterparts, was replicated. This study also replicated the widely reported finding that therapists who worked with less symptomatic clients rated their respective online therapeutic exchanges as Smoother than therapist who worked with more symptomatic clients.

**Limitations.** The findings are tentative given the limited number of participants, their narrow demographics (primarily English speaking female Caucasian adults), and the restricted presenting problem range of the clients (mostly depression and anxiety issues). Further, we cannot rule out possible self-selection biases, insofar as the participants volunteered to take part in this study.

**Implications.** The online calming hypothesis converges with Cohen and Kerr’s (1998) findings. Their clients who were engaged in face-to-face therapy subsequently completed paper-and-pencil measures (not online versions of the measures) and rated their mood “right now” as more Aroused. Consequently, the lack of exposure to the online environment during either their therapy sessions or subsequent reporting may have accounted for their increased Arousal ratings. Similarly, the hypothesis accounts for Reynolds and Stiles’ (2007) finding that face-to-face therapists who reported online within two hours of their sessions rated their mood “right now” as less Aroused than did face-to-face therapists who reported online more than two hours after their sessions. Consequently, the exposure to the online environment during subsequent reporting may have accounted for their decreased Arousal ratings.

The therapists who provided relatively higher Smoothness ratings worked with the relatively less symptomatic clients. Therapists may have experienced their online exchanges as more challenging, tense, and uncomfortable as a result of the difficulty in emotionally connecting and working together to address their more symptomatic clients’ presenting concerns (e.g., Zuroff et al., 2000). This finding is consistent with Jones and Markos’ (1997) result that higher client pre-session distress was related to lower ratings of session Smoothness.

**Significance.** Our results offer a qualified encouragement for future therapists and clients who are considering using online therapy. We found online clients generally reported similar session impacts and alliances as participants in face-to-face therapy. Moreover, we found online therapists rated aspects of the impact of their weekly exchanges (e.g., Depth and Smoothness of the exchanges) and certain facets of their alliance (e.g., their Confidence in their therapeutic ability and establishing an emotional connection with their clients to work toward shared goals) as especially strong compared to face-to-face therapists. Finally, if online therapy is experienced as more calm, it may offer a less threatening initial alternative to face-to-face psychotherapy, especially for neophytes to online therapy who wrestle with anxiety disorders (e.g., social anxiety). Our study’s results suggest that online therapy may not be a less desirable alternative to face-to-face therapy but hold promise as a legitimate manner of conducting psychotherapy.

**REFERENCES**

(References marked with an asterisk indicate studies included in the comparison analysis.)


**Other Publications of the Research**


**Presentations of the Research**

Reynolds, D. J., Jr., & Stiles, W. B. (2006, October). *Technological innovations in psychotherapy: How do on-line consumers and therapists evaluate the alliance and impact of their sessions?* Paper presented at The Ohio Department of Mental Health sponsored Research Results Briefing 2006, Columbus, OH.


The importance of involving family members in the behavioral health care treatment of youth is well documented. As a result, public dollars are funneled into initiatives that attempt to empower parents and caregivers as they interact with the behavioral health care system. Recently, parent advocacy has emerged as an empowerment strategy to aid youth by aiding the family. An important component of the Ohio Access to Better Care (ABC) initiative is the requirement that all families receiving family support services for their youth with behavioral health needs also are offered parent advocacy services. This effort to provide families with support from others who “have been there, done that” was formally introduced in the fall of 2004 when several state departments pooled resources to provide Family and System Team (FAST$) funding for a small, specific group of youth who were at risk of out-of-home placement. The role of parent advocates (PA) included the provision of assistance to the families of these youth as part of the process of planning for and securing appropriate services.

Responsibility for the provision of PAs was given to the local funding and programming entities implementing FAST$, with the local ADAMH/CMH/ADAS Board acting as fiscal authority. Each county had the option of utilizing a process administered by NAMI Ohio or, alternatively, providing PAs via the local board/provider process. The Parent Advocacy Connection, or PAC, is the statewide, NAMI Ohio-administered program designated to provide assistance to the counties in meeting this requirement. In addition, regional coordinators were put into place throughout the state to coordinate the recruitment, training and assignment of local PAs.

The Center for Family Research (CFR) is partnering with NAMI Ohio to assist in expanding NAMI’s PA activity data collection and reporting efforts. Currently, all NAMI PAs are required to use the Parent Advocacy Reporting Form to document their work with families/children they are serving. However, the specific activities undertaken by advocates on behalf of families are not clearly documented, making analyses of their impact (beyond mere presence) quite difficult. There are also concerns about the relatively low percentage of families that engage an advocate. Unknown at the time of the research was whether the percentage reflects how often families are offered advocacy services, or how often families take advantage of advocacy services even when they are offered. This research conducted a more systematic examination of the process by which families were (or were not) linked to advocates, as well as supported an effort to more systematically document the actions taken by advocates. An additional aim of the research was to improve NAMI’s ability to identify PA training needs and recruit advocates.
Conceptual Framework

This research study on Parent Advocacy efforts has its roots in the social exchange theory and its relevance to the perception of burden experienced by a caregiver. According to Homans (1958), the theory’s initiator, it was developed to understand the social behavior of humans in economic undertakings. Central to social exchange theory is the idea that relationships and interdependencies need to be mutually beneficial and over the long term are made up of reciprocal exchanges that tend to balance out. So when family members care for one another, they reciprocate past help and/or count on future assistance. However, during these exchanges, the family caregiver’s perception of burden might be greatly impacted if the level of care needed by the receiver exceeds the physical and emotional capability of the caregiver (Call, Finch, Huck & Kane, 1999). Results of a study by Call, Finch, Huck and Kane (1999) suggest that a support network for caregivers and care receivers should be able to ease some caregiver burden.

Perkins and Zimmerman (1995) describe empowerment as a process of developing mutual help between the individual and the mental health community and further, considering people within concepts of wellness, competence and strengths rather than illness, deficits and weaknesses. Parent advocacy as a form of empowerment and building upon the strengths of the family has emerged as a way of providing assistance to children vis-à-vis the family. This idea is derived from Bronfenbrenner's social-ecological theory, which acknowledges the family’s position as a liaison between the child and various social service systems (Bronfenbrenner, 1979; Heflinger & Bickman, 1997). Parent advocacy empowers the parent on the child’s behalf; it can enable the parent to use, influence and change services given to their child to how they best see fit. Indeed, such family advocacy is a central tenet in developing effective systems of care for children’s mental health (Stroul & Friedman, 1986) and has been emphasized in related federal and state-funded grant initiatives since 1984 (Bryant-Comstock, Huff, & VanDenBerg, 1996).

Perhaps one of the greatest challenges in the new paradigm of children's mental health services is the systems' partnerships with families (Stroul & Friedman, 1986). It is widely acknowledged that families should be full partners in the planning and delivering of services for their own child (Burns, Hoagwood, & Mrazek, 1999; Worthington, Hernandez, Friedman, & Uzzell, 2001). Yet the involvement of families as full partners is still evolving and growing in acceptance (Friesen & Stephens, 1998). Simpson, Koroloff, Friesen, and Gac (1999) suggest three areas of family-provider partnership necessary for successful collaboration: a shared vision and shared goals, shared power in decision making at all levels, and a long-term commitment to collaborative development.

Research Objectives

The Center for Family Research (CFR) worked with NAMI Ohio to lay the groundwork for better understanding how parent advocacy matters for families with youth experiencing emotional and behavioral disorders. The CFR team is focused centrally on the nature of parent advocacy efforts and their association with family well-being. The main objectives of this research were to (1) explore potential differences in the characteristics of those families that used PA services in comparison to those families that did not use these services; (2) examine the degree to which parent advocacy efforts lead to increases in family empowerment and improvement in youth well-being; (3) document current advocacy services (as both types and amounts) and advocate characteristics (experience level, prior training, etc.), with the longer-term goal of developing an advocacy services checklist that will provide greater assistance in tracking these efforts and their impacts; and (4) examine the procedures in place by which families are
offered advocacy services, to document how often families take advantage of advocacy services, and record the reasons why families choose not to utilize the services of PAs.

**Phase 1 Methodology**

Phase 1 of this research examined the extant data from the Ohio’s Families and Systems Teams (FAST$) database. FAST$ targets families with youth experiencing significant behavioral health needs through a constellation of services that, in part, center on parent advocacy efforts. Because the evaluation model for FAST$ was already in place and had generated three consecutive years of enrollment and termination data, initial analyses were conducted on the terminated cases in FAST$.

Potential differences in outcomes for youth from families that received PA services were compared to youth from families that did not use these services. To ensure accuracy of data, the CFR worked with County coordinators in Butler County and Franklin County, Ohio to clarify those FAST$ cases that received PA services. In turn, data from these two urban counties were compared with information on the other large (6) Ohio counties in the FAST$ database.

**Phase 1 Findings**

**Demographics.** The FAST$ evaluation examined 2,176 terminated cases in the FAST$ database, and 431 (19.8%) of those cases utilized some sort of PA. The families of female and male youth were just as likely to utilize PA services ($\chi^2 = 0.192, p=.909$) while youth in large counties were more likely to receive PA services when compared to youth in medium or small counties ($\chi^2 = 189.263, p < .001$). Of all FAST$ terminated cases, 39.0 percent of FAST$ youth in large counties received PA services compared to 12.8 percent and 12.0 percent in medium and small counties, respectively.

Race mattered with regard to families utilizing PA services. Families of racial minority youth were more likely to receive PA services (31.8%) compared to families of white youth (16.8%) ($\chi^2 = 47.807, p < .001$). In large counties, 40.3 percent of minority youth received PA services compared to 38.1 percent of white youth. In small counties, 27.3 percent of minority youth received PA services compared to 11.0 percent of white youth. In medium counties, white and minority youth used PA services in about the same proportions (13.0%).

**Family Empowerment.** In the overall FAST$ sample of terminated cases, a significant increase in family empowerment (as measured by the Family Caregiver Wants & Needs Scale) was noted at the time of termination from FAST$ funded services. Further results from independent $t$-test analyses indicated a marginally significant difference ($t = 1.90, p < .05$) between Time 1 empowerment scores for families with a PA ($\bar{x} = 41.4$) in comparison to families without a PA ($\bar{x} = 39.6$). By the end of program participation, however, the significant differences between these two groups disappeared, generating evidence that families without a PA were able to experience family empowerment at levels similar to families who engage an advocate. Hence, family empowerment gains seem to occur after participation in the FAST$ Program, regardless of the employment of a PA as a service enhancement.

**Ohio Scales Behavioral Health Outcomes.** Scores from the Ohio Scales were the primary source of Outcomes data. The Ohio Scales consisted of four subscales: Hopefulness, Satisfaction with Services, Problem Severity, and Functioning. Analyses of Ohio Scales scores revealed that PAs begin their work with youth displaying significantly greater Problem Severity and significantly less Functioning abilities in comparison to youth enrolled in the FAST$ program who do not have PAs assigned to their cases.
improvements were seen on both the Problem Severity and Functioning scores, and significant improvements were reported from Time 1 to Time 2 in the overall sample.

The significant differences in Time 1 Functioning and Problem Severity scores between the youth who do and do not have a PA as part of their FAST$ funded services necessitated the breakdown of these groups into sub-samples based on the parent version of the Ohio Scales scores at Time 1. Youth in each group (PA and Non-PA) were identified as either “High” or “Low” based on whether their reported scores for the respective subdomain were above or below the mean score for that group at Time 1. In essence, the sub-samples allowed for a comparison of the impact of PA presence on the Outcomes measures for groups that were relatively equivalent in terms of where those youth began at the time of their enrollment.

**Proximal Reporter Strategy.** There was only a small group of youth within the extant FAST$ dataset for which all three versions of the Ohio Scales were completed at every time point. Hence, to include the greatest number of youth in the sample without overweighting the effects of any small group, a “proximal reporter” (PR) sample was used for making comparisons. Here, the Youth version was privileged and thus employed wherever available; the Parent version data were used in cases with insufficient Youth version data, and Worker version data were used if neither the Youth nor Parent versions were available. All youth that terminated FAST$ services and had valid (within FAST$ compliant date ranges) Time 1 and Time 2 Ohio Scales perspectives were included in the PR sample. As a result, the PR Sample allowed for the inclusion of the maximum possible number of cases that, in turn, privileged data from the youth and parent respectively. The surprising finding from the analyses of the overall FAST$ sample was that Parent Advocacy did not affect the significant changes in outcomes as measured by the Ohio Scales. When baseline differences were controlled for through the creation of High and Low Initial Level categories for each measure, differences in the amount of change completely disappeared for all four sub-scales.

**Franklin and Butler sample pooled and compared to other large counties.** The above analyses conducted for the FAST$ report were replicated on the sub-sample from Franklin and Butler Counties. The pooled sample from Franklin and Butler Counties was compared to the pooled sample from other large counties (Cuyahoga, Hamilton, Lucas, Montgomery, Stark, and Summit). Table 1 provides the breakdown of perspectives in the two sub-samples.

<table>
<thead>
<tr>
<th>Table 1. Number of Reports from the Three Ohio Scales Perspectives in Each of the Proximal Reporter (PR) Sub-samples</th>
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</thead>
<tbody>
<tr>
<td>PR sub sample</td>
</tr>
<tr>
<td>Franklin &amp; Butler</td>
</tr>
<tr>
<td>Other Large</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

1 Acceptable date ranges for valid Ohio Scales as defined for purposes of FAST evaluation:
- **Ohio Scales Time 1 (enrollment)** - administered less than 180 days prior to FAST enrollment or up to 30 days after FAST enrollment
- **Ohio Scales Time 2 (termination)** – administered not more than 30 days prior to FAST termination or more than 90 days beyond FAST termination
Problem Severity subscale. Proximal reports of youth with relatively high Problem Severity levels noted significant positive gains regardless of the presence of an advocate. This was true for both the Franklin-Butler sub-sample and the other large counties sub-sample. In the Franklin-Butler sub-sample, a paired samples t-test on youth with high levels of Problem Severity indicated a significant decrease both for youth with a parent advocate \((t = 3.85, p < .05)\) and youth without a parent advocate \((t = 2.63, p < .05)\) by the time of termination. Similarly, in the other large sub-sample, a significant decrease was indicated both for youth with a parent advocate \((t = 4.65, p < .001)\) and youth without a parent advocate \((t = 6.25, p < .001)\) by the time of termination. Additionally, youth with relatively low levels of Problem Severity indicated an increase in scores regardless of the presence of an advocate. However, while the increase was not significant for either of the sub-samples, it is noteworthy that the non-PA group’s increase in Problem Severity for the Franklin-Butler sample amounted to over 10 points, in comparison to a less than three-point increase in the PA group.

Functioning subscale. Proximal reports on low Functioning youth indicated positive gains regardless of the presence of an advocate. This was true for both the Franklin-Butler sub-sample and the other large counties sub-sample. In the Franklin-Butler sub-sample youth with low levels of Functioning indicated a significant increase for youth with a parent advocate \((t = 2.9, p < .05)\) and without a parent advocate \((t = 2.48, p < .05)\) by the time of termination. Similarly, in the other large sub-sample youth with low levels of Functioning indicated a significant increase both for youth with a parent advocate \((t = 3.82, p < .05)\) and youth without a parent advocate \((t = 3.48, p < .05)\) by the time of termination.

In addition, high Functioning youth with a PA in both sub-samples indicated either unchanged scores or slight but non-significant increases in scores. The increase, however, was not significant. At the same time, relatively high Functioning youth without a PA in both sub-samples showed a decrease in Functioning scores. While this decrease was not statistically significant in either sub-sample, the Time 2 mean scores fell into the clinical range of Functioning levels for the Franklin-Butler non-PA group.

Hopefulness & Client Satisfaction with Services. While there are no theoretical grounds to suppose that the presence or absence of a PA would have any direct effect on Functioning or Problem Severity, there is reason to believe that PAs might have an impact on two other domains measured within the Ohio Scales: Hopefulness and Client Satisfaction with Services. To explore this more, sub-samples were created to incorporate mean splits on the Hopefulness and Satisfaction domains of the parent version of Ohio Scales scores at Time 1.

Reports on both groups of proximal reporters (youth with and without a PA) who were relatively low on Hopefulness indicated positive gains regardless of the presence of an advocate. The Franklin-Butler sub-sample indicated a significant increase in Hopefulness both for youth working with an advocate \((t = 2.93, p < .05)\) and youth without an advocate \((t = 3.84, p < .05)\) by the time of termination. Similarly, the other large counties sub-sample indicated a significant increase in Hopefulness both for youth working with an advocate \((t = 3.00, p < .05)\) and youth without an advocate \((t = 5.14, p < .001)\) by the time of termination. Reports from both groups of proximal reporters for the Other Large counties sub-sample who were relatively high in Hopefulness indicated decreases in hopefulness, again regardless of the presence of an advocate. A significant decrease was indicated both for youth working with an advocate \((t = 2.4, p < .05)\) and without an advocate \((t = 2.58, p < .05)\) by the time of termination. While there was a non-significant decrease in the Franklin-Butler sub-sample non-PA group, in the case of the PA group there actually was a slight and non-significant increase in Hopefulness.
Satisfaction subscale. Reports from both groups of proximal reporters with relatively low satisfaction levels at time of enrollment experienced positive gains regardless of the presence of an advocate. For the Franklin-Butler sub-sample a significant increase was indicated only for youth with a parent advocate \((t = 3.21, p < .05)\) by the time of termination. For the other large counties sub-sample a significant increase was indicated both for youth with a parent advocate \((t = 2.14, p < .05)\) and youth without a parent advocate \((t = 4.44, p < .001)\) by the time of termination. Additionally, youth with relatively high levels of satisfaction at time of enrollment indicated a decrease in satisfaction both for youth working with an advocate and without an advocate by the time of termination. This finding held for both sub-samples; however, these decreases were not significant.

Phase II: Understanding Parent Advocacy Models and Processes

The final two objectives of this research effort were to explore the backgrounds of parent advocates in relation to the specific services they provide to children and families and to better understand the processes for implementing parent advocacy services in Butler and Franklin Counties. Based on the findings from the FASTS data analyses, the research team recognized the need to explore potential explanations for the leveling out of empowerment levels and outcomes between groups that used advocacy services and those who did not. Early efforts explored how advocates might define different levels of work intensity in hopes that such delineation would allow quantitative analyses of differences among youth outcomes based on such PA involvement. However, these efforts resulted in what appeared to be rather arbitrary assignment of service dosages across levels and inconsistent perceptions among the PAs themselves. Thus, defining such levels of intensity are anticipated to emerge only from future data collection efforts using the Family Advocate Services Checklist (FACS) developed from this research.

Phase II Methodology

A focus group and individual interviews were conducted with PAs in both Butler and Franklin Counties. A total of 11 advocates participated in the study, five from Butler County and six from Franklin County. A principal investigator and the research associate together conducted both focus groups, each consisting of five participants. In Butler County the same five focus group participants engaged in an individual interview. In Franklin County four of the same five focus group participants plus one additional PA participated in an individual interview. The same principal investigator who conducted the focus groups conducted the interviews. All participants received $10.00 for their interview participation.

Focus groups and interviews were audio recorded and transcribed. The focus groups were analyzed using content analyses and the individual interviews were analyzed using open coding combined with content and thematic analyses. Atlas.ti qualitative software was used for the interview analyses. Findings from the focus groups and interviews were synthesized and are reported accordingly.

Findings from Focus Groups and Interviews with Parent Advocates

The focus groups and interviews conducted with PAs in each county provided a rich grounding for contextualizing parent advocacy efforts and the resulting advocate services checklist. The range of information collected during Phase 2 included background information on PAs, advocate perceptions of families’ decisions around engaging a PA, step-by-step processes used and services provided by PAs in their work with families, processes by which PAs determine service needs of families, PA perceptions of their service effectiveness, and PA perceptions of administrative support for their work.
Advocate experience and training. Advocates became affiliated with their structures in Butler and Franklin Counties through the regional FCFCs, the wraparound initiative, flyers and ads, word of mouth, and a private child serving agency. Formal advocate experience spanned from two to 42 years. All advocates in Butler County were parents of children with emotional and/or behavioral disorders, whereas this level of personal experience was not expressed by most advocates in Franklin County. Several PAs had moved from volunteer to paid advocacy positions; others described moving from formal work experience to volunteer advocacy. Examples of formal experiences ranged from foster parenting, to providing case management, to setting up and running programs. Experience included one-to-one work with families to extensive involvement with teams of people working with families. Participants similarly described experience working across the public and private systems serving children and youth. While the extent of systems experience varies, it would be difficult to name a system untouched by parent advocacy.

The training PAs had received, ranging from work-related experiences to their own families’ experiences, is as vast as their different types of advocate experience. The following quote captures the spirit of what seemed at the core of PAs whose training was described as “been there done that”:

In the beginning giving me that base was quite frankly having a child that I was told was going to be potentially removed from [school] . . . and so that took my life in the path that it has gone, and so I ended up navigating the school system myself and came to recognize that I had a lot of challenges and barriers working with that system. I walked out of my son’s first IEP meeting with a signed IEP, did not know for sure what I had signed, got outside the front of the building and finally looked at the document long enough to process a piece of it . . . Once it sank in . . . that very day I knew in my heart that I had to learn what this document was, what I had signed – the fact that I had signed something of which I was not knowledgeable about or comfortable with. Also I don’t know, I just had some feelings of anger in a way because I felt ganged up on. I was at the meeting alone . . . there were 10 school people and I was alone. So that was the beginning . . .

Only two PAs indicated formal education as contributing to their preparatory background. Most described various trainings, workshops, and conferences they had attended over the years affiliated with former and current staff development opportunities, foster parent training, community trainings, on-line training, and NAMI. Hand-to-Hand was a frequently cited NAMI training attended by PAs. Butler County PAs reported more consistent training since beginning their current affiliation than PAs in Franklin County.

Models of Parent Advocacy. Parent advocacy is a service intended to be offered to all families served through FCFC service coordination. NAMI Ohio’s Parent Advocacy Connection (PAC) provides a basic structure for guiding the training of parent advocates, setting some boundaries for the types of service activities expected of advocates and paying small stipends and travel reimbursement to parent advocates for their meetings with families. While all FCFCs in Ohio are able to access the NAMI-PAC infrastructure, each county is free to design its own parent advocacy program. Thus, implementation of parent advocacy, and ultimately utilization of advocacy services, looks very different across counties. The focus groups and interviews conducted for this study centered on examining the specific models of advocacy implemented in Butler and Franklin Counties in an effort to document the step-by-step processes involved in each model and learn about the specific actions PAs take as a function of their engagement with families. An extensive discussion and diagrams of the step-by-step structural processes of advocacy used in both Butler and Franklin Counties are provided in the final report to ODMH.

Butler and Franklin County models differed most significantly in that NAMI parent advocacy in Butler County was embedded within its county-wide structure for implementing a wraparound service.
delivery approach to families with children experiencing serious emotional and behavioral challenges. This structure eventually led Butler County to create a model which consists of paid staff advocates and volunteer community advocates in an effort to better meet the needs of families in the midst of serious crises upon entering services. Both staff PAs served in dual capacities, splitting their time as advocates and wraparound facilitators. One of them further served as the Parent Advocate Coordinator.

In contrast, NAMI parent advocacy in Franklin County was in a state of transition. During the time period of this study numerous personnel and structural changes occurred in the FCFC serving Franklin County, and a personnel change was made in the NAMI Regional Coordinator serving Franklin County. Although FCFC and the NAMI Regional Coordinator historically have played significant roles in the parent advocacy program of Franklin County, parent advocates reported very mixed levels of understanding about the parent advocacy model processes overall even before the changes in personnel. Parent advocates either described various ideas about how families were identified and referred for parent advocate services or they indicated little if any knowledge of these processes.

Reasons families decline Parent Advocate services. The reason most often cited by advocates for why families decline the services of a PA was that they believe parents simply do not have adequate information or an accurate understanding of parent advocacy and how it can support them. Interestingly, even with the more structured processes in place in Butler County, PAs in both counties indicated this as a primary reason for families declining services.

Because they don’t know what it is . . . So if they could understand that the person isn’t telling them what to do and also probably most importantly that the parent advocates are people who have been through all of this stuff, that would help them enormously. That never, in my opinion, has come across the strongest . . . When you hear the words parent advocate, it doesn’t mean safety. So to get that idea across would be essential.

The second most cited reason across counties for why parents declined advocacy services is that PAs believed parents were overwhelmed with the number of people already involved in their lives and did not want to include another person in their family. Advocates in both counties also suggested that some families may feel they have enough support and do not need the services of a PA. Additional potential reasons cited for families declining PA services included families’ sense of embarrassment about the chaos of their lives, families’ sense of hopelessness, language barriers, fears related to undocumented immigrant status, or concerns related to non-acceptance of people who are gay.

Planning and providing responsive Parent Advocate services to families. Parent advocates in both Butler and Franklin Counties appeared to operate from the philosophy that the services they planned and provided to families were based on the needs and desires of the family. Though PAs who were given information about the families prior to meeting with them used the information to give them a sense of the family’s situation, the PAs still remained grounded in the expressed needs of the family and its stated preferences for levels of PA involvement.

I’d say it is totally based on being responsive to what the family’s needs are . . . It’s almost like we kind of fill the gaps that they aren’t getting from everybody else.

It is very based on child and family needs because that is our role . . . We are there to support the health of that family and that is it. The health consists of everything...
PAs were specifically asked how their approach to families differs based on the family’s culture; i.e., how their approach varies with families whose cultural backgrounds differ based on race, ethnicity, age, faith, socioeconomics, etc. Participant descriptions in this regard were mixed in terms of articulating specific examples of tailoring services based on families’ cultural characteristics. Participants often seemed reticent to discuss their work with families in terms of recognizing differences. Rather, advocates preferred to discuss their approaches as “remaining open” to and “respectful” of families’ “uniqueness,” “developing relationships,” and “blending in” with families to serve them effectively.

Every family is different and every family is unique and their values and their outlook on life. I just respect them, and whatever they want, I do. Whatever they think is best for their family then I just trust them, and I respect them.

A few PAs stated that cultural differences were either not an issue for them or that they try not to let cultural differences interfere with their work. Three specific areas of culture generated the most discussion, race, faith, and socio-economics. Other areas of family culture mentioned include age, geographic culture, education, and family values. Thus, while advocates were often less able to identify particular examples of how they have worked with families in culturally specific ways, they did describe experiences in which they were clearly aware of cultural differences among families they serve.

Parent Advocate service activities. A large proportion of time in both the focus groups and individual interviews was devoted to examining the specific service activities in which parent advocates engaged with families. The intent was to delineate the range and array of services provided by PAs and to differentiate among levels of PA effort expended on each type of activity, ultimately resulting in the development of a data collection tool for tracking parent advocacy services in Ohio.

Table 2 summarizes the array of services described by PAs. Table 3 lists the specific roles of PAs when they attend meetings with service agencies, families, and the general community. The service activities most often discussed fall into two categories: one-on-one work with families and interacting with service systems on behalf of families. As indicated, there were numerous purposes for the one-on-one work with families. Service system interaction was the second primary area for PA services. Related activities consisted primarily of attending family meetings within systems, including schools, mental health agencies, juvenile/drug courts, child welfare, and medical systems. The most often mentioned and discussed interactions were meetings with school systems related to the child’s Individual Education Plan (IEP) as well as school-based activities outside of the IEP meetings. The second most cited type of meeting was related to mental health treatment and wraparound teams.

After learning from the focus groups about the extensive amount of time PAs appear to spend participating in family meetings we explored the specific roles of PAs while in the various meetings. Table 3 provides a snapshot of the supports PAs provide to families during meetings. As evidenced by the list, advocates serve in a multitude of capacities depending upon the needs of the families. Based on discussions with PAs throughout this research effort, the CFR developed the Family Advocate Services Checklist (FASC). The FASC, designed to catalog the types and amounts of PA services received by families, will assist NAMI Ohio in expanding its data collection efforts related to PA activities and will serve as the future primary data collection tool for the NAMI Ohio PAC. The tool is available from the researchers or NAMI Ohio.

Challenges and needed supports for Parent Advocates. The collaboration with NAMI Ohio also sought to better understand how NAMI and other stakeholders can support PAs in their advocacy efforts.
Thus, PAs were given opportunities to discuss challenges they encounter and to offer ideas for how they would like to be further supported by stakeholders. Advocates offered the following as noted challenges:

- It is often challenging to work around personal needs like child care and professional commitments to do advocacy work.
- Advocacy work sometimes takes time away from advocates’ own families.
- Documenting PA activities – Advocates sometimes feel undervalued since their time on the phone and certain other expenses they incur are not reimbursable; some advocates find the documentation burdensome.
- There is sometimes a lack of follow through on the part of clinical workers.
- Transporting families is not allowed, which advocates see necessary to their work.
- Some advocates feel that advocacy services are currently under utilized; the needs of children and youth are severe by the time they receive advocacy services.
- Advocates think there is a lack of marketing about advocacy services.

When asked to discuss the kinds of supports needed to address some of their concerns advocates offered the following ideas:

- Provide more learning and training opportunities for PAs
- Market program to agencies/community and increase PA recruitment in Franklin County
- Create processes to introduce PAs and help families understand the role of a PA
- Provide PAs more information about community resources
- Maintain regular PA meetings and check-ins with PAs about families they are serving
- Help with completing required documentation
- Provide backup coverage when assigned PA cannot make a meeting with a family
- Provide child care during PA meetings
- E-mail communication about PA activities and training opportunities
- Various improvements suggested for Franklin County model structure
- Monetary support for PAs to use in their work with families
- Assistance in getting agencies to follow through with services

Parent Advocate definitions of success. Finally, the lack of linkage found between child outcomes and the presence of a PA led us to explore how PAs describe their perceived effectiveness; i.e., how their work benefits the parents, children, and the family as a whole. While PAs offered an abundance of responses, a few common themes were expressed. Often cited was a belief that parents and children are empowered as a result of the PA work with families. Such empowerment includes increased confidence, comfort, and ability to advocate for one’s own family. Advocates believe they help to keep children and youth at home, in school, and out of jail, thus contributing to keeping families together. Several also believe their efforts help to prevent some of the feelings of isolation commonly experienced by many families who have children with serious emotional and behavioral disorders.
Table 2. Parent Advocate Services/Activities – Summary Table

<table>
<thead>
<tr>
<th>PA Activity</th>
<th>Description/Purpose</th>
<th>Mode of Communication</th>
</tr>
</thead>
</table>
| Interact with service systems on behalf of families | • Working with and involving systems to meet family needs  
• Assist in securing basic needs (food, clothing, housing) | • Attend face-to-face meetings  
• Telephone calls with providers |
| • Children’s Services  
• Hospital/Doctor  
• Juvenile Court  
• Private Agencies  
• Schools (e.g., intervention meeting, 504 meeting, expulsion hearing, IEP, IAT)  
• Treatment/Service/Wrap teams | | |
| One-on-one work with families | • Regular checking-in  
• Building trust with the family  
• Determine families’ needs  
• Empower families to attend meetings  
• Help families utilize natural supports  
• Help families write letters to service systems  
• Interact with child  
• Listen/Discuss/Provide Parent Guidance & Support  
• Mentoring/Coaching  
• Assist families in navigating systems  
• Link families to resources (e.g., car repairs, clothing, home schooling, food pantries, utility assistance, legal resources, doctors)  
• Outing with parent  
• Problem solve  
• Stress management  
• Help make funeral/post-death arrangements  
• On Call 24/7 | • E-mail with family  
• Telephone calls with families  
• Face-to-face meetings |
| Indirect community work for families | • Represent families on committees  
• Research resources for families  
• Provide support resources for families in need  
• Network with others to build/find supports for families | • E-mails  
• Telephone calls  
• Face-to-face meetings  
• Internet |
| Transportation | • Get families to appointments/meetings/car repairs  
• Run critical errands for families  
• Moving furniture  
• Get supplies, clothes, food  
• Pick kids from school | Not applicable |
Table 3. Parent Advocate Roles in Meetings

1. Ask Questions
2. Broker/Negotiator
3. Debriefing with families
4. Ensuring consumer voice
5. Help create service plan
6. Help families understand information/process/translate any jargon
7. Help families complete forms
8. Help prepare family for meetings
9. Intervening between families & systems
10. Listen
11. Seek clarification from providers
12. Take Notes
13. Talk on behalf of families/advocate for families/communicate family’s needs

Significance and Implications

In the statewide sample of FAST$ terminated youth, families of minority youth were more likely to utilize parent advocacy services as compared to families of white youth. Youth in large counties were more likely to receive parent advocacy services as compared to youth in medium or small counties. The analyses generated evidence that families without a PA were able to experience family empowerment at levels similar to families that received an advocate. With regard to youth outcomes, there were remarkable similarities between the statewide analysis of FAST$ youth who did or did not receive advocacy services and the Franklin-Butler and the Other Large counties sub-samples. Namely, parent advocacy did not seem to affect the significant changes in Outcomes as measured by the Ohio Scales.

Our research efforts to understand the relationship between parent advocacy and youth Outcomes led us to explore a combination of data and potential relationships among concepts. When the quantitative analyses failed to support an original hypothesis of relationship between PA involvement and improved youth Outcomes, we turned to parent advocates themselves to provide us with details about the models of advocacy used in two separate counties. Though no definitive relationships among the data were found in this study, one PA comment may shed some light on the lack of significant findings in the direct relationship between the presence of a parent advocate and youth outcomes:

*Because [parent advocacy] helps the kids to get what they need for their parents to be stronger, and they will know how to take care of themselves first . . . they [will] be able to take care of the kids.*

That is, perhaps PA services are more directly related to some measure of caregiver or family outcomes and families’ access to services than to short-term gains in hopefulness and youth outcomes. Parent advocates are working with families whose children are experiencing serious emotional and behavioral disorders. This reality must be considered in determining the type, amount, and time needed for positive change to occur in such familial environments. Hence, the leads gained through this study offer substantial insight for helping to determine future research questions.
REFERENCES


RECOVERY EMPHASIS
IN OHIO BEHAVIORAL HEALTH ORGANIZATIONS’ INPATIENT UNITS

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Statement of the Problem

Recovery in mental health is defined by the Ohio Department of Mental Health as “a personal process of overcoming the negative impact of a psychiatric disability despite its continued presence.” Mental health systems are increasingly being called upon to adopt a recovery orientation in services for people with serious mental illness. The literature currently provides only general guidance concerning changes that support recovery, which include a change in anticipated outcomes from mere maintenance to “reclamation of a full and productive life” (Dumont, Ridgway, Onken, Dorman & Ralph, 2006, p. 7); a shift to consumer-determined goals and treatment plans; and partnership relationships between consumers and mental health practitioners for empowerment of consumers (Dumont et al., 2006).

The Ohio Department of Mental Health's Integrated Behavioral Healthcare System (IBHS) is embracing the concept of recovery for people with mental illness and undertaking transformation of many different aspects of IBHS services, including an effort in the Behavioral Health Organizations' (BHOs) inpatient units called the Recovery and Rights Initiative (RRI). This research is a study of recovery-oriented organizational change associated with the RRI. The RRI involves three broad interventions: a change in the title and job description of the Client Rights Advocate (CRA) to that of Recovery and Rights Advocate (RRA). This marks a change in the role of the CRA from overseeing consumer rights to collaborating in and advocating for consumer recovery within the BHO. Another aspect of the RRI is to increase the consumer focus of the BHOs so that consumers have both increased choice and increased voice. Operationally, this change is expressed through such means as recruiting consumers to serve on standing committees. Recovery-oriented trainings for staff, consumers and families are the final aspect of the RRI. Recovery training materials have been developed and used in the BHOs in the past. Through the RRI, these and other materials are offered to staff, patients and families of patients. Recovery training includes partnerships with consumer groups and other processes, such as the Wellness Recovery Action Plan (WRAP).

Conceptual Framework and Study Design

Recovery is an elusive concept of study. One group of researchers has described phases of recovery, each with accompanying tasks of recovery (Spaniol, Wewiorski, Gagne & Anthony, 2002). Beginning with the onset of the disorder, diagnosis and early experience with the mental health system, the first phase is characterized as being overwhelmed by the disability. As individuals gain greater understanding of their disorder and control of symptoms, they enter a phase of struggling with the disability. Some individuals eventually achieve a level of effectively coping and having meaningful roles, characterized as living with the disability. A further phase of recovery is living beyond the disability. Tasks of recovery in the first phase include the individual developing an explanatory framework for
understanding the disorder, which could be assisted by education from professionals or other resources. Control over the illness itself is achieved through finding medications that control symptoms, developing coping skills to manage symptoms and stressors, and having the presence of helpful supports such as family members, financial resources, stable housing and treatment providers. Another research study identified aspects of the mental health service system that interfered with recovery, including “demeaned dreams, pessimistic staff, poor quality services, discounted spirituality, poverty, unwanted and long-term psychiatric hospitalization, lack of education and information about one’s condition and potential resources... paternalistic responses, lack of respect...stereotyping, labeling, discrimination” (Onken, Dumont, Ridgway, Dorman, & Ralph, 2002, p. viii-ix). According to Onken and colleagues, “Repeated encounters with such experiences instill fear, lack of confidence, and negative attitudes and beliefs” (p. ix).

Conceptually, recovery consists of internal conditions such as hope, healing, empowerment and connection (Jacobson & Greenly, 2001). Hope is the belief that recovery is possible. Healing includes reconceptualizing the mental illness as only one part of the self, reducing or overcoming stigma, and maintaining or increasing control in a number of spheres. Empowerment consists of autonomy, courage and assuming more responsibility. Connection refers to participation in the social world and fulfilling meaningful roles. External conditions necessary for recovery to be possible include “positive culture of healing,” and recovery-oriented services. Recovery-oriented services are described as attitudes of professionals who work with people with mental illness that promote consumer choice, empowerment and autonomy in the community and, more importantly perhaps, in the treatment setting; and services that incorporate the attitude that recovery is possible.

Adopting a recovery orientation is challenging in the inpatient setting in particular. Consumers in the inpatient setting, perhaps regardless of the time since their initial diagnosis, are likely to be in the acute phase of their illnesses, characterized by Spaniol and colleagues (2002) as “being overwhelmed” or “struggling” with their disability. Staff may have little experience with consumers who are “living with” their disabilities and living fuller lives. Professional training may also contribute to difficulties for staff embracing a recovery philosophy. “Traditional professional training has developed a workforce that has seen its role as a benign authority providing care for persons with severe, unremitting illnesses, unable to make rational decisions independently... Professionals have been trained to have limited expectations for lasting improvement and therefore, little hope has been offered to clients to establish a productive and satisfying life” (Sowers, 2005, p. 760). In contrast, providers' hope for better future outcomes for individuals with serious mental illness may be developed through training grounded in knowledge about recovery from serious mental illness (Russinova, 1999). In order to increase “hope-inspiring competence,” as Russinova calls it, practitioners need to be exposed to people with serious mental illness who are “living with” or “living beyond” their disabilities. This can be achieved through interaction with peer support networks and involvement of consumers who are not current patients in training and planning processes (Sowers, 2005). Another challenge to a recovery orientation is that the structure of inpatient services may limit consumer choice, autonomy and empowerment. Seclusion and restraint, for instance, are used to safeguard patients in instances of threats to safety of self or others. As well, liability concerns may limit patients' ability to move freely off the inpatient unit to remain connected to family or develop living skills in the community.

The literature on recovery orientation in mental health services offers detail on what needs to be changed from the current state, but less guidance on how to actually bring about such change. One way to influence practitioners' views of recovery may be through exposure to consumers who are further along in the recovery process. Another way to influence practitioners' views of recovery may be through personal communication with practitioners who already have a higher level of hopefulness about recovery.
and a higher level of hope-inspiring competence. The RRI is designed to bring about change primarily through education and advocacy.

The study is designed to document changes that accrue from the RRI, including changes in the recovery orientation of the BHO environment through such indicators as staff attitudes about recovery, use of seclusion and restraints, how consumers on committees are received by staff, consumer and family involvement in treatment planning, consumer and family member satisfaction with services, and continuity of care after patients return to their communities. Further, the study explores specific hypotheses about relationships among these indicators.

**Research Questions and Hypotheses**

Hypotheses include:

1) Consumer involvement on committees will positively affect staff attitudes about recovery.
2) Staff training in recovery will reduce use of seclusion and restraint and major incidents.
3) Consumer satisfaction will be positively related to a) number of consumers on committees, b) consumers on committees feeling their input is valued, c) consumer involvement in treatment planning, d) consumer involvement in recovery training, e) community provider involvement in treatment planning, and f) staff attitudes about recovery.
4) Family satisfaction will be positively related to a) family involvement in recovery training and b) family involvement in treatment planning.
5) Time to first psychiatric appointment after discharge will be positively related to a) consumer involvement in treatment planning, b) community provider involvement in treatment planning, c) consumer involvement in recovery training, and d) staff attitudes about recovery.
6) Readmissions within 30 days will decline over time.
7) a) The number of consumers on standing committees will increase over time, and b) consumers’ ratings of their influence will increase over time.

**Methodology**

The study uses administrative data routinely collected by the BHOs for many of the variables of interest, as well as an investigator-administered survey to measure staff attitudes about recovery, the Recovery Self-Assessment (RSA), Provider Version (O’Connell, Tondora, Croog, Evans & Davidson, 2005). The design is a time series with repeated measures of variables of interest. The research focuses on two sites, Appalachian Behavioral Healthcare, Athens Campus and Northcoast Behavioral Healthcare, Toledo Campus, chosen to provide variation in region of the state as well as urban/rural variation.

The researchers distributed the RSA to staff at the two sites in April and May 2007, with postage-paid return envelopes. The RSA is a paper-and-pencil survey that indicates degree of agreement with 36 statements about the extent to which various recovery-oriented practices and ideas are used in the setting. A total of 48 surveys were returned to the investigators, 32 (66.7%) from Athens and 18 (33.3%) from Toledo.
Preliminary Results

At this time, preliminary results are limited to baseline staff views of recovery activities (measured by the RSA). Items with the highest mean agreement (mean 4.0 or greater on a 1 to 5 scale) were: “Every effort is made to involve significant others (spouses, friends, family members) and other natural supports (i.e., clergy, neighbors, landlords) in the planning of a person's services, if so desired” (mean 4.1); “BHO staff do not use threats, bribes, or other forms of coercion to influence a person's behavior or choices” (mean 4.3); “BHO staff believe that people can recover and make their own treatment and life choices” (mean 4.0). In contrast, items with the lowest mean agreement were: “The BHO provides education to community employers about employing people with mental illness and/or addictions” (mean 2.8); “People in recovery can choose and change, if desired, the therapist, psychiatrist, or other service provider with whom they work” (mean 2.8); “Staff and BHO participants are encouraged to take risks and try new things” (mean 2.9); “People in recovery are regular members of BHO advisory boards and management meetings” (mean 2.7); “People in recovery work along side BHO staff on the development and provision of new programs and services” (mean 2.8); “BHO staff actively help people become involved with activities that give back to their communities (i.e., volunteering, community services, neighborhood watch/cleanup)” (mean 2.9); and “The development of a person's leisure interests and hobbies is a primary focus of services” (mean 2.9).

Significance and Implications of Results

Staff who responded to the first survey of recovery attitudes indicated at least a moderate degree of agreement with most of the items reflecting recovery ideas and practices. There was a higher degree of agreement with items that reflect several practices particularly important to a recovery perspective: efforts to involve family and significant others in planning for treatment, and avoiding coercion in treatment. In addition, staff expressed a higher degree of agreement with the belief that people with serious mental illness can recover and make their own life choices. Items with lower agreement indicate, however, that patient involvement in aspects of treatment related to planning for programs and everyday activities, such as leisure or volunteering, is less emphasized in the BHO setting. However, in part because the RSA instrument was designed for use in community mental health settings, some of the items seem to pertain less to the type of services and interventions that are available in the hospital setting than those in the community setting. Perhaps there are more appropriate, recovery-oriented activities and practices that are not reflected in the RSA instrument. Therefore, in order to gain a fuller understanding of staff views of recovery for patients in the BHO, qualitative, face-to-face interviews will be conducted during the early part of calendar year 2008.

REFERENCES


2 One item that reflects a community treatment model that would not be possible for an inpatient setting, “Most services are provided in a person's natural environment (i.e., home, community, workplace),” is omitted from this analysis.


EXPANDING UNDERSTANDING OF MENTAL HEALTH RECOVERY: 
EFFECTS OF STIGMA AND WORKING ALLIANCE 
ON THE QUALITY OF LIFE OF PERSONS WITH SEVERE MENTAL DISABILITIES 
RECEIVING COMMUNITY-BASED CASE MANAGEMENT SERVICES

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Recovery from schizophrenia, bipolar disorder, and major depression, which are known collectively as severe mental disabilities (SMD), is recognized as an achievable goal for persons in the public mental health system (Ohio’s Mental Health Commission, 2001). This focus on recovery represents a paradigmatic shift away from past beliefs about the long term, debilitating nature of SMD (Kruger, 2000). Mental health recovery represents a belief that persons with an SMD can, and often do, live self-defined, satisfying lives despite the apparent limitations of the disability and the societal stigma associated with SMD (Anthony, 1993).

This focus on recovery has led to a new understanding for how community mental health interventions should measure success (Anthony, Rogers, & Farkas, 2003). Quality of life (QOL) represents one outcomes measure of recovery (Liberman & Kopelowicz, 2004).

Researchers are working to develop a deeper understanding of the factors that facilitate mental health recovery and the recovery process, including environmental, psychological, and treatment-related factors (Loveland, Randall, & Corrigan, 2005). Two factors that potentially influence mental health recovery include the internalized stigma held by persons receiving psychiatric treatment, and the working alliance between clients of community mental health treatment and their treatment providers.

Recovery from SMD represents an achievable goal for persons with SMD. Yet, the stigma associated with having SMD is a barrier to mental health recovery (Perlick, 2001). While the symptoms and skill deficits associated with SMD can lead to negative outcomes for persons living with SMD, so can the effects of stigma (Corrigan, 2000). Stigma has been associated with negative life changes for persons receiving mental health treatment. Stigma has been related to individuals with SMD experiencing problems with unemployment and lower income (e.g., Link, 1982, 1987). In addition, stigma has been associated with negative social, psychological, and treatment outcomes such as decreased medication treatment compliance (e.g., Sirey et al., 2001), increased depressive symptoms (e.g., Link, Struening, Rahav, Phelan, & Nuttbrock, 1997), reduced self-esteem, and lower levels of perceived life satisfaction or quality of life (e.g., Markowitz, 1998; Rosenfield, 1997). Information from studies on mental illness stigma suggest that the stigma beliefs held by individuals engaged in psychiatric treatment can have a negative effect on the life chances of persons with SMD.

Studies of the working alliance between case managers and their clients have supported the powerful role that the development of a strong working alliance can have on consumer outcomes. In case management studies a strong working alliance has been associated with decreased psychiatric symptoms (e.g. Kinkenberg, Calsyn, & Morse, 1998; Neale, & Rosenheck, 1995), decreased hospitalizations and increased work participation (Priebe & Gruyters, 1993). Further, a stronger working alliance has been
associated with more positive attitudes toward medication compliance, greater satisfaction with treatment and more positive perceptions of life satisfaction/quality of life (e.g., Solomon, Draine, & Delaney, 1995).

Rosenfield (1997) has suggested that treatment and stigma have independent effects on quality of life. Her research suggested that stigma negatively affects quality of life and treatment-related variables positively impact quality of life. However, the same may not be true of the effects of the working alliance and stigma on quality of life. The working alliance has been viewed as a mediating process. For example, R. J. Calsyn and colleagues (2002) found that the working alliance served as a mediating process between types of case management received by homeless persons with SMD and their satisfaction with treatment. Thus, the working alliance may serve as a mediator between stigma and quality of life. That is, the working alliance may serve as a treatment-related process that can mitigate the effect of stigma.

**Research Questions**

The study had two primary research questions:

1) To what extent do clients’ perceptions of stigma and the working alliance between clients and their primary Assertive Community Treatment (ACT) worker independently affect clients’ perceptions of subjective quality of life among consumers of ACT and ACT-like services?

2) To what extent do clients’ perceptions of the working alliance between clients and their primary ACT worker mediate the relationship between perceptions of stigma and clients’ perceptions of subjective quality of life among consumers of ACT and ACT-like services?

**Research Methods**

This study employed a cross-sectional design. Data were collected from a Columbus, Ohio based mental health center. Data on stigma and working alliance were collected through face-to-face interviews. The researcher collected data on possible control variables from information routinely collected at the agency.

The researcher operationally defined stigma using Link’s (1987) 12-item devaluation and discrimination scale. This scale measures “…expectations as to whether most people will reject an individual with a mental illness as a friend, employee, neighbor, or intimate partner, and whether most people will devalue a person with a mental illness as less trustworthy, intelligent and competent” (Link & Phelan, 2001, p 373). Link (1987) argued that these beliefs become relevant for persons who receive mental health treatment; individuals view themselves and their social status based on how they view society’s appraisal of persons with SMD (hereafter referred to as stigma). The actual psychosocial process is not measured by this variable but the social knowledge, which is hypothesized as important to this process, was measured. The research used the average item score from this stigma scale.

The working alliance was defined using Bordin’s (1979) conceptualization of the working alliance. His definition consisted of three elements: a) the bond that exists between the therapist and the client, b) the agreement between the therapist and the client on the goals of therapy, and c) the agreement between the therapist and the client on the tasks of therapy. Bordin’s (1979) definition was intended to be pantheoretical and could be applied to any change-oriented relationship, including case management. The researcher operationally defined working alliance using the short version of Horvath and Greenberg’s (1989) Working Alliance Inventory, which uses Bordin’s definition. The scale was adapted to facilitate
the face-to-face interview format. The researcher used the total scale score for this working alliance variable.

The researcher operationally defined subjective quality of life using the subjective subscales from Lehman’s (1988) Quality of Life Interview. The specific quality of life domains measured were, living situation (six questions), daily activities (six questions), family support (four questions), social relations (six questions), finances (four questions), safety (five questions), and health (six questions). The researcher used the average items score for this scale.

The researcher recruited the sample from the lobby of the local mental health agency. Data were collected from June, 2006 to June, 2007. The research had as a goal to conduct 175 interviews. The researcher chose this sample size based on statistical power. The researcher recruited 175 consumers to participate in the study. The sample was significantly different from the population at the research site on race ($\chi^2 = 10.92 \ df= 2, p < .01$), gender ($\chi^2 = 7.47, \ df= 1, p < .01$), education ($\chi^2 = 54.3 \ df= 3, p < .01$), and primary diagnosis ($\chi^2 = 35.44 \ df= 3, p < .01$). The sample has more African Americans, males, persons with some college, and persons with schizophrenia and fewer persons with a primary diagnosis involving alcohol and other drugs, than did the population from the research site. The sample did not differ from the research site in relation to age ($\chi^2 = 6.81 \ df= 3, p > .01$).

The data collected from this study has a nested structure; consumers were nested within case managers. Consumers and their information represent one level (level one) and case managers represent another level (level two). Hierarchical linear modeling (HLM) is a regression technique used for data that have a nested structure and it controls for possible violations of the autocorrelation assumption of signal level regression techniques (Luke, 2002). HLM allows for the assessment of the effects of client-level variables, including the working alliance scale and the devaluation and discrimination scale, while controlling for the effects of case managers. The researcher used recommendations of Baron and Kenny (1986) to determine if working alliance mediated the effect of stigma on quality of life.

### Table 1. Comparison of Mean and Standard Deviation Statistics with Past Research

<table>
<thead>
<tr>
<th>Scales</th>
<th>Current Study</th>
<th>Past Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stigma: Devaluation and Discrimination scale</td>
<td>$\bar{x} = 2.71 \ SD = .46$</td>
<td>$\bar{x} = 2.8 \ SD = \text{N/A}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Link et al. (2002)</td>
</tr>
<tr>
<td>Working Alliance</td>
<td>$\bar{x} = 60.9 \ SD = 18.4$</td>
<td>$\bar{x} = 65.4 \ SD = 12.3$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Goldberg et al. (2004)</td>
</tr>
<tr>
<td>QOL: Total</td>
<td>$\bar{x} = 4.3 \ SD = 1.63$</td>
<td>$\bar{x} = 4.7$</td>
</tr>
<tr>
<td>QOL: Living situation</td>
<td>$\bar{x} = 4.6 \ SD = 1.63$</td>
<td>$\bar{x} = 5.0$</td>
</tr>
<tr>
<td>QOL: Daily activities</td>
<td>$\bar{x} = 4.54 \ SD = 1.4$</td>
<td>$\bar{x} = 4.6$</td>
</tr>
<tr>
<td>QOL: Family</td>
<td>$\bar{x} = 4.21 \ SD = 1.81$</td>
<td>$\bar{x} = 4.8$</td>
</tr>
<tr>
<td>QOL: Other people</td>
<td>$\bar{x} = 4.53 \ SD = 1.34$</td>
<td>$\bar{x} = 4.8$</td>
</tr>
<tr>
<td>QOL: Money situation</td>
<td>$\bar{x} = 2.93 \ SD = 1.79$</td>
<td>$\bar{x} = 3.8$</td>
</tr>
<tr>
<td>QOL: Safety</td>
<td>$\bar{x} = 4.57 \ SD = 1.53$</td>
<td>$\bar{x} = 5.1$</td>
</tr>
<tr>
<td>QOL: Health</td>
<td>$\bar{x} = 4.35 \ SD = 1.37$</td>
<td>$\bar{x} = 5.2$</td>
</tr>
</tbody>
</table>

*Note. QOL = Quality of Life*
Preliminary Results

The researcher calculated mean and standard deviation statistics for the devaluation and discrimination scale, the working alliance scale, and quality of life sub-scales. The researcher compared this information about the independent and dependent variables to what was known about these variables from the literature. Table 1 compares scores on the independent and dependent variables with information available in the literature.

This comparison of statistics between what was collected in the current study and what other researchers have found was comparable. Both the devaluation and discrimination scale and all of the quality of life subscales were measured using an average items score. Thus, the mean score on these measures can be placed within the context of the midpoint of the scale. The midpoint for the devaluation and discrimination scale was 2.5. The sample’s mean score of 2.71 was above the midpoint of the scale, which suggests that individuals, on average, believe society negatively evaluates persons with SMD. The midpoint for the quality of life variables was four. With the exception of money situation, all of the QOL subscales were above the midpoint of the scale, which indicates that individuals, on average, are satisfied with their quality of life. However, the sample was, on average, unsatisfied with their money situation part of their quality of life.

The researcher also explored the bivariate relationships between working alliance and stigma on quality of life. Table 2 provides these correlations.

Table 2. Correlations between Devaluation and Discrimination scale and the Working Alliance scale on Quality of Life

<table>
<thead>
<tr>
<th>Quality of Life scales</th>
<th>Devaluation &amp; Discrimination scale</th>
<th>Working Alliance scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>QOL: Total</td>
<td>$r = -.226, n = 174$</td>
<td>$r = .141, n = 174$</td>
</tr>
<tr>
<td>QOL: Living situation</td>
<td>$r = -.208, n = 174$</td>
<td>$r = .082, n = 174$</td>
</tr>
<tr>
<td>QOL: Daily activities</td>
<td>$r = -.270, n = 175$</td>
<td>$r = .156, n = 175$</td>
</tr>
<tr>
<td>QOL: Family</td>
<td>$r = -.301, n = 175$</td>
<td>$r = .164, n = 175$</td>
</tr>
<tr>
<td>QOL: Other people</td>
<td>$r = -.220, n = 175$</td>
<td>$r = .253, n = 175$</td>
</tr>
<tr>
<td>QOL: Money Situation</td>
<td>$r = -.321, n = 170$</td>
<td>$r = .093, n = 170$</td>
</tr>
<tr>
<td>QOL: Safety</td>
<td>$r = -.184, n = 169$</td>
<td>$r = .194, n = 169$</td>
</tr>
<tr>
<td>QOL: Health</td>
<td>$r = -.318, n = 161$</td>
<td>$r = .297, n = 161$</td>
</tr>
</tbody>
</table>

The correlations between the devaluation and discrimination scale and the quality of life subscales show that stigma was negatively related to each of the domains of quality of life. The more individuals agree that persons with SMD are devalued and discriminated against by members of society, the less favorably they appraise their quality of life. The variance in the quality of life subscales explained by devaluation and discrimination range from 3.3 percent for safety subscale to 10.3 percent for the money situation subscale. The correlations between working alliance and each of the domains of quality of life were positive. Individuals who have stronger working alliances with their case managers tend to
have higher appraisals of their quality of life. The variance in the quality of life subscales explained by working alliance ranged from less than one percent for living situation and health to 8.8 percent for the health subscale.

**Significance and Implications**

Comparisons of the sample with the population of persons receiving services from the research site indicate that the two samples are dissimilar. The dissimilarity of the sample from the population suggests that the findings may not be generalized back to the research site. On the independent and dependent variables, the current sample appears to be similar to the samples from other studies of these variables. As Table 1 shows, sample statistics on the independent and dependent variables were similar to what was found in past research.

The correlations between stigma and the quality of life variables mirror past research on stigma, which has suggested that devaluation and discrimination are negatively related to quality of life (Rosenfield, 1997). Likewise, most of the correlations between working alliance and the quality of life variables mirror past research on working alliance, which has suggested that working alliance is positively related to quality of life (Solomon et al., 1995).

The magnitude of the relationships between working alliance and quality of life was smaller than the magnitude of the relationships between stigma and quality of life. This finding suggests that perceptions of devaluation and discrimination have greater impact on quality of life than does working alliance. These initial findings suggest that both stigma and the working alliance are potential environmental or treatment-related variables that affect quality of life.

The next steps in the research will be to determine if working alliance mediates the relationship between stigma and quality of life. If working alliance does mediate the relationship, then working alliance would be one treatment-related process that can be used to temper the effects of stigma on quality of life. In essence, a strong working alliance would partly mitigate the negative effects of stigma. This finding would indicate that case managers should work on developing strong working alliances with their clients. In addition, community mental health administrators and policy makers should develop policies and programs that train case managers to develop strong working alliances with their clients. This potential finding does not mean that working alliance would totally dissipate the effects of stigma. Other interventions, which target stigma, need to be considered.

If, however, working alliance and stigma independently affect quality of life, then the working alliance would not be a treatment-related process that mitigates the effect of stigma. Like with the previous possibility, case managers would still want to work on developing a strong working alliance. However, a separate intervention for stigma would need to be developed to change the effects of stigma on quality of life. Link and colleagues (2002) suggest that to change the effects of mental illness stigma requires a macrostrategy. The authors found that microstrategies do not change perceptions of stigma, as measured using the devaluation and discrimination scale among participants of this type of intervention. Macro, anti-stigma strategies need to dramatically reshape how society views persons with SMD from a picture that is negative and harmful to persons with SMD to one that is relatively benign (Gill, 1994).
REFERENCES


INTENSIVE COMMUNITY-BASED TREATMENT OF CHILDREN, ADOLESCENTS, AND THEIR FAMILIES: THE EFFECTIVENESS OF INTEGRATIVE FAMILY AND SYSTEMS TREATMENT (I-FAST)

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Home-based treatment has been increasingly used for treating families with a child or adolescent who is at risk of out-of-home placement. Community mental health agencies are consistently challenged to develop and deliver realistic home-based, family-centered treatment that meets local needs, can realistically fit within available budget and resource capabilities, and is effective in accomplishing the following goals: (1) prevention of out-of-home placement or residential placement of the symptomatic child, (2) inclusive of families of diverse nature and problems that occur in the real world of community mental health agencies, (3) cost–effective in attaining the goals of the home-based treatment, and (4) functional collaboration with institutions that determine placement including but not limited to juvenile courts and children services.

Integrative Family and Systems Treatment (I-FAST) is a home-based treatment model that is developed and implemented from within the community mental health system. I-FAST assumes that (1) families are resilient and have strengths and resources to build solutions, (2) effective treatment of a severely disturbed child or adolescent necessitates treatment of the family system, and (3) effective treatment must include coordination and collaboration of diverse services serving the child and the family. Building on evidence-based literature regarding effective treatment for this population, I-FAST identifies three core treatment components that can be integrated into a coherent treatment protocol in working with children, adolescents, and families at risk. These three core treatment components are (1) establish and maintain a therapeutic alliance with families that will facilitate the collaborative development of a common understanding of the problem, behaviorally specific treatment goals, and activities to achieve these goals with the family (Bordin, 1979; Johnson, Wright & Ketring, 2002); (2) within the context of this therapeutic alliance, work collaboratively with the family members to create pattern change that will result in solving presenting problems and achieving treatment goals, and, thus, second-order change (Fraser & Solovey, 2007; Greene, 2002; Grove & Haley, 1993); and (3) develop and maintain collaborative teamwork with community agencies to address the organic needs of the family and the child (Fraenkel, 2006; Imber-Black, 1988: Madsen, 2007). The development of these core treatment components is based on evidence-based approaches including Brief Strategic Family Therapy (Szapocznik, Robbins, Mitran, Santisteban, Hervis & Williams, 2002); Solution-Focused Family Therapy (Berg & Kelly, 2000; Lee, 1997), Multidimensional Family Therapy (MDFT) (Hogue, Liddle, Becker & Johnson-Leckrone, 2002; Hogue, Liddle & Becker, 2002), Ecosystemic Structural Family Therapy (ESFT) (Jones & Lindblad-Goldberg, 2002); and Multisystemic Therapy (MST) (Henggler, Schoenwold, Rowland & Cunningham, 2002). The simplicity of the model aims at (1) reducing cost of training, (2) increasing utilization of case
managers’ and therapists’ prior expertise, (3) encouraging the agency to develop treatment expertise at the agency level, and (4) creating a context for focused treatment efforts and therapeutic interventions.

**Goals of the Study**

This is an intervention-development study that examines the efficacy of Integrative Family and Systems Treatment (I-FAST) in reducing out-of-home placement of at-risk children and adolescents and improving individual and family functioning. In addition, the study explores the process of and the skill components involved in inter-agency and intra-agency collaboration when providing I-FAST, which was hypothesized as a core treatment component of the model. We hypothesized that the implementation of I-FAST core treatment components of Therapeutic Alliance, Pattern Change Strategies, and Systems Collaboration would be effective in achieving the long-term outcomes goals of improved functioning and reduced behavioral and/or emotional problems in the symptomatic child, which would in turn lead to the avoidance of out-of-home placement of the child. Effective treatment should also result in achieving the intermediate treatment goals of increased parental efficacy in addressing their child’s issues, increased sense of empowerment of parents in relation to treatment providers, increased family participation in the treatment process, and improved family functioning.

**Methodology**

This study adopted a multi-method approach in its research design. The quantitative data were used to examine the effectiveness of I-FAST. The qualitative data were collected to explore the process of inter-agency and intra-agency collaboration, which was an integral part in the implementation of the I-FAST model. The triangulation of quantitative data with qualitative data provided a more comprehensive understanding of the implementation and outcomes of I-FAST as a treatment model.

**The Outcomes Study**

The study used a one-group pre- and post-test design with a six-month follow-up to examine the efficacy of I-FAST in treating families with children at risk of out-of-home placement. Participants of the research included families with children or adolescents at risk of out-of-home placement who were receiving I-FAST from Scioto Paint Valley Mental Health Center or Thompkins Child and Adolescent Services. The Court, Children’s Services, hospitals, or other mental health agencies could refer families to the programs. Both parents and the children who were 12 years or older were invited to participate in the study. Participation in the study was voluntary and formal written consent was obtained from all participants. Participating families received home-based services up to a six-week period with additional six-week increments negotiated based upon the family’s needs and progress. Training and ongoing consultation in I-FAST were provided to case managers and therapists to ensure the standardization of treatment conditions. The study used the I-FAST Checklist to measure treatment fidelity.

In this study, independent variables were the core treatment components of I-FAST, namely, therapeutic alliance, pattern change strategies, and systems collaboration. Dependent variables included the child’s placement status, level of functioning of the child, level of severity of problems, level of family functioning, family participation in the treatment process, parental competence in relation to the child, and parental competence in relation to service providers.

In this study, we used a multiple imputation method to simulate values for the missing assessments to reduce the adverse effect of missing observations in the data analyses. When there were a valid pre-treatment assessment and at least one valid assessment at post-treatment or six-month follow-up,
we imputed the missing assessment with available valid results along with the age and gender of the child of the family. We used PROC MI from SAS to create five imputed datasets and combined these results to simulate values for the missing observations (Schaffer & Olsen, 1998, Graham, Cumsille, Elek-Fisk, 2003). Details of the imputation for each variable are attached at the footnote of Table 1 and Table 2.

Structural equation modeling was used in the final phase of data analysis to develop a causal model that accounted for positive outcomes in children; the model included treatment variables, families’ profiles, demographic variables, and child’s outcomes. We also used the multiple imputation method to simulate the missing independent variables in the data for this analysis. Details of the imputation are attached at the footnote of Figure 2.

Qualitative study method. Qualitative data were collected to explore the process of and the skill components involved in inter-agency and intra-agency collaboration when providing I-FAST treatment for families with children who were at risk of out-of-home placement. A series of focus groups and interviews were conducted with I-FAST case managers and agency collaborators. We explored the following questions in relation to the process of systems collaboration: (1) What has been helpful in the process of building a beneficial collaborative relationship with other agencies especially when the collaborators have more power (e.g., placement-determining power) or status (e.g. judge V’s case managers)? (2) What are the key ingredients in creating a beneficial collaborative relationship? (3) What constitutes the core skill sets in facilitating a beneficial collaborative relationship? (4) How has the collaborative relationship been helpful or unhelpful to service provision? (5) What had been some obstacles that stood in the way of a collaborating process? (6) What is involved in the process of initiating as well as facilitating a beneficial collaborative relationship at an agency-to-agency level? (7) How do informants perceive the climate/culture of intra-agency collaboration at their respective office? What are agency policies, procedures, or practices that facilitate or hinder intra-agency collaboration?

The study used content analysis to understand informants’ perceptions of systems collaboration of I-FAST (Glaser & Strauss, 1967; Lincoln & Guba, 1985; Charmaz, 2000). The qualitative inquiry adopted the following data analyses procedures: informants’ responses and narratives during the focus group discussions or interviews were transcribed and computed. The software for qualitative inquiry--Atlas.ti 5.0 (2005) and QSR NUD*IST Vivo (Qualitative Solutions and Research, 1999)--were used in the data analysis process. All data were coded using an open coding process during the initial stage. Each "unit" with a single idea was identified, and a code was assigned to each of them. Rules of inclusion were made for each code to standardize the content. Codes that addressed similar themes were later organized under “tree nodes.” This process continued until the highest-level of conceptualization was attained that best described the characteristics of and connections among individual codes. After the first round of data analysis on all data, a revised list of codes was prepared and all data were coded again according to this new scheme.

Research participants. Findings of the outcomes evaluation were based on the 77 families who completed the program and provided data at pre-treatment and post-treatment. Among the 77 children, 64.9 percent were males and 35.1 percent females. The majority of child participants were students at middle (41.9%) and elementary schools (32.3%) while 14.5 percent were high school students and 11.3 percent were in kindergartens or preschools. Child participants were predominantly Caucasian (93.2%), with 2.6 percent African Americans, and 5.2 percent biracial. The ages of the children ranged from 4 to 17 (mean = 11.8, SD = 3.3) with 2.6 percent age 4, 19.5 percent between 5 to 8, 29.9 percent between 9 to 12, 31.2 percent between 13 to 14, and 16.9 percent between 15 to 17. Mental status examinations were conducted by licensed mental health professionals. Using DSM: IV criteria, almost half of the child
participants had a diagnosis of Hyperactive Attention Deficit Disorder (48.4%), 12.9 percent Adjustment Disorder, 11.3 percent Mood Disorder, 8.1 percent Depression Disorder NOS, 4.8 percent Oppositional Defiant Disorder, 3.2 percent Bipolar, 3.2 percent Disruptive Disorder, 1.6 percent Impulse-Control Disorder, 1.6 percent Dysthymic Disorder, 1.6 percent Anxiety Disorder, 1.6 percent Post-traumatic Stress Disorder, and 1.6 percent Trichotillomania. Regarding child participants’ placement status, 41.3 percent of the families had children in out-of-home placement before receiving I-FAST.

Regarding inter-agency collaboration, eight focus groups were conducted with 27 informants from collaborating institutions: four probation officers, one judge, three school principals, 11 school teachers, four professionals at child welfare agencies including one director at Children Services, one psychiatrist, and two from other service agencies. Two focus groups were conducted with informants pertaining to intra-agency collaboration. Informants consisted of six professionals and one student intern from two county offices at Scioto Paint Valley Mental Health agency.

Findings

Treatment fidelity: I-FAST Checklist. We had tapes from 35 initial family sessions and 17 week 6 family sessions. Intra-class coefficients (ICC) showed a satisfactory level of inter-rater reliability. The ICC for the Therapeutic Alliance Scale was .84, for Second-order Change was .86, and for Systems Collaboration was .88. We had tapes on nine consultation sessions. ICCs showed a satisfactory level of inter-rater reliability. The intra-class coefficient for Therapeutic Alliance Scale was .82, for Second-order Change was .88, and for Systems Collaboration was .80. The ICC for the overall I-FAST Checklist was .88.

The Outcomes Study

Child outcomes: The Ohio Scales (Ogles, Lambert, & Masters, 1996). Based on findings from paired-sample t-tests of the parents’, youths’, and case managers’ evaluations, there was a significant decrease in the severity of problem behaviors in the child and significant improvement in the child’s level of functioning from pre-treatment to post-treatment (Table 1). On average the youth assessed themselves at a lower level of problem severity (30.7) and a higher level of functioning (47.6) as compared to their parents (40.4 and 35.0, respectively) or case managers (37.9 and 34.1, respectively) at pre-treatment. The differences between the youth and their parents on evaluating problem severity and level of functioning remained at post-treatment. The differences between the youth and their case managers occurred mainly in the functioning domain.

Figure 1 shows the mean scores of Problem Severity and Functioning at pre-treatment, post-treatment, and six-month follow-up based on parents’, youths’, and case managers’ reports. Across multiple reporting sources, findings based on pairwise comparisons indicated there were significant changes from pre-treatment to post-treatment, significant changes from pre-treatment to six-month follow-up, and non-significant changes from post-treatment to six-month follow-up, for both Problem Severity and Functioning of the Ohio Scales (Table 2). In other words, significant positive changes in the children’s behavioral outcomes from pre-treatment to post-treatment were maintained six months after the families terminated from the program.
Figure 1. The Ohio Scales: Pre-treatment, post-treatment, and six-month follow-up.
Table 1. Paired-sample t-tests of The Ohio Scales (parents’, youths’ and case managers’ assessment), Parental Competence, and Family Participation at Pre-Treatment and Post-Treatment

<table>
<thead>
<tr>
<th></th>
<th>Mean score Pre-treatment</th>
<th>Mean score Post-treatment</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ohio Scales</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parents’ assessment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem Severity</td>
<td>40.4 (SD=20.6)</td>
<td>22.3 (SD=16.2)</td>
<td>8.557</td>
<td>75</td>
<td>.000</td>
</tr>
<tr>
<td>Functioning</td>
<td>35.0 (SD=17.3)</td>
<td>48.5 (SD=15.5)</td>
<td>-6.839</td>
<td>72</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Youth’s assessment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem Severity</td>
<td>30.7 (SD=19.4)</td>
<td>17.8 (SD=12.1)</td>
<td>4.178</td>
<td>38</td>
<td>.000</td>
</tr>
<tr>
<td>Functioning</td>
<td>47.6 (SD=19.4)</td>
<td>57.6 (SD=10.7)</td>
<td>-3.275</td>
<td>37</td>
<td>.002</td>
</tr>
<tr>
<td><strong>Case managers’ assessment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem Severity</td>
<td>37.9 (SD=15.1)</td>
<td>16.7 (SD=10.0)</td>
<td>12.409</td>
<td>71</td>
<td>.000</td>
</tr>
<tr>
<td>Functioning</td>
<td>34.1 (SD=12.7)</td>
<td>49.7 (SD=12.0)</td>
<td>-9.056</td>
<td>67</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Parental competence with children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>34.2 (SD=6.4)</td>
<td>36.2 (SD=5.3)</td>
<td>-2.509</td>
<td>63</td>
<td>.015</td>
</tr>
<tr>
<td><strong>Parental competence with service provider</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>54.3 (SD=7.0)</td>
<td>53.1 (SD=7.6)</td>
<td>1.110</td>
<td>69</td>
<td>.271</td>
</tr>
<tr>
<td><strong>Family participation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25.9 (SD=3.0)</td>
<td>25.3 (SD=3.7)</td>
<td>1.146</td>
<td>69</td>
<td>.256</td>
</tr>
</tbody>
</table>

Note. Data were imputed for missing assessments:
- Problem Severity (parent rating): 57 completed all three assessments, 2 missing in post-treatment only and 17 missing in 6 months follow-up only.
- Problem Severity (youth rating): 29 completed all three assessments, 1 missing in post-treatment only and 9 missing in 6 months follow-up only.
- Problem Severity (worker rating): 53 completed all three assessments, 4 missing in post-treatment only and 15 missing in 6 months follow-up only.
- Functioning (parent rating): 54 completed all three assessments, 2 missing in post-treatment only and 17 missing in 6 months follow-up only.
- Functioning (youth rating): 28 completed all three assessments and 10 missing in 6 months follow-up only.
- Functioning (worker rating): 51 completed all three assessments, 3 missing in post-treatment only and 14 missing in 6 months follow-up only.
- Parent competence with children: 44 completed all three assessments, 7 missing in post-treatment only and 13 missing in 6 months follow-up only.
- Parent competence with service provider: 51 completed all three assessments, 3 missing in post-treatment only and 16 missing in 6 months follow-up only.
- Family Participation: 51 completed all three assessments, 3 missing in post-treatment only and 16 missing in 6 months follow-up only.
Table 2. Pairwise Comparisons of the Ohio Scales (parents’, youths’ and case managers’ assessment), FACEII, Parental Competence, and Family Participation: Pre-Treatment (T1), Post-Treatment (T2), and Six-month Follow-up (T3)

<table>
<thead>
<tr>
<th></th>
<th>T1-T2</th>
<th>T2-T3</th>
<th>T1-T3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Difference</td>
<td>Std. Error</td>
<td>Sig.</td>
</tr>
<tr>
<td><strong>Ohio Scales - Parents’ Assessment</strong>&lt;br&gt;Problem Severity (n = 76)</td>
<td>-18.1</td>
<td>2.1</td>
<td>.000</td>
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<tr>
<td>Functioning (n = 73)</td>
<td>13.6</td>
<td>2.0</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Ohio Scales – Youths’ Assessment</strong>&lt;br&gt;Problem Severity (n = 39)</td>
<td>-12.9</td>
<td>3.1</td>
<td>.000</td>
</tr>
<tr>
<td>Functioning (n = 68)</td>
<td>9.9</td>
<td>3.0</td>
<td>.002</td>
</tr>
<tr>
<td><strong>Ohio Scales - Case managers’ assessment</strong>&lt;br&gt;Problem Severity (n = 72)</td>
<td>-21.3</td>
<td>1.7</td>
<td>.000</td>
</tr>
<tr>
<td>Functioning (n = 68)</td>
<td>15.6</td>
<td>1.7</td>
<td>.000</td>
</tr>
<tr>
<td><strong>FACEII</strong>&lt;br&gt;Family Cohesion (n = 60)</td>
<td>3.3</td>
<td>1.6</td>
<td>.049</td>
</tr>
<tr>
<td>Family Adaptability (n = 54)</td>
<td>3.2</td>
<td>1.3</td>
<td>.018</td>
</tr>
<tr>
<td><strong>Parental Competence with Children</strong>&lt;br&gt;(n = 64)</td>
<td>2.0</td>
<td>0.8</td>
<td>.015</td>
</tr>
<tr>
<td><strong>Parental Competence with Service Provider</strong>&lt;br&gt;(n = 70)</td>
<td>-1.2</td>
<td>1.1</td>
<td>.271</td>
</tr>
<tr>
<td><strong>Family Participation</strong>&lt;br&gt;(n = 70)</td>
<td>-0.6</td>
<td>0.5</td>
<td>.256</td>
</tr>
</tbody>
</table>

**Note.** Data were imputed for missing assessments, see note in Table 1.
Family Cohesion: 43 completed all three assessments, 5 missing in post-treatment only and 12 missing in 6 months follow-up only.
Family Adaptability: 37 completed all three assessments, 7 missing in post-treatment only and 10 missing in 6 months follow-up only.
Placement status. Data were obtained on the children’s placement status of 74 families in the study prior to their receiving treatment and at post-treatment. Among the 74 families, 40.5 percent (30) had children in out-of-home placement before receiving intensive community-based services in such settings as psychiatric hospitals (33.3%), juvenile detention centers (26.7%), foster care (10.0%), other youth facilities (6.7%), and residential treatment facilities (3.3%). At post-treatment, only 5.4 percent (4) of these families had children in out-of-home placement. Three of these were in psychiatric hospitals and one was in a residential treatment facility. Findings based on Wilcoxon signed-rank tests indicated significant differences in the placement status of children from pre-treatment to post-treatment with a significantly higher percentage of children in out-of-home placement at pre-treatment than at post-treatment (p = .000).

Of these 74 families, complete data were obtained on 58 of them regarding their placement status at the six-month follow-up. Among these 58 children, 15.5 percent (9) of the families had children in out-of-home placement. Specifically, five children were placed in psychiatric hospitals, one in a residential treatment facility, and three in juvenile detention centers. Findings based on the Wilcoxon signed-rank tests indicated significant differences in the placement status of children between pre-treatment to post-treatment, post-treatment to six-month follow-up, and pre-treatment to six-month follow-up. A significantly higher proportion of the children were in out-of-home placement at pre-treatment than at post-treatment. Although there was a higher percentage of children in placement at six-month follow-up than at post-treatment, there was still a significantly lower percentage of children in placement at six-month follow-up than at pre-treatment.

Family functioning: FACESII (Olson, Portner, & Bell, 1982). Data were obtained from 60 families regarding family cohesion at pre-treatment and post-treatment. At pre-treatment as well as at post-treatment approximately one-third of these families were found to be “Disengaged” (35.0% and 33.3%, respectively). At post-treatment fewer families were found to be “Separated” (23.3%) than at pre-treatment (31.7%), and slightly more families were found to be “Connected separated” (31.7%) at post-treatment than at pre-treatment (26.7%). In addition, the percentage of families considered to be “very connected” doubled from pre-treatment to post-treatment (6.7% vs. 11.7%). Findings based on Wilcoxon signed-rank tests, however, did not indicate significant differences in the pattern of distribution of family types from pre-treatment to post-treatment in the dimension of family cohesion. Findings based on pairwise comparisons indicated there were significant changes from pre-treatment to six-month follow-up, non-significant changes from pre-treatment to post-treatment, and non-significant changes from post-treatment to six-month follow-up in terms of family cohesion (Table 2). Overall, families tended to become connected and less separated and/or disengaged from pre-treatment to post-treatment and to six-month follow-up.

Data were obtained from 54 families regarding family adaptability at pre-treatment and post-treatment. There were fewer families in the categories of “Rigid” at post-treatment than at pre-treatment (16.7% vs. 29.6%) and more families in the categories of “Very Flexible” at post-treatment than at pre-treatment (16.7% vs. 3.7%). Wilcoxon signed-rank tests indicated significant differences in the distribution of family types from pre-treatment to post-treatment in the dimension of family adaptability (p = .010). Findings based on pairwise comparisons indicated there were significant changes from pre-treatment to post-treatment in family adaptability and non-significant changes from post-treatment to six-month follow-up (Table 2). Overall, families showed a trend of becoming more flexible and less rigid with treatment with these changes being maintained at six-month follow-up.
Parental competence with children (Lee, 2001). Data were obtained from 64 families on the Parental Competence with Children measure. Based on findings from the paired-sample t-tests of the parents’ evaluations, parents increasingly perceived themselves as being competent in parenting their children from pre-treatment to post-treatment (Table 1). Findings also indicated there were no significant changes from post-treatment to six-month follow-up on the Parental Competence with Children measure (Table 2). Overall, parents perceived themselves as becoming significantly more competent in addressing problems with their children with treatment and they were able to maintain these positive changes at six-month follow-up.

Family participation (Friesen, 2001). Seventy families provided data on the Family Participation measure as reported by the parents. At pre-treatment these families already reported very high levels of participation in the treatment process (mean = 25.9, SD = 3.0, out of a range of 7 to 28). Findings from the paired-sample t-test did not indicate significant differences in parental competence with service providers from pre-treatment to post-treatment based on the evaluation of parents (Table 1). Findings based on pairwise comparisons indicated there were significant changes from pre-treatment to six-month follow-up in family participation while there were non-significant changes from post-treatment to six-month follow-up (Table 2).

Parental competence with service providers (Lee, 2001). Seventy families provided data for the Parental Competence with Service Providers measure. Participating families reported very high competence with service providers at initial assessment (mean = 54.3, SD = 7.1, out of a range of 5 to 55) and at termination (mean = 53.0, SD = 7.7). Findings from the paired-sample t-tests did not indicate significant differences in parental competence with service providers from initial assessment to termination (Table 1). Findings based on pairwise comparisons also indicated there were no significant changes from termination to six-month follow-up (Table 2). In sum, parents already reported high competence with service providers at initial assessment and such a positive evaluation was maintained at termination as well as at six-month follow-up.

Family Therapy Alliance Scale (Pinsof, 2003). Family Therapy Alliance Scale is a 40-item scale that asks families to assess the quality of therapeutic alliance between the case manager and the family on a 7-point Likert scale with 7 meaning completely agree with the statement and 1 completely disagree with the statement (Pinsof, 2003). Seventy parents completed the Family Therapy Alliance Scale at termination. Findings indicated a mean score of 5.91 (range 4.1 to 7.0; SD = .82) on a scale of 1 to 7, meaning that families generally experienced positive relationships with their case managers.

Systems collaboration: The Systems Collaboration Scale (Lee & Greene, 2002). Findings indicated that there were variations in terms of how frequently the case managers collaborated with professionals from diverse institutions as well as how they evaluated the level of cooperation, helpfulness, and goal attainment of the collaborative process. Overall, case managers most often collaborated with other mental health professionals, psychiatrists, school teachers and personnel, court personnel, and children services case managers. They had less collaborative activities with professionals at hospitals and residential treatment facilities. In terms of the level of cooperation, case managers perceived mental health professionals (92.2%), psychiatrists (84.8%), staff at residential treatment facilities (66.7%) and school teachers and personnel (66.1%) as the four most cooperative collaborators. They only reported three types of professionals as non-cooperative: hospital personnel (20%), children services case managers (4.8%), and psychiatrists (2.2%). In terms of the level of helpfulness, case managers perceived mental health professionals (90.4%), psychiatrists (78.7%), and school teachers and personnel (62.3%) as the three most helpful collaborators. Case managers also perceived approximately one-third of
collaborators from children services, the court, and hospitals as very helpful. Regarding goal attainment, case managers perceived approximately two-thirds of collaboration with all institutions, with the exception of residential treatment facilities, as successful in accomplishing the goal of collaboration. On the other hand, there were also situations where the goal of collaboration was unmet: 33.3 percent of goals were unmet with residential treatment facilities, 16.7 percent with hospitals, 9.1 percent with children services, 7.1 percent with the court, 5.8 percent with other mental health professionals, and 4.9 percent with schools.

The Model

The study used AMOS 4.0 to test the hypothetical model regarding the effect of I-FAST on child and family outcomes. We used child and family outcomes data obtained at termination to test the model. We did not include Pattern Change Strategies in the model because of a lack of a standardized measurement of this variable in the study. In addition, we used data on Systems Collaboration with Schools in testing the model because school professionals constituted the largest group of collaborators in our home-based programs. We used multiple criteria to compare the models: the $\chi^2$ Goodness-of-fit Index (GFI), Adjusted Goodness-of-fit Index (AGFI), and Root Mean Square Error of Approximation (RMSEA). The mean-adjusted $\chi^2$ is a robust measure of differences in fit between models.

The initial result of the hypothetical model lacked a good fit to the data. Parameters in the hypothetical model were non-significant for the paths from Therapeutic Alliance and Systems Collaboration to Parental Competence with Service Providers, Family Participation, and Placement status. One plausible reason was the lack of variations in these three outcome variables at termination. Parents consistently provided high ratings on Parental Competence with Service Providers (mean = 53.0, $SD = 7.7$) and Family Participation (mean = 25.4, $SD = 3.7$). In addition, only three children were in out-of-home placement at termination. We adjusted our model parameters accordingly and arrived at a final model that showed a good fit to the data [$\chi^2 = 5.623$, $df = 9$, $p = .777$, $n = 60$]; GFI = .974, AGFI = .921, RMSEA = .000, PCLOSE = .845]. Figure 2 shows findings of the final model in which we modified the parameters and excluded Parental Competence with Service Providers, Family Participation, and Placement status in the model. Data on 60 children with school collaboration were included in the final model. Demographics of children included in the model were consistent with the demographics of the total sample.

The final model accounted for 21 percent of the variance in Problem Severity in Children, 28 percent of the variance in Level of Functioning in Children, 22 percent of the variance in Parental Competence with Children, and 35 percent of the variance in Family Functioning as indicated by Family Type. The final model indicated that Therapeutic Alliance positively predicted Parental Competence with Children, Family Functioning, Functioning in Children, and negatively predicted Problem Severity in Children. Therapeutic Alliance also positively predicted Functioning in Children and negatively predicted Problem Severity in Children, mediated by Parental Competence with Children. Systems Collaboration with School positively predicted Parental Competence with Children, which positively predicted Functioning in Children and negatively predicted Problem Severity in Children. Family Functioning was also found to positively predict Functioning of children and negatively predicted Problem Severity of children. In sum, Therapeutic Alliance had both direct effects and indirect effects on the child’s outcomes while Systems Collaboration primarily predicted the child’s outcomes through its impact on Parental Competence with Children.
Figure 2. Final model of I-FAST and Outcomes ($n = 60$).

Note. Imputed data were used in the above model; data were imputed for the following assessments: 3 in Therapeutic Alliance, 9 in Parental Competence with Children, 13 in Family Functioning, and 2 in Cooperation in School Collaboration.
Qualitative Data

A detailed description of findings of inter-agency and intra-agency collaboration is available from the authors.

Inter-agency collaboration. Findings based on qualitative inquiry of systems collaboration provided useful descriptions regarding the process of developing beneficial collaboration between intensive community-based programs and other involved professionals from diverse disciplines and institutions at the inter-agency level. Collaboration was perceived as a relational and/or interpersonal activity. The narratives of informants who were collaborators from diverse institutions and disciplines described a developmental process of building collaborative relationships that was preceded by a testing period where there was only superficial or administrative contact. Successful collaborative relationships were initiated by a process of developing trust, which led to relationship building and collaboration in providing services to families. The process of developing trust was facilitated by effective treatment outcomes in addition to particular relational and communication skills of case managers. Key ingredients and core skills of collaboration included different aspects of interpersonal skills (e.g., available, responsive, being visible, sharing, mutual support, honesty, ability to work together, listening skills, etc), attitudes (e.g., trust, mutual respect, willing to accommodate, working together, etc), professional qualities (e.g., confidentiality, follow-through, competence, advocate for community, dependable, work hard, etc), and contextual factors (community characteristics, inter-agency dynamics, etc).

Successful inter-agency collaboration not only benefited the families that led to positive outcomes and effective treatment, it also benefited the collaborating professionals both professionally and personally. Perceived obstacles of collaboration mostly related to concerns about resources, inherent differences in the mandates, philosophies, and practices among institutions and/or disciplines, and problems in communication.

Intra-agency collaboration. Collaboration between I-FAST case managers and other professionals within the agency shared similarities and differences with collaboration at the inter-agency level. Informants, who were mostly I-FAST case managers, described a similar process of developing trust that was facilitated by a similar set of skills and attitudes as narrated by inter-agency collaborators. In addition, informants described similar benefits of successful collaboration that positively affected the families as well as the collaborating professionals. In particular, the mutual sharing and support among professionals within the agency, as well as positive outcomes for families, served as an effective buffer to burnout for collaborating professionals, particularly the case managers. Collaboration was clearly described as a relational activity that did not easily lend itself to be prescribed or regulated by policies.

Narratives of informants pertaining to intra-agency collaboration, however, emphasized the value of and aspiration for non-hierarchal collaboration. Such narration was largely absent in the narratives about systems collaboration at the inter-agency level. It is plausible that such a difference is related to the different players of collaboration at the inter-agency and intra-agency levels. While the major players of collaboration at the inter-agency level included professionals from schools, the court, and children services, the primary players of collaboration at the intra-agency level consisted of the center director, clinical consultants, other mental health professionals, psychologists, and psychiatrists. Different players of collaboration naturally resulted in differences in the characteristics and patterns of collaboration at the inter-agency and intra-agency levels.
Informants described both inter-agency and intra-agency collaboration as interpersonal or relational acts. I-FAST case managers initiated the collaborative process by actively engaging collaborators on personal levels. Such a collaborative process also was anchored in effective and realistic treatment. In addition, case managers played a central linking role in the collaborating process that positively affected treatment outcomes for families.

Summary of findings

Findings of the project provided initial empirical evidence that supports the effectiveness of I-FAST. Findings of the intervention development study indicated that there was significant improvement from pre-treatment to post-treatment in child’s and family outcomes in terms of a significant decrease in problem severity and an increase in the level of functioning of children; a significant increase in the level of cohesion and adaptability in these families; a significant decrease in the number of children in out-of-home placement, and a significant increase in parental competence with children. All observed changes were significant from pre-treatment to termination with the families able to maintain these positive changes at six-month follow-up. Despite that significantly more children were placed in out-of-home placement at six-month follow-up than at post-treatment, the number was still significantly less than the number of children in out-of-home placement before they participated in the program. In addition, families indicated a high level of competence with service providers, a high level of participation in the treatment process, and a high-quality therapeutic alliance with case managers or therapists throughout the evaluation period. Regarding systems collaboration, case managers collaborated most often with other mental health professionals, psychiatrists, schools, children services, and the court. Based on case managers’ reports, they found other mental health professionals, psychiatrists, and schools especially cooperative and helpful in the collaborative process. Despite different perceptions of the degree of cooperation and helpfulness of professionals from diverse institutions and disciplines, approximately two-thirds of all collaborative activities attained or partly met the goal of the collaboration.

The study used SEM to develop a model that accounted for outcomes in children. Findings based on AMOS indicated that Therapeutic Alliance was predictive of positive child outcomes, increased parental competence with children, and improved family functioning with both direct effects and indirect effects on the child’s outcomes. Systems Collaboration primarily predicted the child’s outcomes through its impact on Parental Competence with Children.

The major limitations of the study included a limited sample size, lack of a control group, use of self-reports, and the problem of attribution. However, this study is an important first step in showing the feasibility of I-FAST as a home-based treatment approach, and setting the stage for a larger scale randomized study to test its effectiveness.

Findings based on qualitative inquiry of systems collaboration provided useful and detailed descriptions about the process of developing beneficial collaboration between home-based programs and other involved institutions as well as within the agency level. Systems collaboration was clearly described as a relational activity. Recognizing the inherent difficulties of collaboration among different disciplines and institutions, informants described a particular set of skills and attitudes that were facilitative of successful collaboration in providing home-based treatment. The development of trust is essential in the collaborative process; it leads to successful collaboration between diverse institutions and disciplines and brings diverse benefits to both the collaborating professionals and the families.
**Conclusion**

Integrative Family and Systems Treatment (I-FAST) is a home-based model that is developed and implemented from within the community mental health system. I-FAST was developed based on evidence-based common factors to intervening with at-risk families and their children and adolescents. Clinically speaking, I-FAST attempts to explore the appropriateness and feasibility of integrating multiple evidence-based interventions conceptually and methodologically in treatment. By selecting second-order change as the principle that guides the focus of intervention, I-FAST opens the door for case managers and therapists to select from a wide range of therapy models and work collaboratively with the families. Such an inclusive approach empowers therapists and case managers to utilize and build upon their existing expertise in the treatment process and to work within a relatively uncomplicated treatment framework, while still being effective in providing treatment for families. In terms of service provision, because I-FAST focuses on evidence-based common factors, meshing with the realities of everyday practice demands on staff, reducing the cost of training, increasing the utilization of case managers’ and therapists’ existing expertise, and empowering the development of expertise at the agency level, I-FAST can provide an alternative, feasible, and effective home-based treatment model that addresses the challenges of cost containment, facilitates continuity of expertise in home-based treatment at the agency level, and meets realities of practice demands to serve families with children at risk of out-of-home placement. Findings of the study provided initial empirical evidence that I-FAST was effective in improving children’s outcomes and family functioning. Future studies with more rigorous research designs will provide more conclusive evidence of I-FAST as an alternative, feasible, and effective home-based treatment model for treating families with children at risk of out-of-home placement.

**REFERENCES**


Presentations of the Research


Other Publications of the Research


TREATMENT OF TRAUMA SURVIVORS:
EFFECTS OF MEDITATION PRACTICE ON CLIENTS’ MENTAL HEALTH OUTCOMES

The Ohio State University
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Trauma has pervasive and devastating impacts on individuals. Trauma survivors, especially those with prolonged histories of interpersonal abuse, suffer from other “co-morbid conditions,” including but not limited to diagnoses related to substance abuse problems, mood disorders, including depression and manic-depressive disorders; and dissociative identity disorder (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Foa, Keane, & Friedman, 2000). PTSD clients also have unusually high utilization rates of psychiatric services (Macy, 2002). While PTSD is now being fully recognized as a mental health condition, helping professionals are still struggling to find viable and evidence-based treatments for PTSD (Foa et al., 2000). Conventional treatment efforts involve mostly cognitive-behavioral therapy, which has received the greatest research attention and support for its efficacy (Rothbaum, Meadows, Resick, & Foy, 2000). Findings, however, revealed that PTSD subjects with prolonged histories of interpersonal abuse responded adversely to prolonged exposure and cognitive restructuring treatment. Treatment was related to increased severity in PTSD symptoms. Bessel van der Kolk, who is currently the Medical Director and Founder of The Trauma Center in Massachusetts, has identified important evidence in neurobiology research that questions the utility of cognitive-behavioral approaches with this population (van der Kolk, 1994; van der Kolk, McFarlane, & Weisaeth, 1996). Research regarding the neurobiology of trauma shows that trauma disrupts the stress-hormone system, influences the entire nervous system, and prevents people from processing and integrating trauma memories into conscious mental frameworks. Because of these complex physiological processes, traumatic memories stay in the brain’s “nether regions,” which are the nonverbal, nonconscious, subcortical regions (amygdala, thalamus, hippocampus, hypothalamus, and brain stem), where they are not accessible to the frontal lobes, which are the understanding, thinking, and reasoning parts of the brain (van der Kolk, 1994). As such, prolonged exposure and cognitive restructuring approaches may not be helpful and can even be harmful to some trauma survivors because when clients are encouraged to re-experience and cognitively process the trauma (a routine procedure in prolonged exposure), they could be so overwhelmed by intense negative emotions that they can no longer consciously process the trauma (van der Kolk, 2002).

Another major concern for the recovery process of trauma survivors is to help them learn how to live beneficially in the present and not under the shadow of trauma. The characteristic PTSD symptoms as described in DSM-IV-TR include: (a) distressing and intrusive thoughts, feelings, and images that recapitulate the traumatic event, (b) psychological and/or physiological reactivity to internal or external cues that symbolize an aspect of the traumatic event, (c) persistent avoidance of stimuli associated with
the trauma and numbing of general responsiveness, and (d) persistent symptoms of increased arousal and vigilance (American Psychiatric Association, 2000). These symptoms describe a situation in which the trauma survivor is still living in the past trauma. Psychologically and physiologically trauma survivors react to present-time experiences with diminished emotional regulating ability—they react as if they are presently experiencing the original trauma(s). Effective treatment for trauma survivors will need to accomplish the following tasks in addition to other treatment goals: 1) foster clients’ capacity to recognize and attend to current experiences as well as to differentiate them from past traumatic experiences so clients have increased ability to uncouple current physical/psychological sensations from trauma-based emotional and behavioral responses; 2) enhance clients’ ability to stay physiologically calm, which constitutes a necessary condition for clients to engage beneficially in treatment that assists them in processing and integrating their trauma experiences; and 3) enhance clients’ self-regulating abilities so they make choices that are responsive and beneficial to their current needs and situations.

**Theoretical Foundations Regarding Meditation and Treatment of Trauma Survivors**

Meditation is a set of practices that has been around for more than 2,500 years, with roots in Buddhist and other contemplative traditions. Meditation not only brings about a relaxation response (Lazar, Bush, Gollub, Fricchione, Khalsa, & Benson, 2000); through meditation, one also cultivates the ability to create a mindful existence, know the state of the mind and body at all times, reduce negative thoughts associated with anxiety, worry, and stress, and enhance positive thoughts (Kabat-Zinn, 1994). Meditation should have positive impacts on trauma survivors as postulated by the following theories:

**Physiological effects of meditation.** Early studies in the 1970s (Benson, 1975; Lazar et al., 2000) found that meditation was a stress-reducing phenomenon that brought about “the relaxation response” by inducing favorable brain waves and lowering the physiological and biochemical byproducts of stress, such as lowered respiration rate, decreased heart rate, and lowered blood pressure. Empirical evidence indicates that meditation is associated with reduced salivary cortisol levels, increased salivary total protein levels, lowered systolic and diastolic blood pressures, and reduced pulse rate (Sudsuang, Chentanex, & Veluvan, 1991). Enhancing clients’ ability to stay physiologically calm is crucial in successful treatment with trauma survivors because it will increase clients’ ability to engage beneficially in treatment and successfully process and integrate their trauma experiences.

**Self-determination theory.** Theories on self-regulation have long recognized the importance of self-awareness and attention in maintaining and enhancing psychological and behavioral functioning. Self-determination theory as proposed by Deci and Ryan (1980) posits that open awareness is essential in facilitating the choice of behaviors that are consistent with one’s needs, values, and interests. Awareness facilitates attention to prompts arising from basic needs, making a person more likely to regulate behavior in a way that fulfills personal needs (Brown & Ryan, 2003; Ryan & Deci, 2000). PTSD symptoms can be partly perceived as the consequences of clients with PTSD being trapped in the past traumas and not able to live in the present. Mindfulness, by enhancing one’s awareness, facilitates attention to cues for basic needs, making one more likely to regulate behavior to fulfill individual needs congruent to his or her well-being instead of being trapped by past trauma. In addition, Ken Wilber (2000) suggests that by bringing awareness to experiences that have been alienated, ignored, or distorted, the “hidden objects” are converted into “conscious objects” that can be differentiated from, transcended, and integrated into the self. The vivid awareness of current experience, undistorted by past trauma, will enhance clients’ abilities to engage in new experiences, feelings, relationships, learning, ventures, and perspectives that are crucial in their recovery process (Herman, 1992).
**Systems perspective.** Systems perspectives and cybernetic theories describe how the self-regulation process occurs through the operation of feedback mechanisms (Becvar & Becvar, 2003). Feedback processes are inherently self-corrective and self-regulating mechanisms that enable the system to sustain itself in a functional way. However, in order for a system to be self-corrective, there need to be variations in input to activate the self-regulating abilities of the systems (Becvar & Becvar, 2003). In human beings, attention to internal and external stimuli constitutes input for a person to initiate the self-regulating feedback processes. As such, attention has been described as key to the communication and control processes that underlie the regulation of behavior (Carver & Scheier, 1981). A core problem for treating trauma survivors is that trauma-based emotional, cognitive, and behavioral responses become the dominant input that initiates feedback processes, which continually reinforce PTSD symptoms. Meditation practice enhances clients’ ability to attend to and be aware of internal and external stimuli that exist in the present moment. A keen awareness of the present leads to varied input that will activate a different feedback process in clients, one that is more responsive to current needs, demands, and reality. In other words, the ability to observe, be openly aware, and attend to emotions, even distressing ones, and accept them for what they are increases clients’ capacity to develop psychological resources that allow them to increase self-regulation of their emotions in a beneficial way (Linehan, 1993).

**Research Objectives**

This study examines the effectiveness of a six-week meditation curriculum on mental health outcomes among female trauma survivors. The study will also explore the utility and cultural adaptability and appropriateness of using meditation, a primarily Eastern-based practice, as an intervention with clinical populations in the U.S. The study attempts to answer and explore three specific questions: (1) Is a 6-week meditation curriculum effective in reducing PTSD symptoms of research participants? (2) Is a 6-week meditation curriculum effective in improving emotion regulation abilities of research participants? (3) How did research participants understand and perceive their meditation experience and its potential benefits? The following figure describes the framework of the study.
Table I. Study Instruments and Administration Schedule

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Reporting sources</th>
<th>Pre-treatment</th>
<th>Two-week</th>
<th>Post-treatment</th>
<th>Three-month</th>
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**Methodology**

This is a randomized controlled study with a longitudinal design. Clients at Amethyst, Inc., who have consented to participate in the study, are randomly assigned to the experimental group and the control group. Amethyst, Inc. is a substance abuse treatment and housing program for homeless women and their children. The study will include 60 clients in the experimental group and 40 clients in the
control group. Outcome indicators include participants’ and/or therapists’ evaluation of participants’ levels of functioning, PTSD symptoms, state of mindfulness, positive emotions, and emotion regulation abilities at pre-treatment, post-treatment, and six-month follow-up. The study is also collecting information on salivary cortisol levels at five assessment points to measure the level of stress in participants (Table I). Qualitative data are being collected through individual interviews and focused group interviews to explore participants’ understanding and experience of their meditation experience and its potential benefits.

Treatment conditions consist of a six-week meditation curriculum with the first two weeks devoted to Breathing Meditation, the second two weeks to Nying-je Meditation (Compassion), and the final two weeks to Tonglen Meditation (Loving kindness). Geshe Kalsang Damdul, the Assistant Director of the Institute of Buddhist Dialectics in Dharamsala (which is under the direct administration of His Holiness the Dalai Lama), is an expert on using meditation practice for treating trauma survivors. He is assisting with the development of the meditation curriculum and providing the meditation instruction.

**Potential Significance of the Contribution of Meditation for Treating PTSD**

One significant potential contribution of meditation is the way meditation practice empowers female trauma survivors in their process of recovery. Clients can practice meditation on a regular basis individually once they learn how to do it and if they find it beneficial. Meditation can be practiced any time, anywhere, and is not dependent on any medication, equipment, facilities, or professional assistance. This six-week meditation curriculum, if found to be effective, will provide an empowering, low-cost, and convenient intervention for helping trauma survivors in their recovery process. It will also provide a new option for treating clients with PTSD, such as combat soldiers returning from war, or victims of natural disasters, such as Hurricane Katrina.

**REFERENCES**


Aggressive behavior in people with intellectual and developmental disabilities (I/DD) presents many difficulties and challenges. Prevalence of aggression in this population has been estimated at 22 percent, and considerable resources are expended in the management and treatment of this problem (National Institute of Health, Consensus Development Panel on Destructive Behaviors in Persons with Developmental Disabilities, 1989). Violent behaviors have been linked to lessened community job opportunities (Block & Rizzo, 1995) and increased social isolation (Golden & Reese, 1996). Aggression is the primary reason for prescription of psychotropic medications (Baumeister, Todd, & Sevin, 1993) and institutional placement referral (Meador & Osborn, 1992) for people with I/DD diagnoses. The seriousness of the problem of aggression among people with intellectual and developmental disabilities is well established, and so, therefore, is the importance of having valid and reliable measurement tools for assessing aggression.

Researchers have employed certain distinctions between types of aggressive behaviors. Among these are verbal versus physical, and overt versus covert, direct versus indirect (Bjorkqvist, Osterman, & Kaukiainen, 1992). One of the most important distinctions may be that between aggressive behavior which is primarily motivated by the desire to acquire some tangible reward/goal or for intimidation ("proactive aggression"), and that which is more impulsive, annoyance-motivated, or occurs in response to a perceived threat ("reactive aggression"). Dodge and Coie (1987) developed the first empirically-derived instrument to assess these two constructs. This was later followed by additional efforts to achieve this distinction (e.g., Brown, Atkins, Osborne, & Milanow, 1996; Little, Henrich, Jones, & Hawley, 2003).

A reliable, valid method for differentiating people whose aggressive behaviors are more instrumental than impulsive, and vice versa, could be valuable to clinicians in the I/DD field. For example, research supports the idea that violent offenders diagnosed with psychopathy engage in more instrumental aggression than non-psychopathic offenders (Cornell et al., 1996). On the other hand, one might expect a high rate of reactive violence to be associated with an impulse-control disorder, or Cluster B personality disorders which are marked by “disturbance in impulse control and emotional dysregulation” (DSM-IV; American Psychiatric Association, 1994). Diagnosis and treatment planning could be enhanced by a good proactive/reactive scale. Of course, such an instrument might also be of use to researchers for screening, determining need for treatment, assessing outcomes, and so forth.

Some (e.g., Bushman & Anderson, 2001) have questioned the scientific and clinical utility of the reactive and proactive aggression constructs, given the high correlation found between them in several studies. This problem was examined by Polman et al. (2007) in a meta-analysis of studies using the reactive/proactive distinction. Polman et al. reported that most of these studies did find relatively high correlations between the two constructs. However, very low, even negative, correlations between
proactive and reactive aggression were found in the very small number of studies which sought to disentangle types of aggression and reasons for the behaviors (i.e., reactive or proactive).

Little et al. (2003) hypothesized that high correlations between instrumental and reactive aggression were at least in part due to respondents' focusing on the types, or topographies, of behaviors while having difficulty discerning their functions, such as being “instrumental” or “defensive.” Little et al. therefore designed a scale for typically developmentally disabled children which separated these questions from one another. With the type of aggression “disentangled” from its function, Little et al. found instrumental and reactive aggressive behaviors to be only negligibly correlated with one another (disattenuated $r = -.10, p < .05$).

Although there are several good instruments for assessing problem behavior in subjects with I/DD, none exists that samples a wide array of aggressive and hostile acts. Existing instruments only touch on aggression in broad terms and do not differentiate among the multitude of forms of hostility and aggression. Furthermore, we are not aware of any work that has tried to differentiate between reactive and proactive aggression in individuals with I/DD.

**Objectives and Hypotheses**

The purpose of this project was to develop an informant-based scale for measuring severity and/or frequency of interpersonal aggression among people with intellectual and developmental disability. We strived to include scale items that reflected a broad range of topographies, including physical and verbal aggression, as well as hostile affect. We also attempted to incorporate a reactive/proactive domain.

The four objectives for this project were as follows: (a) develop a factor-analytically-derived instrument for assessing common forms of aggression in adults with I/DD; (b) compute normative data for the subscales that were obtained, broken out by gender, level of functioning, and age group; (c) assess the interrater reliability of the derived subscales, and (d) assess the validity of the new scale.

We predicted that factor analysis of the preliminary scale items would lead to a multidimensional instrument that would include subscales representing various types of hostility and aggressiveness. Such multidimensional structures have been consistently found by developers of empirically-derived scales of aggression in the general population (e.g., Buss & Durkee, 1957; Kazdin, Rodgers, Colbus, & Siegel, 1987; Miller et al., 1995). We also hypothesized that an association would occur between (a) higher proactive aggression and indicators of disruptive behavior (Cornell et al., 1996), and (b) higher reactive aggression and impulse-control disorders or Cluster B personality disorders (American Psychiatric Association, 1994). Finally, given that the functions of the behaviors in question would be disentangled from their forms, we predicted that correlations between reactive and proactive scores would be relatively low.

**Method**

**Subjects.** Subjects were 512 individuals receiving services for developmental disabilities, and aged 19 to 84 years, inclusive. The average age of the sample was 41.5 years, with a standard deviation of 12.3. Most of the subjects were male (61.5%). Twenty-four of them (4.7%) were residents of a developmental center, 93 (18.2%) were residents of supported living homes, 350 (68.4%) were employees of sheltered workshops, 43 (8.4%) were enrollees of a living skills center, and two (0.4%) resided in private homes. Functional levels ranged from mild to severe/profound intellectual disability (ID), with an approximate ratio of 1:2:2 for severe/profound, moderate, and mild ID.
**Raters.** We obtained written permission to recruit raters and collected data from administrators at each site. Raters were recruited using an IRB-approved script and consent form. We paid raters $7.00 per completed scale packet. Among the 61 raters were one parent, one psychologist, one behavior specialist, nine supported living supervisors, and 49 workshop instructors. Raters were familiar with subjects for an average of five and a half years, ranging from six months to 25 years.

**Instruments.** The Adult Scale of Hostility and Aggression, Reactive/Proactive (A-SHARP). We developed items for the preliminary Adult Scale of Hostility and Aggression, Reactive/Proactive (A-SHARP) through consultation with psychology professionals experienced with clients having disruptive behavior problems. We made an effort to include not only descriptions of the more common examples of physical violence, but also included varieties of hostile affect and aggressive verbal behavior.

The initial version of the A-SHARP encompassed 58 items, each containing a short description of some form of aggressive behavior (e.g., “Makes demeaning comments about others in their absence” or “Pulls others' hair”). For each item, a four-point Problem Scale was provided, ranging from 0 (“Never happens”) to 3 (“Severe and/or very frequent problem”). Where appropriate, a five-point Provocation Scale was also provided, ranging from -2 (“Only when provoked, not planned, and/or when s/he ‘just loses it’”) to +2 (“Always the first to act [i.e., always the instigator; the one who ‘starts it’]”), with a midpoint of 0 to indicate “Equally likely to happen with or without provocation.” For the purposes of this instrument, instigator was defined as “the one who deliberately initiates the conflict; the first or only one to act in an incident of aggression,” and provocation as “Any action leading to the aggression, no matter how mild (e.g., verbal teasing or being crowded) or severe . . . .”

We instructed raters to judge subjects' behavior over the last six months on each of the 56 behavioral (Problem Scale) items. If the item was rated at all positive (i.e., 1 through 3), we asked raters to judge the level of provocation as well.

**Behavior Problems Inventory (BPI), Aggressive/Destructive Behavior Subscale.** The 11-item Aggressive/Destructive Behavior subscale of the Behavior Problems Inventory (BPI; Edlinge, 1983; Rojahn, 1984; Rojahn, Matlock, & Tassé, 2000) was selected as a measure of congruent validity of the A-SHARP. We chose the BPI subscale because it has favorable validity and reliability statistics and because of its brevity (Rojahn, 1984). BPI items were scored on a five-point frequency scale (never = 0 through hourly = 4) and on a four-point severity scale (no problem = 0 through severe problem = 3). To be scored higher than 0, an item must describe a behavior which was observed within two months of administration of the instrument.

**Procedure.** We recruited staff members at the participating sites to be raters. We distributed copies of the A-SHARP, along with the 11 BPI Aggressive/Destructive Behavior items, to raters. In a brief one-on-one training, we asked raters to fill out the A-SHARP and the BPI subscale for subjects whom they knew for at least six months. The A-SHARP face sheet for each subject contained a subject identification code, month and year of birth, gender, ethnicity, relationship of rater to subject, length of time the rater knew the subject, and the rater’s estimation of severity of intellectual disability (“Mild,” “Moderate,” “Severe/profound,” “Unable to guess”), as well as confidence in that estimate (“Certain” through “Complete guess”).

To assess interrater reliability, we obtained independent ratings by pairs of raters for forty-four subjects. Five of these pairs occurred in different settings. These subjects were rated by workshop staff and program directors of their supported living homes. Thirty-nine pairs were rated by two instructors sharing a production area at one of the day programs.
For 103 subjects, we asked legal guardians to give signed permission (IRB and HIPAA consents) to use information regarding subjects’ medications and DSM diagnoses for validity purposes. We accessed the relevant data from case files and recorded them onto standard forms to examine the external validity of the A-SHARP.

**Data Analysis and Results**

**Problem Scale.**  *Factor analysis.* We eliminated four items from further analysis because they were endorsed by fewer than five percent of raters. Endorsement rates for these excluded items ranged from 1.3% (“Cuts others with a sharp object”) to 4.2% (“Chokes others/Grabs others”). The most frequently-endorsed item (at 57.2%) was “Reacts suddenly or impulsively to minor provocations.” We conducted exploratory factor analysis of the inter-item correlation matrix of the 54 remaining A-SHARP Problem Scale items, using the Comprehensive Exploratory Factor Analysis program (CEFA; Browne, Cudeck, Tatenien, & Mels, 2004). Maximum Wishart Likelihood was the method of extraction, and CF Equamax was the method of rotation. Since we expected any factors elucidated to be correlated with one another (as all of the items described some form of hostile or aggressive behaviors), we used oblique rotation. We retained items with a loading of at least .35 on the factors with which they had the highest loadings. Items were not included on more than one factor.

We adopted the five-factor solution as having the best overall fit to the data. Factors were named I. Verbal Aggression (n = 9 items retained), II. Physical Aggression (n = 13), III. Hostile Affect (n = 11), IV. Covert Aggression (n = 8), and V. Bullying (n = 7). Forty-eight items were retained, while six failed to meet the inclusion criterion of a factor loading of at least .35, and were therefore dropped from the scale. Mean factor loadings for factors I through V were 0.62, 0.52, 0.54, 0.57, and 0.55, respectively.

Rather than weight each item according to its factor loading, the 48 retained items were given an equal weight of 1.0. Henceforth, groups of items are referred to not as “factors” but as “subscales.” Average subscale scores were (a) Verbal Aggression, 3.07 (range 0 to 27; 0.34 average per item); (b) Physical Aggression, 3.13 (range 0 to 31; 0.24 average per item); (c) Hostile Affect, 8.23 (range 0 to 36; 0.75 average per item); (d) Covert Aggression, 3.60 (range 0 to 20; 0.45 average per item); and (e) Bullying, 2.60 (range 0 to 21; 0.37 average per item). The average Total Score was 20.20 (range 0 to 119; 0.42 average per item). All Pearson correlations between the Problem subscales were significant at the 0.01 level (two-tailed), ranging from Verbal Aggression and Hostile Affect (.65, p = .0009) to Verbal Aggression and Physical Aggression (.23, p = .0009). The A-SHARP Problem Scale appears in the Appendix.

**Reliability (a) Internal Consistency.** As a measure of internal consistency, alpha coefficients were computed for the full Problem Scale and for each of its subscales. The alpha coefficient for the full scale was .95. Coefficients for the subscales were as follows: .92 for Verbal Aggression, .89 for Physical Aggression, .92 for Hostile Affect, .82 for Covert Aggression, and .80 for Bullying.

**Reliability (b) Interrater.** Intraclass correlations are appropriate in situations such as this, when there is no clear rationale for assigning the paired raters to the abscissa or the ordinate (Shrout & Fleiss, 1979). Intraclass correlations (ICCs) were computed for 44 subjects for whom scales were filled out by two or more raters. Excluding the across-settings data, ICCs for the Problem subscales ranged from 0.59 (Bullying) to 0.78 (Physical Aggression). With the across-settings data included (n = 44), ICCs ranged from 0.57 (Covert Aggression) to 0.73 (Hostile Affect).
**Concurrent Validity.** As an index of concurrent validity, scores for the A-SHARP Total Score and the subscales were compared to frequency and severity scores for the BPI Aggressive/Destructive Behavior subscale. Two-tailed Pearson correlations were calculated; all were significant at the .01 level or less. The strongest correlation was between the Physical Aggression subscale and the severity score of the BPI subscale ($r = .86$). The weakest was between the Verbal Aggression subscale and the BPI subscale severity score ($r = .33$). The full Problem Scale correlated with the BPI subscale scores at .70 for severity and .67 for frequency. All $p$s were significant at $<.01$.

**Effect of demographic variables.** To assess any differences between A-SHARP scores and age and gender, we performed $t$-tests. Levene’s test for equality of variances was performed (Levene, 1960), and appropriate corrections were made if there was heterogeneous variance between groups.

Current practice is to order comparisons by their expected outcomes before calculating Bonferroni corrections. Thus, no power in alpha is lost until an hypothesis is incorrect. Unfortunately, we failed to do this before performing the $t$-tests. Therefore, in lieu of using Bonferroni-adjusted alpha levels, we decided to consider only results at the $p < .01$ to be statistically significant. However, as this is the first study of the A-SHARP, we did not want to overlook potentially important results which might provide further validation of the instrument, suggest directions for future research, and so on. Therefore, we also tagged results meeting the $p < .05$ criterion with a dagger ($^\dagger$), with the caveat that they should be viewed as exploratory.

**Age:** Subjects were divided into two age groups along the median of 41.5 years. The younger group ($n = 235$) received higher scores than the older subjects ($n = 268$) for Verbal Aggression ($M_s = 3.62$ vs. 2.61, $p = .029$)$^\dagger$, Physical Aggression ($M_s = 4.10$ vs. 2.34, $p = .001$), Hostile Affect ($M_s = 9.42$ vs. 7.30, $p = .003$), Covert Aggression ($M_s = 4.04$ vs. 3.21, $p = .035$)$^\dagger$, Bullying ($M_s = 3.41$ vs. 1.90, $p = .0009$), and Total Score ($M_s = 24.02$ vs. 17.05, respectively, $p = .0009$).

**Gender:** Females scored non-significantly higher on the Verbal Aggression subscale ($M_s = 3.72$ vs. 2.65, $p = .026$)$^\dagger$. Gender differences on Total Score and the other subscale scores were not significant.

**Functional level:** For the three categories of functional level, we used one-way analyses of variance, and performed Tukey HSD (Honest Significant Difference) as post hoc tests. Mean scores and levels of significance are reported. Subjects categorized in the Mild range of intellectual disability ($n = 220$) scored higher than those in the Severe/Profound category on the Verbal Aggression ($M = 3.74$ vs. 0.93, $p = .0009$) and Covert Aggression ($M = 3.64$ vs. 2.27, $p = .02$)$^\dagger$ subscales. Those in the Moderate I/DD category ($n = 172$) had higher mean scores on Physical Aggression than subjects in the Mild I/DD group ($M = 3.38$ vs. 1.74, $p = .008$). They also were rated higher than those with Severe/Profound I/DD on Verbal Aggression ($M = 3.68$ vs. 0.93, $p = .0009$), Hostile Affect ($M = 9.21$ vs. 6.82, $p = .036$)$^\dagger$, and Covert Aggression ($M = 4.47$ vs. 2.27, $p = .0009$). Subjects functioning in the Severe/Profound range ($n = 115$) scored higher on Physical Aggression than the Mild ($M = 5.22$ vs. 1.74, $p = .0009$) and Moderate I/DD ($M = 5.22$ vs. 3.38, $p = .01$) groups.

**External Validity.** We expected certain psychiatric diagnoses to be associated with aggressive behaviors or expressions of hostility. To examine the external validity of the A-SHARP, diagnoses and medications were recorded for individuals in the sample for whom we had been given guardian consent. These subjects were dubbed the “validity sub-sample” ($n = 103$). Roughly equal numbers of individuals
functioning at the mild, moderate, and severe/profound levels of I/DD were included. The subsample was 60.2 percent male, with an average age of 41.4 years.

*T*-tests were used to compare mean Total Scores and subscale scores of groups within the validity sub-sample, and significant results are reported here.

(a) **ADHD.** Subjects diagnosed with ADHD (n = 4, 3.9%) had higher scores than all others in the validity sample on Covert Aggression (M = 10.50 vs. 2.83, p = .0009) and Bullying (M = 8.50 vs. 2.56, p = .002).

(b) **Autism.** Subjects with autistic disorder (n = 9, 8.7%) scored higher on Physical Aggression (M = 10.44 vs. 5.01, p = .01), but lower on Verbal Aggression (M = 0.00 vs. 3.52, p = .0009).

(c) **Psychotic Disorder.** Scores for subjects with Psychotic Disorder NOS (n = 14, 13.6%) were higher for Hostile Affect (M = 14.21 vs. 7.62, p = .008).

(d) **Down Syndrome.** Those with Down Syndrome (n = 11, 10.7%) scored lower on Physical Aggression (M = 1.09 vs. 6.01, p = .0009) Hostile Affect (M = 2.55 vs. 9.23, p = .0009); Covert Aggression (M = 0.36 vs. 3.46, p = .0009); Bullying (M = 0.55 vs. 3.05, p = .0009); and Total Score (M = 7.09 vs. 23.68, p = .0009).

Next, differences in mean scores for subjects receiving various classes of psychoactive medications and those not receiving these medicines were investigated. Subjects receiving antipsychotic drugs (n = 50, 48.5%) scored higher than the remaining 53 subjects on Physical Aggression (M = 8.92 vs. 2.25, p = .0009); Hostile Affect (M = 11.96 vs. 5.26, p = .0009); and Total Score (M = 30.88 vs. 14.35, p = .0009). Subjects receiving psychostimulants (n = 6, 5.8%) scored higher on Physical Aggression (M = 13.00 vs. 5.02, p = .003). Finally, those taking any psychoactive drug (n = 77, 74.7%) scored higher than the remaining people in the sample on Physical Aggression (M = 6.69 vs. 1.92, p = .0009); Hostile Affect (M = 9.79 vs. 4.73, p = .002); Covert Aggression (M = 3.66 vs.1.54, p = .004); and Total Score (M = 25.55 vs. 11.15, p = .0009).

**Provocation Scale**

Of the 48 SHARP Problem Scale items, 26 had corresponding Provocation Scale items. This “secondary” scale presented some unusual challenges to analysis. First, the Provocation Scale was conditional (that is, an item was completed only if the corresponding Problem Scale item was endorsed with a one or higher). Therefore, factor analysis would be inappropriate, since raters completed different sets of items. Second, because not all Problem items were paired with a Provocation item, some Provocation subscales included only one or two items. Third, since items could legitimately be left incomplete (if the item was rated “0” on the Problem Scale), missing values had to be dealt with when analyzing responses. For this study, we selected a function of SPSS which replaced all missing values with their series means (i.e., mean of responses to the variable across all subjects).

Finally, there is the question of how best to analyze and present results for the Provocation Scale. We considered several possibilities. We tested the following approaches to the Provocation Scale: (a) Separate totals of negative and positive scores to give one a “reactive” and a “proactive” figure for each subject; (b) Algebraic product between the Problem and Provocation scores; and (c) Net total score for each Provocation subscale. After much consideration and exploratory analyses, we employed total scores for each of the Provocation subscales.
Reliability of the Provocation Scale. Intraclass correlations were used again to assess interrater reliability. Excluding the across-setting ratings from analysis, ICCs for the raw Provocation Subscales ranged from .54 (Verbal Aggression) to .78 (Physical Aggression) (ICC = .66 for full Provocation Scale). With the across-setting data included, ICCs ranged from .46 (Bullying) to .87 (Physical Aggression) (ICC = .55 for the full Provocation Scale).

Validity of the Provocation Scale: Effects of demographic variables. Again, we employed t-tests to examine differences between Provocation Total and subscale Provocation scores for age and gender, and ANOVA with Tukey HSD post hoc tests for level of functioning. Significant and exploratory results are reported here.

Age. Subjects were again split into groups along the median age of 41.5 years. The older group (n = 268) received lower (presumably more reactive) scores than the younger subjects (n = 235) for Verbal Aggression (M = 3.77 vs. 4.50, p = .021), Physical Aggression (M = 1.06 vs. 1.75, p = .035), Hostile Affect (M = -4.26 vs. -3.86, p = .01), Bullying (M = 9.49 vs. 9.70, p = .031), and Provocation Total Score (M = 6.46 vs. 8.39, respectively, p = .007).

Gender. There was a non-significant difference in the mean Covert Aggression subscale scores given to women and men (M = 7.15 vs. 7.24, respectively, p = .05).

Functional Level. Subjects classified in the Mild range of intellectual disability were scored as more reactive on the Verbal Aggression (-1.18, p = .003), and the Hostile Affect (-0.51, p = .01) subscales, as well as on Provocation Total Score (-2.29, p = .01), than those in the Moderate category. Compared with the Severe/Profound category, people in the Mild group were rated as more reactive on Physical Aggression (-1.21, p = .01), Hostile Affect (-.55, p = .016), and Total Score (-.61, p = .01).

External validation analyses for Provocation Scores. We again compared the mean scores of groups within the validity sub-sample when grouped by medication regimen or diagnoses. Results follow.

Impulse Control Disorder NOS. Those with Impulse Control Disorder NOS (n = 9, 8.7%) were scored as more reactive than all other subjects in the sub-sample on Verbal Aggression (M = -3.04 vs. -0.08, p = .009), Hostile Affect (M = -1.44 vs. 0.02, p = .005), and Total Score (M = -2.24 vs. 8.91, p = .0009).

Personality Disorder NOS. Comparatively more reactive scores were assigned to subjects with Personality Disorder NOS (n = 7, 6.8%). Mean scores for this group were more negative (reactive) than those for the remaining sub-sample on Physical Aggression (M = -0.17 vs. 6.70, p = .002), and Total Score (M = -0.89 vs. 8.58, p = .005).

Combined Personality Disorders. Subjects in this category (n = 9, 8.7%) were more reactive on Physical Aggression than the remainder of the sample (M = 1.18 vs. 6.72, respectively, p = .006), and Total Score (M = 0.61 vs. 8.64, respectively, p = .007).

Medication and Provocation Scores. Subjects taking beta blockers (n = 4, 3.9%) were rated more reactive on Physical Aggression (M = -1.89 vs. 6.57, p = .004), Hostile Affect (M = -2.28 vs. -0.02, p = .003), and Total Score (M = -4.20 vs. 8.43, p = .004).
Discussion

Problem Scale of the SHARP. As predicted, exploratory factor analysis yielded a multidimensional instrument that assessed for hostility plus a variety of aggression topographies. The five-factor structure of the A-SHARP Problem Scale conformed fairly well to clinical expectations. The model had reasonably good fit, and its factors had good reliability results. The matrix of correlations between the subscales supported the scale’s convergent and divergent validity, with the lowest correlation being that between Verbal Aggression and Physical Aggression (constructs which, while related, need not always occur together). The highest correlation was between Verbal Aggression and Hostile Affect, with the former so often being the expression of the latter. We had hoped to develop an instrument which was capable of capturing a variety of types of aggression and expressions of hostility, and this goal appears to have been met.

The Verbal Aggression and Physical Aggression subscales included varied descriptions of topographies within these two broad categories of behavior. Items in the Hostile Affect subscale reflected many of the more commonly-seen expressions of hostility, as well as impulsivity and attitudes of resentment and defensiveness. The items in the Covert Aggression subscale gave a picture of someone who not only seeks to hide or escape the consequences of his or her harmful acts, but also who attempts to manipulate others by influencing them to act in inappropriate ways. Finally, the Bullying items described someone who seeks to intimidate or take advantage of others. It is noteworthy that Bullying was more strongly correlated with Covert Aggression than with any of the other subscales. Both comprised mostly those items which one would associate with manipulative and/or goal-driven behavior, and they were perhaps differentiated only by the level of “artfulness” and subtlety the subject was willing or able to employ.

Correlations between the A-SHARP Problem subscales and the Aggressive/Destructive Behavior subscale of the Behavior Problems Inventory (BPI) were highest with Physical Aggression and lowest with Verbal Aggression. This makes sense, as the BPI subscale focuses almost exclusively on physical acts. However, two of the BPI items were most highly correlated with A-SHARP subscales other than Physical Aggression. BPI item 9, “Being verbally abusive with others” was most highly correlated with the A-SHARP Verbal Aggression subscale (0.72 with the severity rating, 0.75 with the frequency rating), and BPI item 11, “Being mean or cruel (e.g., grabbing toys or food from others, bullying others),” correlated most strongly with the A-SHARP Bullying subscale (0.56 with the severity rating, 0.52 with the frequency rating).

The Problem Scale portion of the A-SHARP had a factor structure with reasonably good fit and good face validity. Its subscales had good-to-excellent internal consistency and fair-to-excellent interrater reliability statistics. Its concurrent validity was supported by comparisons with the results of the BPI Aggressive/Destructive Behavior subscale. Comparisons of mean scores of groups of subjects divided by demographic, diagnostic, and medication variables yielded results which were supportive of the A-SHARP’s external validity.

Provocation Scale of the SHARP. The SHARP Provocation Scale and its subscales had interrater reliability statistics in the fair-to-good range of clinical significance. Comparisons of mean scores of groups of subjects divided by demographic, diagnostic, and medication variables yielded results which were supportive of the Provocation Scale’s external validity. A few of the t-test results indicated that the Provocation scale can provide pertinent information not obtainable with the Problem scale alone. As predicted, reactive aggression was found to be associated with impulse-control disorders and personality
disorders. Also as predicted, the correlation between the positive (proactive) and negative (reactive) totals was low, \( r = .11 \) (compared to \( r = .87 \), found by Camodeca et al., 2002). These results are encouraging, but it is also clear that important improvements to the scale can be made.

**Limitations and Directions for Future Research**

Our sample could have been more demographically representative of the adult intellectually disabled population in central Ohio. Age groups from late adolescence to old age were reasonably well represented, and the gender ratio fell roughly within the range estimated for the I/DD population (Stevenson, Schwartz, & Schroer, 2000). Subjects functioning in the Mild range of impairment were the largest segment of the sample, followed in size by the Moderate and Severe/Profound groups, respectively. A little over 43 percent of the individuals in our sample were diagnosed with Mild intellectual disability, compared to an estimated 75 to 90 percent of all people with ID (McDermott, Durkin, Schupf, & Stein, 2007). All data were collected in Ohio, mostly in the Columbus area. More geographic diversity would have been preferable. Also, there was a preponderance of data collected in sheltered workshops. Although some subjects were in residential and other day program settings, a wider variety of settings likely would have resulted in a better representation of this population. Confirmatory factor analysis with a large, more representative, sample of adults with intellectual disability would be a logical next step.

Another limitation of the current study is the lack of external validity data for the entire sample. A related weakness was that inclusion in the validity sub-sample was not random but contingent upon guardian consent. Some diagnoses which would have been highly relevant to this study, such as Obsessive/Compulsive Disorder, were either very under-represented or completely missing from the sub-sample. The numbers of subjects in some external validity categories were quite small: only four subjects were diagnosed with ADHD, four were receiving beta blockers, and seven were diagnosed with Personality Disorder NOS.

Another potential problem was that raters were not necessarily blind to subjects' diagnoses and medication regimens. This introduces the possibility of biased responding. However, it should also be noted that **raters were not aware that these external validity data would be collected and analyzed.**

More work should be done to corroborate the validity of the instrument. Studies with more extensive and diverse external validity data are called for. The concurrent validity of the Provocation Scale should be investigated, using another scale designed to gauge reactive and/or instrumental aggression, such as the Revised Teacher Rating Scale for Reactive and Proactive Aggression (Brown, Atkins, Osborne, & Milnamow, 1996) for comparison.

A longitudinal study using both the Children's-SHARP (C-SHARP; Farmer, 2008) and A-SHARP could perhaps address some questions, such as (a) “Which aggressive behaviors are most stable over the years? Which are transitory?”, or, (b) “Which C-SHARP items or subscales, if any, are predictive of aggression problems later in one’s life?”, and (c) “Which C-SHARP scores are predictive of particular psychiatric diagnoses later in life?” If such a study were to identify C-SHARP scores predictive of later behavioral and/or psychiatric problems, this could present opportunities for preventative intervention.

If the A-SHARP is shown to be sensitive to changes brought about by behavioral or pharmacological interventions, it could prove very useful for researchers and clinicians. If it is demonstrated that the instrument is sensitive to behavioral change, researchers can use it as an outcome
measure as well as a screen. Clinicians can use it in treatment planning and to measure progress toward treatment goals. Future studies should employ the A-SHARP and other aggression instruments, such as the Nisonger Child Behavior Rating Form (NCBRF; Aman, Tassé, Rojahn, & Hammer, 1996), as pre- and post-treatment measures. If the instruments show analogous changes, this could add to information on concurrent validity.

Problems with the Provocation Scale and Possible Solutions. We appear to have accomplished the primary goal of characterizing and measuring aggression in intellectually disabled adults. The Problem scale and subscales performed well on reliability and validity tests, and they appear to be useful for capturing a variety of behavioral topographies and/or expressions of negative affect.

We made progress toward the secondary goal of assessing the “why” (the motivations or functions) of aggression and hostility. The Provocation Scale holds promise, but more refinement needs to be done. One problem with the current design was the absence of several Provocation items. This was done because the items were thought to be intrinsically proactive or reactive, or simply unrelated to the question of provocation. For example, we were concerned that asking whether the item “Is ‘sneaky;’ does things ‘on the sly’” was provoked or not would have been confusing for raters. However, this left some subscales with only one or two Provocation items. It is difficult to obtain good reliability with subscales which have so few items. It appears that future versions of the instrument should measure all items on both the Problem and Provocation dimensions.

Conclusions

To sum up, this study of 512 adults with I/DD resulted in a very compelling Problem Behavior Scale and an apparently-sound Provocation Scale. The 48 items of the Problem Behavior Scale resolved into five subscales that were empirically derived by factor analysis. Their structure is reasonable from what we know of psychopathology and from aggression research in clinical populations without I/DD. Interrater reliability was very good, and there was ample demonstration of concurrent validity. Although the Provocation Scale was not as well established in this study, it also had acceptable reliability and validity. It addresses the issue of whether aggressive acts are instrumental or reactive, which should be a contribution to the field. The A-SHARP is the first instrument to assess aggressive behavior in adults with I/DD, and these early data suggest that its psychometric characteristics are robust.

REFERENCES


**Other Publications of the Research**

APPENDIX

ADULT SCALE of HOSTILITY & AGGRESSION, REACTIVE/PROACTIVE (A-SHARP)

Note: The A-SHARP scale and its norms can be downloaded from http://psychmed.osu.edu.
Mental health workers are welcome to copy and use the A-SHARP at no cost.

SUBJECT'S ID CODE: ____________________________ DATE: ____/____/____
Subject's…
Date of Birth: ____/____/____
Gender (please circle): F M
Subject is: ______ African American ______ Caucasian (European origin) ______ Hispanic ______ Asian American ______ Other (if checked, please specify: ________________________)
IQ/severity of intellectual handicap: __mild, __moderate, __severe/profound.

RATER'S NAME: ______________________________
Relationship of rater to subject (e.g., parent, teacher, instructor, etc.):
How long have you (the rater) known the subject?:

Does the subject have any psychiatric diagnoses? ___NO ___YES If YES, please list all diagnoses below:
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

Does the subject have a behavior support plan for aggressive or hostile behavior(s)? ___NO ___YES

Does the subject take any medicines for behavioral or emotional problems? ___NO ___YES If YES, please list all medicines below:

Medicine Dose/day
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

Does the subject have any genetic disorders? Please check any that apply:
____ Down Syndrome
____ Fragile X Syndrome
____ Autistic Disorder, or other PDD Spectrum Disorder
____ Other (if checked, please specify): __________________________
INSTRUCTIONS: Based on your experience of the person’s behavior in the past six months, please first circle ONE “Problem Scale” answer for each of the items.

**Problem Scale:** Please circle the number which best reflects the person’s behavior…

- **0** = Does not happen (NOTE: If circled, the “Who starts it?” rating [next column over] is NOT scored for that item)
- **1** = Mild or infrequent problem
- **2** = Moderately serious and/or frequent problem
- **3** = Severe and/or very frequent problem

Next, *if this answer is a “1,” “2,” or “3” (that is, if it is a problem at all)*, circle ONE “Who starts it?” rating for the item if applicable.

**“Who starts it?” Rating:** Where applicable, please circle the number which best reflects the client's behavior…

- **-2** = *Only* when provoked, unplanned, or when s/he “just loses it;”
- **-1** = *Usually* provoked and/or unplanned;
- **0** = Equally likely to happen with or without provocation;
- **1** = *Usually* the first to act, without provocation;
- **2** = *Always* the first to act (that is, always the instigator; the one who “starts it”);

**DEFINITIONS:**

*Instigator:* The one who deliberately “starts it;” the first or only one to act in an incident of aggression;

*Provocation:* Any action leading to the aggression, no matter how mild (e.g., verbal teasing or being crowded) or severe (e.g., being hit or kicked), which seems to anger or upset the subject and trigger the behavior;

<table>
<thead>
<tr>
<th>Problem Scale</th>
<th>Who starts it?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Doesn’t happen</strong></td>
<td><strong>Some</strong></td>
</tr>
<tr>
<td><strong>Severely Provoked</strong></td>
<td><strong>Not Provoked</strong></td>
</tr>
<tr>
<td>1. Sneers, “makes faces” at others</td>
<td>0</td>
</tr>
<tr>
<td>2. Is “sneaky;” does things “on the sly”</td>
<td>0</td>
</tr>
<tr>
<td>3. Attempts to touch others in inappropriate, sexually suggestive manner</td>
<td>0</td>
</tr>
<tr>
<td>4. Pinches others</td>
<td>0</td>
</tr>
<tr>
<td>5. Is resentful over seemingly minor issues</td>
<td>0</td>
</tr>
<tr>
<td>6. Breaks others’ things</td>
<td>0</td>
</tr>
<tr>
<td>7. Is quick to anger (“hot-headed”)</td>
<td>0</td>
</tr>
<tr>
<td>8. Takes others’ things by force</td>
<td>0</td>
</tr>
<tr>
<td>9. Broods, pouts, or is sullen</td>
<td>0</td>
</tr>
<tr>
<td>10. Calls others insulting names in their absence</td>
<td>0</td>
</tr>
<tr>
<td>Problem Scale</td>
<td>Who starts it?</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td><strong>Problem Scale</strong></td>
<td><strong>Who starts it?</strong></td>
</tr>
<tr>
<td><strong>Desert</strong></td>
<td><strong>Severe/Frequent</strong></td>
</tr>
<tr>
<td>11. Shoves or pushes others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>12. Crowds others (invades their personal space)</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>13. Intimidates others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>14. Says, “I hate you” or makes other hurtful statements</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>15. Bites others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>16. Insults others to their faces</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>17. Throws objects at others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>18. Reacts suddenly or impulsively to minor provocations</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>19. Shouts at others in anger</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>20. Uses headlocks or other “wrestling” holds against others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>21. Gets mad when caught behaving badly</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>22. Is overly argumentative</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>23. Uses profanity to shock or offend others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>24. Cuts others with a sharp object</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>25. Tickles or otherwise physically teases others, even after being asked to stop</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>26. Steals from others when they aren't looking</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>27. Reacts to insults or teasing by lashing out physically</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>28. Calls others insulting names to their faces</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>29. Trips others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>30. Head-butts others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>31. Makes insulting comments about others behind their backs</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>32. Breaks own belongings</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>33. Makes threatening gestures (like shaking fist)</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>34. Charges at others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>35. Verbally teases others, even after being asked to stop</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>36. If caught, denies having behaved badly</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>37. Pulls others' hair</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>38. When angry, is slow to cool off</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>39. Spits at others</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>40. Says “I hate [someone not present]” or makes other hurtful statements in absence of the person concerned</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>41. Chokes others/Grabs others’ necks</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Item</td>
<td>0</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>42. Lashes out at people who are in his/her space</td>
<td></td>
</tr>
<tr>
<td>43. Takes offense at things others say or do when s/he shouldn't</td>
<td></td>
</tr>
<tr>
<td>44. Starts trouble by baiting others</td>
<td></td>
</tr>
<tr>
<td>45. If caught, makes excuses for bad behavior</td>
<td></td>
</tr>
<tr>
<td>46. Is hostile, “has a chip on his/her shoulder”</td>
<td></td>
</tr>
<tr>
<td>47. Scratches others with fingernails</td>
<td></td>
</tr>
<tr>
<td>48. Glares at others</td>
<td></td>
</tr>
<tr>
<td>49. Encourages others to gang up on someone (physically OR verbally)</td>
<td></td>
</tr>
<tr>
<td>50. Hits others with objects</td>
<td></td>
</tr>
<tr>
<td>51. Is often grouchy</td>
<td></td>
</tr>
<tr>
<td>52. Doesn't care about others' feelings</td>
<td></td>
</tr>
<tr>
<td>53. Verbally threatens others with physical harm</td>
<td></td>
</tr>
<tr>
<td>54. Hits or shoves others forcefully</td>
<td></td>
</tr>
<tr>
<td>55. Makes unwanted sexual comments to others</td>
<td></td>
</tr>
<tr>
<td>56. Does not seem truly sorry after hurting someone</td>
<td></td>
</tr>
<tr>
<td>57. Gets revenge after some time has passed and the other person is not on guard</td>
<td></td>
</tr>
<tr>
<td>58. Tries not to get caught while doing harmful things to others</td>
<td></td>
</tr>
</tbody>
</table>

**Problem Scale**: Please circle the number which best reflects the subject's behavior…

0 = Does not happen (NOTE: If circled, Reactive/Proactive is NOT scored for that item)

1 = Mild or infrequent problem

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**“Who starts it?” Rating**: Where applicable, please circle the number which best reflects the subject's behavior…

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0 = Equally likely to happen with or without provocation;

1 = Usually the first to act, without provocation;

2 = Always the first to act (i.e., always the instigator; the one who “starts it”)
ASSESSING THE VALIDITY OF THE NISONGER CHILD BEHAVIOR RATING FORM IN A SAMPLE OF YOUTH WITH INTELLECTUAL DISABILITY

The Ohio State University
Department of Psychology
The Nisonger Center

Megan Norris, MA  Luc Lecavalier, PhD

It is a well known fact that individuals with Intellectual Disability (ID) have higher rates of psychopathology than the typically-developing population (Borthwick-Duffy, 1994; Linna et al., 1999; Reiss, 1994; Tonge & Einfeld, 2003). Rojahn and Tassé (1996) defined psychopathology as encompassing two distinct but related clinical phenomena: behavior and emotional problems (such as aggression and tantrums), and psychiatric disorders (such as bipolar disorder). One significant complication in the assessment of psychopathology in youths with ID is a scarcity of instruments (Lecavalier & Aman, 2005). The Nisonger Child Behavior Rating Form (NCBRF) is one of the few rating scales specifically designed to assess behavior and emotional problems in youngsters with ID. This study aimed to assess the construct and criterion validity of the NCBRF.

Theoretical Framework

Much of the epidemiological research in dual diagnosis (ID concurrent with psychopathology) has been done with adults, with a few notable exceptions. Follow-ups to the Isle of Wight studies (Rutter, Tizard, Yule, Graham, & Whitmore, 1976) examined the prevalence and types of disabilities of British children via parent, teacher, and child surveys. They reported that around 50 percent of children aged 10 to 12 years with an IQ below 50 (n =38) had behavior or emotional disorders. Einfeld and Tonge (1996) conducted an epidemiological study with children with ID of all levels of functioning between the ages of four to 18 years (n = 454). They reported that the prevalence of psychopathology was over 40 percent, when psychopathology was defined by scoring for caseness on the Developmental Behaviour Checklist Total Problem Behaviour score. Using the Child Behavior Checklist (CBCL) and the Teacher’s Report Form, Dekker, Koot, van der Ende, and Verhulst (2002) reported a prevalence of emotional and behavior problems of almost 50 percent in a sample of Dutch school children with IQs ranging from 60 to 80 (n = 1,041). A similar study in Finland using the Rutter Parent Questionnaire estimated the rate of psychopathology to be 32.2 percent (n = 90) (Linna et al., 1999) while a study in South Africa reported a rate of 31 percent (n = 355) when a DBC teacher version cut-off score of 30 was used (Molteno, Molteno, Finchilescu, & Dawes, 2001).

These high prevalence rates are troubling in their own right, but are not the only reason professionals should be concerned with psychopathology. Many additional problems are associated with dual diagnosis. Psychopathology may negatively impact a child’s school performance or cause disruptions in his/her classroom that indirectly hinder others’ learning. Emerson et al. (2001) reported that individuals with more severe behavior problems tended to require additional help with daily activities, such as eating and dressing. This additional aid could translate to a greater financial burden on families. Furthermore, psychopathology in an individual with ID is associated with greater caregiver stress, as Baker, McIntyre, Blacher, Crnic, Edelbrock, and Low (2003) found in their study of delayed preschool
children \((n=82)\). This finding was echoed by Lecavalier, Leone, and Wiltz (2006) when they sampled the teachers and parents of children aged three to 18 years with Pervasive Developmental Disorders (PDDs). Long-term implications of dual diagnosis can include severely limited employment opportunities (Anderson, Lakin, Hill, & Chen, 1992) and difficulty integrating into community residential centers (Bruininks, Hill, & Morreau, 1988). With the myriad of hardships that face individuals with dual diagnosis, it is clear why Rojahn and Tassé (1996) stated that psychopathology was the most serious problem facing professionals in the ID field.

While the importance of studying psychopathology in individuals with ID has been recognized, the assessment of these problems has been and continues to be very difficult. One issue that complicates assessment is diagnostic overshadowing, a phenomenon that occurs when an individual’s ID eclipses accompanying psychopathology, or when mental illness or psychiatric problems are attributed to the ID instead of being considered a distinct entity (Reiss, Levitan, & Szyszko, 1982).

Hurley, Levitas, Lecavalier, Pary, and King (2006) described several other difficulties in the diagnostic process. For instance, baseline exaggeration occurs when a previously existing behavior problem increases in frequency or severity due to a psychiatric disorder. Intellectual distortion refers to the various miscommunications that may occur when interviewing an individual with ID, as questions can be easily misunderstood or confused. Psychosocial masking refers to the fact that individuals with ID manifest less elaborate symptoms due to limited experiences (e.g., generally, believing that one can drive a car is not evidence of delusions of grandeur, but could be such evidence in an individual with significant delays in functioning).

For youth with ID, assessment of behavior and emotional problems is further complicated by a paucity of research. For instance, Borthwick-Duffy (1994) reviewed the literature on prevalence and epidemiology of psychopathology in individuals with ID; only two of the 19 studies she examined were conducted after 1970 with a representative sample of children (i.e., population-based and broad-range of level of functioning included). Along the same lines, Murphy, Hall, Oliver, and Kissi-Debra (1999) recently discussed the paucity of research regarding self-injurious behavior in child-specific samples, despite more extensive research in older populations.

Another complication in the assessment of psychopathology in youths with ID is a scarcity of instruments appropriate for use with children and adolescents (Lecavalier & Aman, 2005). One available instrument is the Aberrant Behavior Checklist (ABC; Aman, Singh, Stewart, & Field, 1985a, 1985b). Although originally developed for adolescents and adults, its factor structure held in children (Brown, Aman, & Havercamp, 2002). Adaptive behavior scales are another means of assessing behavior and emotional problems. However, the primary aim of these scales is not to assess such problems. Indeed, often multiple problem behaviors are lumped together within one question, decreasing reliability. For example, on the Scales of Independent Behavior-Revised (SIB-R; Bruininks, Woodcock, Weatherman, & Hill, 1996), the item “Disruptive Behavior,” which is endorsed yes or no, includes clinging, picking fights, and laughing or crying for no reason (as well as other behaviors). Furthermore, the psychometric properties of the Problem Behavior sections of these scales remain largely unstudied.

Research Objectives/Hypotheses

The NCBRF is gaining in popularity and was recommended by experts as having potential for assessing individuals with ID (Rush & Frances, 2000). It is one of the few instruments developed specifically for youth with ID. This was the first independent study to examine its factor structure and
criterion validity in a heterogeneous sample of children with ID. Based on evidence presented elsewhere (Lecavalier, Aman, Hammer, Stoica, & Mathews, 2004; Tassé, Morin, & Girouard, 2000), we anticipated that the factor structure obtained from the current sample would be similar to the original NCBRF factor solution. We also expected high internal consistency of subscales (i.e., above .70). Lastly, we anticipated children taking psychotropic medication or diagnosed with psychiatric disorders would score higher on subscales than youth not taking medications or without diagnoses.

**Methodology**

The sample consisted of 292 children with borderline to profound ID. They were recruited from Ohio special education classes (n = 199) and from an OSU outpatient clinic for children with behavior problems (n = 93). Community children were recruited via a three-step mailing strategy (original letter and two reminder letters) from Ohio special education classrooms (response rate of 12%). Clinically-referred children were consecutive cases meeting inclusion criteria for the current study. Inclusion criteria were that youth be between the ages of five and 18 years and have some level of ID. The average age of participants was 12.1 years (SD = 3.8; Range: 5–18); 114 were females (39%) and 174 were males (60%). The most frequently endorsed psychiatric disorders were PDDs (31%, n = 90) and ADHD (16%, n = 47). Sixty-two percent of the sample (n = 182) reported some other medical condition (e.g., epilepsy). One hundred fifty-five youth (53%) were taking at least one psychotropic medication.

The *Nisonger Child Behavior Rating Form* (NCBRF; Aman, Tassé, Rojahn, & Hammer, 1996; Tassé, Aman, Hammer, & Rojahn, 1996) contains 10 items measuring social competence and 66 items measuring problem behavior. All items are rated on a four-point Likert scale. The two social competence subscales are: Compliant/Calm and Adaptive Social. Problem behavior items are distributed on the following six subscales: Conduct Problems, Insecure/Anxious, Hyperactive, Self-Injury/Stereotypic, Self-Isolated/Ritualistic, and Overly Sensitive.

There are two types of factor analysis. Confirmatory factor analysis (CFA) is used to assess the extent to which new data fit with previous models. Exploratory factor analysis (EFA) is used when there are less data to support a particular factor structure (Floyd & Widaman, 1995). Since only one study has examined the factor structure of the NCBRF in an ID sample in English, both EFA and CFA were used in the current study.

Exploratory factor analysis (EFA) was performed on a polychoric correlation matrix using CEFA. Ordinary Least Squares (OLS) was used as an extraction method and CF-quartimax rotations were performed. CFA was performed using LISREL and MPLUS. Specifications were based on the original factor structure reported by Aman et al. (1996). The internal consistency of the NCBRF subscales was assessed using Cronbach’s alpha. These results were compared to alpha coefficients based on the original item assignment. Criterion validity was assessed with a series of ANOVAs. Children with psychiatric diagnoses (n = 89) were compared to those without a diagnosis (n = 203), and children taking psychotropic medications (n = 127) were compared to those not taking medications (n = 164).

**Results**

Factor analysis. EFA indicated a five-factor solution best fit the data for the problem behavior items. Factor loadings for this solution are found in Table 1. The CFA based on Aman et al.’s (1996) 6-factor solution yielded an RMSEA of 0.135. When items were dichotomized, the RMSEA was 0.104. According to Browne and Cudeck (1992), these are considered unacceptable fits (an RMSEA below .08 is
considered adequate). EFA indicated a one-factor solution best fit the data for the prosocial items. Factor loadings are presented in Table 1. CFA for the two-factor social competence section indicated reasonable fit (RMSEA = .0635). Coefficient alpha for original subscales ranged from .73 (Adaptive Social subscale) to .94 (Conduct Problems subscale).

Table 1. Exploratory Factor Analysis Factor Loadings

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor I</th>
<th>Factor II</th>
<th>Factor III</th>
<th>Factor IV</th>
<th>Factor V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Apathetic</td>
<td>0.242</td>
<td>0.050</td>
<td>-0.046</td>
<td>0.066</td>
<td><strong>0.528</strong></td>
</tr>
<tr>
<td>2. Argues</td>
<td><strong>0.788</strong></td>
<td>0.083</td>
<td>0.121</td>
<td>-0.029</td>
<td>-0.100</td>
</tr>
<tr>
<td>3. Clings</td>
<td>-0.015</td>
<td>0.217</td>
<td><strong>0.330</strong></td>
<td>0.171</td>
<td>0.111</td>
</tr>
<tr>
<td>4. Cruelty</td>
<td><strong>0.659</strong></td>
<td>0.177</td>
<td>-0.093</td>
<td>0.233</td>
<td>-0.107</td>
</tr>
<tr>
<td>5. Crying</td>
<td>0.105</td>
<td>0.174</td>
<td>0.198</td>
<td><strong>0.384</strong></td>
<td>0.131</td>
</tr>
<tr>
<td>6. Hits self</td>
<td>0.048</td>
<td>0.181</td>
<td>-0.066</td>
<td><strong>0.691</strong></td>
<td>-0.047</td>
</tr>
<tr>
<td>7. Defiant</td>
<td><strong>0.744</strong></td>
<td>0.256</td>
<td>-0.151</td>
<td>0.046</td>
<td>0.035</td>
</tr>
<tr>
<td>8. Destroys</td>
<td><strong>0.487</strong></td>
<td>0.272</td>
<td>-0.127</td>
<td>0.372</td>
<td>0.053</td>
</tr>
<tr>
<td>9. Difficulty concentrating</td>
<td>0.222</td>
<td><strong>0.758</strong></td>
<td>-0.021</td>
<td>-0.262</td>
<td>0.228</td>
</tr>
<tr>
<td>10. Disobedient</td>
<td><strong>0.673</strong></td>
<td>0.353</td>
<td>-0.149</td>
<td>0.138</td>
<td>-0.016</td>
</tr>
<tr>
<td>11. Rocks</td>
<td>-0.152</td>
<td>0.286</td>
<td>-0.081</td>
<td><strong>0.449</strong></td>
<td>0.024</td>
</tr>
<tr>
<td>12. Guilty</td>
<td><strong>0.565</strong></td>
<td>0.174</td>
<td>-0.144</td>
<td>0.127</td>
<td>0.074</td>
</tr>
<tr>
<td>13. Easily distracted</td>
<td>0.198</td>
<td><strong>0.696</strong></td>
<td>0.009</td>
<td>-0.159</td>
<td>0.165</td>
</tr>
<tr>
<td>14. Easily frustrated</td>
<td><strong>0.428</strong></td>
<td>0.400</td>
<td>0.132</td>
<td>-0.003</td>
<td>0.218</td>
</tr>
<tr>
<td>15. Overly sensitive</td>
<td>0.019</td>
<td>0.096</td>
<td><strong>0.576</strong></td>
<td>-0.068</td>
<td>0.248</td>
</tr>
<tr>
<td>16. Exaggerates</td>
<td>0.244</td>
<td>0.056</td>
<td><strong>0.500</strong></td>
<td>-0.065</td>
<td>0.058</td>
</tr>
<tr>
<td>17. Explosive</td>
<td><strong>0.583</strong></td>
<td>0.122</td>
<td>0.192</td>
<td>0.192</td>
<td>0.019</td>
</tr>
<tr>
<td>18. Rituals</td>
<td>-0.030</td>
<td>0.347</td>
<td>0.017</td>
<td><strong>0.481</strong></td>
<td>0.113</td>
</tr>
<tr>
<td>19. Fails to finish</td>
<td>0.230</td>
<td><strong>0.535</strong></td>
<td>0.114</td>
<td>-0.085</td>
<td>0.232</td>
</tr>
<tr>
<td>20. Feelings</td>
<td>0.044</td>
<td>-0.048</td>
<td><strong>0.637</strong></td>
<td>0.022</td>
<td>0.178</td>
</tr>
<tr>
<td>21. Others against</td>
<td><strong>0.480</strong></td>
<td>-0.062</td>
<td>0.418</td>
<td>-0.153</td>
<td>0.218</td>
</tr>
<tr>
<td>22. Scratching self</td>
<td>0.074</td>
<td>-0.156</td>
<td>0.177</td>
<td><strong>0.770</strong></td>
<td>0.155</td>
</tr>
<tr>
<td>23. Worthless</td>
<td>0.324</td>
<td>-0.103</td>
<td>0.378</td>
<td>-0.084</td>
<td><strong>0.486</strong></td>
</tr>
<tr>
<td>24. Fidgets/wiggles</td>
<td>0.013</td>
<td><strong>0.635</strong></td>
<td>0.085</td>
<td>0.232</td>
<td>0.028</td>
</tr>
<tr>
<td>25. Shy, bashful</td>
<td>-0.160</td>
<td>0.076</td>
<td>0.142</td>
<td>0.070</td>
<td><strong>0.688</strong></td>
</tr>
<tr>
<td>26. Fights</td>
<td><strong>0.685</strong></td>
<td>-0.080</td>
<td>0.024</td>
<td>0.215</td>
<td>-0.049</td>
</tr>
<tr>
<td>29. Isolated</td>
<td>0.061</td>
<td>0.140</td>
<td>-0.110</td>
<td>0.357</td>
<td><strong>0.523</strong></td>
</tr>
<tr>
<td>30. Lying</td>
<td><strong>0.706</strong></td>
<td>-0.106</td>
<td>0.206</td>
<td>-0.156</td>
<td>0.188</td>
</tr>
<tr>
<td>31. Nervous</td>
<td>0.132</td>
<td>-0.009</td>
<td>0.319</td>
<td>0.310</td>
<td><strong>0.362</strong></td>
</tr>
<tr>
<td>32. Gouges self</td>
<td>0.068</td>
<td>0.150</td>
<td>-0.024</td>
<td><strong>0.582</strong></td>
<td>0.228</td>
</tr>
<tr>
<td>33. Overactive</td>
<td>-0.021</td>
<td><strong>0.758</strong></td>
<td>0.124</td>
<td>0.231</td>
<td>-0.133</td>
</tr>
<tr>
<td>34. Anxious</td>
<td>-0.091</td>
<td>0.214</td>
<td><strong>0.735</strong></td>
<td>-0.037</td>
<td>-0.027</td>
</tr>
<tr>
<td>35. Excited</td>
<td>-0.107</td>
<td><strong>0.577</strong></td>
<td>0.394</td>
<td>0.271</td>
<td>-0.171</td>
</tr>
<tr>
<td>36. Attacks</td>
<td><strong>0.486</strong></td>
<td>0.153</td>
<td>-0.204</td>
<td>0.475</td>
<td>-0.033</td>
</tr>
<tr>
<td>37. Refuses</td>
<td>0.097</td>
<td>0.087</td>
<td>-0.164</td>
<td>0.266</td>
<td><strong>0.458</strong></td>
</tr>
<tr>
<td>38. Repeats</td>
<td>-0.136</td>
<td><strong>0.470</strong></td>
<td>0.119</td>
<td>0.408</td>
<td>-0.140</td>
</tr>
<tr>
<td>39. Restless</td>
<td>0.003</td>
<td><strong>0.704</strong></td>
<td>0.121</td>
<td>0.295</td>
<td>-0.120</td>
</tr>
<tr>
<td>Items</td>
<td>Factor I</td>
<td>Factor II</td>
<td>Factor III</td>
<td>Factor IV</td>
<td>Factor V</td>
</tr>
<tr>
<td>-------</td>
<td>----------</td>
<td>-----------</td>
<td>------------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>40. Runs away</td>
<td>0.360</td>
<td>0.329</td>
<td>-0.161</td>
<td><strong>0.373</strong></td>
<td>-0.193</td>
</tr>
<tr>
<td>41. No one likes</td>
<td>0.380</td>
<td>-0.024</td>
<td><strong>0.487</strong></td>
<td>-0.121</td>
<td>0.242</td>
</tr>
<tr>
<td>42. Secretive</td>
<td>0.192</td>
<td>-0.112</td>
<td>0.313</td>
<td>-0.001</td>
<td><strong>0.474</strong></td>
</tr>
<tr>
<td>43. Bites self</td>
<td>-0.041</td>
<td>-0.023</td>
<td>-0.032</td>
<td><strong>0.761</strong></td>
<td>-0.103</td>
</tr>
<tr>
<td>44. Self-conscious</td>
<td>0.063</td>
<td>-0.021</td>
<td>0.407</td>
<td>-0.132</td>
<td><strong>0.465</strong></td>
</tr>
<tr>
<td>45. Shifts rapidly</td>
<td>0.219</td>
<td>0.272</td>
<td><strong>0.547</strong></td>
<td>0.004</td>
<td>-0.008</td>
</tr>
<tr>
<td>46. Short attention span</td>
<td>0.183</td>
<td><strong>0.731</strong></td>
<td>0.024</td>
<td>-0.071</td>
<td>0.176</td>
</tr>
<tr>
<td>47. Shy or timid</td>
<td>-0.244</td>
<td>0.123</td>
<td>0.055</td>
<td>0.062</td>
<td><strong>0.816</strong></td>
</tr>
<tr>
<td>48. Steals</td>
<td><strong>0.547</strong></td>
<td>-0.080</td>
<td>0.189</td>
<td>0.183</td>
<td>0.059</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor I</th>
<th>Factor II</th>
<th>Factor III</th>
<th>Factor IV</th>
<th>Factor V</th>
</tr>
</thead>
<tbody>
<tr>
<td>49. Odd behaviors</td>
<td>0.006</td>
<td>0.223</td>
<td>0.063</td>
<td><strong>0.525</strong></td>
<td>0.103</td>
</tr>
<tr>
<td>50. Stubborn</td>
<td><strong>0.520</strong></td>
<td>0.177</td>
<td>0.031</td>
<td>0.237</td>
<td>0.056</td>
</tr>
<tr>
<td>52. Sulks</td>
<td>0.309</td>
<td>-0.051</td>
<td>0.294</td>
<td>0.117</td>
<td><strong>0.427</strong></td>
</tr>
<tr>
<td>53. Harms self</td>
<td>0.144</td>
<td>0.013</td>
<td>-0.097</td>
<td><strong>0.806</strong></td>
<td>0.171</td>
</tr>
<tr>
<td>54. Talks back</td>
<td><strong>0.808</strong></td>
<td>0.032</td>
<td>0.150</td>
<td>-0.100</td>
<td>-0.003</td>
</tr>
<tr>
<td>55. Talks too much/loud</td>
<td>0.289</td>
<td>0.299</td>
<td><strong>0.561</strong></td>
<td>0.069</td>
<td>-0.329</td>
</tr>
<tr>
<td>56. Temper tantrums</td>
<td>0.474</td>
<td>0.131</td>
<td>0.089</td>
<td><strong>0.488</strong></td>
<td>-0.085</td>
</tr>
<tr>
<td>57. Threatens people</td>
<td><strong>0.749</strong></td>
<td>-0.191</td>
<td>0.102</td>
<td>0.233</td>
<td>0.002</td>
</tr>
<tr>
<td>58. Threatens self</td>
<td>0.428</td>
<td>-0.216</td>
<td>0.245</td>
<td><strong>0.485</strong></td>
<td>0.059</td>
</tr>
<tr>
<td>60. Too fearful</td>
<td>0.002</td>
<td>0.205</td>
<td><strong>0.482</strong></td>
<td>0.287</td>
<td>0.236</td>
</tr>
<tr>
<td>63. Violates rules</td>
<td><strong>0.717</strong></td>
<td>0.246</td>
<td>-0.013</td>
<td>0.027</td>
<td>0.056</td>
</tr>
<tr>
<td>64. Withdrawn</td>
<td>0.103</td>
<td>0.040</td>
<td>-0.025</td>
<td>0.420</td>
<td><strong>0.535</strong></td>
</tr>
<tr>
<td>65. Worrying</td>
<td>0.105</td>
<td>-0.048</td>
<td><strong>0.558</strong></td>
<td>0.072</td>
<td>0.332</td>
</tr>
<tr>
<td>66. Argues</td>
<td><strong>0.768</strong></td>
<td>-0.025</td>
<td>0.234</td>
<td>-0.175</td>
<td>0.042</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor</th>
<th>Factor II</th>
<th>Factor III</th>
<th>Factor IV</th>
<th>Factor V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Redirection</td>
<td>0.701</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Expressed ideas</td>
<td>0.577</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Followed rules</td>
<td>0.769</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Positive interactions</td>
<td>0.758</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Group activities</td>
<td>0.712</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Was tolerant</td>
<td>0.723</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Shared</td>
<td>0.641</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Stayed on task</td>
<td>0.698</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Was cheerful</td>
<td>0.614</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Was patient</td>
<td>0.819</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Summary of item phrasing.

Note. Highest loading is bolded; items loading on different subscales than in development study are underlined.

Criterion validity. ANOVAs indicated significant differences at the $p<.001$ level on all subscales. Children with psychiatric diagnoses and taking psychotropic medicines had more behavior problems and less prosocial behaviors than their counterparts. Mean scores between groups are presented in Table 2.
Significance/implications

Data indicated a single-factor solution for the prosocial behavior section and a five-factor solution for the problem behavior section. These results are slightly different than originally reported by Aman et al. (1996), but similar to a study on a PDD population (Lecavalier et al., 2004). Despite a poor fit, factor loadings and alpha coefficients were high and most items loaded on their anticipated subscales. Criterion validity of the NCBRF was supported by youth with psychiatric diagnoses or taking psychotropic medications scoring higher on problem behavior subscales and lower on prosocial subscales than participants without a psychiatric diagnosis or not taking medications. Additional research on the NCBRF is needed, particularly with respect to items found in the sixth factor as originally reported by Aman et al., 1996.

Table 2. Criterion Validity: NCBRF Scores Between Groups (n = 292)

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Medication</th>
<th>No Medication</th>
<th>F value</th>
<th>Diagnosis</th>
<th>No Diagnosis</th>
<th>F value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliant/Calm</td>
<td>7.0</td>
<td>9.3</td>
<td>33.3*</td>
<td>6.4</td>
<td>9.0</td>
<td>38.7*</td>
</tr>
<tr>
<td>Adaptive Social</td>
<td>4.7</td>
<td>5.7</td>
<td>16.5*</td>
<td>4.4</td>
<td>5.6</td>
<td>18.6*</td>
</tr>
<tr>
<td>Conduct Problems</td>
<td>21.6</td>
<td>11.4</td>
<td>65.2*</td>
<td>24.3</td>
<td>12.2</td>
<td>84.3*</td>
</tr>
<tr>
<td>Insecure/Anxious</td>
<td>12.6</td>
<td>7.4</td>
<td>26.8*</td>
<td>15.2</td>
<td>7.4</td>
<td>56.9*</td>
</tr>
<tr>
<td>Hyperactive</td>
<td>15.5</td>
<td>10.0</td>
<td>48.3*</td>
<td>16.3</td>
<td>10.7</td>
<td>42.8*</td>
</tr>
<tr>
<td>Self-Injury</td>
<td>4.3</td>
<td>1.6</td>
<td>48.3*</td>
<td>4.2</td>
<td>2.1</td>
<td>21.4*</td>
</tr>
<tr>
<td>Self-Isolated</td>
<td>7.0</td>
<td>4.3</td>
<td>28.0*</td>
<td>7.1</td>
<td>4.8</td>
<td>17.4*</td>
</tr>
<tr>
<td>Overly Sensitive</td>
<td>7.5</td>
<td>5.3</td>
<td>33.6*</td>
<td>8.1</td>
<td>5.5</td>
<td>38.9*</td>
</tr>
</tbody>
</table>

* Summary of subscale name. *p < 0.001

The assessment of behavior and emotional problems in youngsters requires psychometrically sound instruments. This study was the first to assess the factor structure of the NCBRF in an English-speaking, heterogeneous sample of youth with ID. Factor analysis of the Problem Behavior section yielded similar results to previous studies. Analysis of the Social Competence section did not produce a single-factor solution similar to the original study, potentially indicating a different structure in heterogeneous populations. Internal consistencies for the subscales were high, lending support to the construct validity of the instrument. The factor structure may need to be revisited with a larger community sample. Future studies need to examine whether or not a sixth factor emerges from analyses in the Problem Behavior section and if the Social Competence section has one or two factors. Additional studies with large samples will allow for more reliable results.

It is essential that further analysis, refinement, and comparison of assessment instruments occur, because this can lead to more reliable diagnosis and treatment of behavior and emotional problems. This, in turn, will improve the lives of individuals with disabilities and their caregivers.

REFERENCES


**Other Publications of the Research**


**Presentations of the Research**

EVIDENCE AND EMPOWERMENT
AMONG CONSUMERS IN THE PUBLIC MENTAL HEALTH SYSTEM

The Ohio State University
College of Public Health

Sandra J. Tanenbaum, PhD

Public mental health services are delivered across a highly fragmented network to consumers with severe mental illness, limited financial resources, and minimal social supports. Over the last decades, two approaches—Evidence-Based Practices (EBPs) and a recovery movement—have emerged to improve the treatment and services as well as the lives of mentally ill individuals. Evidence-Based Practices (EBPs), on one hand, are often perceived as bringing a scientific solution to the problems of poor quality, unwarranted variation, and unnecessary costs associated with the public service delivery mechanism (IOM, 2001; Sohjania, Duncan, McDonald, & Wachter, 2002; Wennberg, 2004). The recovery movement seeks, on the other, to empower people with mental illness by emphasizing housing, employment, and peer support (Tanenbaum, 2008). Even though mental health policy makers and program officials support both approaches (New Freedom Commission, 2003; NIMH, 2008; SAMSHA, 2008; Tanenbaum, 2005; 2008), little attention has been paid to the convergence of the two.

This research project was undertaken to probe the relationship between the two approaches in the lives of consumers who are involved in Ohio’s public mental health system and by extension, on information that might pertain to treatment decisions. Because EBPs may not be familiar to consumers, the study design stepped back from that concept. Participants were invited to speak about evidence, information generally, the decision-making processes, and relationships with decision-makers, primarily psychiatrists. The study did not propose hypotheses; rather it sought to expose the major themes in participants’ talk about the subject matter.

Methodology

“Evidence and Empowerment” was a two-year qualitative study which included focus groups and face-to-face interviews. The Ohio State University provided a seed grant for the focus groups, and the Ohio Department of Mental Health provided a research grant for the interviews. For both the focus groups and face-to-face interviews, consumers were paid $20 each to participate. Flyers were posted at each site to recruit participants. Samples were stratified for demographic or diagnostic characteristics.

In 2005, 38 consumers participated in four focus groups convened over a month’s time. Two groups were held in a clubhouse setting in a major city and two at a consumer-operated center in a suburban/rural county. Even though the sample was a convenience sample, the focus group members were relatively diverse: 16 men and 22 women; one-third African American; all between the ages of 20 and 65, mostly between the ages of 30 and 40. Although participants were not asked to give their diagnoses, they disclosed mood, anxiety, and thought disorders and frequently more than one. They commonly stated that they had been re-diagnosed over time. The clubhouse site was affiliated with a community mental health center, but housed at a different location. Case managers referred clubhouse members for broadly construed pre-vocational and vocational activities. The consumer-operated center
was independent, and although mental health agencies directed some clients there, the center
distinguished its mission from clinical care of any kind. Focus group questions were open-ended and
began with general queries about how participants know what to do about their illnesses. The concept of
EBPs was introduced by describing EBPs as the application of scientific findings to decisions about
individual care. This led to questions about the practitioner-consumer relationship, especially in regard to
the roles of information and choice. Focus group discussions lasted 90 minutes.

In 2006, the Principal Investigator (PI) conducted face-to-face interviews with 43 consumers at
three sites: the urban clubhouse where two focus groups had met and a mobile office, housing a consumer
quality review team, parked adjacent to mental health centers in smaller cities. Thirteen to 15 consumers
were interviewed at each site for a total sample of 43. Four interviews resulted in unusable data, reducing
the sample size to 39. Like the focus groups, the sample was relatively diverse. Of the 39 interviewees,
19 were men and 20 women; a third African-American, and all between the ages of 23 to 60, with the
largest number in their 40s. Consumers were not asked to disclose their diagnoses; many reported mood,
anxiety and thought disorders, frequently more than one. The interview questions were similar to the
focus group questions; interviews lasted from 15 minutes to an hour.

For both the focus groups and face-to-face interviews, the sessions were audiotaped, and the tapes
were transcribed. The PI coded participant responses by theme, and responses in each thematic category
were further coded into constituent subcategories. The PI used Atlas.ti computer software to organize the
interview data into themes. Thematic responses were not specifically counted; however, themes and sub-
themes represent similar responses by multiple participants. Given the exploratory nature of the research
and the use of a convenience sample, the range and logic of consumers’ responses were considered more
significant than actual frequencies would be.

**Results**

The results section is broken into two sub-sections which are focused on group findings and face-
to-face interview findings.

**Table 1. Thematic Categories and Subcategories: Focus Groups**

| Category 1: Consumers have positive and negative attitudes toward evidence. |
| Evidence is preferable to trial and error. |
| Science leads to progress in mental health care and in society’s treatment of consumers. |
| Aggregate study findings may not be relevant in individual cases. |
| Short-term research may not be informative about long-term treatment. |

| Category 2: Consumers seek and receive information from multiple sources. |
| Consumers actively seek and passively receive information. |
| Sources include the internet, libraries, television and pamphlets. |
| Good physicians share information and may revisit even informed decisions. |
| Family and friends offer information and advice. |

| Category 3: Consumers have competing and complementary principles for decision-making. |
| Good physician-patient relationships may trump information. |
| Effective treatment is necessary but not sufficient to recovery. |
| Personal meanings of treatment may matter more than effectiveness data. |
| Individuals are expert about their own illnesses, treatment and recovery. |
| Values, including “humanitarianism,” are fundamental to successful programs. |
Focus Group Findings

Focus group findings are summarized in Table 1. Three major thematic categories emerged, and each category comprises multiple sub-themes.

Category 1: Consumers have positive and negative attitudes toward evidence.

Few focus group members had not previously heard of EBP. Once EBP had been described, however, consumers’ responses were to the point and often favorable. For some participants, a psychiatrist’s use of scientific studies signaled concern for the consumer’s well-being by caring enough to be fully informed.

Participants also viewed evidence as contributory to progress and characterized it as an antidote to stigma. Consumers saw science as having reduced the suffering of other illness groups and expressed hope that they would similarly benefit from research. A number of participants stated that research had established mental illness as a brain disease and that this was reducing society’s discrimination against individuals with mental illness.

Participants also had misgivings about using evidence in their care. They were concerned about the differences between study subjects and individual consumers. Some wondered if aggregate findings were applicable to them as unique persons. A number voiced the opinion (which appears below as a competing principle) that individuals are expert in their own diseases: “I mean we’re the ones that know our bodies…”

Participants also queried the use of short-term studies to recommend long-term treatment. Most consumers had been medicated for years and even decades. Many were concerned that they were serving as “guinea pigs” by taking drugs that had been studied only for months and in drug combinations that may not have been studied at all. An additional misgiving about psychopharmacological evidence arose from the perceived dishonesty and greed of the pharmaceutical industry.

Category 2: Consumers seek and receive information from multiple sources.

On the subject of information more generally, participants related that they were both active information-seekers and more passive users of information provided. Participants sought information through online searches, pharmaceutical ads, public libraries, and collections housed at mental health agencies or program sites. Sites where they received care gave a number of consumers material about their illnesses and other subjects.

Human sources of information included pharmacists, psychiatrists, consumers who taught classes, and families and friends. As a group, pharmacists compared favorably to physicians; pharmacists were said to have “more knowledge” and to “give you more time.” Consumers also spoke approvingly of the written material accompanying every prescription. Several participants said they read the material carefully and relied on it to reinforce what their physicians told them or to reassure themselves when new side effects appeared.

Participants found it easy to say whether a psychiatrist was a good one or not. One characteristic of a good physician was ability to share information, sometimes in the form of evidence. They looked to them for information about their illnesses and treatments and on a variety of other matters.
Consumers who described information-sharing by physicians spoke positively about the expectation that any particular decision could be revisited and revised. For most participants, life with a mental illness entailed repeated diagnosis and re-diagnosis. Treatments and treatment combinations changed frequently, often because they were ineffective or had adverse effects.

**Category 3: Consumers have competing and complementary principles for decision-making.**

Information, and even evidence, sometimes serves as a guide to action but consumers also have competing and complementary principles for decision-making. First, physician-patient relationships may trump information of any kind. Participants treasured what they described as good relationships. A good psychiatrist was overall the most credible source of information.

Second, although evidence could be informative, its persuasiveness was limited by the scope of its subject matter. Consumers believed that although studies might demonstrate treatment effectiveness, an intervention was at best necessary and never sufficient for making people well. This was especially true of evidence from pharmaceutical research; even the most effective medication was said to give consumers only “a chance to learn and see.” Many echoed the mental health recovery movement’s assertion that getting well is a journey, taken by individuals, according to their best lights and with help from peers and others (Deegan, 1988). A small number viewed their conditions as constituting a specific need for a specific intervention.

Third, personal meanings may matter more than effectiveness data to consumers facing treatment choices. Medical care requires sense-making by both physicians and patients, and often the meanings given to illnesses and treatments are as fundamental to healing as the so-called “facts” of the case (Frank, 1995). Consumers gave meanings to their experiences. In two cases participants said they would discount drug effectiveness data in favor of the personal meanings they gave to medication compliance. One adhered, with reservations, to a drug regimen because he respected his father’s decision to do the same [for heart disease]. One associated medication with her mother’s unsuccessful treatment for cancer, and prevailed upon her psychiatrist not to prescribe.

Fourth, as noted above, consumers considered themselves experts in their own illnesses, treatment and recovery. Participants spoke about knowing their own bodies best and having the benefit of experience that could not be captured in a medical record or scientific study. Many had been psychiatric patients for lengthy periods and were especially reluctant to give up anything they considered to be working for them, whatever the evidence.

Finally, participants were asked about the mental health programs or consumer-operated center that they attended. How would they respond to evidence that the programs were effective, or perhaps ineffective? The idea that programs as well as treatments might be studied was new to most participants, and their responses were mixed. Participants held that their programs were fundamentally sound because they were based on the right values—“humanitarianism,” peer support and free choice. Asked if study findings could convince them that their programs did not work, consumers said emphatically that they could not.

**Face-to Face Interview Findings**

The findings from the interview portion of the study are summarized in Table 2. Three major thematic categories were repeated, and two more were added. Each comprised a set of subcategories.
Table 2. Thematic Categories and Subcategories: Interviews

Category 1: Consumers have positive and negative attitudes toward evidence.
- Evidence is preferable to trial and error.
- Consumers want to know what is likely to help and what has helped others.
- Research symbolizes someone’s concern about mental illness.
- Aggregate study findings may not be relevant in individual cases.
- Research is flawed methodologically, takes too long, and embodies misunderstandings of mental illness.

Category 2: Consumers seek and receive information from multiple sources.
- Consumers want more information than they get.
- Physicians and pharmacists are important sources of information about medication.
- Mental health center staff and classes are especially important sources of information.

Category 3: Consumers have competing and complementary principles for decision-making.
- Opportunities for decision-making are few.
- Consumers are inclined to decide in favor of a medication change if the new medication has practical advantages or positive effects.
- Consumers are inclined not to change a medication because change is frightening or if new medication may have negative effects.
- The decision-making process may involve explanation and advice from others and the understanding that every decision may be revisited.
- Non-compliance with a drug regimen is based on practical disadvantages, adverse side effects, and the consumer’s state of mind.

Category 4: Although formal shared decision-making is rare, psychiatrists may involve consumers in physician decisions.
- Psychiatrists may elicit participation and respond to consumers’ experiences and the information they provide.
- Psychiatrists may offer to revisit decisions if the consumer requests a change.
- Listening, understanding and mutual trust characterize good psychiatrist-consumer relationships.
- Shared decision-making obstacles include: no choice offered; fear of psychiatrist retribution; psychiatrists’ general unresponsiveness.

Category 5: Consumers identify what is and is not “working” for them.
- Consumers need jobs, housing, education and cash benefits.
- Consumers need improved mental health care, including more time with their psychiatrists.
- Consumers benefit from case managers and other mental health center staff, medication, and psychotherapy.

Category 1: Consumers have positive and negative attitudes toward evidence.

Interviewees, like focus group members, commented on evidence and its role in decision-making, but less frequently and in less detail. Still, almost a quarter of the interviewees expressed some positive experiences with or attitudes toward scientific study. Only one consumer reported that his psychiatrist read and discussed new findings and made the articles available to him. Others appreciated the value of hearing about how specific interventions had affected other people. One interviewee favored evidence
over the trial-and-error approach that he had experienced. Research had symbolic value for another: “It shows me that somebody out there is just pondering too about mental illness. I am not the only one that would like to know what is wrong...It’s a good feeling. It’s a healthy feeling.”

An equal number of interviewees expressed some negative experiences with or attitudes toward scientific study (although about half of these interviewees belong to the positive group as well; e.g., if they wanted but were not getting evidence). Most of the negative comments related to research inadequacies: reliance on too-broad official categories of mental illness; too slow to produce results; findings valid only until they are inevitably overturned. Researchers were said not to understand mental illness well enough to do meaningful work. Interviewees objected to evidence on the basis that people with mental illness are individuals and decisions about their care cannot be based on aggregate findings.

Category 2: Consumers seek and receive information from multiple sources.

Interviewees commented more frequently about information than evidence per se. Most spoke about information generally or medication-related information specifically. Some wanted more information; some reported having difficulty getting it, especially from their psychiatrists. Others cited their psychiatrists as good sources of information, at least about medication. A modest percentage of the interviewees received information from a pharmacist, used books, pamphlets, or the internet. Many more reported receiving information from a community mental health center or other provider agency, where classes or groups were devoted to a range of topics, such as mental health.

Category 3: Consumers have competing and complementary principles for decision-making.

Because EBP is designed to apply evidence to decision-making, interviewees were asked about their decision-making processes. The decision in question was, first, whether and/or how they would decide to make a change in their care – a question deriving in part from the contention that EBP is necessary because most current interventions are not evidence-based. Change, therefore, is the point of EBP. Most interviewees discussed decision-making. A small number reported that they had in fact had an opportunity to choose a course of treatment. Evidence was mentioned indirectly as a factor in decision-making; some said that they would try something new if the chances were good that it would work or if aggregate findings showed it worked. Others were inclined to take a different medication if it worked quickly or if they could take less of it, or if their condition were deteriorating or if there were positive effects; e.g., having more energy. They would try something new if it would improve their prospects for getting a job or securing disability benefits. Some were reluctant to make a change because any kind of change was frightening. The risk of adverse physical side effects was also cited as a reason to avoid medication changes. Potentially increased costs were also a concern.

Interviewees provided information about the decision-making process. Interviewees wanted to know that decisions could be revisited. Decisions to change medication, for example, were hastened by satisfactory explanations of their advisability and shared understandings that no decision is final. They identified therapists and case managers as well as psychiatrists as participants in their decision-making processes. One significant decision is the consumer’s choice to discontinue medication. Compliance with medication regimens has implications for the well-being of the consumer, and in some instances for the well-being of people around her. Most interviewees who decided not to comply cited that the drugs had adverse side effects or were ineffective or too expensive as the reasons. Consumers also reported that various states of mind contributed to their decisions to discontinue medication. These ranged from “losing it” over a family tragedy, to a period of diffuse anger, to a sense of having reached the “limit” after 19 years on medication, to a need to feel more “normal.”
Category 4: Although formal shared decision-making is rare, psychiatrists may involve consumers in physician decisions.

Another set of responses had to do specifically with potentially shared decision-making between the consumer and his/her psychiatrist. Most interviewees spoke about the psychiatrist-patient relationship, including how treatment decisions were made. Some reported that the physician is always right. Others named various obstacles to shared decision-making: they were given no choice; psychiatrists simply insisted on a given treatment despite serious side effects; the psychiatrist would respond to a consumer requesting input by increasing the dosage of the offending medications or hospitalizing him against his will; and psychiatrists are generally unresponsive to consumers’ concerns about their care, don’t understand those concerns, or are perfunctory in their interactions overall.

In contrast, about half of the consumers who spoke about their psychiatrists considered them responsive to their concerns. For instance, “I told the doctor it wasn’t working for me, and he changed it for me. And he gave me a good medicine this time.” Some interviewees reported that their psychiatrists specifically asked them about what they would like to do next, and a few consumers praised their psychiatrists because they responded to new information. Not surprisingly, interviewees also mentioned the importance of listening, understanding and trust – not only of the physician but of the patient. This creates mutuality in the decision-making process.

Category 5: Consumers identify what is and is not “working” for them.

EBP is about determining what “works” and doing it. Some interviewees spoke about what was and was not working. Most who related their needs named jobs, housing, or education, or cash or access to cash through the Social Security system. A smaller number sought improvements in their care, including more time with psychiatrists, additional and more sympathetic staff, and expanded and higher-quality activities. Two consumers included an end to stigma among their needs.

Interviewees, in equal numbers to those who related their needs, reported things that were working for them. Many spoke approvingly of their case managers. Others praised the mental health centers, including other staff; e.g., a job coach. Medication was said to work as was talk therapy.

Discussion

The findings of this study are far from definitive, but do document some consumers’ perspectives on EBPs. It is clear that different consumers have different perspectives and that study findings offer the range and logic of participants’ responses. Given the design of the study, correlations between consumers’ characteristics and their views cannot be established. However, focus group members’ responses differed somewhat from interviewees’. Focus group participants were more likely to want and seek out information, including evidence, and to weigh the strengths and weaknesses of scientific research. They were less likely to acquiesce in their psychiatrists’ decisions about them; they made greater reference to recovery principles (SAMHSA, 2005).

These differences seem to be attributable to various factors. Two focus groups but none of the interviews were conducted at a consumer-operated center, where members appeared to be both higher functioning and more engaged in the recovery movement. All focus groups were scheduled in advance, and participation required signing up and then meeting the group at the appropriate time. Interviewees in the mobile office, on the other hand, tended to be consumers with appointments at mental health centers.
who stopped by the van because they heard they would be paid. Overall, consumers interviewed seemed lower functioning and more passive, although participants in both parts of the study varied widely on these characteristics.

The findings of this research must be read through an overlay of extreme poverty. Consumers in the public mental health system are the poorest and most persistently mentally ill. Study participants spoke repeatedly about income, jobs and housing. Some gave a perfunctory interview only to receive the $20 payment; a small number of interviews were un-analyzable owing to the participant’s toothlessness and consequent indecipherability. Possibly, more comfortable consumers may have responded differently, with a greater sense of empowerment vis-à-vis the mental health system and those who determine their care.

From a mental health policy perspective, this study suggests that the EBP initiative has mostly bypassed consumers in the public system. Although practitioners may be employing specific EBPs, consumers do not recognize them as such and are not, for the most part, invited to consider evidence that may play a role in their clinicians’ decision-making. On the other hand, at least some consumers would welcome evidence about their treatments or programs, and an even larger number are enthusiastic about information generally. Also, consumers, while appreciative of what scientific research can offer, have reasonable misgivings about its usefulness in individualized care.

Consumers desire more information, but their decision-making operates on competing and complementary principles as well. Most of these involve the particularity of their situations and the opportunity to override evidence with personal experiences and relationships. Responses resonate with tenets of the recovery movement, including the desirability of making decisions about one’s health based on self-knowledge and personal values. Still, participants in no way discounted good relationships with their psychiatrists. These sometimes included information-sharing and always entailed caring and trust. Shared decision-making may be regarded as the optimal physician-patient relationship, even for psychiatrists and patients with mental illness, and evidence-based shared decision-making is distinguished by combining the best science with consumers’ preferences and values (Adams & Drake, 2006). Some consumers in this study described, if not true shared decision-making, then a kind of involvement in the decisions their psychiatrists made about them. This was an opportunity they valued highly.

The research reported here suggests the following policy recommendations:

First, consumers are capable of appreciating and responding to evidence, especially if it is framed as a kind of information, with strengths and weaknesses. Therefore, evidence of treatment and program effectiveness should be made available to consumers in an easily understood form and through the same channels that disseminate other kinds of information. The psychiatrist-patient relationship is an important venue for these communications, but consumers related that case managers, classes at mental health centers and classes taught by trained consumers were also important sources of information and less subject to the time pressures of psychiatrist appointments. Providing evidence to consumers presents two difficulties for the mental health system. The presentation of evidence must be accompanied by a frank assessment of its value, something that has been generally overlooked in the enthusiasm of some policy-makers for EBPs. Consumers will want to know how strongly scientific studies predict what will happen to them. In addition, informing consumers about specific EBPs may stoke demand for these services. Will they be informed only of the evidentiary status of what is already available to them or also about what the literature has shown to be truly effective?
Second, more evidence is no substitute for better relationships between consumers and their psychiatrists, case managers and others. To the extent that EBPs improve functioning and foster independence, they may lessen consumers’ overall reliance on the mental health system. For consumers who continue to see practitioners, the importance of interest, responsiveness and respect in these relationships cannot be overstated. Even the ideal use of evidence, in shared decision-making, requires that psychiatrists listen to patients and consider carefully their points of view. Systemic factors, such as psychiatrist appointment length and frequency, and availability of psychotherapy or counseling may affect the scope and quality of consumers’ relationships. Consumer-taught courses that emphasize personal responsibility for one’s health care could be expanded and could improve more time-limited interactions between consumers and professionals.

Third, although evidence-based, shared decision-making will benefit some consumers, people with mental illness generally have very few real opportunities for self-determination. Poverty, stigma, and mental illness severely limit their choices, and many study participants reported that they were barely making it day-to-day, taking from the system what they could get. A not insignificant number expressed fears of coercion, including unnecessary hospitalization. Consumer self-determination might be advanced through the purposeful cultivation of choice points within the system. Financing schemes that allow consumers to “spend” their benefits on what they think they need could be combined with accessible information about probable outcomes to reconcile any underlying incompatibilities between EBP and recovery (Tanenbaum, 2006).

This research has substantial limitations. Convenience sampling in a limited number of sites makes its findings suggestive at best. Because the focus groups and interviews were semi-structured, responses were not always to-the-point and findings touch on a broad array of topics. The point of the study was to look behind the current enthusiasm for EBP and gauge its applicability to the experiences of consumers in the public mental health system. It established that at least some people with mental illness are potentially consumers of evidence. They will bring to EBPs the complexity of decision-making, the centrality of relationships and the stark limitations of their life circumstances.

REFERENCES


TRANSPORTING EVIDENCE-BASED PRACTICES
IN THE CONTEXT OF SCHOOL-MENTAL HEALTH PARTNERSHIPS

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The evidence-based treatment (EBT) movement advocates for improving client outcomes by recommending and employing specific treatments that have been shown to work in controlled clinical trials (American Psychological Association, 2006). This movement has made significant progress in identifying scientifically robust services for youth (Lonigan, Elbert, & Johnson, 1998). Indeed, a recent meta-analysis (Weisz, Jensen-Doss, & Hawley, 2006) demonstrated that EBTs outperformed usual care, indicating that EBTs have the potential to better meet the needs of youth receiving services in typical care settings. However, the EBT movement has been criticized for being “an academic exercise with little applicability to real-world concerns facing mental health providers” (Hoagwood & Johnson, 2003, p. 6). One concern is that participants from tightly controlled, university-based studies may not be representative of the families that are typically referred for treatment in community settings. As such, models of research are shifting from examining the “efficacy” of interventions (how well treatment works under controlled conditions) to examining the “effectiveness” of interventions (how well treatment works when examined with real world cases and when implemented by existing community providers) (Chorpita, 2003). Because the transfer of EBTs into a community setting represents a multi-step process, research must examine both quantitative and qualitative data associated with each phase of the transfer process (e.g., Chorpita, 2003; Hoagwood & Olin, 2002). Further, research is needed to explore the feasibility of implementing EBTs in typical care settings and the effectiveness of EBTs when implemented in a more flexible format by different types of providers.

Many school mental health programs are attempting to use EBTs (Rones & Hoagwood, 2000); however, integrating and evaluating the effectiveness of EBTs in schools presents many challenges. Unfortunately, communication in the literature about the process of overcoming these challenges is limited. This study provides preliminary evidence toward this agenda within the domain of treating attention-deficit/hyperactivity disorder (ADHD) and other disruptive behaviors in the school setting.

Conceptual Framework

Although providing mental health services in schools is not new (e.g., Rones & Hoagwood, 2000), an innovative framework for enhancing the quality and comprehensiveness of the school delivery model is being articulated. Namely, the expanded school mental health (ESMH) framework highlights the importance of interdisciplinary partnership development among schools, agencies, and families; services that address identified community needs and that span the entire continuum of care, and ongoing program evaluation to document service effectiveness (Weist & Albus, 2004).

This framework seems particularly important in the prevention, early identification, and treatment of disruptive behavior problems, as most EBTs for these problems provide intervention in the child’s daily context (home or school; Pelham, Wheeler, & Chonis, 1998). Indeed, research shows that
integrating behavioral services into schools to address disruptive behavior enhances access to and utilization of ecologically-based services (e.g., Atkins et al., 2006), fosters early identification of problematic behavior (Conduct Problems Prevention Research Group, 2004), and reduces symptoms and impairment in youth (e.g., Owens, Murphy, Richerson, Girio, & Himawan, in press).

This project represents a community’s attempt to enhance their school-mental health partnership by collaborating with a university to implement the Youth Experiencing Success in School (Y.E.S.S.) Program, a school mental health program comprised of EBTs for youth with inattentive and disruptive behavior problems that has demonstrated success for youth in low-income families in rural communities in the Appalachian region of Ohio (Owens, Murphy et al., in press). The aims of the Y.E.S.S. Program (www.yessprogram.org) are to enhance the use of EBTs in schools, improve academic and behavioral functioning of children, enhance home-school collaboration and support services for parents, provide ongoing collaborative consultation for teachers, and conduct program evaluation. The Y.E.S.S. Program exemplifies ESMH in many ways (Owens, Murphy et al., in press), including that it uses EBTs to address identified community needs (i.e., intensive behavioral intervention in the classroom, enhanced home-school linkages) and that it prioritizes collaborative teacher consultation, interdisciplinary partnership development and service provision.

The early success of the Y.E.S.S. Program suggested promise (Owens et al., 2005); however, because services were provided by supervised graduate students, questions remained about treatment outcomes when the program was implemented by community professionals. As the EBT movement shifts from efficacy research toward effectiveness and dissemination research, it will be important to examine the status of the treatment provider (e.g., paraprofessional versus professional) and the degree of technical support provided by the program developer, as existing data about the effects of these factors on outcomes are mixed (e.g., Weisz, Donenberg, Han, & Weiss, 1995; Weisz, Weiss, Han, Granger, & Morton, 1995). Because of the program’s success in southeastern Ohio, there was interest in examining possible adoption of the model in south central Ohio. This created an opportunity to replicate previous findings, and also evaluate treatment effectiveness when program services were provided by community mental health staff as an alternative to graduate student clinicians.

**Research Objectives and Hypotheses**

The goals of this project were to replicate the effectiveness of the Y.E.S.S Program and to evaluate treatment effectiveness under High University Involvement Conditions (HUI; services provided by university graduate students) and Low University Involvement Conditions (LUI; services provided by community mental health staff). It was hypothesized that, relative to the wait-list condition, children receiving treatment via the Y.E.S.S. Program (i.e., both HUI and LUI) would demonstrate improvement in disruptive behavior and academic functioning. It was also hypothesized that, relative to the wait-list condition, parents and teachers in the treatment conditions (i.e., both HUI and LUI) would report a decrease in stress and an increase in parent-teacher communications. With regard to the HUI and LUI conditions, a directional hypothesis was not made; we sought to obtain quantitative and qualitative data that would inform future research.

**Methodology**

Participants. Participants were 72 children in Kindergarten through 6th grade. The LUI condition included 17 children from one school (in Adams County) who were consecutively referred to the program over two years. The HUI condition included 41 children from five schools (in Athens and Hocking
Counties) who were consecutively referred to the program over the same two years. The wait-list control condition included 14 children from two schools (in Hocking County) in which program implementation was delayed for one year. These two schools received Y.E.S.S. Program services following their year on the wait-list (see Table 1 for participant demographic information). Socioeconomic status data, quantified using Hollingshead (1975) calculations, indicate that the sample is comprised of low-income families. In the HUI condition, 83 percent met criteria for ADHD; 68 percent of those children also met criteria for co-occurring Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD). In the LUI condition, 71 percent met criteria for ADHD; 50 percent of those children also met criteria for co-occurring ODD or CD. In the wait-list condition, 50 percent met criteria for ADHD; 86 percent of those children met criteria for co-occurring ODD or CD. T-tests indicated that the HUI and LUI groups did not differ on parent- or teacher-rated symptoms, or teacher-rated impairment; however, children in the LUI condition were rated by parents as more impaired than children in the HUI condition. Treated children (HUI+LUI) did not differ from the wait-list children on any treatment outcome variable (see Table 1).

**Instruments.** Parents completed a demographic questionnaire, the Disruptive Behavior Disorders (DBD) Rating Scale (Pelham, Gnagy, Greenslade, & Milich, 1992), the Impairment Rating Scale (IRS; Fabiano et al., 2006), the Ohio Scales – Short Forms (Ogles, Melendez, Davis & Lunnen, 2001), the Disruptive Behavior Stress Inventory (DBSI; Johnson & Reader, 2002), a parent-teacher contact questionnaire, and a satisfaction survey. Teachers completed the DBD Rating Scale, the IRS, the Ohio Scales – Short Form, the Index of Teacher Stress (ITS; Greene, Abidin, & Kmetz, 1997), the School Climate Survey (Bruns, Walrath, Glass-Siegel, & Weist, 2004), a parent-teacher contact questionnaire, and a satisfaction survey. We also obtained participants’ quarterly grades. Treatment compliance was monitored by tracking the frequency and types of contacts that the clinician had with parents, teachers, and child participants, and the percentage of days that the teacher successfully implemented the child’s daily report card intervention.

**Procedures.** Parent and teacher rating scales were completed at three time points throughout the year (fall, winter, spring) and were used to evaluate treatment outcomes. Treatment services were provided throughout the entire academic year and included behavioral parenting sessions, daily report card (DRC) procedures, teacher consultation, as well as individual child therapy as needed (see Owens, Murphy et al., in press for details). In the HUI condition, services were provided by supervised psychology and social work graduate students from the university. In the LUI condition, services were provided by a case manager from a community mental health center (CMHC). All program clinicians participated in 15 hours of preparatory training. Following training, program clinicians provided services on site at the elementary school for 20 hours per week. Graduate student clinicians received weekly supervision by university faculty. The case manager clinician received technical assistance (TA; via telephone or videoconference) from university faculty that was faded over the course of the year. In the first three months, TA was provided via one-hour, biweekly meetings, followed by one-hour sessions every three weeks.

**Results.**

Data were analyzed using Hierarchical Linear Modeling (HLM; the HLM models can be found in Owens, Girio, Himawan, and Abbott, in press). The HLM models test (a) whether the rate of change for individuals in each condition is statistically significant (i.e., different from zero) and (b) whether the rate of change for individuals in one condition differs from the rate of change for individuals in another condition. Analyses sought to answer two research questions: Do the strength of treatment outcomes differ under varying levels of university support (i.e., HUI versus LUI)? Do children in The Y.E.S.S.
Program (i.e., HUI+LUI) demonstrate significantly greater improvement than wait-list children (see Overall Treatment Outcomes below)?

Table 1. Demographic Characteristics of Participants by Condition

<table>
<thead>
<tr>
<th>Variable</th>
<th>HUI n (%)</th>
<th>LUI n (%)</th>
<th>HUI+LUI n (%)</th>
<th>Wait-list n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (M, SD)</td>
<td>7.61 (1.73)</td>
<td>8.26 (2.23)</td>
<td>7.80 (1.90)</td>
<td>7.20 (1.29)</td>
</tr>
<tr>
<td>Gender (male)</td>
<td>33 (80.5)</td>
<td>13 (76.5)</td>
<td>46 (79.3)</td>
<td>11 (78.6)</td>
</tr>
<tr>
<td>Race (Caucasian)</td>
<td>32 (78.0)</td>
<td>17 (100)</td>
<td>49 (84.5)</td>
<td>11 (78.6)</td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K through 3&lt;sup&gt;rd&lt;/sup&gt; grade</td>
<td>34 (82.9)</td>
<td>13 (76.4)</td>
<td>47 (81.0)</td>
<td>12 (85.7)</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt;, 5&lt;sup&gt;th&lt;/sup&gt;, or 6&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>7 (17.1)</td>
<td>4 (23.5)</td>
<td>11 (18.9)</td>
<td>2 (14.3)</td>
</tr>
<tr>
<td>Mothers without HS degree</td>
<td>9 (22)</td>
<td>9 (52.9)</td>
<td>18 (31.0)</td>
<td>5 (35.7)</td>
</tr>
<tr>
<td>Fathers without HS degree</td>
<td>10 (24.4)</td>
<td>10 (58.8)</td>
<td>20 (34.5)</td>
<td>4 (28.6)</td>
</tr>
<tr>
<td>Hollingshead SES (M, SD)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>24.61 (14.40)</td>
<td>18.29 (11.73)</td>
<td>22.7 (13.85)</td>
<td>25.89 (13.25)</td>
</tr>
<tr>
<td>On Medication at Referral&lt;sup&gt;a&lt;/sup&gt;</td>
<td>11 (26.8)</td>
<td>12 (70.6)</td>
<td>23 (39.7)</td>
<td>5 (35.7)</td>
</tr>
<tr>
<td>In Counseling at Referral&lt;sup&gt;a&lt;/sup&gt;</td>
<td>13 (31.7)</td>
<td>13 (76.5)</td>
<td>26 (44.8)</td>
<td>5 (35.7)</td>
</tr>
<tr>
<td>Identified for SPED</td>
<td>23 (56.0)</td>
<td>10 (58.8)</td>
<td>33 (56.8)</td>
<td>Not Available</td>
</tr>
<tr>
<td>IQ Estimate (M, SD)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>94.08 (11.93)</td>
<td>83.85 (16.51)</td>
<td>90.76 (13.21)</td>
<td>91.50 (6.68)</td>
</tr>
<tr>
<td>Met criteria for ADHD&lt;sup&gt;b&lt;/sup&gt;</td>
<td>34 (82.9)</td>
<td>12 (70.6)</td>
<td>46 (79.3)</td>
<td>7 (50.0)</td>
</tr>
<tr>
<td>Parent-Rated Hyper/Impul&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.59 (0.82)</td>
<td>1.65 (0.67)</td>
<td>1.60 (.77)</td>
<td>1.78 (.81)</td>
</tr>
<tr>
<td>Parent-Rated Inattention&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.64 (0.74)</td>
<td>1.80 (0.58)</td>
<td>1.69 (.70)</td>
<td>1.82 (.77)</td>
</tr>
<tr>
<td>Parent-Rated Overall Impairment&lt;sup&gt;a, c&lt;/sup&gt;</td>
<td>3.73 (1.84)</td>
<td>5.41 (1.06)</td>
<td>4.26 (1.80)</td>
<td>4.64 (1.69)</td>
</tr>
<tr>
<td>Teacher-Rated Hyper/Impul&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.97 (0.83)</td>
<td>1.69 (0.98)</td>
<td>1.88 (.88)</td>
<td>1.45 (.83)</td>
</tr>
<tr>
<td>Teacher-Rated Inattention&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.84 (0.83)</td>
<td>1.43 (0.95)</td>
<td>1.71 (.88)</td>
<td>1.25 (.82)</td>
</tr>
<tr>
<td>Teacher-Rated Overall Impairment&lt;sup&gt;c&lt;/sup&gt;</td>
<td>5.08 (1.01)</td>
<td>4.59 (1.97)</td>
<td>4.93 (1.37)</td>
<td>4.43 (1.91)</td>
</tr>
</tbody>
</table>

Note. SPED = special education; HS = high school.
<sup>a</sup>Denotes a significant difference between HUI and LUI; <sup>b</sup>Denotes a significant difference between Treatment (HUI+LUI) and Waitlist. <sup>c</sup>Time 1 ratings.

Strength of Treatment Outcomes

Teacher-rated variables. For children in the HUI condition, statistically significant improvement was observed in hyperactivity/impulsivity and conduct disorder symptoms, relationship with peers,
relationship with teachers, classroom functioning, and overall impairment, as well as teacher stress. That is, the rate of change for these variables was different from zero. For children in the LUI condition, the rate of change was statistically different from zero for relationship with peers, self-esteem, overall impairment, and teacher stress. Thus, children in both the HUI and LUI conditions were making significant improvement. Indeed, the HLM slope coefficients for all outcomes variables were in the same direction across conditions (i.e., indicating trends toward improvement). However, the HLM results indicated that the rates of change for the two groups did not differ from each other on any outcome variable.

Parent-rated variables. For children in the HUI condition, statistically significant improvement was observed in the parent-child relationship and in the child’s symptom severity and functioning on the Ohio Scales. Although the slope coefficients showed trends toward improvement, none of the variables for children in the LUI condition were significant. Consistent with teacher data, the rates of change for the two groups did not differ significantly from each other on any outcome variable.

Overall Treatment Outcomes

To examine the overall treatment effects, the HUI and LUI group were combined into one treatment condition and compared to the wait-list condition. Because the slopes of improvement for the HUI and LUI groups were not significantly different from each other for any outcome variable (as described above), and because the slope coefficients (indicating the direction of the slopes) were similar across the two groups, there was sufficient statistical justification for combining the HUI and LUI groups.

Teacher-rated variables. For children in the treatment condition, the rates of change were significantly different from zero for inattention and hyperactivity/impulsivity, relationship with peers, relationship with teachers, classroom functioning, self-esteem, overall impairment, and teacher stress (see slope coefficients in Table 2). For children in the wait-list condition, statistically significant improvement was not observed for any variable. Indeed, the slope coefficients for the two conditions were significantly different from each other for three of four symptom domains, one impairment domain (relationship with teachers) and overall impairment (see Group Comparison in Table 2).

Parent-rated variables. For treated children, the rates of change were significantly different from zero for hyperactivity/impulsivity, overall impairment, and for symptom severity and functioning on the Ohio Scales (see slope coefficients in Table 2). Although children in the waitlist condition did not demonstrate statistically significant improvement on any variable, slope coefficients indicated that the two treatment conditions were not significantly different from each other on any variable (see Group Comparisons in Table 2).

Grades. Quarterly grade point averages (GPAs) of the treated children did not improve significantly over the course of the year; yet, the slopes for the two conditions differed significantly, such that the GPA for the wait-list condition declined significantly over time (see slope coefficients Table 2).

Treatment Potency and Compliance

In the treatment condition (HUI+LUI), on average parents participated in 16 parenting sessions and teachers participated in 16 consultation sessions over the course of the year. Of the treated children (HUI+LUI), 52 percent had a Daily Report Card (DRC). Across all DRC targets, on average, children achieved their target goals 71 percent of the time, suggesting that children were achieving their DRC
goals on more days than not, even as the criterion for goal achievement was becoming more challenging. On average, across all DRC targets, teachers complied with DRC implementation procedures on 78 percent of school days.

Interestingly, t-tests revealed that parents in the HUI condition participated in more sessions ($M = 18.80; SD = 10.39$) than parents in the LUI condition ($M = 9.64; SD = 5.63$), $t(55) = 3.33, p < .002$. The frequency of teacher consultation sessions did not differ between the HUI and LUI conditions. In the HUI condition, 61 percent of treated children had a DRC and teachers complied with implementation procedures on 77 percent of school days ($M = 76.56; SD = 21.22$; range 10% to 100%). In the LUI condition, only 29 percent of treated children had a DRC, yet teachers complied with implementation procedures on approximately 80 percent of school days ($M = 82.37; SD = 24.80$; range 33% to 100%).

Table 2. HLM Coefficients Depicting Treatment Outcomes Based On Parent and Teacher Ratings by Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Teacher Ratings</th>
<th>Parent Ratings</th>
<th>Group Comparison</th>
<th>Group Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment Group</td>
<td>Waitlist Group</td>
<td>Group Comparison</td>
<td>Treatment Group</td>
</tr>
<tr>
<td>DBD Ratings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inattention</td>
<td>-.10*</td>
<td>.16</td>
<td>$p &lt; .05$</td>
<td>-.09†</td>
</tr>
<tr>
<td>Hyper/Impul</td>
<td>-.15**</td>
<td>.06</td>
<td>$p &lt; .10$</td>
<td>-.12*</td>
</tr>
<tr>
<td>Opp/Defiant</td>
<td>-.07</td>
<td>.15</td>
<td>$p &lt; .05$</td>
<td>-.10†</td>
</tr>
<tr>
<td>Conduct</td>
<td>-.08†</td>
<td>.11</td>
<td>$p &lt; .05$</td>
<td>-.04</td>
</tr>
<tr>
<td>IRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peers</td>
<td>-.42**</td>
<td>.07</td>
<td>$p &lt; .10$</td>
<td>-.12</td>
</tr>
<tr>
<td>Siblings</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-.13</td>
</tr>
<tr>
<td>Teacher/Parent</td>
<td>-.35**</td>
<td>.43†</td>
<td>$p &lt; .01$</td>
<td>-.26†</td>
</tr>
<tr>
<td>Academics</td>
<td>-.13</td>
<td>-.21</td>
<td>ns</td>
<td>-.26</td>
</tr>
<tr>
<td>Classroom/Family</td>
<td>-.39**</td>
<td>-.29</td>
<td>ns</td>
<td>-.32†</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-.32*</td>
<td>-.07</td>
<td>ns</td>
<td>.06</td>
</tr>
<tr>
<td>Overall</td>
<td>-.48**</td>
<td>.25</td>
<td>$p &lt; .01$</td>
<td>-.29*</td>
</tr>
<tr>
<td>Ohio Scales</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity</td>
<td>-1.51†</td>
<td>-3.11</td>
<td>ns</td>
<td>-3.25**</td>
</tr>
<tr>
<td>Functioning</td>
<td>1.38</td>
<td>4.22†</td>
<td>ns</td>
<td>1.59*</td>
</tr>
<tr>
<td>Parent Stress Number</td>
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<td>N/A</td>
<td>N/A</td>
<td>.19</td>
</tr>
<tr>
<td>Parent Stress Severity</td>
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<td>N/A</td>
<td>-.49</td>
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<tr>
<td>Teacher Stress Severity</td>
<td>-6.71**</td>
<td>-3.70</td>
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<tr>
<td>Teacher Stress Efficacy</td>
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<td>-.654</td>
<td>ns</td>
<td>N/A</td>
</tr>
<tr>
<td>GPA</td>
<td>.04</td>
<td>-.24*</td>
<td>$p &lt; .05$</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note. DBD = Disruptive Behavior Disorders; Hyper/Impul = Hyperactivity/Impulsivity; Opp/Defiant = oppositional defiant symptoms; IRS = Impairment Rating Scale; GPA = grade point average.

† $p < .10$, * $p < .05$, **$p < .01$, ns = nonsignificant.
Benefits of School-Mental Health Service Delivery Model

Home-school communication. Data from the contact questionnaire revealed the percent of teachers who reported daily and weekly contact with the child’s parents. In the HUI condition, daily communication from the teacher to the parent increased impressively from baseline, as 17 percent of teachers reported daily contact with parents at Time 1, and 65 percent and 48 percent of teachers reported daily contact with parents at Time 2 and Time 3, respectively. This demonstrates the utility of the DRC intervention in enhancing the frequency of communication from school to home. A similar trend, although smaller in magnitude, was witnessed in the LUI condition. Namely, at Time 1, 12 percent of teachers reported daily communication with parents, whereas 20 percent and 27 percent of teachers reported daily contact at Time 2 and Time 3, respectively. In contrast, in the wait-list condition, no teachers reported daily communication with parents at any of the three time points.

In addition, both daily and weekly communication from the parent to the teacher increased from Time 1 to Time 3 in the HUI condition. More, specifically, 28 percent of parents communicated with the teacher on a daily or weekly basis at Time 1 and nearly 50 percent of parents communicated with the teacher on a daily or weekly basis at Time 2 and Time 3. In the LUI condition, daily communication increased initially, but then dropped off to a zero rate in the spring. In the wait-list condition, communication from parent to teacher was respectable to start, (50% of parents had daily or weekly communication); however, this level did not improve over the course of the year.

Satisfaction. Data from parent and teacher satisfaction surveys indicated that the majority of parents and teachers agreed or strongly agreed that program services improved academic performance (84% of parents; 52% of teachers) and behavioral performance (73% of parents; 71% of teachers). Parents reported that they were included in treatment decision-making (31% “strongly agree;” 53% “agree”) and that the clinician was responsive to their concerns (71% “strongly agree;” 26% “agree”). Fifty-five percent of parents reported that they preferred school-based services to clinic-based services. Reasons for this school-based preference included more frequent appointments (36%), more flexible appointment times (37%), and fewer transportation difficulties (32%) as compared to clinic-based services. Interestingly, 19 percent reported school meetings were less embarrassing than clinic meetings. Overall, 86 percent of parents reported being mostly or very satisfied with treatment.

Additionally, teachers reported that interventions were useful (89%) and consultation was helpful (94%). In fact, teachers believed the program decreased stress (68%), allowed for more time devoted to teaching (69%), and benefits outweighed the costs (73%). It is notable that 91 percent of teachers agreed that the clinician was viewed as part of the school culture rather than as a consultant from an outside agency. Finally, 74 percent of parents and 51 percent of teachers reported that parent-teacher communication increased as a result of treatment.

Discussion

Study results provide optimism that EBTs can retain their effectiveness when transported to schools serving children living in low-income families, and that EBTs can be delivered by community-based professionals in the context of a technical assistance model. In general, children receiving treatment via the Y.E.S.S. Program experienced significant reductions in the core symptoms of ADHD (i.e., hyperactivity/impulsivity), overall impairment as rated by parents and teachers, and teacher stress. In addition, teachers observed significant treatment-related improvements across multiple domains of child functioning including peer relationships, student-teacher relationships, and classroom functioning.
Improvements in these domains are critical as they are associated with better psychological adjustment, enhanced connectedness to school, and better academic performance (e.g., Domagala-Zysk, 2006; Vedder, Boekaerts & Seegers, 2005).

Interestingly, significant differences were not observed in treatment outcomes between the HUI and LUI conditions. Thus, our findings offer optimism that EBTs can retain their effectiveness when transported to a community context, and perhaps under varying levels of university support. Although statistically significant findings were not found with regard to treatment outcomes, interesting qualitative differences between the HUI and LUI conditions did emerge in the process of school-mental health partnership development and in the process of delivering treatment in a modality that departs from business as usual. We have recently published a discussion of the qualitative information related to the benefits experienced, as well as the lessons learned from this study (see Owens, Girio et al., in press). These lessons learned highlight that achieving the promise of equitable dissemination of EBTs to underserved children through ESMH requires policy changes at the national, state, and local level including (a) billing mechanisms that support the delivery of evidence-based services across the continuum of care in schools (i.e., reimbursement for teacher consultations); (b) support for personnel positions devoted to leadership, supervisory, and networking positions so that agencies have staff who can concentrate on partnership development; (c) support and training for data collection and data-driven decision making; and (d) provision of continued training for workforce development so that future mental health professionals are prepared to work on interdisciplinary teams in the context of ESMH models.

This study also substantiates several purported benefits of ESMH, including enhanced access to services (i.e., less than half of the sample was connected to mental health services prior to enrollment in the Y.E.S.S. Program), provision of ecologically-valid services (i.e., teachers successfully integrated the daily report card into the child’s classroom routine), and communication between parents and teachers (see contact questionnaire data). It is purported that ESMH interventions can address high priority education goals (e.g., grades, achievement tests). Unfortunately, children’s GPAs did not improve significantly over the course of the year. The minimal impact on academic functioning suggests that additional intensive academically-focused interventions (e.g., peer tutoring, multi-sensory reading intervention) are likely needed to complement intensive behavioral interventions, particularly given the high rates of comorbidity between disruptive behavior problems and underachievement. It is noteworthy, however, that without intervention, the GPAs of the wait-list children declined significantly over the course of the year. Thus, in this context, maintaining a stable GPA across the school year may represent a positive treatment outcome; a finding observed in other school-based treatment programs for youth with ADHD (Evans, Lanberg, Raggi, Allen, & Buvinger, 2005).

In summary, extant literature provides limited information on the extent to which EBTs are effective for referred children in underserved communities or when delivered in the context of ESMH. To achieve the goal of equitable dissemination of best practices to underserved populations, studies such as this are needed. This study provides evidence supporting the purported benefits of ESMH, demonstrates the effectiveness of an EBT package when provided to low-income families, and offers, through qualitative lessons learned, insight into the contextual factors that may influence treatment outcomes in community service settings. In addition, through this study emerged implications for measuring and benchmarking treatment outcomes in ESMH (see Owens, Murphy et al., in press for a discussion). This study suggests that with adequate time devoted to partnership development, training, and ongoing technical assistance, existing community professionals can implement EBTs with fidelity and achieve positive outcomes for referred youth in Ohio’s communities.
REFERENCES


Other Publications of the Research


Presentations of the Research


Owens, J. S. (2006, October). Transporting evidence-based practices in the context of school mental health partnerships. Poster presented at the Ohio Department of Mental Health Research Results Briefing: Knowledge to Transform Mental Health Services in Ohio, Columbus, OH.

ADHD CHILDREN’S PERCEPTIONS OF SELF AND OTHER

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Department of Psychology

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Nicole M. Evangelista, MS

Approximately three to five percent of children suffer from attention-deficit/hyperactivity disorder (ADHD; American Psychiatric Association, 2000), a disorder characterized by a persistent pattern of inattentive and/or hyperactive/impulsive behaviors that are developmentally inappropriate. Children with ADHD demonstrate impairments in multiple settings. ADHD is a chronic disorder as the majority of children continue to struggle with inattention and hyperactivity/impulsivity into adolescence and adulthood (Faraone, Biederman, & Mick, 2006).

Clinical behavior therapy is one of three evidence-based, short-term treatments for ADHD (MTA Cooperative Group, 1999). Behavioral interventions rely heavily on contingency management techniques in which rewards or consequences are presented depending on choices the child makes (e.g., to follow rules or to break them). In order to learn to make appropriate choices about behavior, children likely need to be aware of the behavior that is in need of change. It has been suggested that awareness of one’s own deficits serves a motivating function in behavioral therapy (Hoza & Pelham, 1995), whereas inaccurate self-evaluations seem to interfere with treatment progress. That is, children who are aware of their deficits may be more willing to strive toward improvement than children who are unaware of their deficits.

Given the severity and chronicity of ADHD, it would seem that the self-perceptions of children with ADHD would be negatively impacted. Interestingly, multiple studies have found that children with ADHD demonstrate overly positive self-perceptions of competence across multiple domains despite their actual deficits (e.g., Hoza et al., 2004; Owens & Hoza, 2003). This concept is termed the “positive illusory bias” (PIB) and is defined as the disparity between self-report of competence and actual competence (e.g., teacher report) such that self-reported competence is higher than actual competence. It is possible that the biased perceptions of children with ADHD interfere with a positive response to behavioral interventions. Therefore, in order to design the most beneficial treatment interventions for ADHD, it is necessary to understand the perceptions of children with ADHD.

Theoretical Framework

According to Harter’s model of motivation (1981), children’s self-perceptions of competence and perceptions of control contribute to their motivational orientation. Specifically, children who experience success develop a sense of perceived competence and an internal locus of control, which increases the child’s motivation to participate in future novel or challenging tasks. In contrast, children who experience failure develop a sense of low perceived competence and an external locus of control, which decreases the child’s motivation to participate in future novel or challenging tasks.

Harter’s model (1981) would suggest that children with ADHD are at risk for developing low competency beliefs that would likely lead to decreased motivation for future novel or challenging tasks due to the fact that many children with ADHD experience persistent challenges and negative feedback.
Some studies support Harter’s model, as they have found that children with ADHD have lower self-perceptions of competence as compared to children without ADHD (e.g., Ialongo, Lopez, Horn, Pascoe, & Greenberg, 1994; Treuting & Hinshaw, 2001). More recent studies that have compared the self-perceptions of children with ADHD against a criterion (e.g., teacher ratings, actual performance) have concluded that children with ADHD demonstrate inflated self-perceptions compared to non-ADHD children, despite having difficulties in multiple domains (e.g., see Owens et al., 2007 for a review). To date, only one study (Owens & Hoza, 2003) has examined the role of ADHD subtype characteristics (inattention, hyperactivity/impulsivity) in positive illusory self-perceptions. Regression analyses revealed a positive relationship between hyperactivity/impulsivity and the PIB, such that as hyperactivity/impulsivity increased, overestimation of competence increased. Conversely, the analyses did not indicate a positive relationship between inattention and the PIB.

Taken together, recent literature supports the presence of the PIB in the self-perceptions of children with ADHD. It is unclear whether the PIB is restricted to the self-perceptions of children with ADHD or whether it applies to their perceptions in general (i.e., perceptions of self and others). In order to better understand the nature of positive illusory self-perceptions in children with ADHD, it is important to understand their perceptions of others’ competence as well; however, studies examining the perceptions of others’ competence in children with ADHD are quite limited.

The most relevant studies evaluated how children with ADHD judge others’ emotional states and behavior; and results are equivocal. For example, Whalen, Henker, and Granger (1990) found that children with ADHD accurately perceived (i.e., did not differ from non-ADHD children) positive and negative behaviors in video-taped vignettes with clearly depicted successful and unsuccessful interactions. Similarly, Milch-Reich et al. (1999) found that children with ADHD did not differ from non-ADHD children in the amount of social cues encoded during the presentation of a story vignette or in their perceptions of others’ emotional and cognitive state; yet, children with ADHD were less able to integrate multiple components from the story.

In contrast, other studies found that children with ADHD demonstrated less accurate perceptions of others’ nonverbal social cues compared to control children (Cadesky, Meta, & Schachar, 2000; Sprouse, Hall, Webster, & Bolen, 1998). Researchers speculated that this inaccuracy may have been the result of lack of attention to details or self-control deficits, rather than an inability to perceive the social cues. Consistent with these findings, Lorch et al., (2004) found that children with ADHD had the ability to engage in deep processing, yet had difficulty with deep processing when distracted by external stimuli. Taken together, these results suggest that when social situations are clearly depicted and distracters are limited, the perceptions of social situations in children with ADHD may not differ from those of non-ADHD children.

**Research Objectives and Hypotheses**

Several studies have demonstrated the presence of the PIB in the self-perceptions of children with ADHD in a variety of domains (Owens et al., 2007); however, research has not indicated why children with ADHD overestimate their self-perceptions. Before investigating possible hypotheses for the PIB in self-perceptions, it is important to understand how children with ADHD interpret competency in general and how children with ADHD perceive others’ competency. Most research examining the relative accuracy of the perceptions of others in children with ADHD has focused children’s perceptions of social situations in which the performance is consistently positive or negative. To date, no studies have examined the perceptions of others in children with ADHD within academic situations, or in situations...
that present inconsistent cues of success and failure. Further, no studies have examined the role of inattention and hyperactivity/impulsivity in the perceptions of others in children with ADHD.

The purpose of this study was (a) to explore the role of ADHD subtypes in children’s perceptions of others in academic and social situations in which inconsistent cues of success and failure are presented and (b) to replicate a recent study (Owens & Hoza, 2003) by examining the role of ADHD subtypes in self-perceptions. As this is the first study to examine the perceptions of others’ competence in children with ADHD where competence is displayed inconsistently rather than consistently, past research does not lend support for a specific directional hypothesis. Based on Owens and Hoza’s (2003) findings, it was expected that children who demonstrate a combination of hyperactivity/impulsivity and inattention would overestimate their academic competence significantly more than control children and children who demonstrate predominantly inattentive symptoms. In addition, it was expected that children with predominantly inattentive symptoms would not significantly differ from control children.

**Research Design and Methodology**

Screening for the full study protocol occurred with 191 children (108 boys; 83 girls), aged seven to 13 years, in grades 3 to 6. Participants were recruited across four contexts, including (a) a children’s intensive summer treatment program (STP), (b) ten elementary schools in two rural communities, (c) a community sponsored activities fair for children, and (d) advertisements via a university faculty/staff listserv and a local newspaper. Of note, the STP was in an urban New England community, whereas all other recruitment activities were conducted in rural Midwestern communities.

The parent and teacher versions of the Disruptive Behavior Disorders Rating Scale (DBD; Pelham, Gnagy, Greenslade, & Milich, 1992) and the Impairment Rating Scale (IRS; Fabiano et al., 2006) served as screening measures and were used to classify children into one of three groups: (a) children who demonstrate either hyperactivity/impulsivity only or a combination of hyperactivity/impulsivity and inattention (HICB), (b) children who demonstrate inattention only (IA), or (c) non-ADHD control children (CTL). Based on the DSM-IV-TR (American Psychiatric Association, 2000), to meet criteria for IA or HICB, six or more symptoms of either inattention or hyperactivity/impulsivity had to be endorsed as *pretty much* present or *very much* present on either the parent or teacher DBD Rating Scale, or a combination of both. The same symptom was not counted twice if indicated by both reporters. At least one score on either the parent or teacher IRS had to be three or greater. Children in the CTL group had to demonstrate three or fewer symptoms of hyperactivity, impulsivity, and inattention, and all scores on both the parent and teacher IRS had to be below two. These procedures resulted in 21 IA children (10 boys, 11 girls), 46 HICB children (36 boys, 10 girls), and 40 CTL children (14 boys, 26 girls).

**Procedures**

After parental consent was obtained, parents and teachers completed the screening surveys listed above. In addition, parents completed a demographics questionnaire and teachers completed the Teacher Rating Scale of Child’s Actual Behavior (Harter, 1985), which assessed teachers’ perceptions of children’s competencies in multiple domains and was used as a criterion against which to judge the accuracy of children’s self-perceptions. After child assent was obtained, children participated in an individual session in which they completed the Self-Perception Profile for Children (SPPC; Harter, 1985), the Wechsler Individual Achievement Test, 2nd edition, Abbreviated (WIAT-II-A), and a video task. (The order of the three tasks was randomized to control for effects of fatigue and inattention.)
In the video task, children watched 16 video clips (20 to 30 seconds each) of child actors engaged in eight academic vignettes and eight social vignettes to assess their perceptions of others’ competence. The order of presentation of the video clips was randomized to control for inattention and fatigue effects. Two video clips (1 academic, 1 social) displayed consistent cues of a highly competent child experiencing success and two video clips (1 academic, 1 social) displayed consistent cues of a highly incompetent child experiencing failure. These clips, named consistent performance video clips, served as a manipulation check; thus, it was expected that all participants would rate these child actors as highly competent or highly incompetent. The remaining 12 video clips displayed inconsistent cues of success (3 academic, 3 social) and failure (3 academic, 3 social) in which the child actor’s experiences of success and failure varied. These video clips, named variable performance video clips, were intended to be more challenging for the participants to identify success and failure and the competence of the child actor. Data from our pilot study that included 22 non-ADHD children (12 girls, 10 boys) in grades 3, 4, or 5 and data from this study demonstrated that the variable performance video clips provided less salient depictions of competence compared to the consistent performance video clips.

Following each video vignette, child participants completed a four-item questionnaire. Participants rated actors on a five-point rating scale (i.e., very poor, poor, okay, good, very good) with regard to (1) others’ competency (e.g., How well did the child do on the handwriting exercise?), (2) others’ effort (e.g., How hard did the child try at the task?), (3) importance of task (e.g., How important is good handwriting?), and (4) self-perception of competency (e.g., How do you think you would do on this handwriting exercise?). Higher ratings indicate higher perceived competence.

Results

Main Statistical Analyses

Responses to the four questions on the video questionnaire were averaged across the three variable performance success vignettes and the three variable performance failure vignettes within each domain (i.e., social and academic). These four scores were the dependent variables. The independent variables were group (IA, HICB, CTL), a between-subjects factor, and domain (academic, social), a within-subjects factor. To assess the effects of domain and characteristics related to ADHD subtype on children’s perceptions related to the video clips, four 2 (social, academic) by 3 (IA, HICB, CTL) repeated measures multivariate analyses of variance (MANOVA) were performed on each of the dependent variables. For each dependent variable, one MANOVA was conducted for the success situations and a second MANOVA was conducted for the failure situations. Univariate analyses of variance (ANOVAs) and post-hoc tests were conducted only for significant multivariate effects ($p < .05$).

Results revealed a main effect of domain for both variable performance success situations, $F(1, 103) = 10.05$, $p < .01$, and variable performance failure situations, $F(1, 103) = 12.06$, $p < .01$ (See Table 1 for means and standard deviations). With regard to the success vignettes, children rated the competence of the actors higher in the social situations than in the academic situations. Within the failure vignettes, children rated the actors as less competent in the social situations than in the academic situations. In other words, children rated the competence of the actors in a more extreme direction in the social domain compared to the academic domain. No main effects of group, or domain by group interactions were significant. Similar analyses were conducted on the other three items on the video questionnaire (i.e., effort, importance, self-perception) and all findings were nonsignificant.
To compare children’s ratings of others’ competence (video question #1) to their own expected competence for a given task (video question #4), several 3 (Group) by 2 (Locus) repeated measures MANOVAs were performed. In these analyses, group (IA, HICB, CTL) was a between-subjects factor and locus (self, other) was a within-subjects factor. For all analyses, there was a significant main effect of locus [variable academic success: \( F(1, 103) = 93.81, p < .001 \); variable academic failure: \( F(1, 103) = 281.29, p < .001 \); variable social success: \( F(1, 103) = 50.83, p < .001 \); variable social failure: \( F(1, 103) = 366.43, p < .001 \)]. The pattern of results indicates that all children rated their expected self-competence higher than they rated the actors’ competence, across all analyses. None of the main effects of group or group x locus interactions were significant.

Table 1. Means and Standard Deviations for Children’s Responses to the Video Questionnaire

<table>
<thead>
<tr>
<th>Video Questionnaire Ratings</th>
<th>Control</th>
<th>ADHD, IA</th>
<th>ADHD, HICB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n = 39 )</td>
<td>( n = 21 )</td>
<td>( n = 46 )</td>
</tr>
<tr>
<td></td>
<td>( M(SD) )</td>
<td>( M(SD) )</td>
<td>( M(SD) )</td>
</tr>
<tr>
<td>Perceptions of Other’s Competency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable Academic Success</td>
<td>2.27 (0.60)</td>
<td>2.48 (0.85)</td>
<td>2.22 (0.92)</td>
</tr>
<tr>
<td>Variable Academic Failure</td>
<td>1.34 (0.62)</td>
<td>1.60 (0.80)</td>
<td>1.61 (0.76)</td>
</tr>
<tr>
<td>Variable Social Success</td>
<td>2.59 (0.62)</td>
<td>2.65 (0.87)</td>
<td>2.64 (0.85)</td>
</tr>
<tr>
<td>Variable Social Failure</td>
<td>1.18 (0.70)</td>
<td>1.25 (0.94)</td>
<td>1.16 (0.74)</td>
</tr>
<tr>
<td>Consistent Success</td>
<td>3.51 (0.58)</td>
<td>3.36 (0.71)</td>
<td>3.58 (0.55)</td>
</tr>
<tr>
<td>Consistent Failure</td>
<td>0.45 (0.47)</td>
<td>.86 (1.14)</td>
<td>.51 (0.60)</td>
</tr>
<tr>
<td>Other’s Effort</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable Academic Success</td>
<td>2.57 (0.86)</td>
<td>2.41 (1.04)</td>
<td>2.83 (0.98)</td>
</tr>
<tr>
<td>Variable Academic Failure</td>
<td>1.62 (0.85)</td>
<td>1.73 (1.21)</td>
<td>2.09 (1.07)</td>
</tr>
<tr>
<td>Variable Social Success</td>
<td>1.97 (0.75)</td>
<td>1.89 (1.16)</td>
<td>2.33 (0.92)</td>
</tr>
<tr>
<td>Variable Social Failure</td>
<td>0.97 (0.74)</td>
<td>1.17 (0.87)</td>
<td>1.30 (0.89)</td>
</tr>
<tr>
<td>Consistent Success</td>
<td>2.69 (1.01)</td>
<td>2.23 (1.13)</td>
<td>2.78 (1.11)</td>
</tr>
<tr>
<td>Consistent Failure</td>
<td>1.08 (0.83)</td>
<td>1.02 (1.27)</td>
<td>1.11 (1.19)</td>
</tr>
<tr>
<td>Importance of the Task</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable Academic Success</td>
<td>3.46 (0.48)</td>
<td>3.59 (0.60)</td>
<td>3.50 (0.80)</td>
</tr>
<tr>
<td>Variable Academic Failure</td>
<td>3.54 (0.40)</td>
<td>3.41 (0.96)</td>
<td>3.37 (0.84)</td>
</tr>
<tr>
<td>Variable Social Success</td>
<td>3.32 (0.64)</td>
<td>3.19 (0.89)</td>
<td>3.33 (0.75)</td>
</tr>
<tr>
<td>Variable Social Failure</td>
<td>3.32 (0.56)</td>
<td>3.33 (0.89)</td>
<td>3.22 (0.96)</td>
</tr>
<tr>
<td>Consistent Success</td>
<td>3.37 (0.67)</td>
<td>3.33 (0.71)</td>
<td>3.40 (0.79)</td>
</tr>
<tr>
<td>Consistent Failure</td>
<td>3.63 (0.53)</td>
<td>3.57 (0.90)</td>
<td>3.29 (1.02)</td>
</tr>
<tr>
<td>Perception of Self- Competency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable Academic Success</td>
<td>3.29 (0.54)</td>
<td>3.35 (0.65)</td>
<td>3.16 (0.87)</td>
</tr>
<tr>
<td>Variable Academic Failure</td>
<td>3.23 (0.74)</td>
<td>3.32 (0.68)</td>
<td>3.20 (0.82)</td>
</tr>
<tr>
<td>Variable Social Success</td>
<td>3.19 (0.49)</td>
<td>3.44 (0.40)</td>
<td>3.24 (0.72)</td>
</tr>
<tr>
<td>Variable Social Failure</td>
<td>3.15 (0.61)</td>
<td>3.32 (0.58)</td>
<td>3.18 (0.85)</td>
</tr>
<tr>
<td>Consistent Success</td>
<td>3.00 (0.73)</td>
<td>3.33 (0.60)</td>
<td>3.14 (0.80)</td>
</tr>
<tr>
<td>Consistent Failure</td>
<td>3.46 (0.53)</td>
<td>3.55 (0.57)</td>
<td>3.22 (0.85)</td>
</tr>
</tbody>
</table>

Note. \( N = 106 \). Higher scores indicate higher perceived competence.
Replication Statistical Analyses

In order to compare children’s self-perceptions to teachers’ perceptions, Z-scores (standardized by grade level) were created for children’s scores on the SPPC and teachers’ scores on the teacher version of the SPPC. Difference scores were calculated by subtracting the standardized teacher scores from the standardized child scores for each subscale (e.g., scholastic, behavioral) with higher difference scores suggesting the child reported greater overestimation. A one-way MANOVA was performed on the difference scores to assess the effect of ADHD subtype characteristics on children’s self-perceptions relative to teacher perceptions.

Results indicated significant main effects of group, $F(8, 162) = 2.19, p < .05$. Unexpectedly, post-hoc tests revealed that IA children overestimated their scholastic and athletic competence relative to teachers’ perceptions significantly more than CTL children. HICB children overestimated their athletic competence significantly more than CTL children. HICB and IA children did not differ significantly on any subscales. Self-perception discrepancy scores by group can be found in Table 2.

Table 2. Self-Perceptions Discrepancy Scores by Group

<table>
<thead>
<tr>
<th>SCALE</th>
<th>Control</th>
<th>ADHD, IA</th>
<th>ADHD, HICB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n = 40$</td>
<td>$n = 20$</td>
<td>$n = 46$</td>
</tr>
<tr>
<td></td>
<td>$M(SD)$</td>
<td>$M(SD)$</td>
<td>$M(SD)$</td>
</tr>
<tr>
<td>SPPC ACAD*</td>
<td>-0.44</td>
<td>0.47</td>
<td>0.01</td>
</tr>
<tr>
<td>SPPC SOC</td>
<td>-0.19</td>
<td>0.21</td>
<td>0.05</td>
</tr>
<tr>
<td>SPPC ATH*</td>
<td>-0.50</td>
<td>0.49</td>
<td>0.24</td>
</tr>
<tr>
<td>SPPC BEH</td>
<td>-0.21</td>
<td>0.01</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Note. $N = 106$. SPPC ACAD = child and teacher SPPC scholastic competence discrepancy; SPPC SOC = child and teacher SPPC social acceptance discrepancy; SPPC ATH = child and teacher SPPC athletic competence discrepancy; SPPC BEH = child and teacher SPPC behavioral conduct discrepancy. For all discrepancies, teacher scores were subtracted from child scores to create difference score. Groups with different subscripts are significantly different.

Discussion

The study advances the literature by examining the perceptions of others’ competence in variable performance social and academic situations in children with ADHD, and the role of ADHD subtypes in perceptions of others. In addition, the study attempted to replicate Owens and Hoza’s (2003) study by investigating the role of inattention and hyperactivity/impulsivity in positive illusory self-perceptions.

In the main analyses, there were no significant group differences (IA, HICB, CTL) with regard to perceptions of others in variable performance academic and social domains. This is consistent with previous research that found that children with ADHD do not differ significantly from non-ADHD children in the judging the social competence of others (Sprouse et al., 1998; Whalen et al., 1990). The findings advance the literature by demonstrating that children with ADHD may be able to perceive subtle
social cues in more ambiguous social and academic situations. Most importantly, the findings suggest that the PIB previously found in the self-perceptions of children with ADHD does not seem to apply to perceptions of others’ competence.

Interestingly, when children were asked to rate their own competence for the same task in which they observed the child actor to be engaged, all children rated their expected self-competence higher than they rated the actor’s competence, across all domains and situations. This effect is consistent with the “better-than-average” effect that has been well documented in the social psychology literature (e.g., Alicke & Olesva, 2005) in which people rate themselves more favorably than average peers on a behavioral characteristic. Most relevant to this study was that children with ADHD did not demonstrate this self-inflating bias to a greater extent than did the CTL children. This finding could be interpreted such that children with ADHD did not demonstrate positive illusory self-perceptions, as compared to control children. However, in past studies (e.g., Hoza et al., 1993), similar results have been interpreted as evidence for the PIB. Specifically, children with ADHD reported levels of competence that were not significantly different from control children despite the presence of significant impairments in social and academic functioning. For example, both IA and HICB children had higher parent impairment ratings on the IRS in the academic (IA: $M = 3.75$, $SD = 1.71$; HICB: $M = 4.20$, $SD = 1.62$) and social (IA: $M = 1.22$, $SD = 1.43$; HICB: $M = 3.88$, $SD = 1.62$) domains as compared to CTL children (academic: $M = .0.15$, $SD = 0.53$; social: $M = 0.21$, $SD = 0.62$). Teacher ratings of impairment revealed a similar pattern.

To examine the extent to which children overestimate their competence, children’s self-perceptions were compared to teachers’ perceptions. Contrary to our hypothesis, the replication analyses indicated that IA children overestimated their academic competence and athletic competence relative to teachers’ perceptions significantly more than CTL children. In addition, HICB children overestimated their athletic competence in relation to teachers’ perceptions significantly more than CTL children. (Findings with regard to athletic competence should be interpreted with caution, as several teachers [$n = 19$] chose not to rate the children’s athletic competence, reporting that they were unaware of the student’s athletic abilities.) Contrary to the predictions, HICB children did not overestimate their competence relative to teachers’ perceptions significantly more than IA children. Further, HICB children did not overestimate their competence relative to teachers’ perceptions significantly more than CTL children in most domains. These findings are inconsistent with Owens and Hoza’s (2003) study in which HICB children demonstrated positive illusory self-perceptions in the academic domain, whereas IA children did not.

There are several possible explanations for the discrepancies between the present study and Owens and Hoza (2003). First, ADHD children represent a heterogeneous group of children, even within subtypes (Gaub & Carlson, 1997). Because both this study and Owens and Hoza’s (2003) study included community-recruited samples of ADHD children, there may have been even more heterogeneity within subgroup (as compared to a clinic-recruited sample), making it more difficult to detect consistent between-subgroup differences. Second, both studies have relatively small numbers of children with ADHD within each subtype. Because of inconsistencies across studies, additional research with larger samples of each subtype of ADHD is warranted. Third, it is possible that ADHD subtype is not the strongest predictor of the PIB in ADHD children as suggested by Owens and Hoza. Instead, domain of impairment, or comorbid disorders may better account for ADHD children’s self-perceptions.

The study’s findings are consistent with Hoza and colleagues’ (Hoza et al., 2004; Hoza et al., 2002) conclusions that children with ADHD overestimate their self-perceptions most in the domain in which they demonstrate the most impairment. Specifically, IA children ($M = 88.76$, $SD = 14.39$) obtained
a significantly lower composite score on the WIAT-II-A compared to both CTL ($M = 109.55$, $SD = 13.81$) and HICB children ($M = 97.39$, $SD = 15.48$). Results indicated that IA children overestimated their academic competence relative to teachers’ perceptions. Thus, perhaps IA children overestimated their self-perceptions in the domain in which they demonstrated the most impairment.

If the results from this study can be replicated, it would suggest that the PIB is present in ADHD children’s self-perceptions, but not in their perceptions of others. Why might ADHD children overestimate their self-perceptions, but not perceptions of other? This may be best explained by the self-protection hypothesis. This hypothesis states that children attempt to hide their incompetence by bolstering reports of self-competence in order to protect against feelings of failure or inadequacy (Diener & Milich, 1997; Ohan & Johnston, 2002). Lab-based research that attempts to experimentally manipulate conditions to induce this self-protective bias has provided evidence for the self-protection hypothesis in the social domain (e.g., Diener & Milich, 1997; Ohan & Johnston, 2002) but not the academic domain (Ohan & Johnston, 2002).

In this study, it is possible that IA children overestimated their scholastic competence due to the fact that this was their domain of greatest impairment relative to their peers (i.e., their achievement scores were lower than those of the other children). That is, IA children may have felt the need to bolster their academic self-perceptions in order to present themselves in a positive light. Because IA children did not overestimate others’ competence, these findings further suggest that their inaccurate self-perceptions are a function of bias rather than a global misunderstanding or misinterpretation of competence. Nonetheless this interpretation is made with caution, as the self-protection hypothesis was not directly tested.

**Implications of the Findings and Future Directions**

The present study’s findings have implications for the behavioral treatment of ADHD. In order to learn to make appropriate choices about behavior, children likely need to be aware of the behavior that is in need of change. Hoza and Pelham (1995) suggested that awareness of one’s own deficits serves a motivating function in behavioral treatment, thus, inaccurate self-perceptions may interfere with treatment progress. This study found that children with ADHD do not differ in their perception of others’ competence. Thus, clinicians may be able to use the relatively accurate perceptions of others in children with ADHD in a therapeutic manner. For example, in the context of behavioral interventions, children with ADHD may learn new skills by observing successful models in peers (or in story format) as well as the positive consequences associated with appropriate behavior.

The results of this study, in conjunction with other studies, suggest that future behavioral treatments for ADHD must address the PIB and the child’s need for self-protection in the face of functional deficits. There are several possibilities for addressing their need for self-protection. First, in line with several state and national initiatives (e.g., President’s New Freedom Commission), clinicians should adopt a strengths-based approach. If clinicians, children with ADHD, and their families can focus on the child’s assets and talents, the child’s need for protection may be reduced. Experiencing success in some domains may help them compensate for challenges in other domains. Second, the children with ADHD who demonstrate the PIB may benefit from receiving individual cognitive therapy in conjunction with behavioral and/or pharmacological interventions. Indeed, some studies have demonstrated clinical benefits from the use of cognitive therapy in conjunction with an evidence-based treatment (e.g., Pelham, 2002). However, the explicit strategies for reducing the PIB in the context of cognitive therapy have yet to be identified. Third, it will be important for behavior therapists and parents to consider the interaction between the PIB and the provision of feedback in the context of behavioral interventions. Providing
positive reinforcement is a hallmark of behavior therapy, yet providing sufficient positive feedback to children with positive self-illusions may be particularly important. Specifically, research on self-protection in ADHD (Diener & Milich, 1997) demonstrates that when children with ADHD are given neutral to positive feedback, the self-protective bias is not triggered. Clearly, in order to change behavior in a child with ADHD, corrective feedback is warranted. However, children’s need for self-protection may be reduced if corrective feedback can be presented in a neutral manner and can be coupled with positive feedback (e.g., “I like how you’re sitting in your seat; however, you must raise your hand before you are allowed to speak in class”).

REFERENCES


**Other Publications of the Research**


**Presentations of the Research**


SOCIAL WORKERS AND SUICIDE: THE ROLE OF CLIENT FIREARM ASSESSMENT AND SAFETY COUNSELING

Ohio University Zanesville
Department of Social Work

Karen Slovak, PhD, LISW-SUP
Karen Carlson, PhD

Professional social work cuts across all age groups, mental health issues, and behavioral problems in a variety of roles and settings. Additionally, social workers are often considered the front line professionals in dealing with mental health issues since the number of social workers providing mental health services in the United States is greater than the professions of psychiatry and psychology in this arena (Colby & Dziegielewski, 2001). Yet, these social work professionals are likely to have little knowledge about an issue that can profoundly impact clients, namely clients’ safety related to ownership and access to firearms. Sherman et al. (2001) states that the mental health community should emphasize managing firearm risks among clients since firearms are fairly easy to acquire and those with mental health issues are at risk of hurting themselves or others by this means. Gathering information on social workers’ awareness, knowledge, and practices of assessment and intervention with clients on the issue of firearm safety holds the potential to enhance the efficacy of mental health practice in this area.

Theoretical Framework and Study Design

When working with high-risk clients and their families, it is important that mental health clinicians routinely assess and provide educational intervention on the risks of keeping a gun in the home or otherwise having access to a firearm. Although many clients may not initially present in crisis, the possibility of crisis remains significant with many clients and therefore initial assessment and counseling on firearms is a proactive practice. Suicide is rare in the absence of psychiatric illness (Beautrais, 2006) and while mental health providers are key gatekeepers, the U.S. Department of Health and Human Services (2001) states that gaps still exist in specialized assessment techniques and risk factor recognition. This report points out that while at-risk individuals often seek professional help, only 18 percent of suicide decedents reported suicide ideation to a health professional (Robins as cited in U.S. Department of Health and Human Services, 2001). Furthermore, as many as 90 percent of suicide decedents carry a psychiatric diagnosis at the time of death (Conwell & Brent, 1995; Moscicki, 2001) indicating the need for proper assessment and recognition of risk factors by mental health professionals.

An effort to study the attitudes, knowledge, and behaviors surrounding client gun ownership and access has been approached within the fields of psychology, psychiatry, and medicine. Sullivan (2004) documents the practices and comfort level of psychologists in firearm assessment and discussion with clients. Research conducted by Gallagher (2002) collected data on psychiatrists’ knowledge, attitudes, and risk assessment practices of firearm-related suicide. In the field of medicine, the American Academy of Pediatrics recommended that physicians advise patients and families on firearm injury prevention (American Academy of Pediatrics Committee on Injury & Poison Prevention, 1992).

Research has demonstrated that clients are receptive to clinicians’ counsel in this area. A study by Sherman et al. (2001) illustrates the effectiveness of a multidisciplinary firearm risk management program.
in Ohio among high-risk mental health clients who expressed intent to commit suicide by means of a firearm upon inpatient admission to a mental health facility. The program was successful in eliminating access to firearms prior to discharge and thus neutralized this environmental risk factor for clients. Additionally, studies in the medical field have demonstrated that parents and guardians are receptive to recommendations against having guns in the home (Haught, Grossman, & Connell, 1995) and guidance about safe storage practices (Webster, Wilson, Duggan, & Pakula, 1992). Safe storage practices have been associated with a decrease in youth homicides and suicides, as well as a decline in unintentional shooting deaths among older youths (Cummings, Grossman, Rivara, & Koepsell, 1997).

With the many avenues and settings of services, the potential of the social work profession to reduce risk related to firearm access and counsel about safe storage practices with all clients is immense. Although other professions have been urged to assess firearm availability and advocate for the removal of firearms in their patients’ homes (Brent et al., 1988; Brent et al., 1991; Kaplan, Adamek, & Rhoades, 1998), little is known about the practices and techniques that social workers utilize with client populations. Although it has been suggested that clinical screening for firearm access is important in reducing the risk of suicide, homicide and injury, firearm-specific education and counseling techniques are not a required component of social work undergraduate, graduate, or continuing education programs. Therefore, it is unclear what knowledge these professionals possess regarding this issue, to what degree this type of intervention occurs, and the effectiveness of such effort.

The primary objective of the present study is to document the knowledge, attitudes, and behaviors of social workers regarding client firearm safety counseling. Because of the current lack of information on this issue among social workers, the study is exploratory in nature.

Methodology

A list of licensed social workers was acquired from the State of Ohio on October 10, 2005. The social work licensure list procured from the State of Ohio contained information for 15,350 Licensed Social Workers (LSW) and 6,549 Licensed Independent Social Workers (LISW). From this initial list, addresses that were out of the country or were from a state not bordering Ohio were deleted. The final list contained 15,101 LSWs and 6,338 LISWs. From this list, two samples were drawn. The first random sample was extracted for use in the Pilot Study. The second stratified random sample was extracted for a mail survey.

A pilot study was performed on a random sample of 50 social workers in the fall of 2005 (25 LSWs and 25 LISWs). This helped refine the survey questions, timing, and response categories before the full study was conducted. Following this, a mail survey was utilized to gather information from licensed social workers in the State of Ohio. Schutt (2001) states that the typical response rate is 30 percent for mailed surveys unless extra steps are taken to increase this rate. Previous mail surveys of specialized practice groups, such as school social workers, have yielded response rates of 53.8 percent and 59.2 percent when utilizing Dillman’s (2000) suggestion of reminder postcards (Astor, Behre, Wallace, & Fravil, 1998; Joseph & Broussard, 2001). Although a reminder postcard was planned in the present study, a conservative response rate of 30 percent was still utilized since the list is not specialized to practice setting or population. Also, it was important in this study to capture data from social workers who are active as clinicians versus those in higher education, administration, and advocacy roles.

Names of pilot study participants were removed from the list. A total sample size of 737 social workers was needed in order to achieve a 95 percent confidence level and a confidence interval of five within each licensure status. To achieve the appropriate power within each licensure group 1250 LSWs
and 1206 LISWs were surveyed. Based on the 30 percent response rate, 2,456 social workers were surveyed in order to reach a needed final sample size of 737.

The survey instrument was designed from existing surveys in the medical profession (Becher & Christakis, 1999; Everett, Price, Bedell, & Telljohann, 1997) and particularly one conducted by Solomon and colleagues (2002). Expert consultants were also utilized. The survey was three pages in length. The first page asked social workers, based on their past two years of practice, 23 questions about their attitudes, knowledge, and behaviors relating to firearms and counseling. Responses were captured on a four-point ordinal scale with the categories of Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4). The second page of the survey posed questions relating to the respondent’s own firearm ownership, formal training in firearm counseling, use of firearm safety counseling, previous client firearm injury and death, and impact of growing up with firearms. The final page of the survey collected demographic and practice information, including years at licensure level, practice population, work function, setting, sector, community type, and caseload questions.

The process of obtaining consent included a cover letter indicating the purpose of the study, its voluntary nature, and the anonymity of participation. By returning the survey, consent was implied.

Results

A total of 2,456 surveys were mailed out in January 2006. The response rate was 31 percent ($n = 756$), with a total of 704 (29%) usable surveys. Respondents who had an inactive license, indicated they were not licensed, or did not indicate type of licensure were removed ($n = 7$) for subsequent analyses. A total of 320 LSWs and 377 LISWs responded for a sample size of 697 usable for analysis (28% of total sample).

The majority of the sample was female, white, had a bachelor’s degree, and was educated in social work. Average age of participants was 47.5 years and participants reported an average of about seven years at their licensure level. Table 1 summarizes these results.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Years Age</td>
<td>47.5 ($SD = 11.1$)</td>
</tr>
<tr>
<td>Female</td>
<td>84.9% (592)</td>
</tr>
<tr>
<td>Race-White</td>
<td>88.2% (612)</td>
</tr>
<tr>
<td>Masters</td>
<td>72.6% (505)</td>
</tr>
<tr>
<td>Social Work Degree</td>
<td>85.6% (596)</td>
</tr>
<tr>
<td>Mean Licensure Years</td>
<td></td>
</tr>
<tr>
<td>LSW</td>
<td>6.92 ($SD = 7.7$)</td>
</tr>
<tr>
<td>LISW</td>
<td>7.2 ($SD = 8.9$)</td>
</tr>
</tbody>
</table>

Two variables examined how much social workers agreed or disagreed with the following statements: 1) “I routinely assess if my clients own and have access to guns”, and 2) “I routinely counsel my clients about firearm safety”. Participants were asked to answer based on their past two years of practice experience. Responses were captured on a four-point ordinal scale. Figure 1 shows the response frequency of social workers to these questions within the past two years of practice.
The majority of social workers did not report assessing for firearms or counseling on firearm safety on a routine basis within the past two years of their practice. When the four-point response categories were dichotomized into yes/no categories for analysis and interpretation, 34 percent of respondents agreed they routinely assessed for firearm ownership and access and 15.3 percent agreed they routinely counseled on firearm safety. Clearly the majority of social workers reported lack of these practices with clients within the past two years.

Figure 1. Frequency of Firearm assessment and safety counseling.

A logit regression model was used to predict the odds that a social worker would routinely assess for firearm safety and provide safety counseling within the past two years in practice. The logit model was chosen as it is flexible, relatively free of restrictions, and assumptions about the predictor variables are limited (Tabachnick & Fidell, 2001). One limitation of this class of models is the relative lack of an
intuitive metric for interpreting the results. Logistic models return coefficients representing log-odds, as opposed to simple odds, of an event occurring. Currently available statistical software and automated transformations are capable of converting the slope coefficients into more intuitive metrics. Stata 9.0 (StataCorp. 2005) software was used with SPOST commands from Long and Freese (2006).

Table 2. Bivariate Predictors of Routine Firearm Assessment and Safety Counseling

<table>
<thead>
<tr>
<th>Variable</th>
<th>Assess Change in Probability</th>
<th>Counsel Change in Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not enough time</td>
<td>-.16 -14.9%</td>
<td>b -1.08 -66.0% ***</td>
</tr>
<tr>
<td>Not adequately trained</td>
<td>-1.11 -67.0%***</td>
<td>-2.00 -86.4% ***</td>
</tr>
<tr>
<td>Clients safer with guns</td>
<td>-1.23 -70.7%*</td>
<td>-1.67 -81.1% ***</td>
</tr>
<tr>
<td>Not responsibility of Swer</td>
<td>-.89 -59.0%***</td>
<td>-1.43 -76.2% ***</td>
</tr>
<tr>
<td>Routinely discuss firearm safety if client is depressed</td>
<td>1.50 348.5%***</td>
<td>1.71 450.3% ***</td>
</tr>
<tr>
<td>My advice doesn't matter</td>
<td>-.35 -29.5%</td>
<td>-.52 -40.5% *</td>
</tr>
<tr>
<td>Concerned I will offend client</td>
<td>-.28 -24.0%</td>
<td>-.02 -1.5%</td>
</tr>
<tr>
<td>Clients won't be truthful about guns</td>
<td>.004 .4%</td>
<td>-.56 -42.8% *</td>
</tr>
<tr>
<td>Media coverage has motivated</td>
<td>1.43 320.6%***</td>
<td>1.73 465.9% ***</td>
</tr>
<tr>
<td>Clients not at risk to harm self</td>
<td>-1.58 -79.4%***</td>
<td>-1.15 -68.4% ***</td>
</tr>
<tr>
<td>Clients not at risk to harm others</td>
<td>-1.31 -73.0%***</td>
<td>-.84 -56.0% **</td>
</tr>
<tr>
<td>Likely to support gun control</td>
<td>.03 2.8%</td>
<td>-.25 -21.8%</td>
</tr>
<tr>
<td>More important topics</td>
<td>-.75 -52.7%***</td>
<td>-1.18 -69.3% ***</td>
</tr>
<tr>
<td>Would counsel more if materials available</td>
<td>.33 39.8%</td>
<td>.23 25.6%</td>
</tr>
<tr>
<td>Uncomfortable with topic</td>
<td>-.84 -56.6%***</td>
<td>-.75 -52.6% *</td>
</tr>
<tr>
<td>Proper training would give me credibility</td>
<td>.03 3.0%</td>
<td>.30 34.3%</td>
</tr>
<tr>
<td>Not aware of suicide/homicide risks associated with guns</td>
<td>-.92 -60.3%***</td>
<td>-.75 -52.9% *</td>
</tr>
<tr>
<td>Routinely assess for guns with suicidal clients</td>
<td>1.57 381.6%***</td>
<td>1.20 232.9% **</td>
</tr>
<tr>
<td>Routinely counsel on firearm safety with suicidal clients</td>
<td>1.61 401.3%***</td>
<td>1.33 278.5% **</td>
</tr>
<tr>
<td>Firearm counseling is major public health issue</td>
<td>.02 1.6%</td>
<td>1.7 18.2%</td>
</tr>
<tr>
<td>Counseling clients on firearm safety would be effective</td>
<td>.20 22.0%</td>
<td>.66 94.0% *</td>
</tr>
</tbody>
</table>

*p ≤ .05, **p ≤ .01, ***p ≤ .001

Firearm assessment and safety counseling were retained as “yes/no” dichotomized variables and 21 variables regarding firearm attitudes, behavior, and knowledge questions were also dichotomized to serve as predictor (independent) variables. At the bivariate level of analysis, many personal and environmental barriers were significantly associated with routine firearm assessment and counseling (see Table 2).

Measures with statistically significant and positive change in odds were variables tapping into if the client was depressed, suicidal and motivated by media coverage. If a client is depressed, the odds of routine firearm assessment and counseling by a social worker increased by 348.5 percent and 450 percent, respectively. Social workers were asked if, when assessing for suicide they routinely ask about gun access. If this was endorsed, it increased the odds of routine firearm assessment and safety counseling across the board by 381.6 percent and 232.9 percent. Also, social workers were asked if when assessing for suicide risk they routinely provide safety counseling for clients. If this statement was endorsed, it
increased the odds of routine firearm assessment and safety counseling across the board by 401.3 percent and 278.5 percent, respectively.

The media’s coverage of gun-related issues also impacted responses to routinely assessing for firearms and counseling on firearm safety. If social workers stated media coverage motivated them to address gun related issues with clients, the odds of routine firearm assessment and safety counseling increased by 320.6 percent and 465.9 percent, respectively.

While the above variables increased the odds of a social worker providing routine firearm assessment and safety counseling, other variables significantly decreased the odds that these behaviors would have occurred in their practice in the past two years. If the social worker endorsed the statement that they were not adequately trained on the topic of firearm safety, the change in odds that routine firearm assessment and safety counseling occurred decreased by 67 percent and 86.4 percent, respectively. If they thought it was not their responsibility to discuss firearm safety with clients, the change in odds that routine firearm assessment and safety counseling occurred decreased by 59 percent and 76.2 percent, respectively. Among respondents who believed their clients were not at risk for firearm injury, the change in odds that routine firearm assessment and safety counseling occurred decreased by 79.4 percent and 68.4 percent, respectively. If they thought their clients were not at risk to harm others with a firearm, the change in odds that routine firearm assessment and safety counseling occurred decreased by 73 percent and 56 percent, respectively. If they endorsed the statement that there are more important topics to discuss, the change in odds that routine firearm assessment and safety counseling decreased by 52.7 percent and 69.3 percent, respectively. If social workers reported that they were uncomfortable with the topic of firearms, the change in odds that routine firearm assessment and safety counseling occurred decreased by 56.6 percent and 52.6 percent, respectively. And finally, if social workers reported not being aware of the risks associated with firearms in the home of clients, the change in odds that routine firearm assessment and safety counseling occurred decreased by 60.3 percent and 52.9 percent, respectively.

In order to determine whether other variables exhibited a relationship to firearm assessment and safety counseling, multivariate analyses were conducted. This analysis also allowed for the estimation of a coefficient while controlling for other, possibly competing, effects on the dependent variable. Ordered logistic regression models were estimated using both firearm assessment and safety counseling as dependent variables. The ordinal coding of the two dependent variables allows for a more precise estimate of the effects because the categories are not collapsed into “yes/no” distinctions. While a model such as Ordinary Least Squares is often used with ordinal dependent variables, certain underlying assumptions of this model become problematic such as when the distance between responses is assumed to be equal (interval or ratio level). Advances in the interpretation of logistic coefficients, as described above, obviate the need to use the less desirable linear models.

Ordinal logistic regression models were estimated for each dependent variable -- 1) firearm assessment and 2) safety counseling. Each analysis included the following independent variables, which were dichotomously coded: Race (White and all other Races), Sex, Client Ever Injured or Killed, Gun Access or Ownership (by respondent), Licensure Status (LSW and LISW), Firearm Safety Training, and Community type (Urban, Suburban, and Rural). The analyses also included interval-level independent variables of age of respondent and percent of male clients served.

An underlying assumption of the ordered logit model, known as the parallel regression assumption, states that the slope coefficient estimates generated by the series of binary regressions are
equal and only the intercept changes (Long, 1997, p.140). This assumption can be tested with an approximate likelihood-ratio test developed by Wolfe and Gould (1998; as described by Long and Freese, 2001, p.151) for the Stata statistical software package. Violation of the parallel regression assumption is not indicated in this model.

The results from Table 3 demonstrate the percent change in odds of being coded in a higher category (e.g., responding “strongly agree” to a statement in the survey versus “agree”) for firearm assessment and for safety counseling with an increase in the independent variable. For sake of discussion, this will be discussed in terms of the odds of registering more agreement with routine firearm assessment and safety counseling with a change in the independent variable holding all others constant.

Table 3. Multivariate Predictors of Firearm Assessment and Counseling

<table>
<thead>
<tr>
<th>Variable</th>
<th>Assess</th>
<th>Counsel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>Change in Probability</td>
</tr>
<tr>
<td>Race</td>
<td>.04</td>
<td>4.1%</td>
</tr>
<tr>
<td>Sex</td>
<td>.50</td>
<td>65.0%*</td>
</tr>
<tr>
<td>Age</td>
<td>-.01</td>
<td>-1.35</td>
</tr>
<tr>
<td>Client Injured or Killed by Gun</td>
<td>.54</td>
<td>71.1%*</td>
</tr>
<tr>
<td>Gun Access/Ownership</td>
<td>-.09</td>
<td>-8.8%</td>
</tr>
<tr>
<td>Licensure Status</td>
<td>.31</td>
<td>35.8%*</td>
</tr>
<tr>
<td>Firearm Safety Training</td>
<td>1.32</td>
<td>275.7%***</td>
</tr>
<tr>
<td>Male Clients</td>
<td>.003</td>
<td>.3%</td>
</tr>
<tr>
<td>Urban</td>
<td>.29</td>
<td>33.0%</td>
</tr>
<tr>
<td>Suburban</td>
<td>.12</td>
<td>12.7%</td>
</tr>
</tbody>
</table>

*p ≤ .05, **p ≤ .01, ***p ≤ .001

Starting with the most significant results, both previous firearm safety training and gender of the social worker significantly increased the odds of registering more agreement in both routine firearm assessment and safety counseling. If a social worker reported having prior firearm safety training, the odds of registering more agreement with routine assessment increased by 257.7 percent and safety counseling by 479.3 percent. This illustrates the magnitude that firearm training possesses for enhancing social work practice protocol.

Being female increased the odds of registering more agreement with routine firearm assessment and safety counseling, by 65 percent and 75.3 percent, respectively. However, this should be interpreted with caution since many more males are in administrative positions and therefore not likely to engage with clients in this respect.

Higher licensure status and ever having a client injured or killed by a firearm significantly impacted routine firearm assessment only. Clinicians who had a client injured or killed by a firearm were 71.1 percent more likely to register more agreement with routine firearm assessment. Additionally, the odds of registering more agreement for routine firearm assessment is 35.8 percent greater for those with the higher licensure status (LISW).
Other variables in the model did not demonstrate a significant association with routine firearm assessment and safety counseling. Race, age, and gun ownership status of respondents did not impact the odds of routine firearm assessment and safety counseling. The sex of clients was also examined to determine if the odds would significantly increase for routine firearm assessment and safety counseling with an increasing proportion of male clients. Having more or less male clients did not impact the likelihood of routine firearm assessment and safety counseling. Lastly, the model also controlled for the effect of the population density of the practitioners' primary region of practice. Social workers who indicated that they practice primarily in an urban area or suburban area were no more or less likely to register more agreement with routine firearm assessment and safety counseling with clients than with practitioners practicing in rural areas.

**Significance and Implications**

The most common method of death by suicide is by firearms, which accounted for 51.6 percent of all deaths in 2004 (Centers for Disease Control, 2004). Thus, the National Strategy for Suicide Prevention (U.S. Department of Health and Human Services, 2001) focus on eliminating or restricting access to the lethal means of firearms is warranted. Their report points out that social workers and other mental health professionals are on the front line in assessing and treating individuals at increased risk for suicidal behavior, and thus are in a unique position to routinely assess and counsel on firearm risks and safe storage as measures to reduce self-harm. Increasing the proportion of mental health professionals who routinely assess for firearms and counsel on safety will help address this important environmental risk factor for suicide.

Developing trainings for clinicians on specific assessment and intervention techniques is aligned with the goal of “reduc[ing] factors that increase the risk of suicide” set forth by the Ohio Suicide Prevention Plan (Ohio Department of Mental Health & Ohio Coalition for Suicide Prevention, 2002, p. 9). The present research gathered information from social workers regarding firearm assessment and intervention techniques being utilized with clients, highlighting attitudes, knowledge, practices, and potential training needs of this profession. When best practices are documented and incorporated into mental health practice protocol, there is a strong potential to decrease clients’ risk of homicide, suicide, and injury related to firearms.

From the findings, it is clear that the majority of social workers are not assessing for the presence of firearms or counseling on firearms safety on a routine basis. Only 34 percent of social workers agreed/strongly agreed they routinely assessed for firearm ownership and access within the past two years of practice. Only 15.3 percent reported providing firearm safety counseling on this variable. To put this in perspective with the medical field, about 50 percent of pediatric residents in one recent study reported routine firearm counseling on the issue of firearms with adolescents and their parents (Solomon et al., 2002). While social work may lag behind, the medical field has the professional body of the American Academy of Pediatrics strongly encouraging their physicians to counsel families in this area and has published recommendations to follow. Unfortunately, social work does not have a parallel organization encouraging this agenda to reduce this environmental risk of self-harm for clients. However, we can learn from the practices, educational interventions, and common barriers that the medical field has faced with this issue to further this important practice issue.

As a routine practice protocol, it is important to understand what factors were related to an increase in the occurrence of firearm assessment and safety counseling practice behaviors with social workers. From the bivariate analysis, factors that contribute to the decreased likelihood that routine
firearm assessment and safety counseling would occur include lack of training in this area, lack of awareness of risks associated with firearms, discomfort with topic, not a social work responsibility, lack of time, not feeling their clients are at risk, and more important topics to discuss. These are similar to barriers perceived in the medical field: insufficient time, inadequate training, discomfort with topic, and a belief that patients do not need firearm safety counseling (Everett et al., 1997; Solomon et al., 2002). Clearly these barriers are areas easily addressed in targeted educational trainings.

While these factors appear to decrease the probability that firearm assessment and counseling will occur, other variables indicate opportunities to be fostered. The influence of media in impacting routine firearm assessment and safety counseling techniques is quite apparent from these results. Pediatric residents in one study also believed that gun-related media stories motivated them to counsel more on this topic—those who had this belief were almost twice as likely to counsel routinely on firearm safety (Solomon et al., 2002). Continuing and improving existing forms of professional educational and service campaigns is an obvious path for action.

Social workers indicated a significantly increased probability of firearm assessment and counseling if the client was depressed or suicidal. This is a positive finding for prevention of suicide by firearm. However, routine firearm assessment and safety counseling should occur as a standard part of all treatment protocol as a preventive focus even for those who do not immediately present as depressed or suicidal.

An important finding from this research, indicated by the multivariate regression model, is that some type of firearm safety training increases the probability that firearm assessment (275%) and counseling (479%) would occur by social workers. Thus, training in this area would provide great potential to increase an important assessment and safety counseling protocol for mental health service providers. The audience for this type of training is considerable, with over 76 percent of social workers in this study reporting they had never received training or education about counseling clients on firearm safety. Comprehensive training on this topic can address many barriers stated above, such as lack of awareness of firearm risks to clients, importance of topic, and comfort with topic. In addition, trainings can provide agencies with educational resources, handouts, and avenues for the provision of safe storage hardware.

This study represents an initial attempt to document social workers’ attitudes, knowledge, and behaviors about client firearm safety assessment and counseling. More research of this nature is needed to better understand this issue among social workers and other mental health professionals. Additional research, both quantitative and qualitative, will help create comprehensive training material on this topic. As key gatekeepers, the lack of routine firearm assessment and safety counseling reported by social workers is disheartening for suicide and injury prevention efforts. The irrefutable evidence that suicide by firearms accounts for the majority of these types of deaths begs for suicide, homicide, and injury prevention protocols aimed at restricting this lethal means among high risk populations.

While this study provides useful insight, limitations are recognized. First, since this was an exploratory study, questions were not normed, making it difficult for comparative purposes. Another limitation is non-respondent bias. The lower response rate of the study limits the generalizability of these results. Other counseling professions were not represented in this study. In addition, this was not a national sample of social workers but limited to those in Ohio. Finally, survey questions only tapped into the last two years of practice for these respondents and were not a cumulative measure.
REFERENCES


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StataCorp. (2005). *Stata Statistical Software: Release 9*. College Station, TX: StataCorp LP.


The pressure on practitioners and mental health agencies to be accountable for their services is steadily increasing (Asay, Lambert, Gregersen, & Goates, 2002). A large number of practitioners and mental health agencies have in turn begun to utilize measures of consumer satisfaction as an indicator of the effectiveness and quality of services (Edlund, Young, Kung, Sherbourne, & Wells, 2003; Ogles, Lambert, & Fields, 2002). There are a number of reasons for the popularity of measures of satisfaction, including their face validity, brevity, and cost-effectiveness (Ogles et al., 2002). Additionally, the use of measures of satisfaction aligns with the movement in the field of mental health, as well as with broader health care movements, to increase consumers’ voices and input into the nature of services and service evaluation (Garland, Haine, & Boxmeyer, 2007). As a result, satisfaction data are frequently used to inform policy and funding decision-making and are also included in health care accreditation reviews (Garland et al., 2007; Salzer, 1999). Given the significant weight placed on consumer satisfaction, it is important to determine what factors are associated with satisfaction ratings.

Despite the fact that research has demonstrated that adolescents are more likely to utilize services such as psychiatric medication management, psychiatric testing, and individual therapy than younger children (Larson, Miller, Fleming, & Teich, 2007), there is a lack of research addressing adolescents' satisfaction with mental health services and the relation of satisfaction to adolescents’ age, gender, and severity of presenting symptoms (Garland et al., 2007; Lambert, Salzer, & Bickman, 1998). Moreover, there are several unique factors that may negatively affect adolescents’ satisfaction with mental health services, namely, involuntary referral for services, power struggles with parents, and the striving for independence and rebellion against authorities that are characteristic of this developmental stage (Adams, 2000). Surprisingly, there is a lack of studies that have examined both parents’ and adolescents’ satisfaction with mental health services (Garland, Aarons, Saltzman, & Kruse, 2000; Garland et al., 2007). Since parents frequently make decisions about their children's mental health services and are often included in treatment (Finkelhor, Wolak, & Berliner, 2001; Srebnik, Cauce, & Baydar, 1996), further research is clearly needed to further examine self-reported satisfaction from both perspectives.

A number of variables, such as age, gender, diagnostic presentation, severity of symptoms, and functioning, may influence consumers’ satisfaction with services; however, these variables have received only limited attention in the literature (Garland et al., 2000; Hasler, Moergeli, Bachmann, Lambreva, Buddeberg, & Schnyder, 2004). Several studies reported no relationship between adolescents’ satisfaction with mental health services and such demographic variables as age and gender (e.g., Copeland, Koeske, & Greeno, 2004; Garland et al., 2000; Garland et al., 2007). However, at least two studies have suggested that adolescent males are more satisfied than adolescent females with mental health services and that younger youth are more satisfied than older youth (Shapiro, Welker, & Jacobson, 1997; Stuntzer-Gibson, Koren, & DeChillo, 1995). Although a few studies have examined the effects of DSM diagnosis on satisfaction with mental health services in adults, only one study has explored the relationship between...
diagnostic categories and satisfaction in adolescents. Specifically, Garland et al. (2007) examined adolescents with externalizing, mood, and anxiety diagnoses and found no differences in satisfaction among youth in these categories. Given that the results are somewhat inconsistent and there is a limited amount of research in this area, it is important to control for demographic variables related to youth satisfaction and further explore the relationship between consumer satisfaction and demographic variables.

Besides factors such as demographic variables and diagnosis, there is also the question of whether treatment outcomes are related to consumer satisfaction. Although it seems intuitive that treatment outcomes would be important factors in determining satisfaction, most research suggests that there is only a minimal relationship between satisfaction and clinical outcomes (e.g., Garland et al., 2007; Lambert et al., 1998; Pekarik & Guidry, 1999). In the adolescent literature, both youth- and parent-rated measures of satisfaction evidence minimal levels of relationship to changes in symptoms. Satisfaction with services, symptom reduction, and functional impairment appear to be relatively distinct constructs and each should be assessed to provide a comprehensive picture of consumers’ experiences in treatment (Ogles et al., 2002; Pekarik & Guidry, 1999). In some cases, large changes in symptoms and functioning may not be possible, but high satisfaction with services and stable reports of symptoms “may indicate that important ‘care’ (as compared with ‘cure’) is occurring” (Plante, Couchman, & Hoffman, 1998, p. 54). For example, a client with a more chronic mental illness, such as a psychotic, bipolar or even severe conduct disorder, may experience a minimal decrease in symptoms, but may be very satisfied with treatment due to factors such as maintenance of the level of symptomatology or functioning, relapse prevention, and improved quality of life.

The current study addressed limitations of many past studies of youth satisfaction (see Garland et al., 2007) and utilized a large, diverse sample, data collected from a real-world clinical settings, a prospective design, validated outcomes measures, and examined both parent and youth ratings of satisfaction using corresponding forms of the same measure. The aim of the current study was to examine the relationship between parent and adolescent satisfaction with community mental health services received by the adolescents and: 1) their ratings of treatment outcomes (problem severity and functioning); 2) adolescents’ primary diagnosis; and 3) adolescents’ age and gender. The goal of the present research was not only to examine these relationships to address some of the inconsistencies in the literature, but also to interpret these data in a meaningful way for clinical providers using measures of consumer satisfaction. Drawing on the previous research, it was hypothesized that the relationship between satisfaction and clinical outcomes (symptoms and functioning) would be significant but small. It was also predicted that adolescents and parents of adolescents with more severe diagnoses would report lower satisfaction than those diagnosed with less severe disorders. No specific hypotheses were made for the relationships between age, gender, and satisfaction with mental health services.

Method

Participants. An archival dataset from the Ohio Department of Mental Health (ODMH) containing information from child and adolescent clients who received outpatient mental health services in the state of Ohio was utilized in the current study. The statewide Ohio Outcomes System database contained data through December, 2005 with a total of 59,601 youth ratings and 94,722 parent ratings at intake. Only individuals who had the following information were included in the current study: 1) ages between 12 and 18; 2) presence of a primary diagnosis; and 3) a satisfaction score at six-month follow-up. The current study utilized 8,310 youth ratings and 5,591 parent ratings after the criteria were applied. Although the two samples were fairly similar, there was not a one-to-one correspondence in families. As a result, the demographics of both parent and youth samples are reported separately. These demographics
are similar to those of the youth who were part of the statewide Outcomes database in 2005 (ODMH, 2006).

**Parent sample.** Approximately 53.8 percent of the youth were male, 42.9 percent were female, and 3.3 percent of data regarding sex were missing. Youth ranged in age from 12 to 18 ($M = 14.68$) with 39.5 percent age 12 to 14, 35.4 percent age 14 to 16, and 25.1 percent age 16 to 18. The ethnic backgrounds of the youth in the sample were identified as: 58.1 percent Caucasian, 24.5 percent African American, 2.6 percent Hispanic/Latino, 0.9 percent Native American/Pacific Islander, 0.6 percent Asian, 1.8 percent other, and 1.4 percent unknown. About 21.6 percent of the youth were diagnosed with a disruptive behavior disorder, 17.5 percent with an attention-deficit/hyperactivity disorder (ADHD), 14.2 percent with an adjustment disorder, 6.8 percent with major depression, 5.8 percent with a bipolar disorder, 11.2 percent with other mood disorders, 4.6 percent with an anxiety disorder, 1.3 percent with a psychotic disorder, and 17 percent with other diagnoses (e.g., substance abuse, impulse control disorders, developmental disorders).

**Youth sample.** Approximately 53.7 percent of the youth were male, 44.5 percent were female, and 1.8 percent of data regarding sex were missing. Youth ranged in age from 12 to 18 ($M = 14.97$) with 35.9 percent age 12 to 14, 34.6 percent age 14 to 16, and 29.5 percent age 16 to 18. The youth in the sample identified their ethnic background(s) as the following: 58.3 percent Caucasian, 27 percent African American, 2.6 percent Hispanic/Latino, 1.2 percent Native American/Pacific Islander, 0.9 percent Asian, 1.9 percent other, and 2.5 percent unknown. About 22.6 percent of the sample were diagnosed with a disruptive behavior disorder, 16.1 percent with an attention-deficit/hyperactivity disorder (ADHD), 14.4 percent with an adjustment disorder, 7.4 percent with major depression, 5.4 percent with a bipolar disorder, 11.6 percent with other mood disorders, 5.1 percent with an anxiety disorder, 1.2 percent with a psychotic disorder, and 16.1 percent with other diagnoses (e.g., substance abuse, impulse control disorders, developmental disorders).

**Measures**

**The Ohio Scales.** The Ohio Scales include a youth self-report form, a parent report form, and an agency worker (clinician) report form assessing four domains: severity of the problem behavior, functioning, hopefulness, and satisfaction with services (Ogles, Melendez, Davis, & Lunnen, 2000). Parents and agency workers fill out the Ohio Scales for youth age five to 18, while youth only fill out a self-report form if they are age 12 to 18. The short forms of the Problem Severity, Functioning, and Satisfaction scales were used in the current study. Four items assess satisfaction with and inclusion in behavioral health services on a six-point scale; parent and youth versions utilize comparable items. The total Satisfaction score (range 4 to 24) is calculated by summing the four items with higher scores indicating greater dissatisfaction with services. However, in the current study the scores were reverse coded so that higher scores indicated greater satisfaction. The Problem Severity scale is comprised of 20 items that address typical problems of youth who utilize mental health services (Ogles et al., 2000). Each item is rated for severity/frequency on a six-point scale ranging from 0 “Not at all” to 5 “All the time” with higher scores (range 0 to 100) indicating greater severity and frequency. The Functioning scale includes 20 items that were devised to determine the degree of functioning of youth in various aspects of daily life, such as recreation, interpersonal relationships, and motivation. Each item is rated on a five-point scale ranging from 0 “Extreme troubles” to 4 “Doing very well” with higher scores (range 0 to 80) indicating better functioning. The Ohio Scales have demonstrated good reliability and validity (Ogles et al., 2000; Turchik, Karpenko, & Ogles, 2007). In the current study, the internal consistency reliabilities were adequate to excellent for the Functioning scale (alphas = .94 and .91), Problem Severity scale
(alphas = .91 and .88), and Satisfaction scale (alphas = .85 and .81) for parent and youth reports, respectively.

Procedure. An archival dataset from the Ohio Department of Mental Health was utilized in the current study. During the period in which the data were collected, it was required in the state of Ohio that all agencies receiving state funding for Outcomes-qualifying services (excluding crisis, assessment, and “other” services) administer Ohio Outcomes System measures at intake, a 180-day follow-up, and yearly thereafter. If children receive publicly-funded Outcomes-qualifying mental health services in the state of Ohio, the children, their parents, and agency workers (e.g., case manager, psychologist) complete corresponding forms of the Ohio Scales which are the youth measures in the Ohio Outcomes System. Children are eligible to complete the youth rating form only if they are 12 years of age or older. Parents and agency workers, however, can complete their forms of the measure for children ages 5 to 18 years.

Youth and parents were administered the Ohio Scales at intake. Diagnoses were made by licensed clinicians as a part of routine clinical practice and were based on the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders, Text-Revision (DSM-IV-TR; American Psychiatric Association, 2000). Clients’ responses and information were de-identified and entered into a database. For the purposes of the current study, only data from parent and youth ratings on the Problem Severity, Functioning, and Satisfaction scales of the Ohio Scales were analyzed. For the Satisfaction scale, if any items were missing for an individual, the scale score was not computed. For the Problem Severity scale, if more than four items were missing the total score was not computed; if four or fewer items were missing mean substitution was used to replace the missing values. For the Functioning scale, if more than four items were missing the total score was not computed; if four or fewer items were missing a score of three was substituted for each missing value.

Analyses. To examine the relationship between Ohio Scales Satisfaction scores and adolescent diagnosis, a 3 X 2 X 2 univariate analysis of variance (ANOVA) was conducted separately for parent and adolescent ratings. Satisfaction scores were entered as the dependent variable and age group (1 = age 12-14, 2 = age 14-16; 3 = age 16-18), gender, and type of disorder (1 = internalizing: bipolar disorder, major depression, other mood disorder, anxiety disorder, 2 = externalizing: ADHD, disruptive behavior disorder) were entered as the between-subjects independent variables. To further examine the relationship between Satisfaction scores and adolescent diagnoses, a 3 X 2 X 8 ANOVA was conducted separately for ratings supplied by parents and adolescents, which included the variables described above except diagnoses were recoded into eight diagnostic groups (bipolar disorder, major depression, other mood disorder, adjustment disorder, psychotic disorder, anxiety disorder, attention-deficit/hyperactivity disorder [ADHD], disruptive behavior disorder).

A hierarchical multiple linear regression analysis was conducted to examine the relationship between Satisfaction scores at the six-month follow-up and change in adolescent- and parent-rated Problem Severity and Functioning scale ratings. Change scores for Problem Severity and Functioning were derived by subtracting scores at the six-month follow-ups of these measures from the intake scores for both parent and youth reports. Age and gender were entered in the first block and Problem Severity change scores and Functioning change scores were entered in the second block for both parents and youth.

Results

Descriptive data for parent and youth Ohio Scales ratings are presented in Table 1. Overall, Satisfaction scores were high for both parents (M = 21.77, SD = 3.47) and youth (M = 19.61, SD = 4.39).
Descriptive data were analyzed for Satisfaction scores at the six-month follow-up based on age, gender, and diagnosis for parents and youth (see Table 2).

Table 1. Ohio Scales Scores by Rater

<table>
<thead>
<tr>
<th>Scale</th>
<th>Parents</th>
<th>Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M(SD)</td>
<td>M(SD)</td>
</tr>
<tr>
<td>Satisfaction at 6 months</td>
<td>21.77(3.47)</td>
<td>19.61(4.39)</td>
</tr>
<tr>
<td>Functioning at Intake</td>
<td>43.44(15.18)</td>
<td>55.58(13.33)</td>
</tr>
<tr>
<td>Functioning at 6 months</td>
<td>47.87(15.01)</td>
<td>59.25(12.61)</td>
</tr>
<tr>
<td>Problem Severity at Intake</td>
<td>28.41(16.53)</td>
<td>24.63(16.07)</td>
</tr>
<tr>
<td>Problem Severity at 6 Months</td>
<td>21.80(14.96)</td>
<td>18.86(14.14)</td>
</tr>
</tbody>
</table>

Table 2. Satisfaction Scores by Demographic Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parents</th>
<th>Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M(SD)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2,514</td>
<td>21.33(3.51)</td>
</tr>
<tr>
<td>Female</td>
<td>1,984</td>
<td>21.37(3.47)</td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-14</td>
<td>1,787</td>
<td>21.63(3.28)</td>
</tr>
<tr>
<td>14-16</td>
<td>1,623</td>
<td>21.06(3.61)</td>
</tr>
<tr>
<td>16-18</td>
<td>1,088</td>
<td>21.30(3.61)</td>
</tr>
<tr>
<td>Diagnostic Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>1,522</td>
<td>21.45(3.41)</td>
</tr>
<tr>
<td>Externalizing</td>
<td>2,125</td>
<td>21.21(3.61)</td>
</tr>
<tr>
<td>Specific Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychotic</td>
<td>67</td>
<td>21.87(2.55)</td>
</tr>
<tr>
<td>Bipolar</td>
<td>307</td>
<td>21.34(3.59)</td>
</tr>
<tr>
<td>Major Depression</td>
<td>374</td>
<td>21.35(3.42)</td>
</tr>
<tr>
<td>Other Mood</td>
<td>588</td>
<td>21.45(3.43)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>253</td>
<td>21.73(3.15)</td>
</tr>
<tr>
<td>Adjustment</td>
<td>784</td>
<td>21.48(3.37)</td>
</tr>
<tr>
<td>ADHD</td>
<td>927</td>
<td>21.62(3.38)</td>
</tr>
<tr>
<td>DBD</td>
<td>1,198</td>
<td>20.89(3.74)</td>
</tr>
</tbody>
</table>

Note. ADHD = attention deficit/hyperactivity disorder; DBD = disruptive behavior disorders.
Parent Satisfaction

Internalizing versus externalizing diagnoses. The ANOVA for parent Satisfaction scores revealed significant differences in age, $F(2, 3,635) = 6.38, p < .01, \eta^2_p = .003$. Specifically, Tukey's HSD post hoc tests showed that parents of 12 to 14 year-old adolescents were more satisfied ($M = 21.57, SD = 3.30), p < .001, than parents of 14 to 16 year-old adolescents ($M = 21.04, SD = 3.67$). The diagnostic category was also significant, $F (1, 3,635) = 6.36, p < .01, \eta^2_p = .002$; parents of adolescents diagnosed with internalizing disorders were more satisfied ($M = 21.45, SD = 3.41$) than parents of adolescents diagnosed with externalizing disorders ($M = 21.21, SD = 3.61$). Effects of gender and the interactions were not significant.

Diagnosis groups. In the ANOVA for parent Satisfaction scores examining eight specific diagnostic groups, age was again significant, $F (2, 4,450) = 5.05, p < .01, \eta^2_p = .002$. Specifically, Tukey's HSD post hoc tests revealed that parents of 12 to 14 year-old adolescents ($M = 21.63, SD = 3.28$) were more satisfied than parents of 14 to 16 year-old adolescents ($M = 21.06, SD = 3.61$) and 16 to 18 year-old adolescents ($M = 21.30, SD = 3.61$), $p's < .001$. There were also significant differences among the diagnostic groups in Satisfaction scores, $F (7, 4,450) = 3.89, p < .01, \eta^2_p = .01$. Specifically, Tukey’s HSD post hoc tests revealed that parents of youth with disruptive behavior disorders reported less satisfaction ($M = 20.89, SD = 3.74$) than parents of youth diagnosed with other mood disorders ($M = 21.45, SD = 3.43$), adjustment disorders ($M = 21.48, SD = 3.37$), anxiety disorders ($M = 21.73, SD = 3.15$), and ADHD ($M = 21.62, SD = 3.39$), $p's < .01$. Effects of gender and the interactions were not significant.

Prediction of symptoms and functioning. In the hierarchical regression analysis, parent Satisfaction scores were regressed upon age, gender, change in Problem Severity scores, and change in Functioning scores. Age and gender were entered in the first block of the regression analysis and the remaining predictors were simultaneously entered in the second block. The first block containing age and gender was significant, $R^2 = .01, F (2, 5,075) = 12.14, p < .001$. When controlling for age and gender, the other two predictors accounted for a significant amount of additional variance, $R^2_{\text{Change}} = .01, F \text{ Change} (8, 200) = 4.23, p < .001$. The overall model was significant, $R^2 = .02, F (4, 5,073) = 27.47, p < .001$, and accounted for two percent of the variance in Satisfaction scores. In the presence of the other three predictors, three variables, younger age, $\beta = -.14, t (5,073) = -4.97, p < .001$, lower Problem Severity, $\beta = -.01, t (5,073) = -2.20, p < .001$, and higher Functioning, $\beta = .02, t (5,073) = 5.62, p < .001$, significantly contributed to the model.

Youth Satisfaction

Internalizing versus externalizing diagnoses. The ANOVA for youth Satisfaction scores revealed significant differences in age, $F (2, 5,571) = 10.41, p < .001, \eta^2_p = .004$. Specifically, Tukey's HSD post hoc tests revealed that adolescents who were ages 12 to 14 ($M = 19.94, SD = 4.30$) were more satisfied with treatment than those ages 12 to 14 ($M = 19.37, SD = 4.42$) or those ages 14 to 16 ($M = 19.10, SD = 4.69$), $p's < .001$. The type of diagnosis was also significant, $F (1, 5,571) = 10.95, p = .001, \eta^2_p = .002$. Adolescents diagnosed with internalizing disorders indicated greater Satisfaction ($M = 19.74, SD = 4.33$) than adolescents diagnosed with externalizing disorders ($M = 19.20, SD = 4.60$). Gender and the interactions were not significant.

Diagnostic groups. In the ANOVA for adolescent Satisfaction scores examining specific diagnostic groups, age was again significant, $F (2, 6,905) = 3.75, p < .05, \eta^2_p = .001$. Specifically, Tukey's
HSD post hoc tests revealed that adolescents who were ages 16 to 18 were more satisfied (\(M = 20.41, SD = 4.25\)), \(p's < .001\) than adolescents ages 12 to 14 (\(M = 19.84, SD = 4.32\)) and 14-16 (\(M = 19.40, SD = 4.59\)). Significant differences were also found among diagnostic groups on Satisfaction scores, \(F (7, 6,905) = 3.65, p < .05, \eta^2_p = .002\). Specifically, post-hoc tests revealed that those with adjustment disorders (\(M = 20.41, SD = 3.98\)) had higher Satisfaction scores than those diagnosed with bipolar disorders (\(M = 19.56, SD = 4.55\)), major depression (\(M = 19.57, SD = 4.34\)), other mood disorders (\(M = 19.76, SD = 4.21\)), ADHD (\(M = 19.51, SD = 4.40\)), and disruptive behavior disorders (\(M = 19.03, SD = 4.70\)), \(p's < .01\). Further, those diagnosed with disruptive behavior disorders (\(M = 19.03, SD = 4.70\)) had lower Satisfaction scores than those diagnosed with other mood disorders (\(M = 19.76, SD = 4.21\)), anxiety disorders (\(M = 20.08, SD = 4.36\)), and ADHD (\(M = 19.51, SD = 4.40\)), \(p's < .01\). Effects of gender and the interactions were not significant.

Prediction of symptoms and functioning. In the hierarchical regression analysis, adolescent Satisfaction scores were regressed upon age, gender, change in Problem Severity scores, and change in Functioning scores. Age and gender were entered in the first block of the regression analysis and the remaining predictors were simultaneously entered in the second block. The first block containing age and gender was significant, \(R^2 = .01, F (2, 5,001) = 10.12, p < .001\). When controlling for age and gender, the other two predictors accounted for a significant amount of additional variance, \(R^2_{\text{Change}} = .01, F\) Change (8, 200) = 4.23, \(p < .001\). The overall model was significant, \(R^2 = .02, F (4, 4,999) = 27.56, p < .001\), and accounted for two percent of the variance in Satisfaction scores. In the presence of the other three predictors, three variables, increased age, \(\beta = .14, t (4,999) = -3.97, p < .001\), decreased Problem Severity, \(\beta = -.02, t (4,999) = -3.58, p < .001\), and increased Functioning, \(\beta = .03, t (4,999) = 6.13, p < .001\), significantly contributed to the model.

Discussion

The current study sought to examine the relationship between parent and adolescent satisfaction with community mental health services and adolescents’ primary diagnosis, age, gender, symptom reduction, and functional impairment. Overall this study supports previous research that suggests that demographic variables (e.g., Copeland et al., 2004; Garland et al., 2000; Garland et al., 2007) and treatment effectiveness (e.g., Garland et al., 2007; Lambert et al., 1998; Shapiro et al., 1997) do not account for a large amount of variance in Satisfaction scores, and also extends this finding to clinical diagnoses which have only been included in one previous study of adolescent satisfaction (Garland et al., 2007). The present study did find significant results in three areas; however, the importance of these results must be tempered by the small effect sizes. First, parent and adolescent Satisfaction with services differed as a function of adolescents’ primary diagnosis. Second, parents of younger adolescents were more satisfied with services than parents of older adolescents. Conversely, older adolescents reported greater Satisfaction with mental health services than younger adolescents. Finally, reduction in symptoms and improvement in functioning were related to greater satisfaction; however, these variables accounted for only a small portion of the variance in satisfaction.

Both parents of adolescents with internalizing disorders and youth diagnosed with internalizing disorders were more satisfied with mental health services than parents of youth and youth diagnosed with externalizing disorders. Although a few previous studies have found no relationship between satisfaction and internalizing and externalizing symptoms (Garland et al., 2007; Shapiro et al., 1997; Stuntzer-Gibson et al., 1995), no previous studies have compared the two types of disorders. Although the findings concerning Satisfaction and internalizing and externalizing disorders were similar for parents and youth,
the underlying reasons for these results may be different. Previous research has suggested that parents of adolescents with externalizing problems report high levels of stress, parental psychopathology, marital distress, and substance use (Johnston & Mash, 2001), which is not surprising, considering the disruptive nature of externalizing problems, whereas parents of children with internalizing problems do not report such levels of impairment. This may suggest that parents of adolescents with externalizing disorders are more heavily impacted and distressed by their child's disorder than parents whose children have internalizing disorders, which are more subjectively experienced by the child. This explanation fits with a study that found that lower reported caregiver strain is related to increased satisfaction among parents (Garland et al., 2007).

Adolescents with internalizing disorders may be more satisfied than those with externalizing disorders as they are more likely to be entering therapy without being coerced by their parents, as they may be suffering from subjective distress and are therefore more motivated for change (Chorpita & Southam-Gerow, 2006). On the other hand, adolescents with externalizing disorders frequently deny the existence of problems and are often in treatment involuntarily. Thus, they have less interest in being in treatment than adolescents with internalizing disorders and not surprisingly are less satisfied (McMahon, Wells, & Kotler, 2006). In fact, this fits with research that has found that adolescents who played some role in their seeking services or treatment are more satisfied than those who had no role in seeking help (Garland et al., 2000).

When specific diagnostic groups were examined, parents of youth with a diagnosis of disruptive behavior disorders were less satisfied than parents of youth diagnosed with other mood disorders, adjustment disorders, anxiety disorders, or ADHD. Similar to the above findings, parents of adolescents with externalizing disorders were generally less satisfied than parents of youth diagnosed with internalizing disorders. Findings with the youth ratings of Satisfaction and their relation to diagnosis revealed a similar pattern. Youth diagnosed with adjustment disorders had higher Satisfaction with treatment in comparison to those youth diagnosed with bipolar disorders, major depression, other mood disorders, ADHD, and disruptive behavior disorders. These findings are consistent with the adult literature (e.g., Hasler et al., 2004; Lehman & Zastowny, 1983) where it has been found that clients with less severe and less chronic mental illness are more satisfied with treatment than clients with more chronic or severe diagnoses. Additionally, it was found that youth diagnosed with disruptive behavior disorders were less satisfied than youth who were diagnosed with other mood disorders, anxiety disorders, or ADHD. Again, this finding suggests that adolescents with more internalizing disorders are more likely to be satisfied with their treatment than their peers with externalizing disorders.

The current study also examined the effects of age and gender and controlled for them in all of the analyses. There were no significant findings for gender of the adolescents and Satisfaction with treatment, which is consistent with most previous research (e.g., Copeland et al., 2004; Garland et al., 2000; Garland et al., 2007). Age was significantly predictive of Satisfaction ratings at the six-month follow-up for both parents and adolescents, although the effect sizes were small. Among adolescents, those who were older indicated that they were more satisfied and felt more included in their treatment planning than younger adolescents, which is the opposite finding of previous research that has found significant results for age (Shapiro et al., 1997; Stuntzer-Gibson et al., 1995). The discrepancy is likely due to the difference in satisfaction measures as the Ohio Scales Satisfaction scale used in the current study includes more items concerning feeling included in treatment and treatment planning than those used in the studies finding opposite results for age. The current results are consistent with the fact that older adolescents are likely able to attend therapy without their parents, have more control over their treatment, and be in treatment voluntarily than younger adolescents. Adolescents value having control
over their own counseling experiences and feel less satisfied if they feel forced or coerced into treatment (Garland et al., 2000). On the other hand, parents with younger adolescents were more satisfied with their youth's mental health services at six months than those with older adolescents. It is likely that parents feel that they have more control over the treatment and treatment planning of children who are younger and therefore feel more satisfied with the services that are provided.

Similar to previous studies, reduction in severity of symptoms and improvement in functioning predicted greater Satisfaction ratings for both youth and parents at the six-month follow-up (e.g., Garland, Aarons, Hawley, & Hough, 2003; Garland et al., 2007; Lambert et al., 1998), but these relationships were small. After controlling for age and gender of the youth, level of Functioning and Problem Severity accounted for only one percent of the variance, which provides further support for the notion that satisfaction is a distinct construct from symptom and functioning change and should not be treated as a measure of treatment effectiveness. It is also of note that although satisfaction scores were consistently higher for parents compared to youth across demographic and diagnostic categories, parent-rated Functioning scores were significantly lower and Problem Severity scores significantly higher than those reported by youth at both intake and six months into treatment. This finding seems especially counterintuitive if one believes that treatment outcomes and satisfaction are related and seems to further indicate that satisfaction is not a good proxy for clinical treatment outcomes, at least in the case of symptom severity and functioning.

As client satisfaction data are being collected more frequently by behavioral healthcare organizations (e.g., Pekarik & Guidry, 1999), it is of great value to researchers and practitioners alike to further explore this construct. The lack of strong relationships between demographic differences and diagnoses in satisfaction ratings are important in informing clinicians in that it does not seem to be a set of fixed unchangeable variables that are influencing clients’ satisfaction with mental health services. Satisfaction is also not a proxy for treatment effectiveness and provides an addition piece of clinical outcomes data. Although further research is clearly needed to provide clarity to what is being assessed by satisfaction measures and what factors influence client ratings, this study indicates a set of variables which do not seem to be strongly related to consumer satisfaction. In the future, it may also be beneficial for researchers to consider other variables in relation to client satisfaction, such as client personality characteristics, agreement between therapist and client expectations, therapeutic alliance, "customer relations" variables (e.g., parking, office décor, convenience of scheduling), and desire for social conformity (e.g., Garland et al., 2007). Although some of these variables may seem trivial, such as ease of scheduling or the receptionist's behavior, these variables may be related to whether clients continue treatment, utilize services in the future, or recommend services at an agency to others (Godley, Fielder, & Funk, 1998).

Although the relationships found in the current study are small in magnitude, they still have implications for clinical practice as it has been argued that extremely high levels of consumer satisfaction with services (near 100%) are needed to maintain loyalty and for consumers to share more positive than negative comments about services with others (Fisk, Brown, Cannizzaro, & Naftal, 1990). One implication of the current study is that parents of older adolescents may need to be made to feel more included in the treatment of the adolescent and that it is worthwhile for them to continue services. On the other hand, clinicians should try to incorporate adolescents into treatment planning and have them at least perceive that they have choices in the services offered to them even if they are being coerced or forced into treatment by their parents or an agency. Garland et al. (2000) argue that it may be the perception that the adolescent feels they had a role in seeking mental health services rather than the reality that is important. It is likely that this also extends to their having an active role in treatment planning and service
utilization. These suggestions may be especially important for adolescents and parents of adolescents with externalizing disorders, especially ODD and CD, who may be overall less satisfied than other clients. Hopefully, by continuing to examine both parent and youth satisfaction, researchers can come to further clarify and understand consumer satisfaction and inform clinical practice as consumer satisfaction is an increasingly important variable in evaluation of mental health services (Garland et al., 2007).

REFERENCES


THE DETERMINANTS OF TURNOVER AND RETENTION OF CASE MANAGERS IN OHIO’S MENTAL HEALTH SYSTEM

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Department of Economics

Robert J. Gitter, PhD

Earlier research has shown turnover among case managers in Ohio’s mental health system is both high and expensive to employers. Gitter (2005) found the rate of turnover—the share of employees who leave for any reason over the course of a year—to be 30.4 percent among case managers (CSP workers) in Ohio. Furthermore, this turnover was quite costly to employers. When the costs of reduced productivity, training and recruiting new employees, etc., were calculated, each turnover and subsequent replacement cost employers an estimated $3,775.

In light of the degree of turnover and its expense, an important question arises as to what are the causes of turnover. Understanding what impacts turnover is a pre-condition for undertaking measures to reduce these losses. Although there is a substantial body of literature on the causes of turnover in general, there is little on case managers within the mental health system in general, and in Ohio specifically. This study examines the causes of turnover and its mirror image, retention, through surveys of both case managers and their employers in Ohio’s mental health system. The surveys were conducted at two points in time one year apart and determined what factors affected turnover.

Models of Turnover

There is a rich literature on turnover in general which serves as a basis for this study. There are several models that draw on turnover in health care fields as well as the public sector in general and they provide the basis for our work. Turnover is something that can be either voluntary or involuntary on the part of the employee. The distinction, though, is one that may be hard to make in the real world. In some cases the decision to terminate the employment relationship is officially called a resignation yet the employee was permitted to resign rather than be fired. This would make it difficult to separate out non-voluntary turnover. Further, there may be cases where the employee and employer disagree as to whether an employee’s leaving was in fact voluntary or not. The model employed in this study will essentially treat the decision to leave as one made by the case manager rather than an involuntary termination made by the employer. This assumption of voluntary turnover is consistent with the fact that the number of involuntary terminations should not be large. Price (1977) found that approximately five percent of nurses who left their job did so on an involuntary basis, including reasons such as death and retirement which do not reflect performance or being laid-off.

Price and Mueller (1981) proposed a basic model of turnover for nurses. The model has been applied to other fields and is still in use today (see Bouma, 2004). Various factors are seen as influencing job satisfaction, which along with training and a person’s demographic characteristics (age, race, gender, etc.), affect an employee’s intention to stay in the job. The intent to stay, combined with other possible job opportunities, are then seen as determining whether the employee stays with the employer or leaves, i.e., becomes a “turnover.” The model, which is changed only slightly from that of Price and Mueller (1981), may be represented as:
In essence, we see seven types of factors influencing a case manager’s job satisfaction. Job satisfaction, along with the employee’s training and demographic background, is thought to influence their intention to stay with their current employer. The intent to stay, coupled with other employment opportunities, determine whether the person does in fact turn over or stay with the employer.

There are seven factors that are seen as affecting job satisfaction.

- **Communication.** This aspect measures the degree to which information about the job is communicated to the employee. Price and Mueller (1981) found that this was in fact correlated with job satisfaction of nurses. Gardner (1986) notes that communication has in fact become a standard variable in models of the determinants of turnover.

- **Participation.** This is the degree to which the employee participates in decision-making on the job. Price and Mueller (1981) found that nurses who believed that they had a greater degree of participation in decision-making were found to have higher degrees of job satisfaction. Further, Pettman found that “the greater the individual’s participation in job assignment, the lower the turnover rate” (Pettman as cited in Bouma, 2004).

- **Routinization.** Routinization measures the lack of variety in the job. Price and Mueller (1981) found that an index of routinization showed that the degree to which the job was routine and repetitive was negatively related with the degree of job satisfaction. The evidence as to whether the degree of routinization leads to turnover is mixed, with Porter and Steers finding such an effect, but no such effect being found in nurses by Cavanagh (Porter, Steers, & Cavanagh as cited in Bouma, 2004).
Integration. Integration measures the degree to which the employee has close friends in the organization. The work of Price and Mueller (1981) found that the degree of integration was positively correlated with job satisfaction. Further, others have found a direct negative relationship between integration and turnover (Porter, & Steers as cited in Bouma, 2004).

Pay and Benefits. Although one would logically expect this to have a positive effect on job satisfaction, surprisingly Price and Mueller (1981) did not find that compensation had a statistically significant effect on either job satisfaction or turnover. Walker (1998) found that pay was negatively related to turnover in the private sector as well.

Justice. Justice, or distributional justice as it is sometimes called, measures the degree to which the employee views rewards and punishments as being related to performance within the organization. Price and Mueller (1981) hypothesized that this would be negatively related to turnover, i.e., viewing the employer as being more just resulting in a reduced likelihood of turnover. Although they did find a negative effect, it was not statistically significant. Mor-Barak, Nissly and Levin (2001) in a metanalysis, where the results of several studies were combined, found however, that higher levels of perceived fairness were negatively related to turnover.

Promotional Opportunity. Although a greater potential for promotion could be viewed as contributing to a higher level of job satisfaction, Price and Mueller (1981) found the effect to be positive, but not statistically significant. Acker (2004) found that opportunities for professional development had a positive and statistically significant impact on job satisfaction among social workers in mental health.

These seven factors that are expected to influence job satisfaction, along with education, training and experience and the demographic background of the CSP worker are expected to have an impact on the employee’s intention to stay with the employer. Although Price and Mueller (1981) discuss how education, which provides the employee with skills that many employers would find of use, should be expected to decrease an employee’s intention to stay, they did not find a statistically significant effect when they used education as an independent variable to predict intent to stay. In a study of community mental health workers, however, Blankertz and Robinson (1997) found that those with a bachelor’s or master’s degree were more likely to state an intention to leave.

Demographic characteristics of the employee are also believed to play a role in the degree to which they intend to stay. Price and Mueller (1981) discuss the impact that such factors as age and family status might have an impact. Older, more mature workers are believed to be more settled and have a greater intention of staying. Acker (2004) and Blankertz and Robinson (1997) both found that age had a positive impact on intent to stay. Price and Mueller discuss family responsibilities as something that might reduce an employee’s intention to remain with the employer. Neither Price and Mueller (1981) nor Acker (2004) found a statistically significant relationship between marital status and intent to stay. Further, in reviewing other studies, Mor-Barak, et al. (2001) did not find a statistically significant impact. Since information on this is relatively easy to gather, the survey includes these factors as well as the age of their children and the employee’s race.

The model that has been presented so far postulates that seven factors will influence job satisfaction and that job satisfaction along with general training and demographic factors will determine an employee’s intention to stay with their employer. The intention to stay along with the other opportunities will determine whether or not the employee will leave. The opportunity to leave will be positively related to the possibility of job turnover. If the local unemployment rate is low, i.e., alternate
employment opportunities are high, then the probability of turnover is expected to be high. Mor-Barak, et al. (2001) in their metanalysis found that the better the employment alternatives, the greater the probability of turnover.

A Description of the Survey

We surveyed both case managers and their employers. The idea was to establish a baseline of data on employers and their case managers and then re-survey the employers one year later to find out which case manager employees left. A list of 191 organizations employing case managers was obtained from the Ohio Department of Mental Health. These organizations were sent a survey in the spring of 2006 to examine various characteristics of these employers including the types of clients served, pay and fringe benefits. Ninety-seven of the employers responded and 90 of those responded that they did in fact employ case managers. Employee surveys were sent to these 90 employers to distribute to their case managers later in the spring of 2006. Employees were given a small stipend to encourage them to complete and return the survey. The use of financial incentives to complete surveys has in the past been demonstrated to increase the response rate (Lesser et al., 2001.) The surveys were mailed to Ohio Wesleyan University and their employers were not privy to their responses. We received a total of 550 responses from case managers.

One year later, in the spring of 2007, a brief survey was sent to the employers asking whether each of the employees was still employed at that organization. We were able to verify the initial employment status of 526 of the case managers one year after the initial survey. Of this group, 135 or 25.7 percent were no longer employed by that organization, a figure that is not that dissimilar from the 30.4 percent figure Gitter (2005) found among case managers in an earlier study. It should be noted that some of the case managers who left may have been unknown to the Human Resources manager or other person who answered the survey. If that were the case, the person would not be recorded as a turnover, but rather would not be in the sample. The exclusion of these people might lead to the slightly lower turnover rate.

Of the 391 case managers who were still employed by their organization, 353 were case managers and 38 had moved on to a different position with their employer. Of the 90 employers that were sent surveys, 65 of them had case managers that returned a survey so only those 65 organizations are in the sample.

In our model, seven factors are seen as affecting job satisfaction, which eventually would impact turnover: communication, participation, routinization, integration, pay and benefits, justice and promotional opportunities. Case managers were asked a series of questions to determine their views on these aspects of their job. In most cases, they were asked to respond to a statement with one of five responses: strongly agree, agree, neutral, disagree or strongly disagree. In some cases, however, the employer was asked questions pertaining to fringe benefits. Unless otherwise noted, the questions in the responses came from the case managers rather than the employers.
Table 1. The Determinants of Job Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean of Turnovers</th>
<th>Mean of Non-Turnovers</th>
<th>Difference (t-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Your employer communicates to you what you are expected to do on your job as well as how to do it.</td>
<td>2.4667</td>
<td>2.1671</td>
<td><strong>0.0036</strong></td>
</tr>
<tr>
<td>2. Your supervisor makes you aware of how well you doing your job.</td>
<td>2.2148</td>
<td>2.0102</td>
<td><strong>0.0396</strong></td>
</tr>
<tr>
<td><strong>Participation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. You have a great deal of say as to how you do your job.</td>
<td>2.3556</td>
<td>2.2519</td>
<td>0.2898</td>
</tr>
<tr>
<td><strong>Routinization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. There is a great deal of repetitiveness in the activities that make up your job.</td>
<td>2.3731</td>
<td>2.5000</td>
<td>0.2313</td>
</tr>
<tr>
<td><strong>Integration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. You have close friends among your co-workers. (&quot;Not applicable, no friends at work&quot; was also a choice).</td>
<td>2.4148</td>
<td>2.3529</td>
<td>0.5462</td>
</tr>
<tr>
<td>6. On most days you have a chance to socially interact with your friends at work.</td>
<td>2.7852</td>
<td>2.7110</td>
<td>0.4938</td>
</tr>
<tr>
<td>7. At your place of work people are treated with respect.</td>
<td>2.1037</td>
<td>2.0154</td>
<td>0.3267</td>
</tr>
<tr>
<td><strong>Pay &amp; Benefits</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. You are adequately reimbursed for mileage.</td>
<td>2.8593</td>
<td>3.0639</td>
<td>0.0888</td>
</tr>
<tr>
<td>10. You have adequate equipment and supplies to do your job.</td>
<td>2.5259</td>
<td>2.5064</td>
<td>0.8522</td>
</tr>
<tr>
<td>11. What is your hourly rate of pay?</td>
<td>13.8424</td>
<td>14.3625</td>
<td>0.1789</td>
</tr>
<tr>
<td>12. Do your receive comp time for overtime worked?</td>
<td>0.3955</td>
<td>0.3984</td>
<td>0.9528</td>
</tr>
<tr>
<td>13. Are you required to be on call?</td>
<td>0.4741</td>
<td>0.4373</td>
<td>0.4601</td>
</tr>
<tr>
<td>14. If you are required to be on call, are you compensated for the on-call time?</td>
<td>0.7027</td>
<td>0.7122</td>
<td>0.8780</td>
</tr>
<tr>
<td>15. Does the employer provide health insurance for CSP staff? (asked of employer)</td>
<td>1.0000</td>
<td>0.9974</td>
<td>0.5573</td>
</tr>
<tr>
<td>16. Does the employee have to pay part of the premiums for their own health insurance? (asked of employer)</td>
<td>0.9474</td>
<td>0.9352</td>
<td>0.6166</td>
</tr>
<tr>
<td>17. What percentage of the premium for their own health insurance do employees pay? (asked of employer)</td>
<td>0.1815</td>
<td>0.1943</td>
<td>0.3754</td>
</tr>
<tr>
<td>18. Does the employer offer health insurance for the families of CSP staff members? (asked of employer)</td>
<td>0.9926</td>
<td>0.9898</td>
<td>0.7713</td>
</tr>
<tr>
<td>19. Does the employee have to pay part of the premiums for their family health insurance? (asked of employer)</td>
<td>0.9098</td>
<td>0.9162</td>
<td>0.4190</td>
</tr>
<tr>
<td>20. What percentage of the premium for their family health insurance do the do employees pay? (asked of employer)</td>
<td>0.1920</td>
<td>0.1956</td>
<td>0.8450</td>
</tr>
<tr>
<td>21. Does the employee have a traditional pension plan where benefits are based on years of service and earnings? (asked of employer)</td>
<td>0.2889</td>
<td>0.3760</td>
<td>0.0683</td>
</tr>
<tr>
<td>22. Does the employer contribute to an IRA, 403b, 401k or similar plan where money is put away for the employee's retirement?</td>
<td>0.6111</td>
<td>0.8485</td>
<td><strong>0.0263</strong></td>
</tr>
<tr>
<td>23. In a typical week, how many hours do you actually work?</td>
<td>44.1391</td>
<td>43.5725</td>
<td>0.5114</td>
</tr>
<tr>
<td>24. How many consumers do you have on your caseload?</td>
<td>27.2923</td>
<td>28.4658</td>
<td>0.5559</td>
</tr>
</tbody>
</table>

*Note. Units of measurements for items 1 – 10 are (1) Strongly agree, (2) Agree, (3) Neutral, (4) Disagree, (5) Strongly disagree; for item 11, dollars; for items 12 – 22, (1) Yes (2) No; for items 23 & 24, number of hours & number of consumers.*
The factors and the questions used to elicit the responses are given in Table 1. The mean values for those case managers who left are given as well as those who did not leave, i.e., the non-turnovers. A $t$-test was performed to see if the difference of the means was statistically significant at the standard .05 level. We see that for both of the questions that measured the effectiveness of communication, the difference in means was statistically significant. Since higher numerical values (5 = strongly disagree) represent disagreement with the statement and lower ones agreement (1= strongly agree), we see that those who stayed were more likely to agree with the statement that their “employer communicates to you what you are expected to do on your job as well as how to do it” and “your supervisor makes you aware of how well you are doing.” We did not, however, find any differences between those who stayed and those who left in the series of questions that dealt with participation (say over how to do the job), routinization or integration (friends at work.)

For the most part there were few differences in the pay and benefits variables. Somewhat surprisingly, the difference in hourly pay was only 52 cents an hour and was not statistically significant. The result, though, is consistent with what Price and Mueller (1981) found. Three differences between the two groups are worth noting in this area. First, those who did not leave were much more likely to have an employer who offered an IRA, 403b, 401k or similar such retirement plan. Eighty-five percent of those who did not leave had an employer who offered such a plan compared to 61 percent for those who left. The difference was statistically significant. Although it was not significant at the .05 level, we found that those who stayed were more likely to have an employer who offered a traditional pension plan based on years of service. This was significant at the .10 level. Finally, an anomalous result occurred in that those who turned over were more likely to agree with the statement that they were adequately reimbursed for mileage and the difference was significant at the .10 level. None of the questions on justice (fairness) and promotional opportunities showed a difference. In terms of the differences between those who stayed and those who did not, we find that those who stayed believed communication was better and were more likely to have an employer who offered a pension than those who left.

Table 2 focuses on those variables that might more directly affect the intention to stay. The key finding is that those case managers who turned over tended to be almost five years younger, possess almost three fewer years less experience in mental health and over a year and a half less tenure with their current employer. All of these differences were statistically significant at the .05 level. To the extent that turnover will occur among newer employees, who also have less experience, these results are not surprising. It should be noted that the other factors, education, licensure, gender and race did not have any statistically significant difference. The only exception was a difference for those of Asian decent, with 1.5 percent of the turnovers being Asian and none of the non-turnovers being Asian. Since only two of the 526 respondents were Asian, the number is too small to make meaningful judgments.

Table 3 examines opportunities to find other jobs. Those people who left their employer by 2007 were more likely to believe the overall job market in their geographic area was better and the difference barely missed being statistically significant at the .10 level. Finally, in terms of control factors, Table 4, the size of the organization, being part of a team and working for a profit making organization seemed to not be associated with a case manager leaving or not. Those who turned over were more likely to be serving adult clients and the difference was close to significance at the .10 level, $p = .1058$. 
Table 2. Components of Intent to Stay Questions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Units</th>
<th>Mean of Turnovers</th>
<th>Mean of Non-Turnovers</th>
<th>Difference (t-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job Satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Education, Training and Experience</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Years working in mental health</td>
<td>Number</td>
<td>5.4701</td>
<td>8.2423</td>
<td>0.0000</td>
</tr>
<tr>
<td>• Years with current employer</td>
<td></td>
<td>2.9915</td>
<td>4.6803</td>
<td>0.0004</td>
</tr>
<tr>
<td>• Education</td>
<td></td>
<td>5.0222</td>
<td>4.9642</td>
<td>0.4812</td>
</tr>
<tr>
<td><strong>Licensure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- LSW</td>
<td>1=Yes; 0=No</td>
<td>0.1923</td>
<td>0.2219</td>
<td>0.4780</td>
</tr>
<tr>
<td>- LISW</td>
<td>1=Yes; 0=No</td>
<td>0.0231</td>
<td>0.0366</td>
<td>0.4592</td>
</tr>
<tr>
<td>- LPCC</td>
<td>1=Yes; 0=No</td>
<td>0.0231</td>
<td>0.0261</td>
<td>0.8496</td>
</tr>
<tr>
<td>- LPC</td>
<td>1=Yes; 0=No</td>
<td>0.0231</td>
<td>0.0339</td>
<td>0.5389</td>
</tr>
<tr>
<td>- RN</td>
<td>1=Yes; 0=No</td>
<td>0.0077</td>
<td>0.0078</td>
<td>0.9875</td>
</tr>
<tr>
<td>- LPN</td>
<td>1=Yes; 0=No</td>
<td>0.0000</td>
<td>0.0052</td>
<td>0.4101</td>
</tr>
<tr>
<td>- Social Work Assistant</td>
<td>1=Yes; 0=No</td>
<td>0.0308</td>
<td>0.0444</td>
<td>0.4993</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Any children under the age of six living at home</td>
<td>1=Yes; 0=No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Any children between the ages of six and 18 living at home</td>
<td>1=Yes; 0=No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Age</td>
<td>Years</td>
<td>33.2370</td>
<td>37.7815</td>
<td>0.0001</td>
</tr>
<tr>
<td>• Gender (Male/Female)</td>
<td>0=F, 1=M</td>
<td>0.1630</td>
<td>0.2051</td>
<td>0.2868</td>
</tr>
<tr>
<td>• Married- (living with spouse or significant other)</td>
<td>1=Yes; 0=No</td>
<td>1.4667</td>
<td>1.5258</td>
<td>0.5587</td>
</tr>
<tr>
<td>• American Indian</td>
<td>1=Yes; 0=No</td>
<td>0.0152</td>
<td>0.0209</td>
<td>0.6811</td>
</tr>
<tr>
<td>• Asian</td>
<td>1=Yes; 0=No</td>
<td>0.0152</td>
<td>0.0000</td>
<td>0.0158</td>
</tr>
<tr>
<td>• Black or African</td>
<td>1=Yes; 0=No</td>
<td>0.1061</td>
<td>0.1332</td>
<td>0.4198</td>
</tr>
<tr>
<td>• White</td>
<td>1=Yes; 0=No</td>
<td>0.8636</td>
<td>0.8616</td>
<td>0.9539</td>
</tr>
<tr>
<td>• Hispanic</td>
<td>1=Yes; 0=No</td>
<td>0.0373</td>
<td>0.0155</td>
<td>0.1319</td>
</tr>
</tbody>
</table>

Note. Multiple responses possible for race and Hispanic variables.
Table 3. Components of Turnover Questions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Units</th>
<th>Mean of Turnovers</th>
<th>Mean of Non-Turnovers</th>
<th>Difference (t-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job Satisfaction</strong></td>
<td>See Table 1</td>
<td>2.3881</td>
<td>2.3918</td>
<td>0.9615</td>
</tr>
<tr>
<td><strong>Intent to Stay</strong></td>
<td>See Table 2</td>
<td>2.3918</td>
<td>2.7429</td>
<td>0.1058</td>
</tr>
<tr>
<td><strong>Opportunities</strong></td>
<td></td>
<td>2.6296</td>
<td>2.7429</td>
<td>0.1058</td>
</tr>
<tr>
<td>Perception of the job marker for case managers</td>
<td>1= Excellent, 2 = Good, 3 = Fair, 4 = Poor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perception of the overall job market</td>
<td>“</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Control Factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Units</th>
<th>Mean of Turnovers</th>
<th>Mean of Non-Turnovers</th>
<th>Difference (t-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job Satisfaction</strong></td>
<td>See Table 1</td>
<td>48.9306</td>
<td>43.6303</td>
<td>0.2323</td>
</tr>
<tr>
<td><strong>Intent to Stay</strong></td>
<td>See Table 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Opportunities/Components of Turnover</strong></td>
<td>See Table 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of CSP workers employed by organization</td>
<td>Number</td>
<td>0.6737</td>
<td>0.7143</td>
<td>0.3869</td>
</tr>
<tr>
<td>Part of a team</td>
<td>1 = Yes; 0 = No</td>
<td>0.7333</td>
<td>0.6607</td>
<td>0.1195</td>
</tr>
<tr>
<td>Type of clients – adults</td>
<td>1 = Yes; 0 = No</td>
<td>0.0148</td>
<td>0.0386</td>
<td>0.1803</td>
</tr>
<tr>
<td>Type of clients – both</td>
<td>1 = Yes; 0 = No</td>
<td>0.0148</td>
<td>0.0307</td>
<td>0.3241</td>
</tr>
<tr>
<td>For Profit Organization</td>
<td>1 = Yes; 0 = No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Turnover Model Results**

The results presented above showed the differences in the variable means of case managers who stayed with their employer and those who left. These results, however, do not show the effect of each factor controlling for the others. Such effects are usually determined through the use of a multiple regression model. When the variable we are trying to predict, i.e., the dependent variable of turnover/staying, is a binary one, a specialized form of regression is preferred. For the dependent variable, only two values are possible, either the case manager left or the case manager stayed with the employer. Therefore, a logit model (logistic regression) is used here. The logit model essentially can be used to determine the probability of an individual staying with the employer. Since probabilities can only range between zero and one, the logit model fits a curve to the data where the predicted values of staying will be between zero and one.
In running a logit model, the actual dependent variable is the natural logarithm of the ratio of the probability of the case manager staying divided by the probability of the case manager leaving. In interpreting the results, the following should be kept in mind. The effect of one of the determinants of turnover, say age for example, will not be constant but is different at low, medium and high values of age. The logit model fits a curve that predicts small effects of one more years of age on the probability of leaving for high and low values of age. The effects, however, are predicted to be large in the middle range of age. The coefficients (slopes) do not have the same meaning as in a standard multiple regression. Therefore, in viewing the results, one should only be concerned with whether the coefficient of a factor (effect) was positive or negative and whether it was statistically significant.

Table 5 presents the results of including all of the variables in the logit model. We are trying to predict a case manager remaining with their employer, so a positive coefficient means that the variable increases the probability of a case manager remaining with their employer. If the variable is statistically significant at the .05 level or less ($p$-value less than .05), there is less than a five percent chance that this variable did not affect a case manager remaining with their employer. These variables where the effect was significant are in boldface. It should be noted that if there are multiple categories of a factor, and they are used as dummy variables, one such category must be omitted or the regression cannot be calculated, i.e., perfect multicollinearity would exist. For example, there are seven categories of education. If we were to form and use seven dummy variables, one for each of the categories, that logit equation could not be calculated. Six categories of education can be made into six separate variables, with the omitted one serving as a base for comparison. In the model estimated here, having a B.A. as the highest level of education serves as the omitted category and the slopes of the other variables show the effect relative to that category, i.e., having a B.A. as the highest degree. When variables were omitted for these reasons, in education, licensure, marital status and race, the means of each variable are given in Table 2 and the omitted variable is noted as such.

The first three columns of numbers in Table 5 present the full model with all of the variables included. Only two of the variables were statistically significant at the standard .05 level of significance; the effectiveness of employer communication and possessing a master’s degree. The effective communication variable was one where the respondent was asked to state their views about the statement that “Your employer effectively communicates to you what you are expected to do on your job as well as how to do it.” The answer was scored on a one to five scale with one being strongly agree and five being strongly disagree. Since the dependent variable was scored as one if the case manager remained with the employer, greater levels of disagreement, i.e., poor communication were associated with lower probabilities of the employee staying with the organization, controlling for all of the other factors. For the master’s degree variable, we find that those case managers who possessed a master’s degree were less likely to remain with their employer. The Chi-square score shows that based on the data, the chances that none of the variables had an effect on retention were 1.3 percent.

Although our sample consisted of 526 individuals, there were only 391 in the first logit model. The wage variable was missing for 37 case managers, so they had to be excluded. This was the largest number of missing cases for any variable. As the pay variable was not statistically significant, it was removed from the model and the logit results for the now 426 case managers with no missing data are presented in the last three columns of Table 5. The results are essentially the same with only the effectiveness of communication and master’s degree variable being statistically significant at the .05 level. The statistical significance of the model as a whole was 0.011, meaning that the probability that none of the variables had an effect on turnover was 1.1 percent.
Table 5. Logit Model of Case Manager Retention

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>job_effect</strong></td>
<td>-0.412</td>
<td>0.175</td>
<td>-0.383</td>
<td>0.170</td>
<td>0.024</td>
</tr>
<tr>
<td>job_aware</td>
<td>-0.031</td>
<td>0.173</td>
<td>-0.037</td>
<td>0.169</td>
<td>0.828</td>
</tr>
<tr>
<td>job_conflict</td>
<td>-0.048</td>
<td>0.153</td>
<td>-0.007</td>
<td>0.143</td>
<td>0.963</td>
</tr>
<tr>
<td>job_say</td>
<td>0.073</td>
<td>0.153</td>
<td>0.083</td>
<td>0.146</td>
<td>0.573</td>
</tr>
<tr>
<td>job_repet</td>
<td>0.108</td>
<td>0.132</td>
<td>0.076</td>
<td>0.127</td>
<td>0.550</td>
</tr>
<tr>
<td>job_friends</td>
<td>0.024</td>
<td>0.150</td>
<td>0.043</td>
<td>0.143</td>
<td>0.761</td>
</tr>
<tr>
<td>job_interact</td>
<td>-0.069</td>
<td>0.137</td>
<td>-0.066</td>
<td>0.133</td>
<td>0.619</td>
</tr>
<tr>
<td>job_treat</td>
<td>0.040</td>
<td>0.200</td>
<td>0.088</td>
<td>0.190</td>
<td>0.644</td>
</tr>
<tr>
<td>job_reimb</td>
<td>0.158</td>
<td>0.129</td>
<td>0.149</td>
<td>0.122</td>
<td>0.221</td>
</tr>
<tr>
<td>job_equip</td>
<td>0.281</td>
<td>0.159</td>
<td>0.255</td>
<td>0.153</td>
<td>0.096</td>
</tr>
<tr>
<td>pay_hourly</td>
<td>-0.066</td>
<td>0.059</td>
<td>0.267</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pay_compen</td>
<td>-0.251</td>
<td>0.275</td>
<td>-0.214</td>
<td>0.266</td>
<td>0.420</td>
</tr>
<tr>
<td>job_call</td>
<td>-0.425</td>
<td>0.334</td>
<td>-0.318</td>
<td>0.324</td>
<td>0.326</td>
</tr>
<tr>
<td>NoCompOnCall</td>
<td>0.753</td>
<td>0.507</td>
<td>0.380</td>
<td>0.467</td>
<td>0.416</td>
</tr>
<tr>
<td>EmpHealthPerc</td>
<td>1.471</td>
<td>1.103</td>
<td>1.094</td>
<td>1.075</td>
<td>0.309</td>
</tr>
<tr>
<td>FamhealthPerc</td>
<td>-0.262</td>
<td>0.816</td>
<td>-0.071</td>
<td>0.794</td>
<td>0.928</td>
</tr>
<tr>
<td>Pension</td>
<td>0.064</td>
<td>0.315</td>
<td>0.139</td>
<td>0.305</td>
<td>0.649</td>
</tr>
<tr>
<td>hour_weekly</td>
<td>-0.024</td>
<td>0.017</td>
<td>-0.024</td>
<td>0.016</td>
<td>0.129</td>
</tr>
<tr>
<td>con_caseload</td>
<td>0.008</td>
<td>0.007</td>
<td>0.009</td>
<td>0.007</td>
<td>0.209</td>
</tr>
<tr>
<td>job_pay</td>
<td>-0.104</td>
<td>0.162</td>
<td>-0.088</td>
<td>0.155</td>
<td>0.568</td>
</tr>
<tr>
<td>job_promotion</td>
<td>-0.149</td>
<td>0.153</td>
<td>-0.137</td>
<td>0.147</td>
<td>0.352</td>
</tr>
<tr>
<td>years_mentalhealth</td>
<td>0.067</td>
<td>0.041</td>
<td>0.058</td>
<td>0.038</td>
<td>0.125</td>
</tr>
<tr>
<td>emp_years</td>
<td>0.027</td>
<td>0.053</td>
<td>0.036</td>
<td>0.048</td>
<td>0.460</td>
</tr>
<tr>
<td>LT_HS</td>
<td>18.555</td>
<td>40193.0</td>
<td>1.000</td>
<td>18.894</td>
<td>40193.0</td>
</tr>
<tr>
<td>HS_Grad</td>
<td>20.111</td>
<td>20185.5</td>
<td>0.999</td>
<td>19.972</td>
<td>20992.4</td>
</tr>
<tr>
<td>Some_Coll</td>
<td>-0.555</td>
<td>0.624</td>
<td>-0.237</td>
<td>0.543</td>
<td>0.663</td>
</tr>
<tr>
<td>Assoc_Deg</td>
<td>0.215</td>
<td>0.526</td>
<td>0.198</td>
<td>0.513</td>
<td>0.700</td>
</tr>
<tr>
<td><strong>MA_Up</strong></td>
<td><strong>-0.853</strong></td>
<td><strong>0.415</strong></td>
<td><strong>-0.900</strong></td>
<td><strong>0.393</strong></td>
<td><strong>0.022</strong></td>
</tr>
<tr>
<td>lie_lsw</td>
<td>0.029</td>
<td>0.387</td>
<td>0.032</td>
<td>0.369</td>
<td>0.930</td>
</tr>
<tr>
<td>lic_lsw</td>
<td>0.889</td>
<td>1.076</td>
<td>0.408</td>
<td>0.570</td>
<td>0.981</td>
</tr>
<tr>
<td>lic_lpc</td>
<td>0.469</td>
<td>0.976</td>
<td>0.631</td>
<td>0.247</td>
<td>0.927</td>
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<tr>
<td>lic_lpc</td>
<td>0.883</td>
<td>0.890</td>
<td>0.321</td>
<td>0.616</td>
<td>0.816</td>
</tr>
<tr>
<td>lic_rn</td>
<td>1.087</td>
<td>1.423</td>
<td>0.445</td>
<td>0.557</td>
<td>1.336</td>
</tr>
<tr>
<td>lic_lpn</td>
<td>19.907</td>
<td>25713.8</td>
<td>0.999</td>
<td>19.384</td>
<td>25598.2</td>
</tr>
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<td>lic_swa</td>
<td>0.474</td>
<td>0.896</td>
<td>0.596</td>
<td>0.462</td>
<td>0.882</td>
</tr>
<tr>
<td>job_mentalhealth</td>
<td>-0.009</td>
<td>0.307</td>
<td>0.060</td>
<td>0.291</td>
<td>0.837</td>
</tr>
<tr>
<td>child_6</td>
<td>-0.072</td>
<td>0.362</td>
<td>0.091</td>
<td>0.348</td>
<td>0.793</td>
</tr>
<tr>
<td>child_18</td>
<td>-0.084</td>
<td>0.313</td>
<td>-0.125</td>
<td>0.298</td>
<td>0.674</td>
</tr>
</tbody>
</table>
Table 5. Logit Model of Case Manager Retention (continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Variables</th>
<th>All Variables Except Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.025</td>
<td>.018</td>
</tr>
<tr>
<td>Gender</td>
<td>.064</td>
<td>.352</td>
</tr>
<tr>
<td>MarrSpPres</td>
<td>-.226</td>
<td>.303</td>
</tr>
<tr>
<td>SignifOther</td>
<td>-.788</td>
<td>.303</td>
</tr>
<tr>
<td>race_indian</td>
<td>19.800</td>
<td>18694.3</td>
</tr>
<tr>
<td>race_asian</td>
<td>-21.719</td>
<td>28246.1</td>
</tr>
<tr>
<td>race_black</td>
<td>.474</td>
<td>.502</td>
</tr>
<tr>
<td>race_hispanic</td>
<td>-21.107</td>
<td>4013.0</td>
</tr>
<tr>
<td>market_case</td>
<td>-.137</td>
<td>.190</td>
</tr>
<tr>
<td>market_gen</td>
<td>.255</td>
<td>.215</td>
</tr>
<tr>
<td>number_employees</td>
<td>.000</td>
<td>.003</td>
</tr>
<tr>
<td>for_profit</td>
<td>.182</td>
<td>1.056</td>
</tr>
<tr>
<td>Team</td>
<td>-.241</td>
<td>.327</td>
</tr>
<tr>
<td>child_client</td>
<td>.836</td>
<td>.380</td>
</tr>
<tr>
<td>both_client</td>
<td>1.405</td>
<td>1.163</td>
</tr>
<tr>
<td>Constant</td>
<td>1.624</td>
<td>1.619</td>
</tr>
</tbody>
</table>

In a logit, just as in a multiple regression, when some of the independent variables are interrelated, they may not appear to be individually statistically significant. The model was re-calculated, omitting those variables whose \( p \)-value was less than .20, i.e., the probability of the variable having no effect on a case manager remaining with the employer being less than 20 percent. There were eight variables that met this .20 level of significance, job_effect (perceived effectiveness of communication by employer), job_equip (adequate equipment to do the job), hours_weekly (hours worked per week), years_mentalhealth (number of years employed in mental health), emp_years (years with current employer) MA_up (highest degree M.A. or higher), SignifOther (living with significant other, not married) and Child_client (clients served are children). The results are presented in the first three columns of Table 6. With the elimination of some of the independent variables, the number of cases that were dropped due to missing data was reduced and the sample size increased to 510. Two of the variables were now statistically significant at the .05 level, effectiveness of communication and years in mental health, and two more at a .10 level, having a master’s degree and serving children. Dropping the other variables and re-estimating the model added nine more cases that were not in the previous logit due to missing data. The results are presented in the middle three columns of Table 6. Effectiveness of communication still is statistically significant at the .05 level as is years in mental health and having a master’s degree almost at that level with a \( p \)-value of .051. The \( p \)-value of .152 for child care does not meet the normal level of statistical significance and is dropped from the last equation presented in the last three columns. The results for the three remaining variables are quite similar to the previous logistic regression.

We see that in every equation the effectiveness of employer communication has an impact on case managers remaining with their employers. This result is consistent with the earlier work by Price and...
Mueller (1981) and Gardner (1986.) The years in the mental health field as well as age both have a positive effect on remaining with an employer. Experienced workers are usually older workers as well. A positive impact of age on reducing turnover is also consistent with the work of Price and Mueller cited above as well as others. The negative impact of the education, i.e., those with a master’s degree, on case managers staying with their employer is in line with the conclusion of Blankertz and Robinson (1997). Although it seems that those case managers serving children are less likely to leave, all else held equal, the effect was not statistically significant at the .05 level in the models with fewer independent variables. In the two penultimate logit equations, the effect of having children as a client base was positive but with p-values of .078 and .152. This is worth noting but does not meet the standard .05 level. It is possible to calculate the odds ratio for variables, which shows the impact of a one unit change in an independent variable on the odds of retention. The odds ratios for the last logistic regression are presented in Table 7 and the numbers represent the change in the odds ratio (the probability of retention divided by the probability of turning over) that would come about from a one unit change in the independent variable.

Table 6. Re-Estimated Logit Model of Case Manager Retention

<table>
<thead>
<tr>
<th>Variable</th>
<th>Slope</th>
<th>Std. Error</th>
<th>p-Value</th>
<th>Slope</th>
<th>Std. Error</th>
<th>p-Value</th>
<th>Slope</th>
<th>Std. Error</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>job_effect</td>
<td>-.330</td>
<td>.107</td>
<td>.002</td>
<td>-.289</td>
<td>.099</td>
<td>.003</td>
<td>-.286</td>
<td>.099</td>
<td>.004</td>
</tr>
<tr>
<td>jobEquip</td>
<td>.108</td>
<td>.109</td>
<td>.321</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hour_weekly</td>
<td>-.009</td>
<td>.012</td>
<td>.439</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>years_mentalhealth</td>
<td>.073</td>
<td>.025</td>
<td>.003</td>
<td>.094</td>
<td>.021</td>
<td>.000</td>
<td>.092</td>
<td>.021</td>
<td>.000</td>
</tr>
<tr>
<td>emp_years</td>
<td>.052</td>
<td>.036</td>
<td>.148</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA_Up</td>
<td>-.485</td>
<td>.257</td>
<td>.059</td>
<td>-.493</td>
<td>.252</td>
<td>.051</td>
<td>-.479</td>
<td>.252</td>
<td>.057</td>
</tr>
<tr>
<td>SignifOther</td>
<td>-.409</td>
<td>.290</td>
<td>.158</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child_client</td>
<td>.427</td>
<td>.242</td>
<td>.078</td>
<td>.338</td>
<td>.236</td>
<td>.152</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.337</td>
<td>.604</td>
<td>.027</td>
<td>1.122</td>
<td>.281</td>
<td>.000</td>
<td>1.226</td>
<td>.273</td>
<td>.000</td>
</tr>
</tbody>
</table>

n = 510, Chi Sq. = 41.8, Signif = .000
t = 519, Chi Sq. = 34.3, Signif = .000
t = 521, Chi Sq. = 32.2, Signif = .000

Table 7. Re-Estimated Logit Model of Case Manager Retention with Odds Ratios

<table>
<thead>
<tr>
<th>Variable</th>
<th>Slope</th>
<th>Std. Error</th>
<th>p-Value</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>job_effect</td>
<td>-.286</td>
<td>.099</td>
<td>.004</td>
<td>0.751</td>
</tr>
<tr>
<td>years_mentalhealth</td>
<td>.092</td>
<td>.021</td>
<td>.000</td>
<td>1.096</td>
</tr>
<tr>
<td>MA_Up</td>
<td>-.479</td>
<td>.252</td>
<td>.057</td>
<td>0.619</td>
</tr>
<tr>
<td>Constant</td>
<td>1.226</td>
<td>.273</td>
<td>.000</td>
<td>3.408</td>
</tr>
</tbody>
</table>

n = 521, Chi Sq. = 32.2, Signif = .000

Although it is interesting to note that the results of this model indicate that employers could keep case managers through better communication, it is somewhat surprising that other aspects of the job, including participation, routinization, integration, pay and benefits and promotional opportunities did not
seem to have an effect. Only having a master’s degree seemed to have an effect, with other educational variables not having a statistically significant effect. The various demographic variables did not have an effect, nor did the case manager’s perception of the ease of finding a job in the local labor market. The number of clients and the type of employer also did not have an effect.

Summary and Conclusions

Ohio case managers and their employers were surveyed to determine the correlates and determinants of turnover/retention. Both case managers and employers were surveyed in the spring of 2006 to form a baseline and the employers were re-surveyed one year later to see which of the case managers were still employed by them. Our sample included 526 case managers working for 65 different organizations.

A model was constructed to determine the causes of job satisfaction which lead to the intention to stay and eventually turnover or not. Control factors were also examined. The results show that there were differences in some of the factors between those case managers who left and those who stayed. In examining the difference in the means between those case managers who left and those who stayed, we see that:

- Case managers who left reported less satisfaction about the communication they were given about their job.
- There was not a statistically significant difference in the level of hourly pay between those that stayed and those who left.
- Those who turned over tended to be younger, and with less experience and tenure with the employer. To the extent that newer hires are more likely to leave, this result is to be expected.
- At a somewhat lower level of statistical significance, those who left by 2007 had believed that the job market was better in 2006 and they would be able to find a job. Those who served children were also less likely to turn over.

The differences for other factors were not statistically significant.

When a logit model was estimated to determine which factors affected turnover, while controlling for the other factors, we see that effectiveness of communication and more experience in mental health improved the probability of a case manager remaining with their employer. Having a master’s degree, relative to a bachelor’s degree, reduced it. Providing services to children also reduced the chances of turnover, but at a lower level of statistical significance.

What can Ohio’s mental health providers learn from this study? Improved communication with supervisors reduces turnover, which providers can impact through training and hiring. Hiring more experienced employees also reduces turnover. Having experienced employees, however, is problematic as hiring is usually at the entry level where the candidates possess less experience. The most educated of case managers have a lower probability of staying, perhaps because those with a master’s degree find other opportunities. For whatever reason, those case managers dealing with children appear to be less likely to leave when other factors are controlled for, although we are less certain of this. It is quite important to note that pay did not appear affect the probability of turnover. If there is one key lesson that could be drawn from this study, it is the importance of communication. Efforts to improve the communication of what case managers are expected to do and how to do it appear to have potential to keep them with their current employers.
REFERENCES


Acknowledgments

The author wishes to thank Marya Christina Intal, Aakarsh Ramchandani and Stefania Mendoza Guerra for the excellent research assistance.
THE RELATIONSHIP OF FAMILY STRENGTHS AND YOUTH CLUSTERS TO OUTCOMES PERFORMANCE AS MEASURED ON THE OHIO SCALES FOR YOUTH

Synthesis, Inc.

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Janice Ossa, BA

Amanda Fox, MA
Erin Ley, BA

“Systems of Care” are viewed as the recommended way to insure that youth with behavioral health needs have access to a comprehensive array of services that address their physical, emotional, social and educational needs (NIMH, 1991). A key component is a comprehensive assessment process that describes how the child has functioned in the context of his/her family, school, and other relevant settings (Stroul & Friedman, 1988). Multiple agency or system involvement is expected to be the norm, and this makes the implementation of integrated and coordinated services and continuity of care critical (Stroul & Friedman, 1988, p. 13). However, many communities have had great difficulty putting “systems of care” into practice, and one of the key non-financial barriers has been the lack of a clear and common understanding of the youth and families to be served.

About 20 years ago researchers at Synthesis, Inc. began work on a Cluster-Based Planning and Outcomes Management approach. This started with efforts to describe sub-groups of larger clinical populations in more holistic ways. A Cluster is defined as a subgroup of a larger clinical population that shares common strengths, problems, treatment histories, social or environmental contexts, and/or life situations. Clusters represent holistic biopsychosocial histories of patterns in the lives of youth and their families. Clusters describe how the mental health problems, addictive behaviors, physical health conditions, educational performance and/or social functioning of youth have affected, have been affected by, have been created by, and/or have been responded to by their families, others around them, and the community at large, over a period of time. In five studies in Ohio, Youth Clusters were described by work groups of community experts (Taynor & Rubin, 1989; Rubin & Taynor, 1998; Synthesis, Inc., 2004 & 2006). Work group members representing schools, child protective services (CSB), mental health and substance abuse agencies, juvenile courts, MR/DD agencies, parent advocacy groups, and health departments provided information about the youth, their parents, and their families. Single-page, prose Cluster Descriptions were prepared for each cluster that incorporated the language and knowledge of the community’s experts. Considerable similarity was seen in the clusters across sites and many were able to be combined. In Table 1 are titles of the ten integrated clusters that were identified.

Table 1. Titles of Ten Youth Clusters

| Cluster 1: | Youth Who Have ADHD Or Other Neuro-Behavioral Conditions |
| Cluster 2: | Vulnerable Youth Who Are Depressed And/Or Suicidal |
| Cluster 3: | Youth With Serious Behavior Problems |
| Cluster 4: | Youth Who Have Been Sexually, Physically, Or Emotionally Abused |
| Cluster 5: | Youth Affected By Traumatic Events |
| Cluster 6: | Youth With Substance Abuse Issues |
| Cluster 7: | Very Anxious Youth |
| Cluster 8: | Youth Not Adjusting To Stressful Life Events Or Crises |
| Cluster 9: | Youth Involved In Sexual Offenses |
| Cluster 10: | Youth With Both Mental Retardation And Behavioral Problems |
Researchers in Michigan and Louisiana, over the last 15 years, have also identified youth clusters (Hodges & Wotring, 2000; Lemoine & McDermott, 1998), which while not identical, showed considerable overlap and are compatible with those found in Ohio. Preliminary results from all three states also support the notion that members of specific clusters may perform differently in terms of specific outcomes (Rubin, & Taynor, 1998; Hodges, & Wotring, 2000; Lemoine, & McDermott, 1998). Members of some clusters may have more problems with aggressive and delinquent behavior, while youth in other clusters may have more problems with depression and/or establishing boundaries to prevent abuse. The above findings indicate that it is important to understand the relationship between a youth’s cluster history, their outcomes performance, and the challenges they must address in their treatment.

However, as research was proceeding on Cluster-Based Planning, a complimentary conceptual framework was emerging around the construct of Family Strengths. This approach focused its treatment on identifying and building upon the strengths of individual family members and the assets of the family as a whole. Several major research efforts have focused on identifying the characteristics of “strong families” in the general population (Dunst & Deal, 1994; Dunst, Trivette & Deal, 1994a; Dunst, Trivette & Mott, 1994b; Stinnett & DeFrain, 1985; Silberberg, 2001). Much of the conceptual, empirical, and practical work has been focused on prevention and early intervention strategies, and on identifying what opportunities and support can be provided that enable families to recognize and use their strengths to get their needs met (Dunst et al., 1994a & b). Little research has been directed at identifying strengths of families of youth receiving mental health care.

While some families have not developed the strengths they need, researchers believe these families can learn, change, and grow into stronger families (Stinnett & DeFrain, 1985, pp. 156-160). In general strong families show their strengths in three areas: 1) family values, 2) family competencies, and 3) family interactional patterns (Dunst et al., 1994a).

Family values refer to the interrelated and interacting influences of attitudes and beliefs that contribute to a family’s unique functioning style. These values include a variety of affirmations and expectations that uniquely characterize a family’s “life style” (Dunst et al., 1994b). Competencies refer to individual knowledge, skills, and abilities that can be used to help the family meet its internal or external needs. When families put their individual skills and competencies together, they become family competencies. Interactional patterns refer to both the flow of information and the mutually supportive way family members relate. These communications can be either verbal or non-verbal (Dunst et al., 1994b).

The above three components overlap and interact to produce the particular way a family deals with life events or promotes growth. Family “strengths are not isolated variables, but form clusters and constellations which are dynamic, fluid, inter-related, and interacting” (Otto cited in Dunst et al., 1994b, p. 118). Few families demonstrate all the characteristics, and family functioning styles vary and may change over time. In fact, this may be a step needed to improve the family’s quality of life (Dunst et al., 1994b).

More recently, the Family Action Centre at the University of Newcastle in Australia conducted the Family Strengths Research Project. The project focused on understanding what strong families consider to be their strengths (Silberberg, 2000). The Centre utilized a revision of the American Family Strengths Inventory (DeFrain & Stinnett, 2000). Based on the findings from surveys and interviews, eight characteristics of strong families were described (Silberberg, 2000, p. 3): These are found in Table 2 below. With research supporting the existence of Youth Clusters and consistent characteristics of strong families, the next question is, “How Do Cluster Histories and Family Strengths Affect Youth Outcomes?”
Table 2. Eight Characteristics of Strong Families

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication:</td>
<td>The family interacts with each other frequently and in an open, positive, and honest manner. Strong families also use humor in their communication.</td>
</tr>
<tr>
<td>Togetherness:</td>
<td>This is the “invisible glue” that bonds the family and gives members a sense of belonging. Shared values, beliefs, and morals are key components of this “glue”.</td>
</tr>
<tr>
<td>Sharing Activities:</td>
<td>Strong families do things together regularly. They share hobbies, activities, and, when possible, are together on holidays.</td>
</tr>
<tr>
<td>Affection:</td>
<td>Members of strong families show love, care, concern, and interest for each other. They express these feelings openly.</td>
</tr>
<tr>
<td>Support:</td>
<td>Family members assist, encourage, and reassure other family members. Family members look out for each other. Family members provide support and also feel comfortable asking for support.</td>
</tr>
<tr>
<td>Acceptance:</td>
<td>Family members show respect and appreciation for each other as individuals. Family members value and tolerate differences and can allow each other space.</td>
</tr>
<tr>
<td>Commitment:</td>
<td>Family members are dedicated and loyal to their family. The well-being of the family is first priority. Commitment can be shown to one’s partner, to one’s responsibilities, to children, and to one’s extended family.</td>
</tr>
<tr>
<td>Resilience:</td>
<td>The strong family has the ability to bounce back from setbacks and/or crises. They are adaptable and can see challenges as opportunities for growth. Strong families meet challenges by communicating well, supporting each other and pulling together.</td>
</tr>
</tbody>
</table>

**Current Research Study Goals**

1. To identify and describe the strengths of families of youth brought for behavioral health care
2. To determine if there are family strengths patterns (characteristics that occur regularly together)
3. To see if family strengths patterns are associated systematically with youth clusters
4. To look at the relationship among clusters, family strengths, and outcomes

**Methodology**

The study focuses on youth (ages 4 to 18) receiving mental health care at eight provider organizations in Ohio. The agencies serve both urban and rural areas. Data collection began early in calendar year 2006 and continued through December 31, 2007. Researchers made a one-hour orientation presentation and conducted a three-hour cluster assessment workshop for clinical staff and/or case managers at each agency. HIPAA Business Associate Agreements were established with each agency to allow for the transfer and analysis of Protected Health Information (including the study data). Three types of data have been collected during the study:
A. **Cluster Membership.** This is a Cluster Assignment number (1 to 10) indicating the cluster that “best fit” each youth. Following training, clinical staff began making cluster determinations for youth on their existing caseload. Subsequently, most new admissions were to be assessed within 30 days of intake. Cluster determination is a way of summarizing and interpreting information typically obtained about youth and their families as part of agency intake and evaluation processes.

B. **A Family Strengths Assessment.** Parents were asked by their child’s primary therapist, case manager, or an intake worker to complete the Family Strengths Inventory. The instrument, a slightly revised version of the Australian Inventory of Family Strengths (Silberberg, 2000), was selected by a work group representing the collaborating agencies, the Ohio Department of Mental Health (ODMH), and members of the research team. The inventory has the following subscales: 1) Spending Enjoyable Time Together, 2) Spirituality, 3) Showing Affection & Appreciation, 4) Communicating Effectively, 5) Commitment to and Valuing One Another, 6) Dealing with Stress and Managing Crisis, 7) Global Family Strengths.

C. **Ohio Scales for Youth Data** (Provider, Parent and Youth Forms) (Ogles, Melendez, Davis, & Lunnen, 1999). These are the mandated ODMH Outcomes measures and are submitted periodically to Synthesis by each agency.

**Some Preliminary Findings**

Preliminary analyses were conducted in the spring of 2007. (Final analyses will be conducted during the 4th quarter of State Fiscal Year 2008). Cluster determinations were available on 2935 youth (see Table 3). Youth in four clusters were more likely to be receiving services (Clusters 1, 3, 4 & 8). Youth with Substance Abuse Issues (Cluster 6) were rarely being served by these agencies primarily because they are typically served in the alcohol & other drug (AOD) system not the mental health system.

Family Strengths Inventories were completed by 799 parents. The goal was to determine if there were patterns in terms of the family strengths characteristics assessed. Only initial measures were included in this analysis and duplicates were removed from the file. This resulted in 641 Inventories being included in the analysis.

Table 3. Distribution of Youth in Study Sample by Cluster (Spring 2007)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 ADHD/Neuro-Behavioral</td>
<td>849</td>
<td>28.9</td>
</tr>
<tr>
<td>#2 Vulnerable – Depressed or Suicidal</td>
<td>228</td>
<td>7.8</td>
</tr>
<tr>
<td>#3 Serious Behavioral Problems</td>
<td>500</td>
<td>17.0</td>
</tr>
<tr>
<td>#4 Sexually, Physically or Emotionally Abused</td>
<td>361</td>
<td>12.3</td>
</tr>
<tr>
<td>#5 Affected by Traumatic Events</td>
<td>288</td>
<td>9.8</td>
</tr>
<tr>
<td>#6 Substance Abuse Issues</td>
<td>40</td>
<td>1.4</td>
</tr>
<tr>
<td>#7 Very Anxious</td>
<td>84</td>
<td>2.9</td>
</tr>
<tr>
<td>#8 Not Adjusting to Stress or Crises</td>
<td>375</td>
<td>12.8</td>
</tr>
<tr>
<td>#9 Involved in Sexual Offenses</td>
<td>124</td>
<td>4.2</td>
</tr>
<tr>
<td>#10 Mental Retardation and Behavior Problems</td>
<td>86</td>
<td>2.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2935</td>
<td>100.0</td>
</tr>
</tbody>
</table>
A K-Means Cluster Analysis (SPSS, 1999) was conducted using the subscale and global family strengths scores obtained from the Australian Inventory of Family Strengths. The K-Means procedure requires the researcher to set the number of clusters into which the data will be separated. Analyses were conducted testing from three to eight clusters. A five Family Strengths Pattern solution was determined to be the best fit. Table 4 shows the mean subscale and Global Family Strengths scores for that solution.

As Table 4 shows, the five “patterns” are differentiated by overall level of family strength. Parents generally see their family’s performance as relatively consistent across the strength areas. Of particular interest was that even though these are parents of youth receiving behavioral health services, they report their families as being reasonably strong. Even those representing the “Fragile Family” pattern indicate that they “somewhat agree” or “somewhat disagree” with statements such as: “Our communication is effective” or “We can work together to solve very difficult family problems”. While the parents report their families having many strengths, the data suggest that within each of the five patterns, families do less well with Open and Effective Communications, Demonstrating a Commitment to Family and its Values, and Dealing with Stressful Situations.

Table 4. Mean Scores on Subscales for Preliminary Family Strengths Patterns (N = 641)

<table>
<thead>
<tr>
<th></th>
<th>Fragile Family</th>
<th>Middle of the Road</th>
<th>Above Average</th>
<th>Strong as Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enjoyable Time</td>
<td>3.0347</td>
<td>2.6286</td>
<td>2.1253</td>
<td>1.7576</td>
</tr>
<tr>
<td>Spirituality</td>
<td>3.5662</td>
<td>3.0241</td>
<td>2.4919</td>
<td>2.0378</td>
</tr>
<tr>
<td>Affection and Appreciation</td>
<td>3.4984</td>
<td>2.9147</td>
<td>2.341</td>
<td>1.8724</td>
</tr>
<tr>
<td>Communicate</td>
<td>3.9983</td>
<td>3.3541</td>
<td>2.8032</td>
<td>2.2515</td>
</tr>
<tr>
<td>Commitment</td>
<td>3.9631</td>
<td>3.1932</td>
<td>2.6824</td>
<td>2.1772</td>
</tr>
<tr>
<td>Stress</td>
<td>3.8594</td>
<td>3.1265</td>
<td>2.6213</td>
<td>2.1504</td>
</tr>
<tr>
<td>Global</td>
<td>3.5</td>
<td>2.7862</td>
<td>2.2192</td>
<td>1.7205</td>
</tr>
<tr>
<td>n</td>
<td>n = 40</td>
<td>n = 93</td>
<td>n = 146</td>
<td>n = 223</td>
</tr>
<tr>
<td>Note</td>
<td>(6.2%)</td>
<td>(14.4%)</td>
<td>(22.7%)</td>
<td>(34.8%)</td>
</tr>
</tbody>
</table>

Finally differences by cluster were seen in terms of performance on the subscales and/or individual Outcomes items on the Ohio Scales for Youth. Problem Severity scale Worker Ratings were available for 1729 youth. Analyses indicated significant differences among the clusters in terms of first ratings of these youth. Youth who have perpetrated serious Sexual Offenses (C 9) and those Not Adjusting to Stressful Events or Crises (C 8) have among the lowest Problem Severity scores. On the other hand, Youth Who Are Vulnerable and Depressed (C 2), Youth Who Have Been Sexually Abused (C 4), Youth with Serious Behavioral Problems (C 3), Youth with ADHD and/or Other Neuro-behavioral Issues (C 1), And Very Anxious Youth (C 7) tended to have the highest Problem Severity scores. In the context of their Cluster Descriptions, these findings and differences make sense.

Even more informative were the analyses of the differences among clusters in terms of the individual items on the Problem Severity scale. Figure 1 shows differences between clusters on the individual items that make up the scale. Some interesting and logical differences include: 1) Cluster 1 (Youth with ADHD) and Cluster 3 (Youth With Serious Behavioral Problems) were reported to have the
most problems with arguing, yelling, and fighting; 2) Cluster 1 (Youth with ADHD) was also rated as having too much energy; 3) Cluster 7 (Very Anxious Youth) was rated as the most anxious; and 4) Cluster 6 (Youth with Substance Abuse Issues) was rated as having fewer problems than one might expect.

Figure 1. Worker ratings of individual items of the Problem Severity Scale--First measures for youth with cluster assessments.

Discussion and Implications

Preliminary findings confirm the systematic heterogeneity of the population of youth receiving behavioral healthcare services. In addition, youth in different clusters need help addressing different treatment goals (outcomes). The data also support the hypothesis that family strengths are not randomly distributed in this population. Five different levels of family strengths were reported by parents. Final analyses should provide:

- A greater understanding of how family strengths group together,
- A greater understanding of the relationship between family strengths and youth clusters, and
- A better understanding of the relationship among the youth clusters, family strengths patterns, and performance on specific Outcomes measures.
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**Other Presentations of the Research**

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There is increasing evidence that youth involved in the juvenile justice system present with a high prevalence of co-occurring mental health and substance use disorders, ranging from 37.5 to 63 percent depending on the study, (Hussey, Drinkard, Murphy, & Ols, 2005; Skowyra & Cocozza, 2006; and Teplin, Abram, McClelland, Dulcan, & Mericle, 2002). It is important to note that among youth with co-occurring disorders, there is significant variability in the onset, presentation, interaction and severity, even among youth with similar diagnoses.

The multiple needs of youth with co-occurring disorders are often first identified when the youth enters the juvenile justice system. Because the juvenile justice system is not designed, prepared, or funded to provide services or treatment for these youth, other treatment options are needed. Cocozza and Skowyra, (2000; pp. 8 & 9), recommend that “whenever possible, youth with serious mental health disorders should be diverted from the juvenile justice system and effective community-based alternatives should be used.” Overall, it is increasingly evident that there is a need for increased availability of community mental health and substance abuse services that address the treatment needs of youth with co-occurring disorders (COD).

Historically, treatment for adolescents has been provided for either substance use disorders or mental health disorders, but not both. Treatment consumers were required to be abstinent to receive psychiatric services, or were required to be psychatically stable to enter drug treatment. However, treatment research indicates that treating one disorder (mental health or substance use disorders) in isolation is not sufficient (Geller et al., 1998). Initial treatment studies on co-occurring youth found that two current evidenced-based treatments for substance use (Cognitive Behavioral Therapy; Multidimensional Family Therapy) did not demonstrate effects with a sample of youth with co-occurring conditions (Rowe, Liddle, Greenbaum, & Henderson, 2004). Rowe et al., 2004 concluded that “comorbidity poses significant challenges regardless of intervention approach” (p. 137).

It is common in fact for youth with substance use and co-occurring disorders to need multiple treatment attempts and supportive environments to sustain recovery (Godley, Kahn, Dennis, Godley, & Funk, 2005; Rowe et al., 2004; Tomlinson, Brown, & Abrantes, 2004). Tomlinson et al. (2004) found “poorer substance use outcomes displayed by comorbid youth occurred despite higher receipt of therapeutic intervention and spending more time in inpatient treatment settings...” (p. 166). In addition, there are higher rates of treatment dropout and poorer long-term success rates in both adolescent and adult populations with co-occurring disorders (Hills, 2007).
No studies to date, however, have evaluated the effectiveness of integrated treatments for youth with co-occurring disorders. Encouragingly, increasing attention is being given to effective treatment approaches for adolescents with co-occurring disorders. Especially of interest, are integrated approaches, which have been shown to be effective in improving treatment engagement, retention, and outcomes with adults with co-occurring disorders (Drake, McFadden, Mueser, McHugo, & Bond, 1998). The Integrated Co-Occurring Treatment model (ICT; Baltrinic & Shepler, 2008; Cleminshaw, Shepler, & Newman, 2005) was developed to meet the unique treatment needs of youth with co-occurring disorders.

**Conceptual Framework and Study Design**

The main research goal for this study is to test the effectiveness of the ICT model as compared to traditional separate treatment services (TSS) for youth with co-occurring disorders of mental health and substance abuse. The two conditions being studied are as follows:

**Condition 1 (ICT):** Crossroads and Integrated Co-Occurring Treatment

**Condition 2 (TSS):** Crossroads and non-integrated treatment (mental health and/or substance abuse treatment provided separately).

It is important to note that youth in both conditions, (ICT and TSS), were also simultaneously enrolled in the Crossroads program. Crossroads is an intensive supervision probation program designed to monitor and coordinate community services for youth with co-occurring substance abuse and mental health disorders. Youth are enrolled in Crossroads for a minimum of one year and during this time meet with their assigned probation officer two to three times per week, submit to random urine drug screens, and attend all required programming and services, including weekly court reviews (Teodosio, Kostoff, & Jones, 2004).

**Condition 1 (ICT): Crossroads probation and Integrated Co-Occurring Treatment (ICT).** Youth in Condition 1 received both Crossroads probation and the ICT model. ICT is an integrated treatment approach embedded in an intensive home-based method of service delivery, which provides a set of core services to youth with co-occurring disorders of substance use and serious emotional disturbance (SED) and their families. ICT utilizes an eco-cultural framework which maintains that symptoms and behaviors manifest in, and are influenced by, multiple cultural contexts including home, school, peers, and community factors. Because of this, ICT believes that the formation of multiple, culturally-mindful relationships and partnerships are necessary to impact meaningful change.

The term ‘integrated’ refers to strategies for combining mental health and substance abuse services to address the needs of individuals with co-occurring disorders (Center for Substance Abuse Treatment, 2006). At the program level, integrated treatment means that services for a youth’s mental health and substance-related problems are delivered by the same provider under the guidance of one collaboratively designed treatment plan. At the clinical level, the term ‘integration’ refers to the process of incorporating mental health and substance use symptom patterns, developmental factors, youth and family resources, and contextual factors into a unified conceptualization with uniquely designed strategies and interventions.

**Condition 2 (TSS): Crossroads and non-integrated treatment (mental health and/or substance abuse treatment).** Youth in Condition 2 received both Crossroads probation and traditional treatment options. Youth were referred by their probation officer to non-integrated mental health and/or substance abuse treatment.
abuse services, offered in either office or inpatient settings, including outpatient substance abuse treatment, outpatient mental health treatment, intensive outpatient substance abuse group treatment, short-term inpatient substance abuse treatment, and residential treatment.

**Research Questions**

This research study will attempt to answer four major research questions.

1. Is ICT more effective in reducing the severity of criminal behaviors and recidivism in youth offenders than TSS?
2. Is ICT more effective in improving mental health functioning than TSS?
3. Is ICT more effective in reducing substance abuse than TSS as measured by drug screens administered by probation officers?
4. Is ICT more effective in improving school, family and personal functioning than TSS?

**Methodology**

**Participants.** Through the second year of the project, a total of 102 subjects were entered into the study; 68 received Crossroads and TSS, and 34 received Crossroads and ICT.

**Treatment condition assignment.** This study utilized a quasi-experimental design, whereby two non-randomly assigned treatment groups from a similar population of youth were compared. Youth were placed in either the ICT Condition or the TSS Condition based on the Crossroads’ Suitability Team’s determination of the 1) level of severity of mental health and substance use symptoms, and 2) the level of family functioning. Youth who were assessed to have higher severity on these variables were assigned to the ICT Condition, while youth with lesser levels of severity were assigned to the TSS Condition. It is important to note that due to the low volume of referrals to the ICT Condition during the second year of the research, referrals to the ICT Condition were also accepted directly from Crossroads’ probation officers. The two treatment conditions were modified to reflect this change to: 1) those receiving ICT at any point in Crossroads (ICT Condition), and 2) those who never received ICT (TSS Condition).

Prior to the suitability hearing, youth were assessed through the following procedures: 1) clinical interview and administration of the Structured Pediatric Psychosocial Interview (Webb, 2005) by the court’s clinical psychologist; (2) assessment by a licensed chemical dependency counselor (LCDC) through a clinical interview and administration of the Substance Abuse Subtle Screening Inventory-Adolescent Version, (SASSI-A; Miller, 1990); (3) administration of the Global Risk Assessment Device (GRAD: Gavazzi et al., 2003) by the court probation officers; and (4) collection of collateral information from community providers. Youth referred to ICT from Crossroads were then screened by the ICT supervisor to determine if they met the criteria for inclusion in the program. These criteria included: (1) youth between the ages of 12 to 17.5 years of age; (2) substance abuse or dependency diagnosis; (3) mental health diagnosis (excluding conduct disorder, ODD, or disruptive behavior disorder by themselves); and (4) at risk of placement or being reunified from a current placement.

**Measures.** The instruments employed in this study included the Ohio Scales (Youth, Parent, and Worker Forms; Ogles, Melendez, & Lunnen, 1999 & Ogles, Melendez, Davis, & Lunnen, 2000) and the GRAD (Gavazzi et al., 2003). The Ohio Scales is a multiple-source (parent, youth, & worker) and multiple-content (Problem Severity, Functioning, Hopefulness, and Satisfaction with Services) instrument developed for the purpose of tracking outcomes for youth involved in the mental health system. The Ohio Scales Technical Manual (Ogles et al., 2000) provides support for the instruments’ reliability and validity.
Ohio Scales scores were collected by the Summit County Juvenile Court psychologist for all youth enrolled in Crossroads, at admission and at every six months until discharge from Crossroads. In addition, the ICT therapists collected the Ohio Scales at ICT admission and discharge.

The GRAD is a global risk-assessment tool that measures eleven domains (prior offenses, family/parenting, education/vocation, peers/significant relationships, substance use/abuse, leisure, personality/behavior, sociability, trauma, accountability, and health services). The GRAD demonstrates strong psychometric properties as described in Gavazzi et al., 2003, and Gavazzi & Lim, 2003. GRAD scores were collected at every six months by the probation officer assigned to the youth for the length of the youth’s enrollment in the Crossroads program.

In addition, the Summit County Juvenile Court collected the following information on each youth: criminal behavior, school data, drug screens, demographics, diagnoses, family status, and compliance data. These data were collected by court staff at admission and at time of advancement to each of the four phases of the Crossroads program. Drug screens were completed randomly, with the type of drug screen determined by the Crossroads probation officer, based on the current substance use patterns of the youth.

**Preliminary Results**

**Demographic comparisons at admission.** At time of admission, the TSS and ICT groups were evaluated for comparability along the following variables: demographics, diagnosis, substance use severity, mental health functioning, and criminal offenses. There were no significant differences in age, race, and gender between groups. The mean age for youth receiving TSS was 15.4, and the mean age for youth receiving ICT was 15.6. The age range for youth in both groups was 12.4 to 17.5. Approximately 60 percent of the samples for both groups were male and approximately 40 percent were female. For the TSS group, 65.3 percent of the youth were Caucasian, 22.4 percent were African American, 10.2 percent were Bi-racial, and 4.1 percent were identified as either Hispanic or Asian. For the ICT group, 80.8 percent of the youth were Caucasian, 15.4 percent were African American, and 3.8 percent were identified as either Hispanic or Asian.

**Diagnostic comparisons at admission.** Utilizing an independent samples *t*-test (two-tailed), the TSS and ICT samples were compared for diagnostic differences at time of admission. The TSS group had significantly more youth diagnosed with Bipolar NOS, *t*(80) = 2.32, *p* = .023, and Post Traumatic Stress Disorder, *t*(80) = 2.42, *p* = .018, while the ICT group had significantly more youth diagnosed with Cyclothymic Disorder, *t*(80) = -3.46, *p* = .001. While many of the youth in the Crossroads program met the minimum criteria for externalizing behavior disorders (conduct disorder, oppositional defiant disorder, and disruptive behavior disorder), these were not tracked at time of court admission, and are, thus, not reflected in the data we are reporting.

In terms of substance use, the youth in the ICT sample received significantly more Cocaine *t*(79) = -2.07, *p* = .042, and Cannabis disorder diagnoses *t*(80) = -2.32, *p* = .023, and were rated as significantly more severe than TSS youth on a severity of substance use continuum, ranging from no use, abuse, to chemical dependency, *t*(80) = -3.28, *p* = .002. In addition, the admission Substance Abuse scale scores for the GRAD were significantly higher (more severe) for youth receiving ICT than for the TSS treatment group *t*(69) = -2.55, *p* = .013.

For the ICT group, there was additional diagnostic information available from the ICT diagnostic assessment. At time of admission to ICT treatment, 53 percent of the youth receiving ICT were diagnosed
with three Axis I substance use disorders, and 78 percent of the youth were diagnosed with two substance use disorders or more. The two primary diagnoses were Cannabis Abuse or Dependence (47%) and Alcohol Abuse or Dependence (37%). At time of admission into ICT, 59 percent of the youth had two Axis I mental health diagnoses. Mood disorders predominated (38%), followed by Attention Deficit Hyperactivity Disorders (29%), behavioral disorders (21%), and Anxiety/PTSD Disorders (9%). When looking at these numbers together, 88.2 percent of the youth receiving ICT had a combination of three or more substance use and mental health Axis I diagnoses, with a mean total of 3.77 diagnoses. Of note, 32.4 percent of the ICT group were given five Axis I diagnoses.

Mental health functioning at admission. In terms of Ohio Scales Worker ratings at time of admission into Crossroads, the TSS youth had significantly higher scores on the Functioning scale than did the youth in the ICT condition $t = -2.63(70), p = .045$ (two-tailed). There were no other significant differences on the Ohio Scales between groups at time of admission.

Criminal behaviors at admission. There were no significant differences in prior felony and misdemeanor charges between groups at time of admission. The ICT treatment group averaged 2.48 prior misdemeanor charges and 1.04 felony charges, as compared to 1.8 misdemeanor and 0.26 felony charges for the TSS group. However, on the GRAD, youth receiving ICT were rated significantly higher in having prior offenses than youth receiving TSS, $t(69) = -2.06, p = .043$ (two-tailed).

Treatment results. There was no significant difference between treatments in reducing criminal behaviors across time. In fact, there was a slight, but not significant, increase in the number of misdemeanors and felonies for both the ICT and the TSS groups. Commitments to the Ohio Department of Youth Services (ODYS) for youth in the TSS group, who had at least six months in Crossroads, were two out of 44 (4.5%). Commitments to ODYS for youth who had completed ICT treatment were three out of 32 (9.4%).

Emotional and behavioral improvement ICT (Ohio Scales). Utilizing a paired samples $t$-test (ICT admission to ICT discharge; one-tailed), the ICT youth rated themselves as significantly improved on the Ohio Scales Problem Severity $t(23) = 3.11, p = .003$; Functioning $t(23) = -1.75, p = .047$; Hopefulness $t(23) = 1.75, p = .047$; and Satisfaction with Services $t(23) = 1.83, p = .040$. In addition, ICT workers rated ICT youth as significantly improved on the Problem Severity Scale, $t(24) = 1.76, p = .046$. There was no significant improvement on any of the Ohio Scales for ICT parent raters. Interestingly, 12 out of 34 (35.3%) ICT parents rated their youth in the normal range of functioning at time of admission (range = 1 to 19; $M = 13.33$).

Emotional and behavioral improvement TSS admission to six months (Ohio Scales). Utilizing a paired samples $t$-test (admission to Crossroads to 6 months in Crossroads; one-tailed), the TSS youth rated themselves as significantly improved on all of the Ohio Scales (Problem Severity $t(25) = 2.558, p = .009$; Functioning $t(25) = -2.419, p = .012$; Hopefulness $t(31) = 1.862, p = .036$; and Satisfaction with Services $t(29) = 2.507, p = .009$). The TSS parents rated the youth as significantly improved on Problem Severity $t(26) = 3.042, p = .003$; Functioning $t(26) = -3.560, p < .001$; and Hopefulness $t(30) = 3.117, p = .002$. The Crossroads psychologist rated the youth as significantly improved on the Problem Severity Scale, $t(27) = 3.255, p = .002$; and Functioning $t(27) = -2.878, p = .004$.

Ohio Scales between-group comparisons (TSS and ICT). There were no significant differences between TSS and ICT on any of the Ohio Scales gain score comparisons (Problem Severity, Functioning, Hopefulness, and Satisfaction with Services) regardless of rater.
Drug Screens. While in the Crossroads program, youth receiving ICT had significantly more positive drug screens than did youth receiving TSS, t(26) = -2.046, p = .016 (two-tailed).

GRAD. There was a significant decrease on the ICT youth’s GRAD Substance Abuse scale scores as compared to the TSS group from time 2 (6 months in Crossroads) to time 3 (12 months in Crossroads), t(29) = 2.865, p = .008 (two-tailed). There were no other significant differences between treatment groups on the other GRAD scales.

Family Functioning. Parental non-compliance, as rated by the Crossroads Probation Officer (PO), was significantly greater over time for ICT parents than it was for TSS parents t(27) = 2.012, p = .046 (one-tailed). Parental non-compliance reflects the PO’s rating of parent’s compliance with the Crossroads program, including compliance with treatment recommendations.

Discussion

The present study examined the effectiveness of the ICT model (Baltrinic & Shepler, 2008; Cleminshaw et al., 2005) as compared to traditional separate treatment services for youth with co-occurring disorders of mental health and substance abuse. Overall, patterns of heterogeneity of co-occurring disorders were noted within and between the populations of the TSS and ICT groups, which is consistent with other research on youth with co-occurring disorders (Chan, Dennis, & Funk, 2008).

The youth in the ICT condition were rated more severe at time of admission in multiple functional domains, including higher substance use severity, lower mental health functioning, and higher youth perceptions of prior offenses. In addition, over time the ICT group was rated as having less parental cooperation with court requirements. Further, the ICT sample had multiple mental health (two or more diagnoses) and substance use disorders (two or more diagnoses), a finding that is consistent with other prevalence data from Center for Sub stance Abuse Treatment-funded programs (Turner, Muck, Muck, Stephens, & Sukumar, 2004). This finding is worth noting because the number of diagnoses in comorbid youth has been “associated with poorer substance abuse outcomes, indicating that there [is] an additive adverse effect of mental health disorders among alcohol- and drug-dependent youth” (Tomlinson et al., 2004, p.166).

It is important to note that multiple diagnoses are just one part of the complex array of phenomena that interact and form the youth’s unique emotional and behavioral patterns. In addition, these youth typically have multiple system mandates (e.g., juvenile court, school, peer group), functional impairments (e.g., developmental maturity, cognitive impairments, skill level), and systemic stressors (e.g., limited resources, family conflict, trauma, community violence, drug availability). When considered collectively, these multiple impacting phenomena are more comprehensively described using the term multiple occurring conditions.

With regards to the study’s research questions, the following were noted:

1. Is ICT more effective in reducing the severity of criminal behaviors and recidivism in youth offenders than TSS? Both the ICT and TSS conditions had small, but not significant, increases in misdemeanor and felony behaviors. One explanation for this is that the Crossroads program provided high levels of external monitoring and supervision. This greater scrutiny of youth behaviors normally results in higher reporting rates and probation violations versus traditional probation.

In contrast, both conditions had lower percentages of commitments to the Ohio Department of Youth Services (ODYS), TSS (4.5%) and ICT (9.4%), than the total commitment rate for Summit County
(12.18%) in 2006 (ODYS, 2006). It should be noted that the overall intention by the Crossroads Co-Occurring Court was to reduce commitment rates that are a function of substance abuse and/or mental health disorders.

2. Is ICT more effective in improving mental health functioning than TSS? While there were no significant differences between the TSS and ICT conditions, both groups showed significant mental health improvement as measured by the Ohio Scales at six months. The TSS group demonstrated these gains across raters, while the ICT group showed gains with the youth and worker ratings but not the parent ratings. These are encouraging findings for youth in both groups. One possible explanation for this is that components of the Crossroads program (intensive monitoring, close supervision, and weekly collaborative Treatment Team meetings) may have played a mediating role by helping to increase treatment engagement, retention, and completion for both groups.

An interesting finding was that 35 percent of the ICT parents rated their child in the normal range of functioning at time of admission. One possible reason for this phenomenon was the limited parental knowledge of the nature of co-occurring disorders and how substance use can mask and/or mimic mental health disorders. The parents may have felt that substance use was the primary or only issue. As the parents were educated to the existence and prominence of mental health issues, the Ohio Scales ratings predictably increased. Another possible reason for the low ratings at time of admission may be because youth were court ordered into treatment and the parents may not have felt that treatment was necessary.

3. Is ICT more effective in reducing substance use than TSS? The severity of substance use behaviors at time of admission was significantly higher for the ICT youth, both in terms of frequency and severity. This finding was consistent across both provider and youth reports. In this context, it is not surprising then that the ICT group had significantly more positive drug screens across time than did the TSS group. While the ICT group showed greater severity of substance use behaviors, they also showed greater improvement on the substance use scale of the GRAD per youth report (time 2 to time 3). This finding should be interpreted with some caution however, because insufficient time has passed to determine whether this result is sustainable.

4. Is ICT more effective in improving school, family and personal functioning than TSS? There were no significant changes in school, family, and personal functioning as measured by the GRAD. The fact that ICT parents showed greater non-compliance than the TSS group lends support to the fact that the ICT families were overall less amenable to treatment than the TSS group, making engagement and treatment more challenging.

In summary, the youth in the ICT condition were rated as more severe in multiple domains (mental health functioning; substance abuse; self-ratings of prior offenses; and parental compliance). In light of this, it is encouraging that the ICT group demonstrated improvement on both mental health and substance abuse variables, while the TSS group showed improvement on just mental health variables. Another promising finding for both groups is the relatively low commitment rates to ODYS. It is important to note that the Crossroads program, while not directly evaluated in this study, may have contributed to the positive findings in both groups.

Limitations. While many of the youth served in the Crossroads program would have met the criteria for externalizing behavior disorders (conduct disorder, oppositional defiant disorder, or disruptive behavior disorder), these were not tracked at time of court admission, and thus, are not reflected in the
data reported. Additionally, while the level of family disorder and conflict were key reasons for referring youth to ICT, these variables were not measured directly in this study.

Another limitation is that less than half of the TSS group had a Time 2 rating even though they were still enrolled in the Crossroads program. This may indicate a selection bias, in that families more willing to complete the outcomes measures may have been more engaged and compliant overall.

Finally, the low referral rate both to Crossroads and to the ICT programs was unpredicted. It was expected that approximately 100 TSS and 50 ICT youth would be served in a two-year period, as compared to the actual 68 TSS and 34 ICT. To increase sample size, youth were accepted into the ICT program at both time of referral into the Crossroads program as well as after enrollment into the Crossroads program. This compromise led to a less robust research design, which created added complexity to all the group comparisons.

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**Presentations of the Research**

VISUAL AND AUDITORY PERCEPTION OF EMOTION IN ADOLESCENTS WITH BIPOLAR DISORDER

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Bipolar disorder (BPD) is a serious and common psychiatric disorder characterized by the presence of at least one manic episode with elevated or irritable mood. BPD is also associated with cognitive deficits in multiple domains (Fleck et al., 2003; Kessler et al., 1994; Lewinsohn, Klein, & Seeley, 1995; McClure, Pope, Hoberman, Pine, & Leibenluft, 2003; Robinson et al., 2006). The domain of emotional processing is of particular interest in BPD, given that emotional dysregulation is a central feature in this disorder. The current study investigated whether adolescents with BPD have facial and vocal affect processing deficits and whether affect processing relates to social functioning. Because Attention Deficit/Hyperactivity Disorder (ADHD) has a high comorbidity with BPD, we contrasted the visual and aural recognition of emotion of groups of adolescents with BPD alone, ADHD alone and those who were psychiatrically healthy, and examined associations between affective processing scores and social functioning measures. It was our goal to explore emotional processing in BPD independently of the ADHD which commonly co-occurs in this population.

Introduction

Bipolar disorder is a common psychiatric disorder that affects approximately 1.5 percent of the adult population (Kessler et al., 1994) and 1 percent of adolescents (Lewinsohn et al., 1995). In addition to their mood disturbance, individuals with BPD display cognitive deficits across multiple domains of functioning. Given the key role of emotion dysregulation in BPD, the present study focused on the abilities of adolescents with bipolar disorder to process emotional material.

Overview of cognitive functioning in Bipolar Disorder. Individuals with BPD may experience difficulty across a number of cognitive domains, including memory (Basso, Lowery, Neel, Purdie, & Bornstein, 2002; Fleck et al., 2003; Shear et al., 1999), speeded verbal fluency (Dixon, Kravariti, Frith, Murray, & McGuire, 2004; Lebowitz, Shear, Steed, & Strakowski, 2001; Rossell, 2006; Wolfe, Granholm, Butters, Saunders, & Janowsky, 1987), attention (Bora, Vahip, & Akdeniz, 2006; Clark, Iversen, & Goodwin, 2002; Fleck, Shear, & Strakowski, 2005), and executive functioning (Dixon et al., 2004; Ferrier, Stanton, Kelly, & Scott, 1999; Shear, DelBello, Rosenberg, & Strakowski, 2002). Some adults with BPD experience persistent cognitive deficits even during periods of euthymia, or periods free of mood symptoms (Altshuler, 1993; Dixon et al., 2004; Ferrier et al., 1999; Rossi et al., 2000).

The literature describing cognitive deficits in children and adolescents with BPD is much more limited than that including adults. However, the few existing studies are consistent with what has been demonstrated in the adult population. Specifically, studies of children and adolescents with BPD have revealed deficits in attention (Dickstein et al., 2004; Doyle et al., 2005; Pavuluri et al., 2006), learning and memory (Dickstein et al., 2004; Doyle et al., 2005; Kyte, Carlson, & Goodyer, 2006; McClure et al., 2003; Pavuluri et al., 2006), response flexibility (McClure et al., 2003), processing speed (Doyle et al.,
2005), and executive functioning (Kyte et al., 2006; Pavuluri et al., 2006). Thus, it is important for studies of emotional processing to consider those skills in the context of other cognitive abilities that may be affected by the disorder.

**Emotional processing in BPD.** The literature on emotional processing in individuals with bipolar disorder has focused primarily on the ability to process facial affect (the information that another person’s facial expression conveys about his or her feelings). Emotions tend to be labeled comparably across diverse cultures (Ekman & Oster, 1979), and correct labeling of facial expressions is believed to be important for effective everyday functioning. For example, facial expressions can offer clues about a person’s emotional condition at a specific point in time and how to best interact with that person. Social perception is important because it has been identified as a predictor of social competence; thus, deficits in the perception of affect may lead to social dysfunction (Penn, Mueser, Spaulding, Hope, & Reed, 1995; Wallace, 1986).

A study designed to examine facial recognition and facial affect labeling in adults with BPD suggested that these individuals were impaired in recognizing facial affect but did not differ from psychiatrically healthy controls on a facial recognition task that did not have an affective component. That is, the patients could recognize faces but had difficulty decoding the affect displayed in the faces (Addington & Addington, 1998). This pattern of results persists when affective stimuli are presented at a rate characteristic of spontaneous facial expression (Getz, Shear, & Strakowski, 2003). Neuroimaging studies suggest that manic adults with BPD have difficulty labeling sad affect in others (Lennox, Jacob, Calder, Lupson, & Bullmore, 2004) and underestimate the intensity of sadness in facial expressions (Chen et al., 2006).

Despite the growing evidence that adults with BPD have affect processing deficits, there have been very few studies of these skills in children and adolescents with this disorder. The available data suggest that adolescent BPD is indeed accompanied by deficient facial affect processing (McClure et al., 2003). Because affect processing is fundamental to effective everyday functioning, it is important to confirm whether young patients with BPD experience the emotional processing deficits that are documented in adults with this disorder.

Although the existing literature on bipolar disorder has been focused on facial affect processing, effective emotional functioning also requires the accurate perception of emotion in a speaker’s voice. Adults with schizophrenia, another serious mental illness associated with substantial cognitive deficits, are deficient in decoding the emotional tones in speech (Pagulayan, Shear, & Farrell, 2004). To our knowledge, however, no study has examined auditory affect processing in childhood and adolescent BPD. The primary goal of this study was to examine facial and vocal affect perception in adolescents with BPD.

**Bipolar Disorder and Attention Deficit/Hyperactivity Disorder.** A secondary goal of this study was to compare affect recognition and social functioning abilities of adolescents who have BPD to adolescents with ADHD. There is a high rate of comorbidity between BPD and ADHD; reportedly, 60 to 80 percent of children and adolescents who have BPD also have comorbid ADHD (DelBello & Geller, 2001; Geller & Luby, 1997; West, McElroy, Strakowski, Keck, & McConville, 1995; Wozniak et al., 1995). Given this high comorbidity, it is unclear whether the deficits observed in patients with BPD are the result of BPD, comorbid ADHD, or a combination of both disorders. Therefore, we investigated the relative degree of deficit in facial affect recognition and social functioning in adolescents with BPD alone and adolescents with ADHD alone.
Deficits in facial affect recognition and labeling have been demonstrated in children, adolescents and adults with ADHD (Corbett & Glidden, 2000; Ingram, 1996; Norvilitis, Casey, Brooklier, & Bonello, 2000; Rapport, Friedman, Tzelepis, & Van Voorhis, 2002). Rapport and colleagues demonstrated that adults with ADHD have a deficit in the perception of emotion in speech prosody, i.e., the stress and intonation patterns of an utterance (Rapport et al., 2002).

While the magnitude of affective processing deficits has not yet been compared in adolescents with BPD who do or do not have comorbid ADHD, this type of comparison has been conducted in other cognitive domains. A comparison of executive functioning in adolescents with BPD only, those with BPD and comorbid ADHD, and psychiatrically healthy controls demonstrated that the patients with comorbid ADHD were rated by caregivers as having more impaired executive functioning skills than the patients with BPD alone, who in turn were more impaired than the control group (Shear, DelBello, Rosenberg, Jak, & Strakowski, 2004). In a complementary study, adolescents with BPD and comorbid ADHD performed more poorly on executive functioning measures than did those with ADHD alone (Warner, DelBello, Shear, Fleck, & Strakowski, 2005). Similarly, it is important to learn whether adolescents with BPD show deficits in affect processing that are distinct from those attributable to ADHD.

Aims and hypotheses. The primary goal of the present study was to compare the facial and vocal affective processing abilities among adolescents with bipolar disorder, adolescents with ADHD, and psychiatrically healthy adolescents. We hypothesized that adolescents with BPD who were not experiencing a mood syndrome would demonstrate a greater deficit than both adolescents with ADHD and healthy controls on tasks requiring the correct labeling of facial affect and the emotional valence of speech samples, and that both clinical groups would be impaired relative to the healthy control group. A second aim of this study was to examine the relationships between facial and vocal affect processing and social functioning. We hypothesized that greater deficits on tasks requiring the labeling of facial affect and the emotional valence of speech samples would correlate with a greater deficit in social functioning in all groups.

Method

Participants. Participants included nine adolescents with a diagnosis of Bipolar Disorder I and no comorbid ADHD; nine adolescents with a diagnosis of ADHD but no comorbid or first-degree relative with a mood or psychotic disorder; and 12 healthy adolescents with no history of psychiatric illness in themselves or a first degree relative. All diagnoses were established via a semi-structured diagnostic interview using the Washington University at St. Louis Kiddie Schedule for Affective Disorders and Schizophrenia (WASH-U-KSADS). The adolescents with BPD were non-syndromal in that they did not meet DSM-IV-TR criteria for a current manic, mixed, or depressive episode. All participants were between the ages of 13 and 17 years, were able to speak English fluently, able to provide written informed assent, and had a parent or legal guardian willing to provide written informed consent. One adolescent
with BPD was unmedicated, and the rest were currently taking medications (including quetiapine, divalproex, ziprasidone, or olanzapine). Seven of the adolescents with ADHD were prescribed psychotropic medications at the time of testing, including methylphenidate, atomoxetine, methylphenidate hydrochloride, amphetamine with dextroamphetamine, dexamethasone with hydrochloride, or a combination of these medications; two participants were not taking any psychotropic medications. Eleven of the healthy participants were not currently prescribed any psychotropic medications although one participant was prescribed amitryptaline for headaches. Exclusion criteria for all groups included IQ < 70, as estimated by the Wechsler Abbreviated Scale of Intelligence [WASI; (Wechsler, 1999)], a history of serious closed head injury or other neurological illness or injury, and current substance abuse or lifetime substance dependence.

Data collection procedures. Participants were recruited from past and ongoing research studies of the Division for Bipolar Disorders Research at the University of Cincinnati. Once written informed consent was obtained, the principal investigator or a co-investigator obtained diagnostic and demographic information using the WASH-U-KSADS. The principal investigator or co-investigator then administered the YMRS, CDRS-R, and Scale for the Assessments of Positive Symptoms (SAPS; Andreasen, 1984) as symptom rating measures and the cognitive measures described below. The affect labeling tasks were administered in a counterbalanced order. The adolescents were compensated for their time. All aspects of this study were approved by the Institutional Review Board at the University of Cincinnati.

Emotional processing measures. The Diagnostic Analysis of Nonverbal Accuracy 2 (DANVA2; Nowicki & Duke, 1999) was used to examine the ability to correctly recognize and label both facial affect and the emotions represented in speech prosody. In the FACES subtests, a series of 24 images that depict adults and children expressing each of four primary emotions (happiness, sadness, anger, and fear) are presented on a computer screen. Participants indicate by a key press which of the four emotions was depicted in the image. In the PARALANGUAGE subtests, a series of 24 versions of the sentence “I am going out of the room now but I’ll be back later” is spoken by adults and children in intonations and rhythm to reflect each of these same four emotions are presented through computer speakers. Participants indicate which of the four emotions was depicted in the prosody of the sentence. The final unit of measure for each of the four subtests (Child Faces, Adult Faces, Child Paralanguage, Adult Paralanguage) was an age-corrected z-score based on normative data in the test manual. For these scores, a higher z-score is indicative of more problems with affect recognition.

Social functioning. The participants’ social functioning was assessed using the Social Skills Rating System (SSRS; Gresham & Elliot, 1990), a multiple-informant rating system using the child and parent to assess behaviors that affect parent-child relations, teacher-student relations, and peer relations. We used the secondary level student forms and parent forms to measure peer relations. The parent form contains 52 items from two scales: Social Skills and Problem Behaviors. The student form contains 39 items from only the Social Skills scale. Higher scores are associated with more or better social skills on the social skills scales and more or greater problem behaviors on the problem behavior scales.

Cognitive tests to control for task demands. This battery included a small number of tasks that were selected to control for potential cognitive confounds that may have affected performance on the primary measures of interest. These tasks assessed facial recognition (Benton Facial Recognition; Benton, Van Allen, Hamsher, & Levin, 1978), auditory perception and memory (Benton Sentence Repetition; Spreen & Benton, 1969), intelligence (Wechsler Abbreviated Scale of Intelligence; Wechsler, 1999), and sustained attention (Connors’ Continuous Performance Test; Connors, 1992). The Wechsler Abbreviated Scale of Intelligence (WASI) was used in order to characterize the groups.
Statistical analyses. Before approaching our analyses of the affect recognition and social functioning variables, we compared the groups on demographic and control variables, including age, sex, socioeconomic status (SES), symptom severity ratings, facial recognition, sentence repetition, and sustained attention. For those demographic and control variables on which we identified group differences, we conducted Pearson correlations in each of the groups separately that examined the possible relationships between these variables and the affect processing and social functioning measures. A repeated measures ANOVA compared the groups across the four affective processing measures, with appropriate follow-up tests. Because of the relatively small sample size, all parametric results were confirmed with nonparametric tests. The results of these two analyses were similar, and so only the parametric results are reported.

We compared the groups on parent ratings of their children’s social skills, student ratings of their social skills, and parent ratings of their children’s problem behaviors using a one-way ANOVA and t-tests, and then correlated these measures with measures of affect recognition using Pearson correlations.

Results

Table 1. Descriptive Statistics of the Demographic and Clinical Characteristics of the Sample Demographic Information

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADHD (N = 9)</th>
<th>BPD (N = 9)</th>
<th>HP (N = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>14.89 (1.27)</td>
<td>16.00 (1.22)</td>
<td>14.67 (1.23)</td>
</tr>
<tr>
<td>Education</td>
<td>8.78 (1.30)</td>
<td>9.89 (1.05)</td>
<td>8.83 (1.75)</td>
</tr>
<tr>
<td>Sex</td>
<td>5M, 4F</td>
<td>3M, 6F</td>
<td>7M, 5F</td>
</tr>
<tr>
<td>Race</td>
<td>89% Caucasian</td>
<td>89% Caucasian</td>
<td>83% Caucasian</td>
</tr>
<tr>
<td>SESa</td>
<td>5.56 (0.88)</td>
<td>4.33 (1.73)</td>
<td>5.50 (1.45)</td>
</tr>
<tr>
<td>YMRS</td>
<td>2.89 (2.67)</td>
<td>5.00 (3.04)*</td>
<td>1.08 (1.24)</td>
</tr>
<tr>
<td>CDRS</td>
<td>20.56 (3.36)</td>
<td>23.44 (4.93)*</td>
<td>18.17 (1.11)</td>
</tr>
<tr>
<td>SAPS</td>
<td>0.22 (0.44)</td>
<td>0.22 (0.44)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Age of Onset</td>
<td>5.75 (1.72)</td>
<td>13.06 (3.40)</td>
<td></td>
</tr>
</tbody>
</table>

*SES Levels: Household Income: 1 = $0 - $10,000; 2 = $10,001 - $20,000; 3 = $20,001 - $35,000; 4 = $35,001 - $50,000; 5 = $50,001 - $75,000; 6 = $75,001 - $100,000; 7 = > $100,000

*There is a significant difference between the adolescents with BPD and the healthy participants at the .05 level with the adolescents with BPD having higher ratings on the YMRS and the CDRS-R.

As expected, the mean ratings on both the YMRS (F(2) = 7.22, p < 0.01) and CDRS-R (F(2) = 6.49, p < 0.01) were significantly higher (YMRS: t = 4.06, p < 0.01; CDRS: t = 3.15, p < 0.01) for the BPD than the healthy participants (HP) group. While they are statistically significant, the group differences are not clinically meaningful. Neither the BPD nor the HP group was significantly different from the adolescents with ADHD. Correlations were computed that examined the relationship between symptom severity and performance on the affect processing and social functioning tasks; the symptom ratings on the YMRS and CDRS were correlated with the z-scores of the DANVA2 subtests and the standard scores of the SSRS scales. In the adolescents with BPD, there was a significant correlation between greater mania and better performance on the Child Paralanguage subtest of the DANVA2 (ρ = -.72), higher ratings of depression and higher parent ratings of problem behaviors (ρ = .72).
Control variables. Descriptive statistics for the cognitive control variables can be found in Table 2. On a task of facial recognition there was a significant omnibus group difference \( F(2) = 7.96, p < 0.01 \); post-hoc tests showed that the adolescents with ADHD performed significantly worse than both the healthy participants \( t = -3.95, p < 0.01 \) and the adolescents with BPD \( t = -2.49, p = 0.02 \).

Table 2. Means and Standard Deviations of the Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADHD ((N = 9))</th>
<th>BPD ((N = 9))</th>
<th>HP ((N = 12))</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQ</td>
<td>105.78 (6.16)</td>
<td>101.22 (13.67)</td>
<td>108.58 (12.82)</td>
</tr>
<tr>
<td>Facial Recognition</td>
<td>39.44 (2.40)</td>
<td>42.67 (3.04)</td>
<td>44.91 (3.58)</td>
</tr>
<tr>
<td>Sentence Repetition</td>
<td>13.67 (0.71)</td>
<td>13.00 (1.00)</td>
<td>13.67 (0.65)</td>
</tr>
<tr>
<td>CPT Hit Reaction Time</td>
<td>49.12 (13.47)</td>
<td>50.44 (9.92)</td>
<td>41.85 (5.11)</td>
</tr>
<tr>
<td>CPT Discriminability ((d'))</td>
<td>56.53 (4.24)</td>
<td>49.56 (4.30)</td>
<td>48.33 (7.26)</td>
</tr>
<tr>
<td>CPT Response Style ((\beta))</td>
<td>48.44 (5.34)</td>
<td>49.27 (3.50)</td>
<td>46.44 (3.02)</td>
</tr>
</tbody>
</table>

The adolescents with ADHD also performed significantly worse \( F(2) = 5.86, p < 0.01 \) than the adolescents with BPD \( t = 3.46, p < 0.01 \) and healthy participants \( t = 3.01, p < 0.01 \) on the discriminability \((d')\) t-score of a sustained attention task. For the two cognitive control tasks that showed group differences (facial recognition and CPT discriminability), correlations were performed to examine the relationship with the affect recognition and social functioning tasks. In the healthy participants, there was a significant correlation between a better performance in recognizing faces and higher student ratings of social skills \( \rho = .73, p = 0.01 \). No other correlations were significant. Thus, group differences in these control skills do not seem to have strongly affected the primary measures of interest.

Affect recognition. Table 3 includes the descriptive statistics for the affect recognition variables. We began by examining the overall effects using a 2 stimulus (child and adult) X 2 modality (facial and vocal) X 3 group repeated measures ANOVA of the DANVA2 z-scores.

Table 3. Means and Standard Deviations of the Z-Scores on Each Subtest of the DANVA2

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADHD ((N = 9))</th>
<th>BPD ((N = 9))</th>
<th>HP ((N = 12))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Faces z-scores</td>
<td>-0.20 (0.78)</td>
<td>0.14 (1.35)</td>
<td>-0.19 (0.84)</td>
</tr>
<tr>
<td>Child Faces z-scores</td>
<td>-0.16 (0.57)</td>
<td>0.05 (0.73)</td>
<td>-0.55 (0.52)</td>
</tr>
<tr>
<td>Adult Paralanguage z-scores</td>
<td>-0.21 (0.78)</td>
<td>0.52 (1.21)</td>
<td>-0.70 (0.89)</td>
</tr>
<tr>
<td>Child Paralanguage z-scores</td>
<td>-0.09 (0.41)</td>
<td>0.69 (1.21)</td>
<td>-0.10 (0.83)</td>
</tr>
</tbody>
</table>

There was a significant main effect of group \( F(2) = 4.10, p = 0.03 \) but not modality or stimulus type. There was a trend toward a significant modality by stimulus interaction \( F(1) = 3.47, p = 0.07 \). We did not pursue trends toward significance further due to our small samples size and the number of statistical tests performed. See Figure 1 for a depiction of this group difference.
Follow-up repeated measures comparisons between each set of participant groups (ADHD vs. BPD, ADHD vs. HP, and BPD vs. HP) showed significantly poorer performance in the BPD than the HP group \( F(1) = 5.93, p = 0.03 \) and a trend towards better performance in the ADHD group than the BPD group \( F(1) = 3.55, p = 0.08 \). Follow-up t-tests revealed that the adolescents with BPD performed significantly worse on the Adult Paralanguage subtests than the healthy participants \( t = 2.66, p = 0.02 \).

**Social functioning.** See Figure 2 for the results of the SSRS. On this measure, higher scores on the social skills scales represent more social skills; in contrast, higher scores on the problem behavior scale are in the impaired direction and represent more problem behaviors. An omnibus test across all three groups revealed significant group differences on the parent ratings of both social skills \( F(2) = 15.91, p < 0.01 \) and problem behaviors \( F(2) = 12.30, p < 0.01 \) but not on the study participants’ ratings of their own social skills.

Parents rated adolescents with BPD as having significantly poorer social skills \( t = 2.30, p = 0.04 \) than adolescents with ADHD. Adolescents with ADHD in turn had significantly poorer social skills \( t = -2.87, p = 0.01 \) than healthy participants. As rated by their parents, both adolescents with BPD \( t = 4.36, p < 0.01 \) and adolescents with ADHD \( t = 3.40, p < 0.01 \) had significantly more problem behaviors than the healthy participants. See Figure 2 for a visual representation of this comparison.

Although we did not find any significant correlations between the z-scores of the affect recognition measures and the social functioning measures (each DANVA2 subtest with each social functioning scale within any of the groups), we did find a number of correlations in the expected direction that represent moderate to large effects (Cohen, 1988). In the adolescents with bipolar disorder, there was a large correlation between better performance (lower z-scores) on the Adult Faces subtest and higher students’ ratings of their social skills \( \rho = -.57, p = 0.11 \), and moderate correlations between higher students’ ratings of their social skills and better performance (lower z-scores) on the Child Paralanguage \( \rho = -.47, p = 0.20 \) and Adult Paralanguage \( \rho = -.31, p = 0.41 \) subtests. Additionally, there was a moderate correlation between higher parent ratings of social skills and better performance on the Child Paralanguage \( \rho = -.34, p = 0.41 \) subtest in the healthy participants.
Figure 2. Standard score parent ratings of social skills (lower scores equal poorer skills) and problem behaviors (higher scores equal poorer behaviors) and student ratings of social skills (lower scores equal poorer skills).

Discussion

The adolescents with BPD performed more poorly than healthy participants in affective processing when performance was collapsed across all measures. Therefore, the results suggest that affect processing deficits in adolescents with Bipolar Disorder may exist independent of co-occurring ADHD. There was also a trend, although it did not reach statistical significance, for the adolescents with BPD to perform more poorly overall on the affective processing measures than the adolescents with ADHD. This pattern of findings occurred in the presence of a greater decrement in the adolescents with ADHD on the cognitive control tasks. In other words, the affective processing deficits in the BPD group are not explicable on the basis of poor attention or difficulty with facial recognition. These results partially support our hypothesis that adolescents with BPD who are not experiencing a full affective episode would be impaired relative to healthy participants and adolescents with ADHD on a task of affect recognition. In other words, subtle affective processing deficits may be a trait characteristic associated with BPD that is at least partially independent of abnormal mood state.

In terms of group differences on specific affective processing tasks, analyses suggested that the adolescents with BPD exhibited worse performance on the Adult Paralanguage subtest of the DANVA2 compared with healthy participants. Although the group differences were not statistically significant, the adolescents with BPD also performed worse on this subtest than the adolescents with ADHD. Thus, although we did not replicate the facial affect recognition deficit suggested in the BPD literature (McClure et al., 2003), we did demonstrate a deficit in vocal affect recognition in this group of adolescents with BPD who did not have comorbid ADHD. It should be emphasized that these deficits are subtle and may be due in part to the relatively good performance of the healthy participants on these tasks.
The results of our study are inconsistent with the current literature in affect recognition and ADHD (Corbett & Glidden, 2000; Norvilitis et al., 2000; Rapport et al., 2002) in that we did not demonstrate group differences between the adolescents with ADHD and the healthy participants on these tasks. It is possible that this discrepancy reflected the fact that our affect recognition task did not adequately challenge the participants, did not include a more sensitive measure such as reaction time, and the ceiling effect limited our variability and power to identify group differences.

The results of our study also reveal some noteworthy group differences on tasks of social functioning. We demonstrated that, according to their parents, adolescents with BPD had fewer social skills than their peers with ADHD or healthy participants and more behavioral problems than the healthy participants. Adolescents with ADHD also demonstrated significantly fewer parent-rated social skills and more problem behaviors than healthy participants. Our findings are consistent with the suggestion in the literature that individuals with BPD have deficits in their social functioning (Dion, Tohen, Anthony, & Watermaux, 1988; Grossman, Harrow, Goldberg, & Fichtner, 1991), even when their overall functioning is rated as “stable” by a treating doctor (Dickerson, Sommerville, Origoni, Ringel, & Parente, 2001). Our findings are also consistent with the literature on social functioning in adolescents with BPD, which suggests that a deficit in social functioning does exist, even at a young age (Biederman et al., 2005; Goldstein, Miklowitz, & Mullen, 2006). In one such study, both the Global Assessment of Functioning (GAF) and performance on another social functioning inventory were impaired in this population (Biederman et al., 2005). It is important to note that irritability is a very common symptom of adolescents with BPD (Biederman et al., 2005; Wozniak et al., 1995) and it may also play a role in their social functioning. To reiterate, these data demonstrate that adolescents with BPD but not comorbid ADHD have greater social dysfunction than those with ADHD alone. Therefore, these deficits are not solely attributable to the comorbid ADHD that many of adolescents who have BPD experience.

Our second hypothesis was that greater deficits on tasks of affective processing would correlate with more impaired social functioning. This hypothesis was partially supported by the large and moderate correlations in the adolescents with BPD between higher students’ ratings of their own social skills and less problems recognizing the emotion present in the faces of adults and voices of both adults and children. Similarly, in the healthy participants, we found a moderate correlation between higher parent ratings of social skills and less difficulty recognizing the emotion presented in the voices of children. We want to acknowledge that these correlations, while notable for their effect sizes, did not reach statistical significance, and also that certain other correlations did not fall in the expected directions. Nevertheless, there is a suggestion in these data that an individual’s ability to process emotions relates to ratings of his or her social skills.

**Future Directions**

A clear limitation of our study is the small sample. Larger samples would have increased our power to find statistically significant differences for smaller effects and would have been more representative of the population of adolescents with bipolar disorder. Also, the sample size was not large enough to examine the effects of medication, which may have impacted performance.

If future studies in individuals with Bipolar Disorder are able to replicate the relationship between affect recognition or identification and social functioning deficits that are suggested in the present results, similar to the relationship that has been shown in individuals with schizophrenia (Mueser et al., 1996; Pagulayan et al., 2005; Penn et al., 1996; Poole et al., 2000), it may possible to focus interventions on areas which contribute to these deficits. A greater understanding of the correlates of this social dysfunction could have substantial implications for the treatment of mental illness, as current programs...
could be modified to target behaviors or skills that are contributing to this impairment. If it is found that receptive emotional skills, such as identifying facial and vocal affect, are related to the varying domains of social functioning, then this information could be incorporated into current rehabilitation efforts. Improved social functioning in BPD could greatly contribute to enhancing the quality of life of patients with this severe and chronic form of mental illness.

REFERENCES


**Presentations of the Research**


Foster, M.K., Shear, P.K., & DelBello, M.P. (2006, October). *Visual and auditory perception of emotion in adolescents with bipolar disorder*. Poster presented at the biannual research results briefing of the Ohio Department of Mental Health, Columbus, OH.
Bipolar disorder (BPD) is a severe psychiatric illness that affects approximately one percent of the adolescent population (Bland, 1997; Lewinsohn, Klein, & Seeley, 1995) and is marked by a deficiency in regulating emotion. Although BPD commonly affects adolescents, very little is known about the emotional and cognitive effects that these individuals experience. Previous research has shown that adults and adolescents with BPD are deficient in their ability to identify other people’s emotions; however, this critical aspect of interpersonal functioning has not been studied in adolescents with the disorder who are in mixed or depressed mood states. Furthermore, it is not yet clear whether patients have a deficit in perceiving emotion or whether they mislabel expressions that they perceive accurately. The present study seeks to address these issues through the study of adolescents with BPD in mixed and depressed mood states.

**Theoretical Framework**

Diagnostic Features. BPD is a psychiatric illness that is characterized by severe abnormalities in a person’s mood and everyday functioning [American Psychiatric Association (APA), 2000]. The hallmark feature of BPD is a deficiency in regulating emotion (APA, 2000), as this disorder is characterized the presence of at least one manic episode. Individuals with BPD may also experience depressive episodes (APA, 2000), and symptoms of mania and depression may be present simultaneously, which is referred to as a mixed episode (APA, 2000). This study focuses on adolescents, whose symptom presentation is often different from adults. For example, adolescents appear to be more likely to have mixed episodes than adults and experience high rates of comorbidity with behavior and anxiety disorders (Biederman et al. 2005).

Social Functioning. Social functioning is an area of particular concern for children and adolescents with BPD. Children with mood disorders experience more peer rejection and social difficulty than healthy children (Luby, Todd, & Geller, 1996). Adolescents with BPD, and those who are sub-syndromal, have been shown to have significant functional impairment in young adulthood (Lewinsohn, Seeley, & Klein, 2003). Finally, people with mood and anxiety disorders often experience social dysfunction, including interpersonal conflicts, inadequate social-problem-solving styles, deficient conflict negotiation, mood dysregulation and peer rejection (Rudolph, Nammen, & Burge, 1994; McClure, Treland, Hoberman, Pine, & Leinbenluft, 2003).

Emotional Processing in Bipolar Disorder. Given the affective instability and social functioning deficits in this population, emotional processing is an important area to examine. One aspect of emotional processing is affect recognition. Facial affect recognition studies have shown that adults and adolescents with BPD are less able than healthy individuals to accurately label an emotion that another person is displaying through his or her facial expressions (Addington, & Addington, 1998; Getz, Shear &
Strakowski, 2003a; McClure et al., 2005b; McClure et al., 2003). McClure et al. (2003 & 2005b) have shown that adolescents with BPD are deficient in their ability to correctly label facial expressions and to judge socially appropriate language. Additionally, vocal affect recognition is reported to be mildly impaired in adolescents with BPD who are non-syndromal (Foster, 2007). Manic adults with BPD are deficient in their ability to identify other people’s emotions (Addington, & Addington, 1998; Getz et al., 2003a), and adults show a disproportionate difficulty labeling negative (anger and fear) emotions (Getz et al., 2003b) compared to this ability in healthy individuals. Lembke and Ketter (2002) found that manic adults showed impairment in labeling fear and disgust, though they found euthymic patients to be similar to healthy individuals and significantly less impaired than individuals in a manic state. Chen (2006) conducted an fMRI study that indicated that depressed and manic patients exhibited abnormal responses to fearful faces and to facial expressions that were incongruent with the patients’ mood (e.g., depressed subjects had difficulty identifying happiness in others). Depressed bipolar and unipolar patients show greater accuracy in perceiving negatively valenced stimuli (Hale, 1998; Murphy et al., 1999).

**General Neuropsychological Deficits in BPD**. Emotional processing deficits in BPD occur within a constellation of other cognitive impairments. For example, adult and child studies have found mild reductions in IQ (Doyle et al., 2005; Olvera, Semrud-Clikeman, Pliska, & O’Donnell, 2005), executive functions (Dickstein et al., 2004; Olvera et al., 2005; Pavuluri et al., 2006; Warner, DelBello, Shear, Fleck & Strakowski, 2005), attention (Dickstein et al., 2004; Doyle et al., 2005; Fleck, 2005; Olvera et al., 2005), and visual and verbal memory (Doyle, 2005; Fleck et al., 2003; McClure et al., 2005a; Olvera et al., 2005; Shear et al., 1999). Because cognitive symptoms vary across different mood states (e.g., Fleck, 2003), it is important to contrast multiple mood states in order to parse symptoms that are related to a particular mood state from those that are broadly related to BPD (McClure et al., 2005a).

**Aims and Hypotheses**

The present study examined affective processing in adolescents with BPD who were in a mixed mood state (i.e., both manic and depressive symptoms are present simultaneously; BPD-M), as well as those in a depressed mood state (BPD-D), relative to healthy participants (HP). BPD-M patients provided information about symptoms of both mania and depression, and mixed mood states are common in adolescence. BPD-D patients allowed us to parse the relative contribution of depression. It is possible that the social difficulties that patients with BPD experience may be related, in part, to a deficit in affective cognition; however, little is known about this domain of functioning. For this reason, this study examined both labeling and social judgment. Labeling was examined by asking participants to apply verbal labels to facial expressions. The first hypothesis was that adolescents with BPD-M would perform more poorly than those with BPD-D and HP on a facial affect labeling task. Adolescents were also asked to make social judgments based on their perceptions of facial affect. The second hypothesis was that adolescents with BPD-M would be less successful than those with BPD-D and HP at making appropriate social judgments on the basis of facial affect.

**Methods**

**Participants.** Participants were adolescents with BPD-M (n = 12), BPD-D (n = 6), and HP (n = 12). Groups were matched with regard to age, sex, and race. Participants with BPD were recruited from ongoing research protocols within the Division of Bipolar Disorders Research (DBDR) in the University of Cincinnati College of Medicine. Adolescents in the HP group were recruited from the community and from ongoing research protocols in the DBDR. All participants’ legal guardians gave written informed consent, and participants provided written assent for participation. All aspects of this project were approved by the University of Cincinnati IRB.
Prospective participants in both groups were between the ages of 12 to 17 years and had a Full Scale IQ $\geq 80$. They were excluded for a history of serious head injury, neurological illness, current psychotic episode, or a history of substance dependence or abuse within three months of participation.

First, a semi-structured interview, the Washington University at Saint Louis Kiddie Schedule for Affective Disorders and Schizophrenia (WASH-U-KSADS; Geller et al., 1998) was conducted to determine diagnostic eligibility. Family history of psychotic and mood disorders was obtained through parent report. The Young Mania Rating Scale (YMRS; Young, Biggs, Ziegler, & Meyer, 1978) and the Childhood Depression Rating Scale-Revised version (CDRS-R; Poznanski, Cook, & Carroll, 1979) were administered to evaluate symptom severity. Finally, the Scale of Positive Symptoms was used to rule out the presence of psychosis (SAPS; Andreasen, 1984). Inclusion criteria for participants with BPD-M included a WASH-U-KSADS confirmed diagnosis of BPD-M, a rating of $\geq 12$ on the YMRS and a rating of $\geq 28$ on the CDRS-R. Four participants in the BPD-M group had comorbid Attention Deficit Hyperactivity Disorder (ADHD), Combined Type. Inclusion in the group with BPD-D was contingent on a WASH-U-KSADS confirmed diagnosis of BPD-D, and a rating of $\geq 28$ on the CDRS-R. Healthy adolescents had a WASH-U-KSADS confirmation of no mood or psychotic disorder or ADHD, and no first-degree relative with a mood or psychotic disorder or ADHD. None of the HP had ever taken any psychotropic medications. At the time of assessment, eight BPD-M participants were taking medications, and all of the participants in the BPD-D group were taking medications.

Neuropsychological assessment. All research participants were administered several non-affective cognitive measures that were not included in the primary analyses but were intended to control for other cognitive processes that could have impacted performance on the affect processing tasks. For example, individuals with low intelligence, poor attention, or poor visuospatial abilities (particularly related to the processing of faces), may answer items incorrectly as a result of a fundamental differences in information processing, rather than due to a broader deficiency in social or emotional awareness. All of the cognitive control measures were standardized tests of neuropsychological performance that have been validated through normative procedures. This battery included a standardized estimate of intelligence, The Wechsler Abbreviated Scale of Intelligence [WASI (Wechsler, 1999)]. Attentional abilities were assessed using the Ruff 2 & 7 Selective Attention Test (Ruff & Allen, 1996). Finally, the Benton Facial Recognition Test assessed participants’ ability to process facial features (Benton, Van Allen, Hamsher & Levin, 1978).

Facial affect recognition and facial affect interpretation tasks. The primary measures of interest in this study were drawn from three novel tasks including 1) Forced Choice Interpretation, 2) Line Scale Interpretation, and 3) Forced Choice Labeling, all of which were constructed from the Ekman Faces of Affect stimuli (Ekman, & Oster, 1979). For this study, a subset of the images was selected for the high reliability with which raters in normative studies labeled the displayed emotion. Images were edited to show only the faces, with hair and external features masked. Equal numbers of male and female images were selected, and all stimuli for the present study depicted Happy, Angry, Fearful or Neutral facial expressions.

Forced choice interpretation. First, in order to understand how adolescents with BPD-M or BPD-D make social judgments based on facial affect information, a forced choice component was presented. Participants were shown two photographs of the same person expressing different emotions and were asked to answer the question, “If you are alone, and need help with something, which picture looks more like someone you would ask for help?” Images were presented in pairs that included both a negative (Angry or Fearful) and a positive (Happy or Neutral) emotion. This method was used to ensure that there was a “correct answer” (i.e., the positive emotion) that would be selected by most healthy individuals.
The two negative valences were crossed with the two positive ones to create four experimental conditions, which were presented in four blocks of ten images, for a total of 40 trials. The items were presented in a quasi-random sequence, with the positions of the positive and negative valences counterbalanced on the left and right. Each item was scored for accuracy and reaction time (RT).

**Line Scale Interpretation.** Next, in a line scale component, participants were shown each of the 40 images that had been presented during the forced choice task individually, and they were asked, “If you are alone and need help with something and this is the only person available, how likely are you to approach this person and ask for help?” This task again looked at social judgment, but was designed to examine the possibility that a participant might decline to ask anyone for help or might ask all people for help. The participants responded by clicking on a line with the left labeled “Very likely” and the right labeled “Unlikely.” Answers were measured in pixels starting at the left end of the continuum and ranged from 300 pixels (“Very Likely”) to 700 pixels (“Unlikely”), and RT was also measured.

**Forced Choice Labeling.** Finally, the participants completed a Labeling task that again used the same faces as in the previous two tasks. The participants were presented with the same 40 stimuli on a computer and were required in a forced choice format to select the label (Fearful, Angry, Happy, or Neutral) that corresponded to the emotion expressed in the image by clicking on the corresponding word. Participants were instructed to click on the word that best matched the expressed emotion. Answers were measured in terms of percent correct and RT.

**Statistical Analyses**

Though sample sizes were small, data were found to be approximately normally distributed in the BPD-M and HP groups. The data were not normally distributed for the BPD-D group. Parametric and non-parametric tests were used to compare data. Also, given the very small sample size for the depressed group (which was due to recruitment problems) primary analyses were conducted between the HP and BPD-M group, and analyses that included the BPD-D group were secondary.

We first compared all groups on a number of demographic variables. *T*-tests were conducted to compare groups with respect to age and symptom severity. $\chi^2$ analyses were conducted to compare groups on handedness, sex, race and family income. We examined cognitive control variables to determine whether the three groups were similar in IQ, facial recognition, or sustained visual attention using *t*-tests. Those control variables that were discrepant were included in subsequent statistical models.

Mean responses for each group on each task were calculated. Data were also considered with respect to the emotional valence of the stimuli. Finally, for Affect Labeling, valences were first compared separately and then collapsed so that angry and fearful created a “negative” category, and happy and neutral created a contrasting “positive” category. When analyzed separately, angry and fearful were not significantly different from one another.

**Results**

**Demographic variables.** See Table 1 for descriptive statistics for the demographic variables. There were no significant differences between all the groups with respect to sex, race, age, or family income level. On symptom severity ratings, as expected, both bipolar groups were significantly worse than the HP group on the YMRS and the CDRS. Neither BPD group significantly differed from HP on the SAPS (BPD-D versus HP: $U = 24.00, p = .574$; BPD-M versus HP: $U = 54, p = .487$). The BPD groups were significantly different from each other on the CDRS ($t = -2.264, df = 14, p = .040$), with the BPD-D
group showing more elevated depressive symptoms than the BPD-M group, but were not significantly different on the YMRS or SAPS.

Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th>Demographic Information by Variance and Group</th>
<th>BPD-M</th>
<th>BPD-D</th>
<th>HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (Percent male)</td>
<td>42%</td>
<td>40%</td>
<td>42%</td>
</tr>
<tr>
<td>Race (Percent Caucasian)</td>
<td>75%</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Medication (Percent on psychotropic medication)</td>
<td>67%</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Medication (Percent on stimulants)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Age (Mean [SD])</td>
<td>14.33 (1.8)</td>
<td>16.00 (1.7)</td>
<td>14.00 (1.9)</td>
</tr>
<tr>
<td>Family Income Level: 5 Categories (Mean [SD])</td>
<td>3.70 (1.4)</td>
<td>3.00 (1.3)</td>
<td>4.00 (1.1)</td>
</tr>
<tr>
<td>YMRS (Mean [SD])</td>
<td>18.09 (6.5)</td>
<td>14.60 (8.6)</td>
<td>0.42 (0.7)</td>
</tr>
<tr>
<td>CDRS-R (Mean [SD])</td>
<td>32.91 (7.9)</td>
<td>44.00 (11.4)</td>
<td>17.25 (0.5)</td>
</tr>
<tr>
<td>SAPS (Mean [SD])</td>
<td>0.38 (0.8)</td>
<td>0.80 (1.8)</td>
<td>0.00 (0.0)</td>
</tr>
</tbody>
</table>

Descriptive statistics for the cognitive control variables can be found in Table 2. The three groups did not differ significantly in their facial recognition ability or sustained attention (accuracy). The HP group scored significantly better than the BPD-M group ($t = -2.563, df = 22, p = .009$) and the BPD-D group ($t = 2.483, df = 15, p = .025$) on attention (speed). The BPD-D patients also scored significantly lower than the HP group on the estimate of IQ ($U = 13.5, p = .04$). Overall, group means were not significantly different and participants scored within the average range of intelligence.

Table 2. Mean and Standard Deviation of Control Tasks by Variable and Group

<table>
<thead>
<tr>
<th>Task</th>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated IQ (SS)</td>
<td>BPD-M</td>
<td>100.10</td>
<td>8.80</td>
<td>98.00</td>
<td>92-119</td>
</tr>
<tr>
<td></td>
<td>BPD-D</td>
<td>92.80</td>
<td>12.72</td>
<td>89.40</td>
<td>80-107</td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td>105.55</td>
<td>10.89</td>
<td>109.00</td>
<td>84-119</td>
</tr>
<tr>
<td>Facial Recognition (Raw)</td>
<td>BPD-M</td>
<td>43.08</td>
<td>4.76</td>
<td>41.50</td>
<td>37-54</td>
</tr>
<tr>
<td></td>
<td>BPD-D</td>
<td>43.80</td>
<td>4.65</td>
<td>43.90</td>
<td>29-60</td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td>44.58</td>
<td>4.96</td>
<td>43.50</td>
<td>41-53</td>
</tr>
<tr>
<td>Attention: Total Accuracy (T-Score)</td>
<td>BPD-M</td>
<td>45.25</td>
<td>8.66</td>
<td>46.50</td>
<td>22-61</td>
</tr>
<tr>
<td></td>
<td>BPD-D</td>
<td>48.00</td>
<td>6.40</td>
<td>47.50</td>
<td>29-47</td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td>50.00</td>
<td>10.12</td>
<td>54.00</td>
<td>22-61</td>
</tr>
<tr>
<td>Attention: Total Speed (T-Score)</td>
<td>BPD-M</td>
<td>37.67</td>
<td>6.01</td>
<td>38.50</td>
<td>29-47</td>
</tr>
<tr>
<td></td>
<td>BPD-D</td>
<td>32.00</td>
<td>7.78</td>
<td>30.50</td>
<td>21-45</td>
</tr>
<tr>
<td></td>
<td>HP</td>
<td>49.33</td>
<td>14.58</td>
<td>49.00</td>
<td>25-74</td>
</tr>
</tbody>
</table>
Facial Affect Recognition: Group Differences

Social Judgment Tasks. We examined BPD-M and HP accuracy differences on the Forced Choice Interpretation task (Table 3). One HP and one with BPD-M were found to be outliers and were excluded from analyses. A 4(valence combinations) x 2(BPD-M and HP) repeated measures ANOVA was conducted, showing a main effect for valence ($F = 6.741$, $df = 18$, $p = .003$). Post-hoc analyses revealed that participants in both groups had more difficulty selecting the positive face in the Neutral versus Angry condition than the three other conditions ($p < .05$ for all comparisons). No significant effect of diagnosis or interaction was found. Mann-Whitney U tests revealed that BPD-D patients scored significantly worse relative to HP on the Neutral versus Angry condition ($U = 13.00$, $p = .04$), and were similar the BPD-M group on all valences.

Table 3. Mean and Standard Deviation of Affect Interpretation (Forced-Choice) by Diagnosis and Valence

<table>
<thead>
<tr>
<th>Group</th>
<th>Happy-Angry M(SD)</th>
<th>Happy-Fearful M(SD)</th>
<th>Neutral-Angry M(SD)</th>
<th>Neutral-Fearful M(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPD-M</td>
<td>0.95 (.07)</td>
<td>0.93 (.10)</td>
<td>0.88 (.09)</td>
<td>0.93 (.09)</td>
</tr>
<tr>
<td>BPD-D</td>
<td>0.92 (.11)</td>
<td>0.96 (.05)</td>
<td>0.80 (.12)</td>
<td>0.94 (.05)</td>
</tr>
<tr>
<td>HP</td>
<td>0.97 (.05)</td>
<td>0.94 (.07)</td>
<td>0.89 (.07)</td>
<td>0.95 (.07)</td>
</tr>
</tbody>
</table>

Next, we examined group differences (BPD-M and HP) on the Line Scale Interpretation task (Table 4). A 4(valences) x 2(BPD-M and HP) repeated measures ANOVA was conducted. This showed a main effect for valence ($F = 29.89$, $df = 20$, $p < .001$). Post-hoc analyses revealed that both groups’ ratings of Happy was significantly different from all other valences ($p < .003$). No effect of diagnosis or interaction was found. Secondary analyses with the BPD-D group showed that they did not perform significantly different from the HP or BPD-M groups.

Table 4. Mean and Standard Deviation of Affect Interpretation (Line-Scale) by Diagnosis and Valence

<table>
<thead>
<tr>
<th>Group</th>
<th>Neutral M(SD)</th>
<th>Fearful M(SD)</th>
<th>Happy M(SD)</th>
<th>Angry M(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPD-M</td>
<td>549.49 (56.48)</td>
<td>612.55 (26.97)</td>
<td>393.88 (27.97)</td>
<td>611.31 (33.61)</td>
</tr>
<tr>
<td>BPD-D</td>
<td>531.86 (46.91)</td>
<td>600.81 (55.66)</td>
<td>407.24 (62.45)</td>
<td>602.00 (38.09)</td>
</tr>
<tr>
<td>HP</td>
<td>513.24 (49.32)</td>
<td>590.64 (56.22)</td>
<td>405.37 (42.04)</td>
<td>588.73 (34.73)</td>
</tr>
</tbody>
</table>

Labeling. The Affect Labeling task revealed significant group differences. Specifically, a 2(positive and negative) x 2(BPD-M and HP) (see Table 5) repeated measures ANOVA was conducted showing a main effect for valence ($F = 14.37$, $df = 22$, $p = .001$). Post-hoc analyses showed participants in both groups had more difficulty labeling negative faces than positive faces ($t = -2.17$, $df = 23$, $p = .041$). A significant group by valence interaction was also found ($F = 7.47$, $df = 22$, $p = .012$) (see Figure 1).
Table 5. Mean and Standard Deviation of Affect Labeling by Diagnosis and Valence

<table>
<thead>
<tr>
<th>Affect Labeling</th>
<th>Neutral $M(SD)$</th>
<th>Happy $M(SD)$</th>
<th>Fearful $M(SD)$</th>
<th>Angry $M(SD)$</th>
<th>Positive $M(SD)$</th>
<th>Negative $M(SD)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPD-M</td>
<td>0.93 (.04)</td>
<td>1.00 (0)</td>
<td>0.87 (.10)</td>
<td>0.83 (.19)</td>
<td>0.97 (.02)</td>
<td>0.85 (.12)</td>
</tr>
<tr>
<td>BPD-D</td>
<td>0.86 (.09)</td>
<td>0.98 (.04)</td>
<td>0.82 (.11)</td>
<td>0.72 (.23)</td>
<td>0.92 (.04)</td>
<td>0.77 (.12)</td>
</tr>
<tr>
<td>HP</td>
<td>0.93 (.06)</td>
<td>0.99 (.03)</td>
<td>0.98 (.06)</td>
<td>0.88 (.11)</td>
<td>0.96 (.04)</td>
<td>0.93 (.05)</td>
</tr>
</tbody>
</table>

Post-hoc analyses revealed that BPD-M patients, compared with HP, made more errors when labeling angry and fearful images (angry and fearful; $t = 2.71$, $df = 22$, $p = 0.006$). This group difference was not evident when viewing faces expressing positive emotions (happy and neutral; $t = .67$, $df = 22$, $p = .26$). The HP achieved approximately the same performance regardless of valence (positive or negative; $t = .69$, $df = 11$, $p = .205$). In contrast, individuals with BPD-M scored significantly worse when labeling negative as compared to positive images (positive and negative; $t = -2.76$, $df = 11$, $p = .009$). Mann-Whitney U tests showed that BPD-D patients scored significantly worse than HP when labeling fearful ($U = 4.5$, $p = .004$) faces and had greater difficulty labeling neutral faces than those with BPD-M ($U = 14.00$, $p = .03$)

Figure 1. Labeling means by diagnosis and valence.

Group Differences in Reaction Time (RT)

Next, we considered reaction time for each task. As the RT data were not normally distributed, a transformation was done, and a 4(valences) x 2(BPD-M and HP) repeated measures ANOVA was conducted. The groups did not significantly differ in their response speed on any of the valences (see Table 6). A Mann-Whitney U test revealed the BPD-D group also did not differ from either group on RT.

Similarly, analyses of the Forced Choice Interpretation task revealed that BPD-M, and HP did not differ significantly (see Table 7). Patients with BPD-D mood state were slower than patients with BPD-M when selecting between happy and angry ($U = 10.0$, $p = .035$) and happy and fearful ($U = 7.5$, $p = .018$).
Table 6. Labeling Reaction Time Medians and Ranges by Diagnosis and Valence

<table>
<thead>
<tr>
<th>Group</th>
<th>Neutral</th>
<th>Happy</th>
<th>Fearful</th>
<th>Angry</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPD-M</td>
<td>1554.06 (1043-2449)</td>
<td>1271.82 (1083-2169)</td>
<td>1908.68 (1184-2935)</td>
<td>1971.17 (1258-2712)</td>
</tr>
<tr>
<td>BPD-D</td>
<td>1704.22 (1199-2488)</td>
<td>1389.50 (1087-1595)</td>
<td>2021.75 (1551-2351)</td>
<td>1690.22 (1502-2794)</td>
</tr>
<tr>
<td>HP</td>
<td>1674.83 (1152-1786)</td>
<td>1331.89 (970-1632)</td>
<td>1930.19 (1406-2869)</td>
<td>1921.11 (1435-2964)</td>
</tr>
</tbody>
</table>

Table 7. Forced-Choice Reaction Time Medians and Ranges by Diagnosis and Valence

<table>
<thead>
<tr>
<th>Group</th>
<th>Happy-Angry</th>
<th>Neutral-Angry</th>
<th>Happy-Fearful</th>
<th>Neutral-Fearful</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPD-M</td>
<td>1326.48 (990-1523)</td>
<td>1222.65 (1287-2005)</td>
<td>1774.55 (959-1406)</td>
<td>2077.45 (1146-2609)</td>
</tr>
<tr>
<td>BPD-D</td>
<td>1613.8 (1298-2160)</td>
<td>1846.2 (1598-2149)</td>
<td>1433.40 (1263-2058)</td>
<td>1613.8 (1298-2160)</td>
</tr>
<tr>
<td>HP</td>
<td>1451.3 (1013-2339)</td>
<td>1817.55 (1142-2502)</td>
<td>1324.75 (1507-51559)</td>
<td>2132.5 (1385-26725)</td>
</tr>
</tbody>
</table>

Finally, for the Line-Scale task, a 4(valences) x 2(BPD-M and HP) repeated measures ANOVA was conducted, which revealed a main effect of valence ($F = 4.21, df = 3, p = .018$). No significant interaction or effect of diagnosis was found. Post-hoc t-tests revealed that both groups were significantly slower at rating neutral any other valence ($p < .002$ for all other valences). BPD-D patients were significantly slower than BPD-M patients when rating happy ($U = 6.0$, $p = .009$), angry ($U = .004$, $p = .004$) and fearful ($U = 8.0$, $p = .019$) faces (see Table 8).

Table 8. Line-Scale Interpretation Reaction Time Medians and Ranges by Diagnosis and Valence

<table>
<thead>
<tr>
<th>Group</th>
<th>Neutral</th>
<th>Happy</th>
<th>Fearful</th>
<th>Angry</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPD-M</td>
<td>1726.4 (1173-2288)</td>
<td>1333.45 (830-1868)</td>
<td>1486.27 (1073-1798)</td>
<td>1366.83 (1063-1868)</td>
</tr>
<tr>
<td>BPD-D</td>
<td>2422.5 (1417-2682)</td>
<td>1788.5 (1647-2546)</td>
<td>1914.73 (1389-2483)</td>
<td>1744.6 (1666-2349)</td>
</tr>
<tr>
<td>HP</td>
<td>2091.75 (1184-3823)</td>
<td>1508 (938-3049)</td>
<td>1669.77 (9531-3167)</td>
<td>1652 (946-3188)</td>
</tr>
</tbody>
</table>

**Examination of Confounding Factors**

**Effect of speed.** Performance on the Ruff 2 & 7 Selective Attention Test indicated that the BPD-M and HP were significantly different with respect to speed on the Line Scale interpretation task. We controlled for this by adding the attention-speed variable to the analysis as a covariate, after which the main effect of valence was no longer significant ($F = 1.61, df = 19, p = .221$), suggesting that speed for general attention impacted the results of the RT comparisons for the Line Scale task.

**Effect of comorbid ADHD.** T-tests revealed that those with comorbid ADHD scored worse than other participants with BPD-M when labeling neutral ($t = -1.83, df = 10, p = .045$) and angry ($t = 1.83, df = 10, p = .045$) faces. A repeated measures ANOVA was conducted excluding the participants with comorbid ADHD. This revealed a significant main effect of valence ($F = 9.49, df = 18, p = .006$) and interaction between diagnostic group and valence of the stimuli ($F = 4.39, df = 18, p = .05$), suggesting that affect labeling deficits exist in adolescents even without ADHD and the possibility that the presence of ADHD adds additional impairment. This is consistent with earlier findings where individuals with
BPD with comorbid ADHD showed greater executive dysfunction than individuals with BPD in isolation (Warner et al., 2005).

**Mood.** Correlations were conducted to examine the relationship between mood and accuracy and RT on novel tasks. For the BPD-M, higher CDRS scores were significantly related to faster response times for neutral faces on the Line Scale Task \((r_s = -.788, p = .004)\) and higher YMRS scores were significantly related to faster response times for neutral faces on the labeling task \((r_s = -.798, p = .003)\), though all groups scored similarly with respect to accuracy.

**Discussion**

This study investigated two components of facial affect processing in adolescents experiencing mixed and depressed mood states: labeling of facial expressions and social judgments made on the basis of facial expressions. The results indicate differences in both accuracy of labeling and interpretation between HP and adolescents with BPD.

**Labeling.** Relative to HP of comparable age and gender, adolescents with BPD-M were mildly deficient in their ability to label emotions in a forced choice format. This relative weakness was found in spite of normal intelligence and normal facial recognition. Though the sample was small, secondary analyses also indicate that those with BPD-D show mild deficiencies as well. These results are consistent with previous reports of deficient facial affect recognition in adults (Getz et al., 2003a) and children (McClure et al., 2003; McClure et al., 2005b) with BPD, although this is the first study to demonstrate such a deficit in individuals experiencing mixed or depressed mood states. Further, we found that adolescents with BPD-M performed more poorly than HP when labeling negative emotions (angry and fearful), but not when asked to label positive emotions (happy and neutral), a pattern that has been reported also in manic adults with the disorder (Getz et al., 2003b).

Without examining euthymic or high-risk individuals, we cannot rule out the possibility that the findings are reflective of a trait-related affective processing difficulty rather than mood state. Individuals in the BPD-D group showed significant impairment when labeling images. This suggests that impairments are indeed related to the presence of either the depressive mood state or to the disorder trait, and point to the fact that mania need not be present to cause difficulties. Previous research in adults can also help to parse the effect of mood state, as Getz showed this impairment in labeling in individuals in a manic state, suggesting that the deficits are not related only to depression. Additionally, Lembke and Ketter (2002) showed that adults in a manic state showed impairment in labeling fear and disgust relative to individuals who were euthymic. This pattern suggests that the impairment is not broadly related to BPD, but may be related to the presence of mood symptoms. Ultimately, our results cannot be generalized to all adolescents with BPD, and can only be applied to those in a mixed or depressed mood states.

**Interpretation.** Facial affect labeling has been investigated in adults and adolescents with BPD-M, and deficiencies have been consistently shown. However, in order to relate this to the psychosocial impairments that such individuals experience it is important to understand how interpretation is impacted. A novel aspect of the present study was the effort to examine interpretation of affective information. The present study did not reveal any significant group differences on either interpretive task in terms of accuracy, suggesting that on the present tasks the BPD-M and HP were making similar judgments based on affective information. Those with BPD-D did show greater difficulties when choosing between a happy and angry person. Thus, some differences between the groups may exist, and it is possible that a
different task would mirror more closely what these adolescents are experiencing in real life and would be more sensitive to difficulties.

**Implications for social and emotional regulation.** Ultimately, these deficits are of interest because they are potentially relevant to the social and emotional dysregulation that individuals encounter in daily life (McClure et al., 2005b). Children with mood disorders experience more peer rejection and social difficulty than healthy children (Luby et al., 1996). In general, children who are less socially competent experience rejection by peers, parents and teachers (Parker, Rubin, Erath, Wojlawowicz, & Buskirk, 2006). Information from other clinical populations can help to formulate hypotheses about a connection between weaknesses in labeling and social competence. Yeates (2007) indicated that children with Traumatic Brain Injury (TBI) display impairments in a number of social-emotional domains, including pragmatic language, understanding of emotions, and theory of mind tasks. Data from the present study and previous studies have described similar difficulties for individuals with BPD (Kerr, Dunbarr, & Bentall, 2003; McClure et al., 2005b). By understanding how such affective information is interpreted, a stronger connection can be made to social impairments experienced in daily life. Also, understanding the types of errors made when labeling emotions can also provide insight into the connection between labeling performance and social and emotional impairment. Qualitative analysis of our data revealed that often BPD-M participants tended to rate negative faces too positively. Indeed, errors such as this could have serious consequences with regard to interpersonal functioning. For example, it is known that social interactions are the building blocks for friendships and often give rise to long-term relationships (Yeates et al., 2007). A misinterpretation in a brief interaction could have the potential to lead a person to engage in a potentially detrimental relationship.

**Design Considerations.** The participants were a sample of convenience, recruited from ongoing clinical trials, raising the possibility of selection bias. In addition, all BPD participants had a prior hospitalization, limiting generalizability because the sample may be more impaired than the general population. Also, a larger sample would have increased our power to find smaller effects and given us a more representative group of the population of adolescents with BPD. Most patients with BPD were receiving medication.

Another consideration is that the interpretive tasks were novel. Though the stimuli used have good normative properties with respect to labeling (albeit without the forced choice format of the present task), such data do not exist for interpretation. Thus, it is difficult to draw conclusive interpretations. Also, this task was based on the relationship between affect and prosocial behaviors; however, questions that relate to aggressive behaviors may yield different information (Rubin, Bukowski, and Parker, 2006). Finally, as we only studied patients with BPD and healthy individuals, it is not possible to determine whether our findings are specific to BPD or, rather, are common to a number of psychiatric conditions. Affective processing deficits have, for example, been identified in those with schizophrenia, although known that not all mental illnesses carry a deficit in affect labeling (e.g., McClure and colleagues [2003] demonstrated that individuals with anxiety do not show deficits in facial affect recognition).

**REFERENCES**


**Others Presentations of the Research**

Biofeedback is a process by which a subject, in this case a child, receives information (feedback) about and learns to control a specific physiological function such as the excess muscle tension that occurs during headache or the rapid heart rate that accompanies stress (Schwartz & Andrasik, 2003).

Neurofeedback is a specific form of biofeedback, in which the child learns to control brain wave activity (EEG). Some brain wave patterns, specifically, low theta or relatively low theta/beta ratio are associated with good concentration and attention, while other patterns (high theta) reflect inattention and poor concentration (Table 1). Control is achieved by monitoring and displaying the brainwave activity (theta) in a format that is understandable to the child. The computer provides information in the form of visual displays or auditory tones showing how well the subject is doing at decreasing theta (the desired direction). In time, children are able to produce the desired types of brain waves more reliably; i.e., behavioral shaping of the brain wave pattern occurs.

Table 1. EEG Patterns

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5-4 Hz Delta</td>
<td>Tuned out. Sleepy, eye movement, blink artifact. Dominant in infants.</td>
<td></td>
</tr>
<tr>
<td>4-8 Hz Theta</td>
<td>Internal orientation. Important in memory recall. Not focused on external stimuli. Dominant in young children.</td>
<td></td>
</tr>
<tr>
<td>12-15 Hz SMR</td>
<td>Decreased motor and sensory activity, calm state; decreased anxiety and impulsivity.</td>
<td></td>
</tr>
<tr>
<td>16-20 Hz Beta</td>
<td>Active thinking, problem-solving.</td>
<td></td>
</tr>
</tbody>
</table>

Neurofeedback has been shown to be efficacious in helping children improve cognitive and psychological functioning (Lubar, 1997, 2000; Lubar & Lubar, 1999). Kaiser and Othmer (2000) reported on a multi-site study of 726 children with Attention Deficit Hyperactivity Disorder (ADHD) and found that symptom improvement occurred in 85 percent of those children receiving neurofeedback treatment, thus demonstrating that positive treatment effects could be observed in a large-scale study. Monastra et al. (1999) compared the effects of medical management (stimulants) with and without neurofeedback in
children with ADHD. Children in both treatment conditions improved on the Attention Deficits Disorders (ADD) Evaluation Scale and on the Test of Variable Attention. However, when medication was withdrawn, only the neurofeedback group maintained their improvement. A recent review (Monastra et al., 2005) summarizes the available literature and concludes that about 75 percent of children trained with EEG biofeedback achieved clinical improvement. Despite these positive results, methodological concerns have been raised, forming the background for a study by Leins et al. (2007) that compared two 30-session training protocols. Both theta/beta training and slow cortical potential training (SCP) were associated with improvements in attention and behavior. Additional methodological issues, such as type of control group, randomization and statistical analysis were addressed in detail by Rossiter (2004); the conclusion was that the evidence supports neurofeedback as a treatment for children with ADHD. However, the possible complications of additional diagnoses in children receiving neurofeedback have received only scant attention.

**Conceptual Framework and Study Design**

How neurofeedback helps children with ADD/ADHD depends on the premise that brainwave patterns are indicative of underlying brain activity whether normal or abnormal (Lubar & Lubar, 1999). Children with ADD and ADHD produce excess theta activity and lower amounts of beta activity (Clarke, Barry, McCarthy & Selikowitz, 2001). Imaging studies show structural differences in children with and without ADHD in brain areas associated with higher levels of cortical functioning (frontal lobe, dorsolateral prefrontal cortex, the corpus callosum, caudate and the cerebellum) (Biederman et al., 2007). The cerebellum, usually considered as important in balance and equilibrium, is also implicated in mood stability and cognitive functions, so reduced volume of the cerebellum contributes to the overall cognitive deficits in children with ADHD (Valera, Farone, Murray, & Seidman, 2007). Therefore, these children are neurologically inclined to daydream, and less able to focus and concentrate. It has been proposed that EEG feedback training reverses this brain wave abnormality in ADD/ADHD children by inhibiting the amount of theta and simultaneously increasing beta activity, thus normalizing the activity of the brain centers regulating attention and response inhibition (Beauregard & Lévesque, 2006). This study was designed as a randomized controlled trial of neurofeedback in children with complicated emotional and behavioral problems to determine if training in decreasing theta and increasing beta is beneficial in improvement in behavior.

**Research Objectives and Hypotheses**

The goal of this study was to determine if a program of neurofeedback could be integrated into existing mental health and educational programs for children with severe emotional and behavioral disorders. A protocol involving neurofeedback was designed to train these children to increase the brain wave patterns associated with higher concentration and attention and improve their classroom behavior so that they could transition more easily back to public school.

The hypotheses for this study were that:

1. Neurotherapy could be integrated into the existing program at the Kobacker Center with only minor disruption to ongoing mental health and educational programs.
2. Children could complete the number of sessions previously associated with improvement in other settings ($n = 30$ sessions).
3. Children receiving neurofeedback would decrease the brain waves correlated with inattention and poor concentration and increase the brain waves associated with good concentration and attention.
4. Children receiving neurofeedback would transduce the learned brain wave patterns to improved scores on the Conners’ Rating Scale, the Gordon Diagnostic System and daily behavioral grades.

5. Follow-up data collected at the end of the school year during which the children were trained would show maintenance of the treatment effects.

Overview of the Methodology

This randomized controlled study was approved by the Institutional Review Board. It was conducted at the psychoeducational center of a medium-sized midwestern university that serves children with severe behavioral, attention and concentration problems (Kobacker Center). Each subject was assigned a code number and data were entered into the SPSS statistical program by code number only, not by name or initials. Research files were separate from the child’s mental health and school files.

Participants were children between the ages of seven and 12 admitted to the psychoeducational center with a disruptive behavior disorder diagnosis (e.g., ADHD) and who had high scores (a T-score of 65 or higher) on the ADHD Index of the Conners’ Rating Scale-Revised (short form). Children with diagnoses of mental retardation, pervasive developmental disorders, autism, or a psychotic disorder were excluded. The children and their parents (legal guardians) received detailed information about the research project and gave informed consent; children gave assent. No standard medical or psychiatric therapies were withheld from participants. Each child’s psychiatrist was informed that the child was participating in this study so that changes in medication could be documented.

Measures and instruments. The following measures were used: the Gordon Diagnostic System (Gordon & Mettelman, 1988), the Conners’ Rating Scales, teacher short forms (Conners, Parker, Sitarenios, & Epstein, 1998; Conners, Sitarenios, Parker, & Epstein, 1998), and The Achenbach Teacher Report Form (Achenbach 1991). The Gordon Diagnostic System is a microprocessor-based unit which administers multiple game-like tasks. It provides information on vigilance and distractibility. The vigilance task requires the child to maintain attention on the game, while the distractibility task adds distracters to the vigilance task. The numbers of errors are counted and normal children make about seven mistakes in the time allotted for the task. The Conners contains four subscales: oppositional behavior, hyperactivity, cognitive problems/inattention, and an ADHD index. The Conners’ Rating Scales-Revised is an assessment tool for ADD and ADHD in children ages three through 17. T scores between 45 and 55 are average and T scores of 70 or higher are “markedly atypical”. The Achenbach is a computerized assessment tool that contains items related to ADHD in addition to other items regarding the child’s behavior. The behavioral grades are calculated as the average of 10 school days’ grades prior to the beginning of treatment and 10 days’ grades following treatment. The behavioral grades are based on the child’s Individualized Service Plans (ISP), which vary from child to child. These goals focus on the individual needs of the child and may or may not deal with ADHD, hyperactivity, oppositional behavior, and inattention. The day is broken down into half hours. If the child meets the goal on his/her ISP for that half hour, he receives a “yes” on the grade sheet. If he is not meeting his goal, he receives a “no”. The “yeses” are tallied at the end of the day and divided by the possible number of yeses.

EEG was measured from the CZ location on the scalp as specified by the international 10-20 system. The signal was processed by an Autogen A620 encephalograph. Average theta and theta/beta ratio were calculated for baseline and post training (control).

Procedures. During the two weeks before and again two weeks after treatment (or the control period) the outcomes measures (EEG theta/beta ratio, EEG theta, Gordon Diagnostic System, behavioral
grades, Conners Teacher version and Achenbach) were assessed. Follow-up data were collected at the end of the school year on the Conners and the behavioral grades.

After the two-week baseline, children were randomly assigned to either the neurofeedback (experimental) group or the wait list control group. Children who completed the control period were then offered participation in the neurofeedback program. During the initial session, the mental health technician explained the equipment and the tasks to be completed to the parent and child in simple terms and provided a demonstration of how the child should use the equipment (Sears & Thompson, 1998).

Children in the experimental group participated in 30 training sessions of 45 to 60 minutes duration, two to three times per week; actual neurofeedback consisted of 10 to 22 minutes of each session; the variability in EEG feedback time was based on the child’s ability to sit still and the child’s physical and emotional state during the session. During the first year, the training instrument was the Autogen A620; in the second year, training was offered using the Biograph and Procomp Plus system from Thought Technology using software version 2.1. The feedback was usually in the form of a game to hold the child’s interest. Training goals were to first decrease theta and then to increase sensory motor rhythm (higher frequency activity) and therefore to decrease the theta/beta ratio (Table 2). At each subsequent session, the child attempted to produce the same brain wave pattern and success was reinforced. The trainer also provided verbal encouragement and an incentive system. The same technician administered all the feedback sessions and was continuously present.

Table 2. Neurofeedback Protocol

<table>
<thead>
<tr>
<th>Parameters</th>
<th>4-8 Hz thetz</th>
<th>Reward!!</th>
<th>12 – 15 Hz SMR, low beta</th>
<th>Audio visual</th>
<th>EMG (muscle artifact)</th>
</tr>
</thead>
</table>

Statistical analysis. Descriptive statistics (mean, standard deviation) characterize the sample. Qualitative description addresses the first two hypotheses that deal with incorporation of neurofeedback into the existing program and the children’s ability to complete the required sessions. Analysis of variance was used to compare the two groups (neurobiofeedback and controls) on the dependent variables pre and post intervention (group x time). The results were not analyzed by gender, since there is no evidence that girls or boys of any racial or ethnic group are better able to learn the neurofeedback techniques. Follow-up data were collected at the end of the school year or when the child left the program. Since control subjects were offered the EEG training after the control period, there is no follow-up data on the control subjects.
Results

Forty-three children gave assent (parents or guardians gave informed consent) to participate. Thirty-one children completed the control or feedback parts of the study, while 12 dropped out. The children who did not complete the program had various reasons, such as prolonged or frequent absenteeism, illness or relocation of the family. In the sample, there were 24 males and seven females of average age 8.9 years (range 7 to 12). There were three Hispanic, 18 African American and ten Caucasian children. In addition to problems with attention and concentration, subjects had the following diagnosed disorders: depression, oppositional defiant, bipolar, intermittent explosive and obsessive-compulsive disorders.

Mental health providers, public school teachers and the study trainers devised a schedule so that the children would leave the classroom three times a week to participate in the EEG biofeedback training sessions. Cooperation amongst all the entities involved was excellent. Teachers and mental health providers were provided with a detailed explanation of the study including literature review, details of past successful programs in other settings, and goals and hypotheses for this study, so they were aware of the protocol. During the first weeks of the study, some disruption occurred in the classroom routine. However, within one month, all of the service providers as well as the children were well aware of the schedule and there were no further problems. Thus, hypothesis 1, that the neurofeedback sessions could be successfully integrated into the existing psycho-educational program, was confirmed.

Over the two years of the study, 72 percent of the children who began either the training or the control period completed the post-treatment assessments. Twenty-one children out of the 36 who began the EEG protocol (58%) completed the required number of EEG sessions. Hypothesis 2, that most children who began neurofeedback would be able to complete the required treatment sessions, was confirmed.

Analysis of EEG data focused on a comparison of the theta/beta ratio and theta from baseline to post-treatment and the data are shown in Table 3. Statistical comparison of the theta/beta ratio and theta in the trained and control subjects did not show a significant difference between groups (group x time). Hypothesis 3, that children in the intervention group would demonstrate statistically significantly different EEG values than the control group, was not supported.

Table 3. EEG Values in the Experimental and Control Groups

<table>
<thead>
<tr>
<th></th>
<th>Trained Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theta Pre-test</td>
<td>19.1 (4.3)</td>
<td>20.5 (10.6)</td>
</tr>
<tr>
<td>Theta Post-test</td>
<td>18.5 (4.2)</td>
<td>19.9 (13.6)</td>
</tr>
<tr>
<td>Theta/beta ratio Pre-test</td>
<td>3.6 (1.0)</td>
<td>3.5 (.89)</td>
</tr>
<tr>
<td>Theta/beta ratio Post-test</td>
<td>3.6 (.9)</td>
<td>3.5 (.82)</td>
</tr>
</tbody>
</table>

Note. No significant differences
Data from the standardized assessment tools that indicate behavior consisted of the teacher’s version of the Conners’ Rating Scale and the Gordon Diagnostic System. Table 4 summarizes the results of the analysis of variance of the baseline and post-treatment (control) comparisons. There were statistically significant differences between the trained children and the controls in the hyperactivity and the ADHD subscales of the Conners, but no differences in inattention or oppositional behavior. Children who received neurofeedback also showed significant decreases in distractibility during tasks of the Gordon Diagnostic System in comparison to the controls but no significant differences in vigilance. There were no significant group differences in behavioral grades. Therefore, hypothesis 4, that children trained with neurofeedback would improve scores on measures of behavior, was partially supported.

Table 4. Summary of the Behavioral Measure in the Experimental and Control Groups

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Post-treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conners’ Rating Scale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
<td>65.7 (11.4)</td>
<td>61.18 (11.5)</td>
</tr>
<tr>
<td>Control Group</td>
<td>64.2 (12.4)</td>
<td>67.3 (13.1)</td>
</tr>
<tr>
<td>Inattention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
<td>63.6 (12.2)</td>
<td>61.7 (13.1)</td>
</tr>
<tr>
<td>Control Group</td>
<td>62.7 (11.9)</td>
<td>65.4 (12.6)</td>
</tr>
<tr>
<td>Oppositional Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
<td>73.6 (13.4)</td>
<td>75.5 (12.9)</td>
</tr>
<tr>
<td>Control Group</td>
<td>80.3 (12.3)</td>
<td>79.8 (11.7)</td>
</tr>
<tr>
<td>Hyperactivity*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
<td>67.1 (14.3)</td>
<td>62.4 (11.6)</td>
</tr>
<tr>
<td>Control Group</td>
<td>65.7 (14.0)</td>
<td>71.2 (14.6)</td>
</tr>
<tr>
<td><strong>Gordon Diagnostic System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distractibility***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
<td>18.3 (19)</td>
<td>6.7 (6.8)</td>
</tr>
<tr>
<td>Control Group</td>
<td>10.5 (7.5)</td>
<td>13.0 (12.3)</td>
</tr>
<tr>
<td>Vigilance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
<td>13.1 (11.6)</td>
<td>8.4 (8.0)</td>
</tr>
<tr>
<td>Control Group</td>
<td>12.4 (13.6)</td>
<td>10.4 (11.6)</td>
</tr>
<tr>
<td>Behavioral Grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
<td>82.4 (12.1)</td>
<td>84.6 (11.5)</td>
</tr>
<tr>
<td>Control Group</td>
<td>77.6 (8.4)</td>
<td>82.1 (11.5)</td>
</tr>
</tbody>
</table>

*F(1,32) = 7.4; p < .011
**F(1,32) = 5.7; p < .024
***F(1,31) = 6.2; p < .019
Follow-up data were analyzed by paired $t$-tests. Baseline and follow-up and post treatment and follow-up values of the Conners and the behavioral grades were compared (Table 5). This analysis showed that the improvement in the measure of hyperactivity was maintained until the end of the school year. Since the number of children available for follow-up testing was small, we suggest that hypothesis 5 is tentatively supported.

**Table 5. Summary of the Follow-up Data in all the Trained Children**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>$n$</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conners ADHD pre</td>
<td>67.5</td>
<td>26</td>
<td>11.2</td>
</tr>
<tr>
<td>Conners ADHD post</td>
<td>64.1</td>
<td>23</td>
<td>12.2</td>
</tr>
<tr>
<td>Conners ADHD follow-up</td>
<td>66.5</td>
<td>23</td>
<td>12.3</td>
</tr>
<tr>
<td>Conners Opp pre</td>
<td>77.0</td>
<td>26</td>
<td>13.3</td>
</tr>
<tr>
<td>Conners Opp post</td>
<td>78.0</td>
<td>23</td>
<td>11.2</td>
</tr>
<tr>
<td>Conners Opp follow-up</td>
<td>77.1</td>
<td>23</td>
<td>12.4</td>
</tr>
<tr>
<td>Conners Inatt pre</td>
<td>64.5</td>
<td>26</td>
<td>11.6</td>
</tr>
<tr>
<td>Conners Inatt post</td>
<td>63.0</td>
<td>23</td>
<td>12.2</td>
</tr>
<tr>
<td>Conners Inatt follow-up</td>
<td>64.4</td>
<td>23</td>
<td>9.5</td>
</tr>
<tr>
<td>Conners Hyper pre</td>
<td>68.7</td>
<td>26</td>
<td>14.1</td>
</tr>
<tr>
<td>Conners Hyper post</td>
<td>64.7</td>
<td>23</td>
<td>12.5</td>
</tr>
<tr>
<td>Conners Hyper follow-up</td>
<td>66.0</td>
<td>23</td>
<td>12.8</td>
</tr>
</tbody>
</table>

Linear bivariate correlations were computed among the EEG variables and the behavioral variables. There were significant correlations between average theta and scores on the Conners’ Rating Scale for hyperactivity and ADHD and the Gordon’s distractibility scale (the same variables that showed significant group differences between trained children and controls (Table 6). Follow-up values of Conners’ ADHD and hyperactivity subscales values were significantly correlated with post-treatment theta values. This analysis suggests that some elements of the EEG training are important in mediating behavioral changes, but we are not able to define the most important elements of the training at this time.
Table 6. Correlations among the EEG and Behavioral Variables

<table>
<thead>
<tr>
<th></th>
<th>Theta Pre</th>
<th>Theta Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conners Hyper pre-test</td>
<td>.307 (.9)</td>
<td>.141 (.4)</td>
</tr>
<tr>
<td>Conners Hyper post-test</td>
<td>.279 (.1)</td>
<td>.414* (.013)</td>
</tr>
<tr>
<td>Conners Hyper follow-up</td>
<td>-.095 (.7)</td>
<td>.431* (.045)</td>
</tr>
<tr>
<td>Conners ADHD pre-test</td>
<td>.410 *(.02)</td>
<td>.154 (.4)</td>
</tr>
<tr>
<td>Conners ADHD post-test</td>
<td>.292 (.09)</td>
<td>.409* (.015)</td>
</tr>
<tr>
<td>Conners ADHD follow-up</td>
<td>.065 (.7)</td>
<td>.414 (.055)</td>
</tr>
<tr>
<td>Gordon distractibility pre test</td>
<td>.231 (.19)</td>
<td>.0 (.9)</td>
</tr>
<tr>
<td>Gordon distractibility post test</td>
<td>.62 (.001)*</td>
<td>.375 (.035)*</td>
</tr>
<tr>
<td>Gordon vigilance pre test</td>
<td>.19 (.3)</td>
<td>-.1 (.6)</td>
</tr>
<tr>
<td>Gordon vigilance post test</td>
<td>.31 (.08)</td>
<td>.02 (.9)</td>
</tr>
</tbody>
</table>

*Significant correlations = \( p < .05 \)

Discussion

The findings of this study support and extend previous research on the effects of neurofeedback in children with ADHD (Lubar & Lubar, 1999; Monastra et al., 2005). Training to reduce theta and the theta/beta ratio was associated with improvements in measures of ADHD, such as hyperactivity and distractibility. Although there were no significant group differences in the EEG variables when baseline and post-treatment were compared, correlation analysis supported a relationship among the EEG and the behavioral variables. A recent study assists in a possible interpretation. Fernandez et al. (2007) found important changes in behavior after neurofeedback training, but EEG current source changes were observed only two months after treatment completion. The authors of this study postulate that reorganization of EEG activity requires time for new post-synaptic connections, while behavioral changes can occur through simple conditioning. Unfortunately, we did not repeat the EEG assessment at the follow-up period.

The improvements in the two subscales of the Conners and the subscale of the Gordon are consistent with the hypotheses of this study. A change in the oppositional scale of the Conners was not expected since EEG training does not address oppositional behavior, but the lack of significant findings on the Conners’ inattention scale remains unexplained.

There were no similar improvements noted on the Achenbach assessment tool; however, this measure may not be an appropriate instrument for an EEG biofeedback study. Although the Achenbach is used in the psychoeducational setting to assess children’s performance, multiple individuals complete this assessment on the children and we did not have a protocol to establish inter-rater reliability.

Lastly, there were no differences between the trained children and the controls on daily behavioral grades. In-depth analysis of the assessment strategy of behavioral grades revealed that
improvement in behavioral grades as an indicator of the success of neurofeedback was not appropriate. The goals of the EEG training program and each child’s individual goals on their service plan are not well aligned. According to a child’s ISP, they may be working on decreasing oppositional behavior, managing anxiety or eating a regular snack. The ISP is not automatically directed towards decreasing symptoms or behaviors of ADHD.

**Limitations**

The major limitations to the study were absenteeism due to children’s illnesses, instability of the children’s living arrangement, decreased enrollment in the psychoeducational program in the second year and teacher and mental health technicians not blind about group assignment. The sample size was small, relative to the number of dependent variables, and follow-up information was difficult to obtain once the child returned to the public school. Other possible limitations were two aspects of the training protocol: the number of sessions of training and the length of training. Existing protocols do consist of 30 sessions over three months. However, due to the severity of the problems that these children experience, sixty sessions during one year or regular refresher sessions during the entire school may facilitate more lasting improvement.

**Significance and Implications**

In addition to the benefits of the integrated psychiatric and educational approach presently utilized at the Kobacker Center, neurofeedback could be an important non-pharmacological addition to the program. The results of this study are encouraging, beginning with the successful incorporation of the neurofeedback training into the existing Kobacker psychoeducational program. Most children can complete the required sessions, unless they are chronically ill or habitually absent. With training, the EEG brain wave pattern changes in the desired direction, that is, decrease in the theta/beta ratio or theta. The children who are trained decreased their scores on the hyperactivity and ADHD subscales of the Conners’ Rating Scale and decreased distractibility according to the Gordon Diagnostic System in comparison to the untrained controls. Correlation analysis suggests that a relationship exists between microvolts of theta and behavioral indicators of hyperactivity and attention deficit. At follow-up, there was limited support for maintenance of the positive changes in ADHD and hyperactivity, although this analysis was limited by small numbers. Future studies will include a larger population, refined assessment tools and longer EEG feedback training and follow-up sessions.

**REFERENCES**


between attention deficit hyperactivity disorder and bipolar disorder: A MRI study of brain volumes. *Psychological Medicine, 10*, 1-12.


**Presentations of the Research**


**Acknowledgments**

We thank the staff of the Department of Psychiatry Kobacker Center, University of Toledo for their cooperation in this project.
The concept of recovery from serious mental illness has received increasing amounts of attention in the psychiatric research and rehabilitation literature (Corrigan, Mueser, Bond, Drake, & Solomon, 2008) and currently serves as the fundamental goal for mental health care policy at a national level (New Freedom Commission on Mental Health, 2003). Concurrent with the emergence of the concept of recovery in mental health care has been the recognition that our methods and models of clinical service delivery should be guided by empirically-based research, and the promotion of evidence-based practices in mental health care (Kazdin, 2008).

**The Wellness Management and Recovery Program**

The Wellness Management and Recovery Coordinating Center of Excellence (WMR CCOE) is a training and technical assistance center created and supported by the Ohio Department of Mental Health. The WMR CCOE represents a statewide initiative that seeks to improve the quality of clinical care by accelerating the adoption of evidence-based and clinical best practices in mental health recovery within Ohio’s public mental health system.

The goal of the WMR program is to support mental health recovery and promote better overall health by teaching skills that empower individuals with serious and persistent mental illness to (1) identify and achieve personal recovery and wellness goals, (2) develop informed, collaborative approaches with mental health providers to effectively select and manage their treatment and recovery, and (3) achieve an overall healthier lifestyle. A central tenet of the WMR model is that the individuals with serious mental illness benefit from having opportunities for both intra-personal growth and inter-personal relationship building.
The WMR program is a psychoeducational curriculum that consists of ten weekly small group therapy sessions that are co-facilitated by a staff member of the agency and a peer specialist who is currently receiving mental health services. The agency providers and peer specialists receive 24 hours of conjoint training that covers not only the WMR curriculum, but also provides formal and experiential learning in group facilitation techniques. This peer-provider team approach to training and implementation accentuates the importance of collaboration in promoting mental health recovery and harnesses the power of peers in promoting the recovery process (Mowbray, Moxley, Jasper, & Howell, 1997). In addition, an emphasis on personal growth and cultural competence is embedded within the training and provision of WMR. To date, over 140 mental health agency providers and peer specialists have been trained to implement the WMR program. (WMR CCOE website: http://www.wmrohio.org)

The curriculum of the WMR program represents an adaptation and extension of two recovery-focused programs which have previously been supported and implemented by the Ohio Department of Mental Health: (1) the Ohio Medication Algorithm Project consumer education program and (2) the Illness Management and Recovery program disseminated by the New Hampshire-Dartmouth national EBP project supported by SAMHSA (Bullock, O’Rourke, & Smith, 2005; Gingerich, & Mueser, 2002; Mueser et al., 2002; 2006). The WMR curriculum was developed by the WMR CCOE following agency and consumer feedback, review of the IMR program curriculum, and evaluation of outcomes following implementation of these recovery-focused programs (Bullock, O’Rourke, Breedlove, Farrer, & Smith, 2007).

The WMR program is delivered in the context of ongoing psychiatric, substance use, and support services being provided to the individual through a community agency. The WMR group sessions are provided weekly for ten weeks, with two hours allotted for each session, including a short break in the middle. The ten sessions covered by the WMR curriculum are (1) Mental Health Recovery, (2) An Understanding of Mental Health, (3) The Role of Medication in Recovery and Wellness, (4) Learning to Manage Symptoms and Side Effects, (5) Effective Communication, (6) Communicating with Your Providers, (7) Wellness, (8) Coordinating Your Care, (9) Building Social Supports and Involving Others, and (10) Planning for Wellness. The WMR curriculum and the process by which WMR is implemented is consistent with calls for a paradigm shift in health and human services in which interventions take a holistic approach to managing wellness and promoting overall well-being by emphasizing the “voice and choice” of individuals and by focusing on strengths, prevention, empowerment, and community conditions (Prillentensky, 2005).

The purpose of the present study was to evaluate the effectiveness of the WMR program in promoting mental health recovery in a heterogeneous group of mental health consumers who were engaged in ongoing psychiatric or support services in community settings. It was hypothesized that participants completing the WMR program would show significant improvement across a variety of measures of the mental health recovery process (Anthony, 1993; Deegan, 1988; 1997; 2005).

**Methods**

**Participating Agencies/Participants.** The current study represents an ongoing, open clinical trial evaluating recovery outcomes of the WMR program as it is implemented in community mental health centers (CMHC) and consumer-operated service (COS) agencies. The current study includes data collected from 13 sites associated with nine CMHC and COS agencies across Ohio: Southeast, Inc. (Franklin Co.), Greater Cincinnati Behavioral Healthcare (Hamilton Co.), DayMont Behavioral Healthcare, Inc. (Montgomery Co.), BRIDGES: Mental Health Consumer Empowerment (Lake Co.),
Neighboring (Lake Co.), Bridgeway, Inc., (Cuyahoga Co.), Center for Vocational Alternatives (Franklin Co.), Gathering Hope House (Lorain Co.), and the Nord Center (Lorain Co.). Three of the sites, representing 25 percent of the current WMR outcomes, were COS sites (The Recovery Center of Greater Cincinnati, Gathering Hope House, and BRIDGES).

Initial pre-WMR outcomes measures have been collected on over 600 individuals. Of these, to date, 304 individuals have completed the WMR curriculum and have completed post-WMR outcomes measures. Long-term follow-up measures (3 to 6 months following completion of the WMR program) have been collected on 98 individuals.

For the 304 individuals who have completed the WMR program to date and provided pre-post WMR outcomes data, the gender distribution of the sample was 58 percent female and 42 percent male. The average age of the sample was 44.4 (SD = 11.1; range 18-72). Ethnicity of participants was 67 percent European-American, 24 percent African-American, one percent Latino/Hispanic-American, one percent Asian-American, two percent Native American/Pacific Islander, and five percent multiethnic or other ethnicity. With regard to education, 20 percent had less than a high school (HS) education, 42 percent had a HS/GED education, 30 percent had some college or trade school, and eight percent had a college degree. For the sample, approximately 40 percent were on disability, 40 percent reported being unemployed, eight percent employed part time, three percent employed full time, two percent in sheltered workshops, four percent retired, and two percent reported being students.

Measures. The primary outcomes measures for the current analyses were The Mental Health Recovery Measure (MHRM; Young & Bullock, 2003), the Ohio Outcomes Adult Consumer Form (Ohio Department of Mental Health, 2000), the WMR Client Self-Report Scales (WMR Scales; cf. Mueser et al., 2004), and the WMR Social Support Questionnaire (WMR SSQ). The MHRM is a self-report measure specifically designed to assess mental health recovery for individuals with severe and persistent mental illness. The items and domains of the MHRM were developed from a qualitatively derived grounded-theory model of recovery based upon the phenomenology of recovery from the perspective of persons with psychiatric disabilities (Young & Ensing, 1999). Items on the MHRM are categorized into one of six domains, corresponding to six higher order categories of the recovery model: 1) Overcoming Stickness, 2) Self-Empowerment, 3) Learning and Self-Redefinition, 4) Basic Functioning, 5) Overall Well-Being, and 6) Reaching New Potentials. Additional domains include Spirituality and “Advocacy/Enrichment” (Bullock, 2005.)

The Ohio Outcomes Adult Consumer Form was developed by the Ohio Department of Mental Health (ODHM) as a self-report measure for use with persons with severe and persistent mental illness. The history, development, and psychometric properties (including reliability and validity data) of this measure are described extensively in the Ohio Consumer Outcomes Procedural Manual (currently in its 9th edition, and available through the ODMH Outcomes website). A statewide report on the Consumer Outcomes System (October, 2006) also provides demographic and normative data on the clinical and recovery dimensions assessed by the Adult Consumer Form. Three scales assessed by the Adult Consumer Form were used in the current analyses: (1) Quality of Life: Overall, which includes satisfaction with a person’s life and whether their needs are being met, (2) Symptom Distress, and (3) the “Making Decisions” Empowerment scale (Rogers, Chamberlin, Ellison, & Crean, 1997), which is imbedded in the Adult Consumer Form.

The WMR Client Self-Rating scale is an adapted and expanded version of the Illness Management and Recovery (IMR) Client Self-Rating Scale, which was originally comprised of 13 items developed as a
measure of illness management, based on the stress-vulnerability model of severe mental illness. The original items were generated by IMR practitioners and consumers in order to tap the specific content areas targeted by the IMR curriculum (e.g., progress toward personal goals, relapse prevention planning, knowledge about illness, and effective use of medication). Later, two additional items were added to assess functioning affected by alcohol or drug use (Mueser & Salyers, 2005). The adapted WMR Scale includes the 15 items on the IMR Scale and added five new items generated by the WMR CCOE that were designed to tap into additional content areas and program goals for the WMR program (e.g., tobacco use, healthy life-style choices, working collaboratively with mental health professionals, use of a wellness plan, and integration of recovery philosophy into one's life.) Thus, the WMR Scale is a 20-item, self-report measure used to assess mental health consumers’ progress on those content areas targeted by the WMR curriculum. Participants respond to each item on a five-point Likert scale, with response anchors varying dependent upon the item. For the current study, the WMR Self-rating Scale items were examined separately and were summed to form a total score.

The WMR Social Support Questionnaire (WMR SSQ) is a seven-item self-report questionnaire designed to measure both the quantity and quality of social support perceived by an individual. The WMR SSQ is adapted from two existing social support scales: the People in Your Life (PIYL) Scale (Marziali, 1987) and the three-item Social Support Questionnaire (SSQ3) (Sarason, Sarason, Shearin, & Pierce, 1987). For each of the first six items, participants indicate the number of people that fit into a social support category (e.g., “How many people can you turn to when you are in trouble and need help?”), then indicate how satisfied they are with the level of support, using a five-point Likert scale. The WMR SSQ was developed for the WMR project to evaluate whether participation in WMR increased the number of individuals in the participants’ social support networks and level of satisfaction with this support.

Procedure. The current study is an open clinical trial with a longitudinal design. Data were collected prior to beginning participation in the WMR program (pre-treatment), immediately after completing the program (post-treatment), and at three to six month follow-up. Participants were recruited by each agency and provided informed consent to participate in the program and its associated outcomes research. The CMHC and COS agencies followed the same program format, curriculum, and procedures for the facilitating the WMR groups.

Results

Group Change Data. Paired (dependent) t-tests were used to assess overall group changes ($N = 304$) on the recovery outcomes measures following completion of the WMR program. Results indicated that there was a significant increase in Total MHMR score from pre-treatment ($M = 80.2$) to post-treatment ($M = 88.4$), $t(30) = 8.50$, $p < .001$. Likewise, results indicated significant increases in the average WMR Client Self-Report, Quality of Life, and Empowerment measures, and a significant decrease in average Symptom Distress. Significant increases were also seen on the subscales of the WMR SSQ for both quantity and quality of social support. As a group, persons completing the WMR program reported significantly greater levels of mental health recovery on all of the recovery measures at the end of treatment. The effect sizes for these statistically significant increases were in the small to medium range (Cohen’s $d = .25 - .55$). (See Table 1.)

For the smaller sample ($n = 86$) who have completed the long-term follow-up assessment, repeated measures ANOVAs were used to assess average group changes. Results indicated a significant increase in Total MHRM score from pre-treatment ($M = 81.4$) to post-treatment ($M = 91.4$) that was
maintained from pre-treatment to follow-up ($M = 90.1$), $F(2, 170) = 15.74, p < .001$. A similar result was found for the WMR Client Self-Report Scale when it was evaluated in the long-term follow-up. There was a significant increase in the average WMR Client Self-Report total score from pre-treatment ($M = 72.5$) to post-treatment ($M = 77.7$) that was maintained at follow-up ($M = 76.5$), $F(2, 126) = 11.72, p < .001$. Taken together, these results suggest that the participants’ recovery gains, use of recovery strategies learned during the WMR program, and personal progress towards recovery goals were sustained three to six months following program completion. (See Figure 1.)

Table 1. Mean Pre and Post Scores for Participants on the Mental Health Recovery Measure (MHRM), the WMR Client Self-Rating Scale, the Ohio Adult Consumer Outcomes Form Scales, and the WMR Social Support Questionnaire ($N = 304$)$^{a,b}$

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre-WMR Mean (SD)</th>
<th>Post-WMR Mean (SD)</th>
<th>$t$</th>
<th>$df$</th>
<th>$p&lt;$</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHRM Total</td>
<td>80.2 (20.2)</td>
<td>88.4 (18.3)</td>
<td>6.10</td>
<td>303</td>
<td>.001</td>
<td>.43</td>
</tr>
<tr>
<td>WMR Client Self-Rating Total Score</td>
<td>69.2 (11.4)</td>
<td>75.5 (11.9)</td>
<td>9.56</td>
<td>253</td>
<td>.001</td>
<td>.55</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>3.27 (.69)</td>
<td>3.44 (.68)</td>
<td>4.78</td>
<td>247</td>
<td>.001</td>
<td>.25</td>
</tr>
<tr>
<td>Empowerment</td>
<td>2.83 (.30)</td>
<td>2.91 (.32)</td>
<td>4.26</td>
<td>232</td>
<td>.001</td>
<td>.27</td>
</tr>
<tr>
<td>Symptom Distress</td>
<td>34.48 (12.3)</td>
<td>30.74 (12.0)</td>
<td>6.15</td>
<td>262</td>
<td>.001</td>
<td>.31</td>
</tr>
</tbody>
</table>

| WMR Social Support Questionnaire    |                   |                    |       |      |      |             |
|-------------------------------------|                   |                    |       |      |      |             |
| Quantitative Avg.                   | 3.98 (2.08)       | 4.76 (2.37)        | 3.76  | 103  | .001 | .35         |
| Qualitative Avg.                    | 3.37 (1.13)       | 3.75 (1.10)        | 2.67  | 77   | .010 | .34         |

$^a$ Sample sizes for measure or scale vary based on missing or incomplete data.

$^b$ The WMR Social Support Questionnaire was added to the outcomes later in the WMR implementation project and has lower overall sample size to date.

To determine whether any differences existed at pre, post, or follow-up testing as a function of CMHC versus COS site, a series of independent $t$ tests (with correction for unequal variances) was used to compare the participants’ MHRM and WMR Client Self-Report outcomes between the 10 CMHC agency sites and the three COS agency sites. Results indicated no significant differences as a function of CMHC or COS site at any of the assessment times. Moreover, the magnitude of the gains seen on the MHRM and the WMR Client Self-Report were virtually the same, with significant improvements seen at post-test for participants at both CMHC and COS sites, which were maintained at the longer-term follow-up.
The 20 items comprising the WMR Client Self-Report were examined individually to determine which specific content areas of the WMR curriculum showed improvement. Ten items showed significant gains from pre to post-treatment: Knowledge Increase (symptoms, medications, coping strategies); Use of a Wellness Plan; Use of Relapse Prevention Planning; Making Progress Towards Personal Goals; Making Healthy Life-style Choices; Coping Better with Mental/Emotional Illness Day-to-Day; Involvement with Self-Help Activities; Recovery Philosophy Integrated into your Life; Involvement of Family and Friends in My Mental Health Treatment; and Symptoms Interfering Less with Daily Functioning.

Figure 1. Mean Scores on the Mental Health Recovery Measure at Pre, Post, and Follow-up (n = 86)

Table 2 presents the proportion of participants reporting reliable or moderate improvement, deterioration, or no change for the MHRM Total Score. The individual change data illustrate the wide inter-individual differences in the amount, and direction, of change from pre- to post-treatment. While 44 percent of the participants were found to have moderate or statistically reliable improvement, 10 percent of the participants had moderate to reliable deterioration, while 46 percent showed no significant individual change. (See Table 2.)

Similar results were seen for each of the other recovery outcomes measures (Quality of Life, Empowerment, and Symptom Distress) when individual change results were examined. While a significant proportion of participants reported either moderate or statistically reliable improvement (Quality of Life = 23%; Empowerment = 20%; Symptom Distress = 31%), a small proportion still reported either a moderate or a reliable deterioration (Quality of Life = 7%; Empowerment = 8%; Symptom Distress = 10%). It was noted that while all of the measures of the recovery process were
positively correlated, the Mental Health Recovery Measure was more sensitive to self-reported changes following completion of the WMR program – both in the positive and negative direction.

Table 2. Proportion of WMR Participants Reporting Reliable or Moderate Improvement, No Significant Change, and Moderate or Reliable Deterioration on the MHRM (N = 304).

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>(Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliable Improvement</td>
<td>95</td>
<td>(31%)</td>
</tr>
<tr>
<td>Moderate Improvement</td>
<td>38</td>
<td>(13%)</td>
</tr>
<tr>
<td>No Significant Change</td>
<td>139</td>
<td>(46%)</td>
</tr>
<tr>
<td>Moderate Deterioration</td>
<td>12</td>
<td>(4%)</td>
</tr>
<tr>
<td>Reliable Deterioration</td>
<td>19</td>
<td>(6%)</td>
</tr>
</tbody>
</table>

Qualitative Data Outcomes. Following completion of the WMR program, all participants completed a written feedback form that included the open-ended question, “How has participating in the WMR program helped you in your recovery?” (See Table 3.) In addition, a subset of participants (n = 18) completed the Narrative Evaluation of Intervention Interview (Hasson-Ohayon, Roe, Kravetz, 2006), a 16-item semi-structured interview specifically designed to evaluate psychosocial intervention outcomes for individuals with serious mental illness. A grounded theory analysis of these interviews was congruent with the qualitative summary results of the written feedback question and suggested that the typical experience of WMR participants is that they begin the WMR program coming from a phenomenological place of “fear,” “isolation,” “doubt,” “inhibition,” and feeling “stuck.” Conversely, after participating in WMR, they describe the experience as promoting a sense of “growth,” “learning,” “renewed energy,” “better socialization,” and being better equipped to overcome the prejudice and stigma associated with mental illness.

Summary and Discussion

The WMR CCOE has successfully created, implemented and sustained the WMR program in the State of Ohio, with over 140 mental health professionals and peer specialists trained to implement the program and its associated research protocol, and over 600 participants having engaged in the program to date. The WMR program is being initiated in a wide range of implementation sites, including traditional CMHC agencies and consumer-operated service centers. The WMR implementation project continues to expand each year, with recent additions of three inpatient hospital sites.

Ohio’s WMR program is designed to provide individuals with the knowledge, skills, and experience to help them develop personal strategies for coping with mental illness, develop and pursue goals, and gain more control over their lives. The WMR program provides a dynamic therapeutic setting in which both intra-personal and inter-personal growth can occur. Individuals in the WMR program are provided with formal and informal learning opportunities in which they can connect with the recovery experience of peers, work to develop collaborative relationships with providers, and pursue holistic health goals as they move from an “illness-centric” to a “wellness-centric” approach to their own recovery.

The quantitative and qualitative data outcomes of the current research project support the efficacy of the WMR program in promoting the recovery process for individuals with serious mental illness. The
current results found that participation in the WMR program was associated with significant improvements in functioning for the particular topics/skill-building areas addressed by the WMR curriculum, and was associated with significant self-reported improvements across an array of measures designed to assess the recovery process. Long-term follow-up data suggest that the improvements seen on these recovery measures were sustained three to six months following completion of the program.

Finally, a particularly intriguing outcome of the current research is the finding that the positive benefits of participating in the WMR program were equally evident regardless of whether the program was implemented through traditional CMHC agency sites or through less traditional consumer-operated service centers. This finding highlights both the flexibility of the WMR program in its implementation and the potent role that peer supports and COS agencies can play in promoting mental health recovery (Rogers et al., 2007).

REFERENCES


**Other Publications of the Research**


**Presentations of the Research**


**Acknowledgment**

We would like to acknowledge and extend our deep appreciation to the many agencies, WMR group facilitators, and WMR participants, without whose efforts this project would not be possible.
Chapter Two

Other Funding Sources
Although developments in modern psychopharmacology have ushered in an era of growingly sophisticated treatments for individuals with bipolar disorder (BPD), it is clear that nearly half of individuals with BPD do not benefit from drug treatments because of sub-optimal treatment adherence (Sajatovic, Valenstein, Blow, & Ignacio, 2006; Perlick, Rosenheck, & Kozma, 2004). An understanding of why some individuals adhere to medication treatments versus why others are either partially or totally non-adherent is essential to developing interventions that focus on features that are changeable and likely to positively impact treatment adherence.

Medication adherence is a complex phenomenon that appears to be influenced by a number of patient, provider, and environmental/system-level factors (Sajatovic et al., 2006; Perlick et al., 2004; Scott, 2002). Models of health behaviors, such as the Health Beliefs Model (Becker & Maimon, 1975) note the importance of patients’ health beliefs in relation to treatment adherence. These include perceptions of susceptibility to illness, perceived severity of illness, the benefits of treatment, the costs and burdens of treatment as well as cues to action that may promote treatment adherence (Scott & Pope, 2002a). Thus, the individual experience of illness appears critical in determining whether a person suffering from bipolar disorder is adherent with prescribed medications. Unfortunately, the literatures that deal with personal factors related to adherence from a patient-focused perspective are limited. The purpose of this study was to analyze subjective/patient-centered aspects of adherence with medication treatments among individuals with rapid-cycling bipolar disorder (RCBPD) receiving treatment in a specialty academic medical center.

**Methods**

This is a cross-sectional, exploratory study to evaluate attitudes and perceptions of medication treatment and treatment adherence among individuals with RCBPD. This analysis is part of a larger study evaluating illness behavior and treatment adherence in BPD (NIMH K-23 MH065599) which is intended to be utilized for comparative qualitative analysis of illness experience among a broad spectrum of individuals with bipolar disorder (Ohio Departmental of Mental Health 06.1223, Fairview/Lutheran Hospital Foundation). Inclusion criteria included RCBPD Type I, index depressive episode, treatment with mood stabilizing medication for at least six months, and illness duration of at least two years but not
more than 20 years. Exclusion criteria were inability to participate in assessments or inability to provide written, informed consent to study participation.

Following confirmation of diagnostic/clinical status using the Mini-International Neuropsychiatric Interview (MINI) (Sheehan et al., 1998) the following measures were conducted: Symptoms and global psychopathology were evaluated with the Hamilton Depression Rating Scale (HAM-D) (Hamilton, 1960), and the Clinical Global Impression (CGI) (Guy, 1976). Insight into illness and treatment attitudes were evaluated with the Insight and Treatment Attitudes Questionnaire (IT AQ) (McEvoy, Aland, Wilson, Guy, & Hawkins, 1982), and the Attitudes Towards Mood Stabilizer Questionnaire (AMSQ) (Adams & Scott, 2000). The IT AQ is an 11-item rating scale used to evaluate patient recognition of illness and need for treatment in psychiatric illness. Each IT AQ item is scored on a 0 to 2 scale (0 = no insight, 2 = good insight), and the scale has high inter-rater reliability ($r = 0.82, p < .001$) (Bauer et al., 2006). The AMSQ is comprised of 19 items with higher scores representing more negative attitudes toward mood stabilizers. Treatment adherence was quantitatively evaluated with the Tablets Routine Questionnaire (TRQ) (Scott & Pope, 2002b; Peet & Harvey, 1991). The TRQ identifies partial/non-adherence, identified as failure to take 30 percent or more of prescribed medication. This rating has demonstrated statistically significant association with past non-adherence, repeated past non-adherence, any non-adherence in the past month, and non-adherence in the past week ($\chi^2 = 7.2, df = 6, p = .03$).

Qualitative assessment consisted of the Subjective Experience of Medication Interview (SEMI), a qualitative, semi-structured assessment of subjective experience of mental illness (Jenkins et al., 2005). Illness experience domains assessed include illness attitudes, attributions and behaviors, social relations, treatment history and medication experience (including a check-list of side effects from medications), self-medication, quality of life, stigma, culture/ethnicity, and healthcare logistics. The SEMI was transcribed from the audiotapes in its entirety and entered into a software program, Atlas.ti (Scientific Software Development, 1997) to code and analyze qualitative data systematically. SEMI data interpretation/coding is conducted via multiple-rater (2 to 5 raters) consensus rating of specific domains, some of which are pre-determined themes taken directly from SEMI questions, and additional themes that emerge from the data/participant responses. Degree of agreement among raters for SEMI theme coding ranges from kappa .52 to 1.0, with a mean of 0.81.

This study was approved by the local Institutional Review Board (IRB) and included consent for audio-taping. Any potential identifying features of the interviews, such as names of providers, friends or residence location were changed during transcribing to preserve participant confidentiality.

**Quantitative findings**

Mean age of the group was 41.7 years, $SD = 13.1$, range 20 to 62 years. Mean age of onset was 28 years, $SD = 12.6$, range 2 to 46 years. The majority ($n = 19, 95\%$) were Caucasian and mean years of education was 15.1 years, $SD = 2.4$, range 12 to 18 years. Overall, the group was moderately depressed with HAM-D mean scores of 19.4, $SD = 5.1$, range 10 to 31. IT AQ scores for this group of participants were all quite high, with a mean group score of 21.1, $SD = 2.1$. This is consistent with high levels of insight into mental disorder diagnosis and acknowledgment of current diagnosis as well as attitudes consistent with perceived need for current and future medication treatment for mental disorder. Scores on the quantitative measures generally agreed with qualitative findings (described below) in that depressive themes were very prominent in the interviews, and the high scores on IT AQ, which implicitly assumes a biomedical explanation for bipolar disorder, supported the explanation of illness cause and origins.
identified by the participants. There were two individuals who were identified as non-adherent based upon their score on the TRQ (defined as missing 30% or more of medications within the past month). As expected, compared to adherent individuals, these two non-adherent individuals also had significantly more negative attitudes towards mood stabilizing medications as assessed by the AMSQ ($p = .001$).

**Qualitative findings**

Treatment history and medication experience. The majority of individuals (15/20, 75%) reported that mood overall was improved with medication. In spite of overall improvement, a number of individuals also noted that they still had some symptoms. One illustrative comment was, “I have felt the mood has improved, but I’m not 100 percent”. In contrast, a substantial minority of individuals (4/20, 20%) noted that their mood overall was not improved with medication.

Individuals were also asked: “What do you think these medications are doing for you?” Responses to this question varied greatly as noted in Table 1. The most common response, noted in 40 percent of participants, was the perception that medications had a stabilizing or balancing effect on mood symptoms. Perceived beneficial effects included positive effects on mood or general well-being (11/20, 55%) such as improvement in depressive symptoms, reduced mood cycling and greater ability to focus on and cope with life challenges. Individuals also noted reduction in problems such as irritability (2/20, 10%), insomnia (1/19, 5%) or hallucinations (1/20, 10%). Participants also noted problematic side effects such as weight gain, sedation/cognitive dulling, dry mouth, shaking/tremor and sexual dysfunction. Twenty percent of individuals noted that the idea of having to take medications the rest of their lives/forever was of concern to them.

Adherence issues. There were six individuals (30% of the total group, mean age 38.3, age range 24 to 51, two women, four men) who reported that they believed or sometimes believed in not taking pills. This included the two individuals who were identified as “non-adherent” by the TRQ quantitative measure. AMSQ scores among individuals who were identified on the qualitative interview as having beliefs against taking medications were higher (mean = 5.50, $SD = 3.94$) compared to those who were identified as not having such beliefs (mean = 3.23, $SD = 1.96$), however this difference was not statistically significant ($p = .107$).

Individuals were asked what things make them decide to take or not take medications. Table 2 illustrates reasons for treatment adherence and non-adherence. A number of individuals noted that their appreciation of the positive effects of medication treatments on their illness outcomes was acquired over time. Individuals were asked what they do to help themselves remember to take medications and what they do if they miss a dose. Table 3 illustrates measures identified as helpful in staying adherent with medications.
Table 1. Perceptions of Overall Effects of Mood Stabilizer Treatment among 20 Individuals with Bipolar Disorder—“What do you think these medications are doing for you?”

<table>
<thead>
<tr>
<th>Perceived effect of medication</th>
<th>Number of responses&lt;sup&gt;a&lt;/sup&gt; (% among 20 individuals who gave this response)</th>
<th>Representative quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilize my mood</td>
<td>8 (40)</td>
<td>“Keep me on an even keel.”</td>
</tr>
<tr>
<td>Help me with depression and/or anxiety</td>
<td>4 (20)</td>
<td>“My mood is coming up”</td>
</tr>
<tr>
<td>Reduce/prevent suicidal thinking or behavior</td>
<td>2 (10)</td>
<td>“What it helps is I don’t worry about suicide anymore”</td>
</tr>
<tr>
<td>Not sure/don’t know</td>
<td>2 (20)</td>
<td>“I’m not a whole lot convinced…”</td>
</tr>
<tr>
<td>Less irritable</td>
<td>2 (20)</td>
<td>“I’m less irritable. I don’t think I’ve had confrontations with anyone in my family in several months…”</td>
</tr>
<tr>
<td>Causing adverse effects</td>
<td>1 (10)</td>
<td>“Sedating me—I am very tired”</td>
</tr>
<tr>
<td>Do not feel medications are helping</td>
<td>2 (20)</td>
<td>“Right now I don’t feel they’re doing anything. In the past they’ve kept me manageable. But I have my doubts now that I’m even on the right stuff.”</td>
</tr>
<tr>
<td>Help me to function normally/cope better</td>
<td>1 (10)</td>
<td>“To help me to function more normally…be able to cope better”</td>
</tr>
</tbody>
</table>

<sup>a</sup> Some individuals noted more than one effect of medication and others did not respond to this query by directly answering this question.

Table 2. Reasons for Treatment Adherence and Non-adherence among Individuals with Bipolar Disorder

<table>
<thead>
<tr>
<th>Reason for Adherence</th>
<th>Reason for Non-adherence</th>
<th>Representative Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feel that I have to take them/do not even consider non-adherence</td>
<td>10 (50)</td>
<td>“I take’em. I have to.”</td>
</tr>
<tr>
<td>Fear of relapse</td>
<td>6 (30)</td>
<td>“I know I need them in the fear of ever having ECT again.”</td>
</tr>
<tr>
<td>Feel better when I take medication</td>
<td>3 (15)</td>
<td>“Because I feel better when I take them and the chances are I’ll feel even better than this.”</td>
</tr>
<tr>
<td>Trust in prescribing physician</td>
<td>1 (5)</td>
<td>“If a reputable doctor is recommending the medication, then I’m more apt to take it.”</td>
</tr>
<tr>
<td>Forgetting to take medication</td>
<td>4 (20)</td>
<td>“Just forgetting, plain and simple”</td>
</tr>
<tr>
<td>Not wanting to get out of bed</td>
<td>1 (5)</td>
<td>“Not wanting to get out of bed and go get them”</td>
</tr>
<tr>
<td>Being reminded by others</td>
<td>1 (5)</td>
<td>“My ex-wife would always do that and it would irritate the hell out of me”</td>
</tr>
<tr>
<td>No perceived benefit</td>
<td>1 (5)</td>
<td>“They weren’t providing a positive effect on me”</td>
</tr>
<tr>
<td>Financial expense</td>
<td>1 (5)</td>
<td>“Medical bills”</td>
</tr>
</tbody>
</table>
Table 3. Methods to Improve Treatment Adherence Identified by Individuals with Bipolar Disorder

<table>
<thead>
<tr>
<th>Method</th>
<th>Number (%) of individuals who identify this method as useful</th>
<th>Representative quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pill box</td>
<td>8 (40)</td>
<td>“I have a nice little medication box: It’s got the 7 days and 4 times a day....”</td>
</tr>
<tr>
<td>Keep medications in same place where they are easily seen/remembered</td>
<td>6 (30)</td>
<td>“I have it right there in my bathroom, when I’m getting ready to shower it’s right there”</td>
</tr>
<tr>
<td>Keep some pills with them at all times</td>
<td>3 (15)</td>
<td>“I keep some pills in my purse with me so when I remember I’ll take another one...”</td>
</tr>
<tr>
<td>Family member assists</td>
<td>3 (15)</td>
<td>“I just go upstairs and dad’s laying them out for me...”</td>
</tr>
</tbody>
</table>

Finally, individuals were asked if anybody ever reminds them to take their medications and if anyone ever tells them not to take their medications. Forty percent \((n = 8)\) of individuals noted no need for reminders for medications, while 30 percent \((n = 6)\) noted that either family members or significant others sometimes reminded them to take medications. While a majority of individuals \((n = 11, 55\%)\) denied that others told them not to take medications, a sizeable proportion \((n = 9, 45\%)\) of individuals noted that there were others in their lives who told them not to take prescribed medications. Family members or friends were particularly likely to be identified as recommending against medications. Other individuals recommending against medication included alternative medicine practitioners such as an acupuncturist or individuals that attended Alcoholics Anonymous (AA). In cases where an individual was told by someone else not to take medication, individuals were queried as to how they responded to this suggestion or request. Individuals in this sample largely voiced the opinion that they tried not to pay attention to comments or suggestions made by others that they not take their medications. One individual stated, “I let it go in one ear and out the other”. However, individuals with RCBD acknowledged that coping with comments regarding medications could be difficult at times, leading to social isolation or other problems. One young man stated that he hung up the telephone when his friends told him to not take medications and another young woman stated that she kept her illness concealed from her friends and thus avoided any comments about medication-taking.

**Discussion**

This analysis of subjective experience of illness and medication-taking among individuals with RCBPD underscores the complex and dynamic nature of treatment adherence and gives support to a health beliefs model (Becker & Maimon, 1975) positing that beliefs regarding perceived benefits versus risks or obstacles to adherence are important considerations for individuals with bipolar disorder. To the best of our knowledge this is the first report of treatment adherence attitudes specific to RCBPD. Most individuals \((80\%)\) in this sample were adherent with medication and had generally positive attitudes toward treatment. Approximately one-third of the participants appeared to have some beliefs against medication taking, identified via direct, open-ended query on this issue. These individuals overall had more negative attitudes toward mood stabilizer therapy, and may be at relatively greater risk for treatment non-adherence.
Scott and colleagues (2002a; 2002b) have noted that beliefs about bipolar disorder, including perceived controllability, are important in shaping individual adherence. In the sample presented here, treatment adherence attitudes appear to fluctuate over time and are affected by an individual’s own beliefs about their illness and past personal experience with treatment as well as features of their environment regarding medications.

Table 4. Facilitators and Barriers to Medication Adherence among Individuals with Bipolar Disorder.

<table>
<thead>
<tr>
<th>Facilitators of Treatment Adherence</th>
<th>Barriers to Treatment Adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td>• perceived benefit of medication on overall illness outcome</td>
<td>• perceived lack of benefit of medications</td>
</tr>
<tr>
<td>• perceived immediate benefit on specific symptoms</td>
<td>• medication-related adverse effects</td>
</tr>
<tr>
<td>• fear of illness relapse</td>
<td>• logistic burdens to medication-taking</td>
</tr>
<tr>
<td>• reminders or cues to treatment adherence</td>
<td>• direct recommendations not to take medications from family, friends or others</td>
</tr>
<tr>
<td>• family/friend support for adherence</td>
<td>• stigma related to psychotropic medication-taking</td>
</tr>
<tr>
<td></td>
<td>• psychological issues related to long-term use of medications</td>
</tr>
</tbody>
</table>

Individuals in this sample identified facilitators of medication adherence (Table 4) that included perceived benefit of medication on overall illness outcomes, perceived immediate benefit on specific symptoms, fear of illness relapse, reminders or cues to treatment adherence and family/friend support for adherence. The majority (75 %) of individuals receiving treatment with mood stabilizing medication perceived the benefit from medication primarily as improvement in mood, anxiety or suicidality. In cases where perceived benefit of medication was immediate or of short onset (for example, improvement in insomnia) adherence attitudes were generally positive. Likewise, a number of individuals noted that fear of relapse is a strong motivator of adherence, often proven by a past history of non-adherence and the consequences of stopping medication. Individuals feared being re-hospitalized, becoming severely depressed and suicidal, or having to undergo a course of electroconvulsive therapy, and these fears reinforced medication adherence. Recommendation by treatment providers was not widely cited as a motivator of treatment adherence, in spite of the fact that most individuals appeared to trust and respect their care providers. Earlier studies, conducted in an era when lithium was the single, predominant treatment agent for BPD, found that 75 percent of individuals receiving lithium experienced freedom from symptoms and the re-establishment of social functions in the family and in work as the main benefits of lithium treatment (Vestergaard & Amdisen, 1983). Thus, while treatment modalities have proliferated, perception of reduced symptoms and improved functionality remain a key factor in promoting long-term adherence.

Specific environmental reminders were noted to enhance treatment adherence and included some relatively simple measures such as the use of pillboxes or keeping medications in locations where they would serve as daily reminders for adherence. The participation of family, woven throughout the individual’s illness experience, was a factor that could be either a facilitator or a barrier to medication adherence depending on individual circumstances. For some individuals the efforts of family and friends were key motivators to remember to take medications on a regular and timely basis.
Individuals with RCBPD noted a number of barriers to medication adherence (Table 4) that included perceived lack of benefit of medications, medication-related adverse effects, logistic burdens to medication-taking, direct recommendations not to take medications from family, friends or others, stigma related to psychotropic medication-taking and psychological issues related to long-term use of medications. Scott and Pope (2002b) noted that individuals with BPD who have adherence difficulties are more likely to have negative attitudes toward medication, more resistance to prophylaxis, more illness denial and greater fear of medication side effects compared to those with BPD who are fully adherent with medication treatment. The quantitative assessment utilized in this study identified individuals with recent non-adherence with medications, while the qualitative assessment identified a larger group of individuals who may be at risk for future treatment non-adherence, and their reasons for non-adherence. Qualitative assessments in this way may provide complementary data on individual adherence factors that may inform the development of future interventions to enhance treatment adherence. In the absence of a full qualitative assessment interview, specific queries regarding general attitudes toward medications (“Some people do not believe in taking pills. Do you ever think that?”) may help to identify those individuals who are at risk for future non-adherence.

Nearly half (45%) of individuals noted that family members, friends or others in their lives advised against taking medications. While most individuals with RCBPD stated that this negative advice did not directly affect adherence behavior, it was clearly an issue that most individuals struggled with. Stigma related to medication taking appeared to also affect medication attitudes, sometimes leading to behaviors such as social isolation or concealing illness from others. It has been demonstrated that involvement of family members of individuals with bipolar disorder in illness management, including psychoeducation, may improve illness outcomes and in some cases may enhance medication treatment adherence (Clarkin et al., 1998; Miklowitz et al., 2003). Lastly, individuals with RCBPD identified psychological issues related to medication-taking such as not liking the idea of having to take medication for the rest of one’s life, reinforcement of a “sick” role and fear of future side effects.

Limitations of this study include small sample size, one-time assessment methodology and the fact that findings from an academic clinic may not represent a larger population of individuals with BPD such as those of more diverse ethnicity, or less financial means. Ongoing analyses by this group of investigators involving other sub-groups of individuals with BPD, such as state hospital populations (see previous report by Sajatovic et al. in this volume) will ideally shed light on illness experience for a larger spectrum of individuals with BPD. Finally, individuals who are most non-adherent with medications are not likely to agree to participate in a research study that is intended to examine treatment adherence issues, and thus these findings can only be applied to individuals who are reasonably treatment adherent to begin with.

In summary, individuals with RCBPD have extensive experience with medication treatments that shape their adherence attitudes. Recent collaborative care models of treatment for BPD (Bauer et al., 2006a & 2006b), in which individuals have active input into their care and illness management may be a useful way to ensure that individual perception of treatment benefits and outcomes is evaluated on an ongoing basis. Patient-centered, qualitative identification of facilitators and barriers to treatment adherence may be an opportunity to enhance adherence, particularly for those features of illness/experience that are most easily modifiable.
REFERENCES


**Other Publications of the Research**

AN EXPLORATORY ANALYSIS OF MENTAL HEALTH RECOVERY-ORIENTED OUTCOMES: EMPOWERMENT, QUALITY OF LIFE, AND SYMPTOM DISTRESS

Eastern Vocational Enterprises Limited (EVE Ltd.)
Psychology Department

Dublin Business School of Arts (DBS)

Leah Quinlivan, BA, MSc

Ireland’s mental health system has only in recent years been exposed to the Recovery model, and has not yet taken on the challenge of incorporating the recovery philosophy into the organization and delivery of the services (Department of Health and Children; DHC, 2006). The recovery model is variously constructed on the belief that people with psychiatric disabilities can “…rebuild and further develop important personal, social, environmental, and spiritual connections, and confront the devastating effects of discrimination through …empowerment” (Spaniol & Koehler, 1994, p.1). In order to ensure quality and successful recovery-oriented care, research and evaluation are necessary (Campbell-Orde, Chamberlin, Carpenter, & Leff, 2005). Indeed, Campbell-Orde et al. (2005) argue to ensure integration of the recovery approach into the mental health services, the research base that exists on the recovery must be promoted, built and expanded on.

However, the Irish Expert Group on Mental Health Policy have pointed to the serious dearth of mental health recovery research in Ireland (DHC, 2006). For example, Irish service provision at present overlooks the broad needs of service users for social as well as clinical recovery. Consequently, the Irish policy document, A Vision for Change, suggests mental health research should aim to address the following gaps: services should be evaluated with respect to levels of meaningful recovery and improved quality of care. Furthermore, service users are experts, thus, the measures used must incorporate feedback from service users; this should directly inform service improvement and development. Quality of life (QOL) measures should also be incorporated to assess the benefit and value of these services to the service users (DHC, 2006, p.112).

A further problem that is recognized in the development of mental health policy in Ireland and abroad is the lack of recovery-oriented baseline outcomes data for mental health service users. In fact, outcomes measures are considered a fundamental aspect of quality improvement and accountability. Mental health providers using outcomes measures become “learning organizations” (ODMH, 2007). The data collected are used in a reciprocal feedback loop to create, gather, and use the knowledge to inform practice and continuous development. The outcomes measured are those affected by an intervention or a service such as quality of life, empowerment and symptom distress (ODMH, 2007).

However, recovery defined as an outcome can be disempowering for service users, as recovery is perceived as “other” defined targets (Torrey, Rapp, Van Tosh, McNabb, & Ralph, 2005). Rather, outcomes and goals are defined by the service user’s own choice. Although symptom management is one aspect of many service user outcomes, recovery from severe mental illness is more than symptom management (Ralph, Lambert, & Kidder, 2002). Rather, outcomes are viewed as consistent with what all adults want--safe comfortable housing, education, good health care, adequate money, and meaningful relationships and activities (Torrey et al., 2005). Thus, the aim of service providers and users is an increase and improvement in these life domains (ODMH, 2007).
In point of fact, the concept of empowerment as an outcome is vital in recovery-oriented services, due to increasing life satisfaction and reduced symptom distress (Rogers & Chamberlin, 1997). Rogers, Chamberlin, Ellision and Crean (1997) defined five components of mental health empowerment from a service user perspective: self-esteem/self-efficacy, power and helplessness, community activism and autonomy, optimism and hope, and righteous anger. Chamberlin (1997) points out recovery-oriented services need to assess their services for changes in empowerment levels. Assessment of empowerment leads to more effective service provision and a consequent increase in quality of life (Corrigan, 2004a). Subsequently, program elements interfering with service user levels of empowerment can be removed.

Like empowerment, quality of life (QOL, “the sense of well being and satisfaction experienced by people under their current condition;” Lehman, 1983, p.143) measurement is recognized in mental health assessment as complex, yet useful, for identifying improvements in domains such as health, family and social relations, functional status, and living situation (Lehman, 1983). Indeed, QOL assessment allows service providers to identify and determine the needs of service users. This information can be used in planning and prioritizing resources (Lehman, 1995).

It is suggested that low levels of subjective personal power and control are significantly related to lower overall quality of life and well being, leading to a loss of personal empowerment. The result is hopelessness and learned helplessness. Subsequently, QOL suffers, as the person perceives attempts of situational transformation as futile (Rosenfield, 1992). Recent research using structural equation modeling supports the relationship between self-stigma, self-efficacy and empowerment (Vauth, Klien, Wirth, & Corrigan, in press). Vauth et al. (in press) demonstrated that lack of choice, stigmatizing culture and internalized stigma, leading to eroded empowerment, accounted for a 58 percent of quality of life reduction and an increase in depressive symptoms of 46 percent. Moreover, 51 percent of empowerment reduction was explained by a reduction in self-efficacy.

Service user empowerment increases self-esteem, allowing the individual to overcome negative impacts of stigma (Corrigan, 2006). Indeed, Corrigan (2004b, p. 616) argues that stigma (“what a naïve public does to the stigmatized group when they endorse the prejudice about that group”) and self-stigma (“what members of a stigmatized group may do to themselves if they internalize the public stigma”) is a major disempowering threat to individuals with mental health difficulties. Indeed, research suggests empowerment is eroded by stigmatizing cultures and self-stigma, and subsequently, symptom distress increases (Corrigan, 2006). Thus, misperceptions and stigma are fundamental barriers to recovery (Corrigan, 2004a).

Decreased QOL, related to stigma, is associated with avoidance of social interaction in fear of rejection and discrimination. Stigma directly affects self-esteem, becoming incorporated into the very being of a person, leading to self-doubt in vocational and relationship areas, as well as passivity (Corrigan, 2004a). In fact, research has indicated services users can overcome self-stigma by gaining empowerment in as many of their life domains as possible, such as work, relationships, and self-management (Corrigan, 2002). This can suppress the effects of stigma that can worsen symptom distress. Resnick, Rosenbeck, and Lehman (2004) also found strong negative relationships between recovery factors such as hope, optimism, empowerment and symptom distress. Likewise, Kahng and Mowbray (2005) found higher symptom distress is related to lower levels of self-esteem, a concept closely related to empowerment. Nonetheless, a bidirectional relationship can exist between empowerment, QOL, and severity of symptoms. Kahng and Mowbray (2005) suggest more psychiatric symptoms may lead to an increased chance of experiencing discrimination, thus lowering chances of self-enhancement opportunities.
In contrast to viewpoints that play down the role of psychiatric symptoms in the recovery process, such as those of Jacobson and Greenley (2001), the aforementioned reciprocal effects and negative relationships indicate symptom reduction as an important component in recovery-oriented service provision. Similarly, Svirskis et al. (2007) conclude psychiatric symptoms should be taken into account when assessing and planning interventions, as negative symptoms are associated with impaired functioning, and consequently, reduced QOL. Nevertheless, Bullock, Ensing, Alloy, and Weddle (2000) have found “changes in feelings of self-efficacy/self-esteem and empowerment more likely to be stable indicators of recovery than the waxing and waning of psychiatric symptoms” (p. 10).

**Purpose of the Study**

Consequently, this exploratory research is an attempt to address current gaps in Irish mental health research, such as involving service users and assessing meaningful recovery-relevant concepts such as quality of life, empowerment and symptom distress. This research also builds on the aforementioned research demonstrating QOL, empowerment and symptom distress outcomes as important components and indicators of service delivery, and of how the person with mental ill health is improving (Greenley, Greenberg, & Brown, 1997). In pursuit of this aim, the interrelationships between recovery-oriented outcomes (Empowerment, QOL, & Symptom Distress), are examined utilizing a cross-sectional, correlational design. Furthermore, baseline outcomes data will be provided on service users in a community care setting. This will be achieved using specific measures developed by ODMH, the Ohio Mental Health Consumer Outcomes System (OMHCOS)--Adult Consumer Form.

Furthermore, in an attempt to address the lack of recovery-oriented outcomes measures used in Irish mental health services, the OMHCOS is assessed for relevance and feasibility to an Irish community care setting. Most importantly, the measure evaluation is from a service user perspective (as measured by an adapted version of OMHCOS initial pilot questions). Thus, the voices of service users will directly inform service provision and will add to the continued development and improvement of community-based services in Ireland. Thus, the current research hypotheses are as follows: Participant’s perceived level of empowerment will be positively related to perceived level of quality of life. Secondly, participant’s perceived levels of empowerment and quality of life will be negatively related to participant’s perceived level of symptom distress. The following research question is also proposed: Is the ODMH Consumer Outcomes Form feasible as an outcomes measure in an Irish mental health care setting?

**Method**

**Measures.** The *Ohio Mental Health Consumer Outcomes--Adult Consumer Form* was developed by the Ohio Department of Mental Health (ODMH) as a multidimensional self-report measure for use with service users “experiencing severe/persistent/chronic mental illness, as well as for consumers experiencing less severe, subacute or emergent emotional or behavioral dysfunctions (defined as General Mental Health)” (ODMH, 2007, pp. 3-2). ODMH provides extensive detail regarding instrument development, history and psychometrics (reliability and validity data) in the recently updated Procedural Manual (7th ed., 2007). ODMH continually re-examines and updates information in regards the internal consistency of the measure. Furthermore, updated norms (means & standard deviations) are available for all scales.

Three scales assessed by the Adult Consumer Form are used in this research, and are as follows: (a) the *Making Decisions* (Empowerment, Rogers et al., 1997), which is imbedded as part of the Adult Consumer Form. This self-report scale measures participants’ perceived level of Empowerment, (higher
mean scores indicate greater level of empowerment). Additionally, there are five subscales: Self-Esteem/Self-Efficacy, Power/Powerlessness, Community Activism and Autonomy, Optimism and Control over the Future, and Righteous Anger. (b) Quality of Life: Overall assesses perceived satisfaction with a person’s life and whether their needs are being met. There is also a three-item financial subscale. (c) Symptom Distress, the questions asked in this self-report instrument scale are intended to measure the level of distress caused by the severity of psychiatric symptoms (higher scores indicate greater distress). The six-item survey evaluation questionnaire used in this research was adapted from ODMH pilot evaluation questions. The questions incorporate two structured and four open-ended questions. An example of the structured questions is “Were the questions easy to understand?” An example of the unstructured is “How did you feel when you were completing this survey? What are your reactions to the survey?”

Participants. EVE Ltd. is a subsidiary of the Irish Health Services Executive, based in the Eastern Region, catering for approximately 1000 people, in a number of centres in Dublin, Wicklow, and Kildare. The majority of the people served by EVE Ltd. have mental health difficulties, though services are also provided for people with intellectual disabilities, Asperger’s Syndrome, and sensory disabilities (EVE Ltd., 2005). Service provision within EVE Ltd. is grounded in a ‘recovery’ framework. Furthermore, programs in EVE Ltd. (Vocational/Rehabilitative Training Centres, Clubhouse, and Occupational Services) focus on participant empowerment to deal with the challenges and consequences of disabilities such as social exclusion, discrimination, demoralization, and unemployment. Accordingly, the selection criteria for participation are open, with the expectation that a heterogeneous sample of demographic and psychiatric variables will be represented in the sample of 51 service users. Thus, a purposive sample from EVE Ltd. (N = 51) participated in this research. One person declined to participate. A description of the participants follows.

Participants consisted of more males (n = 34, 66.7%) than females (n = 17, 33.3%). The age of participants ranged from 22 years to 73 years (M = 44.46, SD = 12.45). Most participants lived in a parental home (n = 16, 31.4%); nine lived in his or her own home (17.6%), and four lived in rented accommodations (7.8%). Others lived in hostels (n = 13, 25.5%), group homes (n = 2, 3.9%), and two (3.9%) lived in supported housing. Five were marked “other”. Eight (15.7%) of the participants lived alone. Furthermore, most service users were never married (n = 42, 82.4%). A smaller number (n = 6, 11.1%) were married, two (3.9%) were separated, and one was living with a partner (2.0%). Four participants received no formal education (7.8%); six participants attained primary education (11.8%). Others received upper secondary, (n = 10, 19.6%). Most participants received lower secondary education (n = 15, 29.4%). Three received a third level diploma (5.9%) and two (3.9%) received a third level degree. Six participants were unspecified or “other”. A small number were involved in mental health services 10 years upwards (n = 6, 11.8%). Seven (13.7%) were involved for five to 10 years. Further service users were involved three years to five years (n = 10, 19.6%). Fourteen (27.6%) of VRT service users were involved in EVE Ltd. services for two years or less, and nine (17.6%) were involved zero to six months. All participants were White Irish.

Procedure. Ethical approval was provided by both the Dublin Business School of Arts and EVE Ltd. Furthermore, prior to commencement, permission was sought for use and adaptation of the ODMH Adult Consumer Form and initial pilot evaluation questions. The latter surveys were adapted for relevance to an Irish context. However, no scale items were modified. Survey evaluation questions were taken directly from ODMH initial pilot evaluation questions and included with the overall survey. Once the study was approved by EVE Ltd., the Principal Psychologist discussed the research with EVE Ltd. center managers about seeking sites. The self-report survey was administered by EVE Ltd. Assistant Psychologists at six EVE Ltd. centers that agreed to participate in the research. Both psychologists were
provided with the adapted ODMH administration guidelines (ODMH, 2007). The psychologists provided briefing instructions about the nature and purpose of the study, as well as instructions for completing the survey to participants. Participants completed the surveys in groups at the centers. Assistance was provided as necessary. All participants provided full, informed and written consent for research participation.

Results

Prior to analysis, the QOL, Symptom Distress and Empowerment variables were examined for accuracy of data entry and fit between their distributions and the assumptions of parametric data analysis. An SPSS MVA (Missing Values Analysis, SPSS, Inc.) was conducted to assess randomness of missing values. A case with two missing values was deleted from the QOL. Symptom Distress had two missing values; however, in accordance with ODMH guidelines mean score insertion was performed. The Empowerment variable had a number of non-random missing values. This non-random pattern can clearly be seen in Table 1. Four cases were deleted from the analysis involving the Empowerment variable. All variables were converted into Z-scores for the analysis. The qualitative service user evaluation data were analyzed descriptively.

The number of participants as well as descriptive statistics on the variables Empowerment, Quality of Life, and Symptom Distress are presented in Table 2. The data were analyzed using Pearson Product-Moment Correlation Coefficients and an alpha level of .05.

There is a significant positive correlation between the Empowerment Z-scores and the QOL Z-scores ($r = .30, n = 46, p = .02, 1$-tailed, CI$_{95} = .01, .54$). They have a shared variance of nine percent (Cohen, 1988). Furthermore, there was a significant negative relationship between Empowerment Z-scores and Symptom Distress (SDS) Z-scores ($r = -.58, n = 47, p < .001, 1$-tailed, CI$_{95} = -.74, -.35$). It is a strong correlation: 34 percent of the variation is shared (Cohen, 1988). There was also a significant negative relationship between QOL Z-scores and SDS Z-scores ($r = -.33, N = 50, p < .01, 1$-tailed, CI$_{95} = -.56, -.06$). It is a moderate correlation: 10 percent of the variation is shared (Cohen, 1988).

Service user evaluation of the ODMH Adult Consumer Outcomes Form. Most of the participants (53.19 %) found the questions “always” or “usually easy to understand;” only 17.02 percent found them “never” or “sometimes easy to understand”. However, 29.79 percent indicated “some were/some were not easy to understand”. The second evaluation question asked service users to “please write the numbers of the questions that were hard to understand”. Many service users ($n = 19$) responded with a comment or by writing the numbers of questions. Service users suggested 12 of the Empowerment scale questions were hard to understand (see Table 3), nine of the QOL scale, one of the SDS scale, and three questions pertaining to concerns about medications and symptom recognition.

The third evaluation question asked if participants were comfortable while answering the questions. Sixty-two percent of service users were “somewhat or very comfortable”. Nonetheless, 18.75 percent of service users were “somewhat or very uncomfortable”, and 18.75 percent were “neutral” in how comfortable they were while answering the questions. The fourth evaluation question asked if participants were offended by any of the questions. Nine participants wrote a response. Five stated that no questions were offensive. However, four participants indicated negative comments (“Yes, ones about money”, “a little complicated”, “Hurt by them”, “No [not offended but] sometimes didn’t understand”).

The fifth question asked how participants felt when answering the questions and what their reactions were. Forty participants wrote comments; 32 were positive and seven were negative. Examples
of positive comments are “Comfortable. I feel by completing the survey it will be to my benefit, and also help others”; “Glad to be asked”; “Made me introspective, interesting, thoughtful, hope it will help others”; “Very, very, good”; “Have gained something”. Examples of negative comments are “Am I a capable person?”; “Uncomfortable, some questions very difficult”; “worrying”.

The final evaluation question asked participants if there were any other comments. Twenty participants wrote comments, one was negative. Examples of the positive remainder are “Excellent survey, hope it is useful”; “All questions were very good, and to the point in regards myself, Q. 14 [Concern about medications addressed] excellent…” Moreover, many participants’ comments indicate hope that the survey will improve services (e.g., “The survey will supply information that may help EVE and centre staff understands the needs of the person”; “Excellent survey, hope it is useful”; “Good for Psychology and services in general”).

Table 1. SPSS Missing Value Pattern for Empowerment Scale: Questions, Case Number, Amount and Percentage Missing

<table>
<thead>
<tr>
<th>CASE</th>
<th>Missing</th>
<th>% Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>3.6%</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
<td>3.6%</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>3.6%</td>
</tr>
<tr>
<td>18</td>
<td>1</td>
<td>3.6%</td>
</tr>
<tr>
<td>41</td>
<td>1</td>
<td>3.6%</td>
</tr>
<tr>
<td>44</td>
<td>1</td>
<td>3.6%</td>
</tr>
<tr>
<td>46</td>
<td>1</td>
<td>3.6%</td>
</tr>
<tr>
<td>51</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>50</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>28</td>
<td>5</td>
<td>17.9%</td>
</tr>
<tr>
<td>15</td>
<td>6</td>
<td>21.4%</td>
</tr>
<tr>
<td>16</td>
<td>7</td>
<td>25%</td>
</tr>
<tr>
<td>45</td>
<td>27</td>
<td>96.4%</td>
</tr>
<tr>
<td>5</td>
<td>27</td>
<td>96.4%</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>39.4%</td>
</tr>
</tbody>
</table>

Empowerment Scale Questions

Q 49 X
Q 55 X
Q 44 X
Q 45 X
Q 51 X
Q 53 X
Q 57 X
Q 59 X
Q 61 X
Q 36 X
Q 60 X
Q 48 X
Q 38 X
Q 39 X
Q 42 X
Q 40 X
Q 37 X
Q 52 X
Q 56 X
Q 58 X
Q 41 X
Q 35 X
Q 43 X
Q 50 X
Q 34 X
Q 54 X
Q 46 X
Q 47 X

Note. Missing values marked as X
Table 2. Means and Standard Deviations for EVE Ltd. Participants (N = 51)

<table>
<thead>
<tr>
<th>ODMH Scale</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empowerment: Overall</td>
<td>47</td>
<td>2.82</td>
<td>.33</td>
</tr>
<tr>
<td>Quality of Life: Overall</td>
<td>50</td>
<td>3.45</td>
<td>.73</td>
</tr>
<tr>
<td>Symptom Distress</td>
<td>51</td>
<td>32.99</td>
<td>13.23</td>
</tr>
</tbody>
</table>

Table 3. Evaluation Question 2, “Please Write the Numbers of Questions Hard to Understand”

<table>
<thead>
<tr>
<th>Questions</th>
<th>Number of Participants Finding Question “hard to understand”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 1</td>
<td>A A</td>
</tr>
<tr>
<td>Q 2</td>
<td>A A</td>
</tr>
<tr>
<td>Q 3</td>
<td>A</td>
</tr>
<tr>
<td>Q 4</td>
<td>A A</td>
</tr>
<tr>
<td>Q 5</td>
<td>A A</td>
</tr>
<tr>
<td>Q 6</td>
<td>A</td>
</tr>
<tr>
<td>Q 7</td>
<td>A</td>
</tr>
<tr>
<td>Q 10</td>
<td>A</td>
</tr>
<tr>
<td>Q 14</td>
<td>A</td>
</tr>
<tr>
<td>Q 25</td>
<td>A</td>
</tr>
<tr>
<td>Q 32</td>
<td>A</td>
</tr>
<tr>
<td>Q 33</td>
<td>A</td>
</tr>
<tr>
<td>Q 36</td>
<td>A X X</td>
</tr>
<tr>
<td>Q 40</td>
<td>A X X</td>
</tr>
<tr>
<td>Q 41</td>
<td>A A X X X</td>
</tr>
<tr>
<td>Q 46</td>
<td>A X X</td>
</tr>
<tr>
<td>Q 47</td>
<td>A X X</td>
</tr>
<tr>
<td>Q 50</td>
<td>A A X X X</td>
</tr>
<tr>
<td>Q 52</td>
<td>A X X</td>
</tr>
<tr>
<td>Q 54</td>
<td>A X X</td>
</tr>
<tr>
<td>Q 56</td>
<td>A X X X</td>
</tr>
</tbody>
</table>

Note. Participant written answers marked A; SPSS missing values marked X.

Table 3 shows a combination of questions participants (marked A) suggested as “hard to understand”. To elucidate problems inherent in the Empowerment scale, the missing values on this scale are included (marked X). Thus, in combination with participants and the MVA, question numbers 41, (n = 7), 50 (n = 6), 47 (n = 4), & 56 (n = 4) are identified as the most problematic. Additionally, the MVA indicates question numbers 43 (n = 6) and 35 (n = 4), as also problematic. Therefore, primarily questions 35, 41, 43, 47, and 56 are in need of focus and attention prior to further use in Irish services.

Discussion

This preliminary exploratory research attempted to address gaps in Irish mental health research, such as involving service users and examining interrelationships between recovery relevant outcomes (Quality of Life [QOL], Empowerment, and Symptom Distress [SDS]). In an attempt to address the lack of recovery-oriented outcomes measures used in Irish mental health services, the Ohio Mental Health Consumer Outcomes System-Adult Consumer Form was evaluated from a service user perspective (as measured by an adapted version of OMHCOS initial pilot questions).

The first and second hypotheses were explored through correlational analyses. The first hypothesis suggested the directional prediction: Participant’s perceived level of empowerment will be positively related to perceived level of quality of life. Indeed, the results indicate perceived empowerment is positively associated with perceived QOL. The results are consistent with previous findings suggesting significant relationships between empowerment and quality of life (Rogers & Chamberlin, 1997; Rosenfield, 1992). Likewise, this finding is congruent with Corrigan’s (2002, 2004a, 2004b, & 2006) consistent arguments that by empowering service users and increasing autonomy, hope for the future increases. Consequently, subjective QOL increases. However, the shared variance in this research is small between Empowerment and QOL (9%), indicating that both also operate independently. This is in contrast to the large shared variance (eroded empowerment accounted for 58 percent of QOL reduction) found by Vauth et al. (in press).

A second directional hypothesis suggested participant’s perceived level of empowerment and quality of life will be negatively related to participant’s perceived level of symptom distress. This secondary hypothesis is supported by the correlational analysis. Indeed, the results indicate Empowerment has a strong negative association with SDS, and QOL has a moderate negative association with SDS. The shared variance in the former is strong at 34 percent. However, the latter is weaker at 10 percent, indicting both operate independently. The results are consistent with previous research suggesting increased empowerment decreases SDS (Corrigan, 2002). The negative relationship between QOL and SDS is also congruent with previous research (Resnick et al., 2004; Yanos, Primavera, & Knight, 2001).

This research supports the argument that by gaining empowerment in as many areas of their life as possible, service users can reduce self-stigma, and symptom distress reduction follows (Corrigan, 2002, 2004a, & 2006). Taken together, this contributes to the existing research on empowerment, QOL and SDS. The results support the view that an empowerment approach provides service users with increased self-esteem/self-efficacy, a sense of control, and hope and optimism for the future (Rosenfield, 1992). Furthermore, increasing empowerment can act as a buffer against stigma and self-stigma (Corrigan, 2004a). Quality of life also increases as service users have greater opportunities for self-enhancement (Rosenfield, 1992). Nonetheless, mental health recovery factors may not exist in simple bivariant relationships. Therefore, there is a danger in taking a homogeneous approach to a very heterogeneous problem such as recovery-oriented outcomes. Service users, who are experiencing the “waxing and waning of psychiatric symptoms” (Bullock et al., 2000, p.10), may feel under pressure to reach the ideals of recovery.

A number of limitations exist in this research. Primarily, this exploratory research is cross-sectional, thus causal inferences can not be made. Furthermore, the non-random pattern of empowerment missing values (see Table 1) affects the generalizability of any conjectures, and may not be representative of all participants. Additionally, a multitude of mediating relationships can exist between empowerment, QOL, and symptom distress. In fact, research suggests symptom distress may be in a reciprocal
relationship with self-esteem (Kahng & Mowbray, 2005) and QOL (Markowitz, 1998). Similarly, Svirskis et al. (2007) and Yanos et al. (2001) argue symptom severity is an important mediating factor in the recovery process. Indeed, Kahng and Mowbray suggest symptom severity may result in increased chance of experiencing discrimination, thus self-enhancement opportunities reduce. However, symptom severity was not considered in this analysis. Moreover, self-stigma can be a mediating variable between empowerment, QOL, and SDS (Corrigan, 2006), and was not assessed in this research. Self-efficacy is another possible mediator in this process (Vauth et al., in press). Yet, due to missing data, the empowerment subscales (e.g. self-esteem/self-efficacy) were not assessed in this analysis. Further analysis should take important factors such as self-efficacy, self-stigma, and symptom severity into consideration.

A further limitation is the small sample size \( (N = 51) \), thus regression analysis was not possible. Statistical power was also reduced by missing data. As a result, relationships between demographics and other characteristics were not assessed in this analysis. Future regression analysis can elucidate important demographic predictors and covariates. In complex designs, the required sample size is large. Large sample sizes, however, can be problematic in psychiatric populations. Therefore, in future research, steps must be taken to ensure participants are comfortable with all aspects of the measures (to prevent missing data), as well as providing a forum that provides ownership and control to the participants (service user evaluation).

Service user measure evaluation. Most participants completed the evaluation part of the survey. Indeed, forty participants wrote comments (refer to results); most are positive, a small number are negative. The service user evaluation elucidates problems in applying the measure to an Irish health care setting. Service users suggested 12 of the Empowerment scale questions were hard to understand, nine of the QOL scale, one of the SDS scale, and three questions pertaining to health. The misunderstanding of the Empowerment scale is also reflected in the missing value analysis (MVA) for the Empowerment scale (see Table 1). Consequently, “the pattern of missing data is more important than the amount missing” and has serious implications for the interpretation of the results (Tabachnick & Fidell, 2001, p. 58).

There are a number of interpretations that can be provided. Primarily, there appear to be difficulties with wording and language. This is evidenced by both the service user evaluation and the MVA. Just over half of participants found the measure easy to understand, leaving 47 percent with some degree of difficulty in comprehension. Thus, a serious implication is the validity of the measure for use in an Irish care setting at this time. Indeed, the validity of the Empowerment scale in this research is questionable, as service users evaluated many of the questions as difficult to understand, and the Empowerment scale had 62 missing values across the 51 participants.

Recovery-oriented constructs, such as Empowerment and QOL, are difficult to measure. This service user evaluation directly informs recovery-oriented measurement in Ireland by indicating possible problems inherent in the measure. Indeed, EVE Ltd. are designing a recovery-oriented measure through participative research and this finding can directly inform development. The results of the evaluation and MVA indicate particular focus is needed on the construct of Empowerment, and slightly less on QOL, in relation to Irish mental health services. Therefore, in light of this evaluation, the ODMH measure requires further research and adaptation before use in Irish health services. Certainly, future research will benefit from incorporating a qualitative aspect such as focus groups to ensure member validation of core constructs and prevent loss of statistical power.
However, there is an alternative/additional explanation. Recovery is a relatively new concept in Irish mental health services. Although services are undergoing transformation, some service users may find this threatening or intimidating. Concepts inherent in empowerment can be threatening to some service users, whom for decades have learned to conform and comply. Choice, autonomy, challenging authority, and even independence can be intimidating in a mental health system that has consistently let people down. Moreover, service users experiencing “waxing and waning of symptoms” (Bullock et al., 2000, p.10), may worry that if they become unwell, they will not have the same level of support. Therefore, a misunderstanding of recovery principles by both providers and service users can result in threatening, disempowering, and “other defined goals” (Torrey et al., 2005).

If this interpretation is correct, a solution is to provide information and training on recovery and empowerment concepts to service users. Indeed, the ODMH Recovery Process and Emerging Best Practices Model (n.d.) is designed to be used as an educational tool for providers, caregivers and service users. The latter may alleviate the perceived threat of total independence, as the last stage in the model is interdependency (dependent/unaware; dependent/ aware; independent/ aware; interdependent/ aware) (see references for website). In this transitional time of the mental health services, approachable, educational, user friendly models promoting and guiding best practices are vital for all stakeholders. Moreover, empowerment is the cornerstone of recovery. Thus, in this time of mental health transformation, empowerment is a core foundational principle and must be fully understood.

To conclude, this research contributes to previous research on mental health recovery that argues for a participative, empowering approach to service delivery. Furthermore, service users’ voices are the cornerstone of these data. Moreover, this exploratory research focused on meaningful recovery-oriented outcomes. The evaluation of the measure directly contributes to recovery measurement development in Ireland by highlighting problems inherent in outcomes measurement. Additionally, this research addresses the lack of baseline data on community services that is necessary to inform mental health policy and for conducting prospective research (DHC, 2006).

Research is a necessary and vital part of mental health system transformation. The evaluation findings demonstrate the importance of service user involvement in research to ensure rigor, validity and reliability of measures. Indeed, the participants have contributed important information to future research and development though the evaluation of the measure. Certainly, EVE Ltd. appears to have incorporated the recovery philosophy fully into service provision. Recovery principles, research and evaluation are guiding principles of service delivery ensuring continuous improvement and development. Indeed, EVE Ltd. foundational principles are based on recognizing that by empowering, and building self-esteem, participants’ quality of life will improve. This is in keeping with the ODMH Recovery Process and Best Practices Model (n.d.) and is highly beneficial to service users. Therefore, recovery principles are genuinely taken as core values rather than just “a new wine in an old bottle” (Davidson, O’Connell, Tondora, Lawless, & Evans, 2005).

REFERENCES


**Other Publications of the Research**


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E-mail: www.eveadmin@eve.ie
The New Freedom Commission on Mental Health (2003) identified the need for improving access to quality care and services by fundamentally transforming the public mental health system. One of the foundational principles for transformation was that “services and treatments must be consumer and family centered, geared to give consumers real and meaningful choices about treatment options and providers” (p. 5). The Commission further stated that consumers’ needs should drive the care and services they receive. The Commission identified several barriers to a consumer-driven system; some of these included fragmented services, financing rules and regulations, and bureaucratic boundaries. Furthermore, the Commission stated that “individualized plans of care help overcome the problems that result from fragmented or uncoordinated services and systems” (p. 28).

In keeping with this perspective, the Commission recommended that individualized plans of care be developed for each adult with a serious mental illness and each child with a serious emotional disturbance (New Freedom Commission on Mental Health, 2003). The Commission asserted that individualized plans of care could facilitate meaningful partnerships with care providers that would improve service coordination, promote informed choices directed at improving individual outcomes, and aid in achieving recovery. The Substance Abuse and Mental Health Services Administration (SAMHSA) (2005), in its report of the 2004 Consumer Direction Initiative Summit, emphasized the need for a fundamental shift in power to a focus on consumer directed care. Historically, mental health systems have been dominated by the needs and concerns of providers and individual service plans have been used to meet requirements and justify funding. Individual service (treatment) planning has not been a meaningful or person-centered process (Adams & Grieder, 2005; Linhorst, 2006; SAMHSA, 2005).

Linhorst (2006) specified several fundamental conditions for individuals with severe mental illness to participate meaningfully in treatment planning. First, the individual must be psychologically ready and have the motivation to participate. In addition, the relationship between the consumer and case manager must be one of mutual trust and respect that allows for honest discussion of the consumer’s recovery goals. Also, consumers need to be able to exercise choice by selecting among an array of available services, supports, and providers that work best for them.

SAMHSA (2005) recommended that mental health professionals be re-educated about the shift to a shared partnership, which is necessary in a person-centered and recovery-oriented system. Linhorst (2006) also emphasized the importance of providing training designed to encourage staff to interact with consumers in a more egalitarian manner. Additionally, in their study on service empowerment and recovery outcomes, Crane-Ross and colleagues (2006) suggested that consumers be provided opportunities to express their service needs and preferences. Furthermore, they advised providing tools to case managers that promote the relationship between the case manager and consumer, and consumer empowerment. They suggested that agencies provide structural tools and opportunities that “require more
interaction between consumers and staff in areas such as treatment planning and goal setting” (Crane-Ross, Lutz, & Roth, 2006, p. 154).

In an effort to further the goal of making mental health care consumer- and family-driven, the current project evaluates a two-pronged intervention, one for adult consumers, and one for case managers; this intervention aims to make treatment planning a more person-centered, collaborative, empowering and recovery-oriented process (see Figure 1 for the conceptual model). Consumers and case managers in Ohio’s mental health system regularly complete the Ohio Mental Health Consumer Outcomes Survey which includes information about consumers’ Quality of Life, Safety and Health, Symptom Distress, Overall Empowerment, and Functional Status (Ohio Department of Mental Health, 2005). However, responses to the Outcomes Surveys have not been integrated routinely into the treatment planning process. Consumers, case managers, and supervisors will attend training sessions on how to communicate with each other about Consumer Outcomes data. These trainings are designed to provide a foundation for a more person-centered treatment planning process, which should directly relate to consumers’ satisfaction with their treatment plan, as well as their perception of their service empowerment. Additionally, literature has suggested that the consumers’ and organizations’ readiness to change may influence satisfaction with services and implementation of new programs (Adams & Grieder, 2005; Bellis, 1993; Flinn, 2004; Greener, Joe, Simpson, Rowan-Szal, & Lehman, in press; Heesch, Velasquez, & von Sternberg, 2005; Hilburger & Lam, 1999; Lehman, Greener & Simpson, 2002; Linhorst, 2006; Simpson et al., in press).

Figure 1. Conceptual Model.
Climbing Into the Driver’s Seat

Climbing Into the Driver’s Seat (CDS) is the training program for consumers. CDS is a peer-led program, coordinated by Ohio Advocates for Mental Health, that was developed as a tool for consumers to use the Outcomes Survey in their recovery plan. The curriculum is taught over two days. The Road Map is split into three sections: 1) Understanding Outcomes, 2) Taking the Survey, and 3) Making the Outcomes Survey Work for You. Understanding Outcomes introduces consumers to recovery and how the domains of the Consumer Outcomes Survey are associated with choice, self-determination, and owning your recovery plan. The different types of stakeholders that developed the Outcomes System are reviewed, and the Outcomes Survey is introduced. In the second section individuals take the Outcomes Survey and are taught how the survey is scored. The third section outlines how the survey results can be used to make or refine goals and how they can be used in a recovery plan. Individuals look at their answers from the survey in each of the domains; then they are asked to brainstorm about how this information could help them with their recovery plan. The class closes with the following statement, “Knowing these things about ourselves puts us on the road to a better life; doing something about them puts us in the driver’s seat.”

Using Adult Consumer Outcomes to Support Service and Recovery Planning

The training program for case managers is “Using Adult Consumer Outcomes to Support Service and Recovery Planning.” The first section includes content on recovery and empowerment. The second section addresses the development, content, reliability and validity of each of the scales included in the Adult Consumer Outcomes Survey, and what reports are available to case managers (e.g., the Strengths Report and the Red Flags Report). The third section is about how to use the information from these reports to communicate with consumers about utilizing their Outcomes information in planning their recovery. The training includes experiential activities that help case managers and supervisors practice using Outcomes in person-centered planning via two consumer case studies. Training is provided by the Cluster-based Planning Coordinating Center of Excellence (CBP COE) in two, half-day sessions.

Sample and Procedures

The evaluation design is a wait-list-control design; four agencies are participating in the evaluation study. (Please contact the author if you are interested in agency eligibility criteria and selection method.) Baseline data collection occurred in each agency for all consumers and case managers. Consumers and case managers at two agencies were trained in winter 2007. The second data collection will occur in spring 2008. Training for consumers and case managers in the second two agencies will occur in summer 2008, and the final data collection is scheduled for winter 2008. Case managers \(N = 66\) completed surveys that were distributed directly to them by project staff. Consumers \(N = 265\) were interviewed in person by field interviewers. (Ten of 17 interviewers are consumers or family members of consumers; all others have experience working with consumers with mental illness.) Consumers and case managers are provided a $20 honorarium for each data collection. Consumers and case managers also receive a free t-shirt when they complete the training course. Additionally, agencies receive some compensation for supervisors’ training time and lost productivity time for case managers. Continuing education credits are provided to case managers and supervisors for their participation in training.
Measures

Demographics. Demographic variables (gender, age, race, education, marital status, living situation, employment status, and mental illness diagnosis) are obtained from the Ohio Mental Health Consumer Outcomes System (Ohio Department of Mental Health, 2005; Ohio Mental Health Outcomes Task Force, 2001).

Readiness to Change. Mental health consumers’ rate their readiness to change using the Readiness for Mental Health measure that includes items from the URICA-A (Heesch, Velasquez, & von Sternberg, 2004). The 12-item instrument includes four factors: pre-contemplation, contemplation, action, and maintenance. Respondents indicate their agreement on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree; reliabilities ranged from \( \alpha = .54 \) to \( \alpha = .84 \)).

Organizational Readiness to Change. The organizational readiness to change measure includes 66 items on motivational readiness (program and training needs, and pressures for change), institutional resources (staffing and training), staff attributes (efficacy and adaptability), organizational climate (mission, autonomy, and change), training utilization, and job satisfaction. Respondents indicate agreement and frequency on two five-point Likert scales (reliabilities ranged from \( \alpha = .57 \) to \( \alpha = .87 \); Lehman et al., 2002; Texas Christian University Institute of Behavioral Research, 2002).

Using Outcomes in Treatment Planning. Consumers rate 15 items developed by project staff, to assess use of Consumer Outcomes between case managers and consumers during treatment planning; a sample item is, “You and your case manager made goals on your treatment plan about your quality of life.” Consumers respond on a five-point frequency scale ranging from 0 (never), to 4 (always). Case managers also rate 14 items developed by project staff, about using Outcomes together in treatment planning. These items are similar to the items on the consumer interview. A sample item is, “How often do you discuss with consumers how they are doing on certain subscales on the Outcomes Survey?” Case managers respond on a five-point frequency scale, ranging from 1 (never), to 5 (always).

Satisfaction with Treatment Planning. Consumers’ experiences of treatment planning are assessed by 21 items developed by the project staff, based on feedback from consumer focus groups. A sample item is, “Your case manager knows your recovery goals.” Case managers’ approaches to treatment planning are assessed by 13 items developed by the project staff; these items are similar in content to items rated by consumers. Additionally, 14 items about the service relationship were adapted from a previous study (Crane-Ross et al., 2006). Responses on these items range from qualitative to five-point scales.

Service Empowerment. Consumers rate their service empowerment using 35 items about 1) consumers’ general contact with agencies and how much say consumers have in the services they receive (11 items); 2) service decisions, consumers’ perceptions of their involvement in and control over decisions about treatment options, such as services and medications (5 items, \( \alpha = .79 \)); and 3) service relationships, the amount of acceptance, support, respect and reciprocity in their relationships with their case managers (19 items, \( \alpha = .93 \); Crane-Ross et al., 2006). Responses range from qualitative to dichotomous to five-point scales.

Indicators of Consumer Recovery. Outcomes Surveys are routinely collected by community mental health providers at initial intake, six months, annually thereafter, and at discharge (Ohio Department of Mental Health, 2005; Ohio Mental Health Outcomes Task Force, 2001). The Consumer
Survey includes questions about quality of life (12 items, $\alpha = .86$), level of symptom distress (15 items, $\alpha = .93$), and feelings of empowerment (28 items, $\alpha = .86$) (Ohio Department of Mental Health, 2006). The Provider Survey includes items on functioning within the community (23 items, $\alpha = .72$) (Ohio Department of Mental Health, 2005). Initial Outcomes measures within six months to one year of the start of the study were be considered as pretest scores.

Agencies’ Recovery Orientation. Recovery orientation is rated by both consumers and case managers using the Recovery Self Assessment (O’Connell, Tondora, Croog, Evans, & Davidson, 2005). The scale measures five recovery domains: 1) life goals includes items about how agency staff facilitate the consumers’ pursuit of individual goals; 2) involvement includes items about how well the agency involves consumers in operations and program decisions; 3) diversity of treatment options includes items about the agency’s incorporation of peer services and a variety of treatment options; 4) choice includes items about access to treatment records, coercion, and the consumer’s ability to choose care providers; and 5) individually-tailored services includes items about how well the agency serves consumers’ individual needs, their culture, and building community connections. Responses are rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Reliability ranges from $\alpha = .76$ to $\alpha = .90$.

REFERENCES


The state of Ohio is currently in the third year of a five-year Mental Health Transformation State Incentive Grant (MHT-SIG) to transform the infrastructure of Ohio’s system of services to persons living with mental illness (SAMHSA, 2005). The grant, based on the President’s New Freedom Commission Goals (Hogan, 2003), was awarded by the Substance Abuse and Mental Health Services Administration (SAMHSA) to the Governor’s office; it is being administered by the Ohio Department of Mental Health and evaluated by the Office of Program Evaluation and Research. With the funds from the grant, Ohio is working to develop several approaches to improve the state’s public mental health system; integrate currently fragmented programs across multiple service sectors; emphasize person-centered planning, peer support and cultural competence; and develop the infrastructure to ensure effective, sustainable collaboration and communication among all stakeholders in the mental health system.

Study Purpose

The purpose of this evaluation is to examine the overall effectiveness of the state’s efforts to transform Ohio’s system of services to persons with mental illness. The evaluation assesses both the process and outcomes related to the MHT-SIG project goals and objectives, exploring factors that facilitate and/or deter cross-system infrastructure change within and across communities throughout Ohio. The evaluation results are also formative, providing project leadership with information to assist in project improvements. This report represents the first round of these efforts, covering the time period from the beginning of the grant to December, 2006.

Methods and Participants

One hundred and seventy stakeholders were recruited to participate in in-depth interviews and surveys. Participants were recruited through the various Content Working Groups, advisory councils, and other state and local agencies involved in pursuing cross-system improvements in Ohio’s public mental health system through Ohio’s Transformation State Incentive Grant. Of those recruited, a total of 90 (53%) agreed to participate in the evaluation of Ohio’s TSIG initiative. Importantly, this report represents the first round of these efforts, covering only the Time 1 results.

Respondents included administrators from state-level Departments, consumer stakeholders, and community-based treatment providers, administrators, and support staff. The two most common roles of participants were mental health service administrators and advocates, and the most common level of education was a Master’s degree (60%). In terms of organizations represented in the study, 23 participants represented persons working in state or local mental health systems, 27 were working for other state agencies (e.g., Ohio Department of Rehabilitation and Corrections) and their local systems, and 20 respondents were from other agencies that were made up of trade or advocacy organizations or entities that work within the mental health arena but are not part of the state system. Most participants had been
employed at their organization an average of nine years. Participants were asked to take part in an hour-long, semi-structured interview and fill out a companion survey.

The use of mixed-method evaluation techniques allows us to examine questions not fully explored by any one method. In the case of this evaluation study, in addition to determining what changes have occurred due to grant activities, this study seeks to understand how and why changes are taking place at the state and local levels; i.e., what are the processes facilitating successful systemic change? These questions are best answered through the identified qualitative interviews and quantitative survey methodology (Kidder & Fine, 1987; Tashakkori & Teddlie, 2002).

**Semi-structured interview protocol.** For the Time 1 administration, questions in the interview focused on assessing the level of institutional change in several key areas, namely training, organizational changes, the involvement of consumers, new programs and services, funding mechanisms, and information systems. Interviews were digitally recorded, transcribed, and coded for themes relevant to workgroup activities and transformation processes. For the purposes of this report, Time 1 interview content related to the challenges and barriers to transformation will be detailed.

**Measures.** Measures used to assess mediating/moderating factors related to workgroup and organizational processes were the Intrinsic Motivation Inventory (McAuley, Duncan, & Tammen, 1989), the Interaction Collaboration Scale (Taylor-Powell, Rossing, & Geran 1998), the Communication Activity Scale (Morrissey, Hall, & Lindsey 1982), the Agency Connections Questionnaire (Gadja, 2004), and the Internal Collaborative Functioning Scale (Taylor-Powell et al., 1998).

**Summary of Findings**

The findings from the first phase of the TSIG evaluation relate to work in conjunction with grant activities, workgroup productivity, agency communication networks, and the impact of governmental culture on cross-system collaboration and transformation.

**Content Working Group Activities:** Innovative programming is the foundation of Ohio’s Transformation efforts.

All of Ohio’s transformation efforts have at their core a commitment to providing the best services available and improving the quality of life of persons living with mental illness. To do this, TSIG funds are being used to enhance the infrastructure around existing evidence-based practices, or are promoting emerging best practices that have been developed in Ohio, to address the unique mental health needs of adults, children, elderly individuals, trauma victims, individuals who are incarcerated, homeless, and those with physical health problems. The TSIG grant has made the expansion of many of these programs possible by providing a venue for state, county, and local agencies to dialogue and collaborate on issues of critical importance to Ohio’s citizens who have mental illnesses.

**Motivation to Participate in Transformation:** Participants are more motivated to participate in TSIG activities when they feel they are making a contribution and have the choice to participate.

In both the Time 1 interviews and the surveys, respondents were quick to point out their eagerness to participate in the work of systems change. In the surveys, respondents reported above-average levels of motivation to participate in TSIG. The most-frequently-endorsed motivators included feeling that they made a contribution, not feeling nervous about participating, and having the freedom to choose to participate (i.e., voluntary involvement). In terms of agency motivation, respondents also reported above-average levels of agency motivation to participate in TSIG activities. The types of
motivation most frequently mentioned by agencies were 1) whether the activities of the workgroups would improve the efficiency of service provision, and 2) if the agency was eager to participate in the transformation project. Additionally, a theme in the interviews was the need to keep people involved over the long haul. Many participants indicated they felt “out of the loop”. As one respondent suggested, “It takes commitment and perseverance. That’s the key to keeping people involved. Otherwise, in projects like this, I think the process of making improvements can lose steam over time in terms of systems cooperating, communicating and collaborating.” Even now, three years into the TSIG project, leadership still needs to explore various ways of keeping people interested and invested in the project.

Predictors of Meeting Satisfaction. To better understand how to create more enjoyable Working Group meetings, we also examined predictors of meeting satisfaction. The greatest predictors of meeting satisfaction for all the Content Working Groups were the organization of the meetings, and the Working Group’s ability to solve problems and manage conflict between members. Figure 1 illustrates this trend--meeting satisfaction increases as problem solving capacity (dotted line) and meeting organization (solid line) also increase.

Figure 1. Predictors of meeting satisfaction.

Grant Productivity: Productivity is affected by the climate of the workgroups, the quality of the meetings, and project leadership.

Overall at Time 1, respondents felt that the climate of the TSIG workgroups was positive. The three most-frequently-mentioned workgroup descriptors were that the workgroups are actively seeking to
understand the needs of persons with mental illness (see Table 1); their work is important; and they are striving to achieve success. Productivity was highly correlated with workgroup climate, the quality of the workgroup and project leadership. These results suggest that efforts put toward improving how people perceive their workgroups and leadership can yield positive results in terms of increased productivity. In the interviews, many indicated that participation would increase if meetings were action-driven and not dominated by discussion, or process.

Table 1. Top Ten Endorsed Workgroup Descriptors

<table>
<thead>
<tr>
<th>Rank</th>
<th>Item Description</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>We seek to understand the needs of persons with mental illness</td>
<td>4.19</td>
</tr>
<tr>
<td>2</td>
<td>We feel our work is important</td>
<td>4.14</td>
</tr>
<tr>
<td>3</td>
<td>We strive to achieve success in our workgroup</td>
<td>3.97</td>
</tr>
<tr>
<td>4</td>
<td>Members communicate well with each other</td>
<td>3.76</td>
</tr>
<tr>
<td>5</td>
<td>We have a plan which guides our activities</td>
<td>3.71</td>
</tr>
<tr>
<td>6</td>
<td>We participate in the decisions of our workgroup</td>
<td>3.69</td>
</tr>
<tr>
<td>7</td>
<td>Our workgroup is productive</td>
<td>3.69</td>
</tr>
<tr>
<td>8</td>
<td>We take pride in our work</td>
<td>3.68</td>
</tr>
<tr>
<td>9</td>
<td>The workgroup has an adequate and representative cross-section of members (e.g., expertise, agency representation, demographic characteristics, and authority)</td>
<td>3.64</td>
</tr>
<tr>
<td>10</td>
<td>Members understand and agree on goals and objectives</td>
<td>3.57</td>
</tr>
</tbody>
</table>

**Agency Networking:** Agencies communicate with other organizations about mental health services based on existing relationships, not on what is needed for change.

As a measure of cross-system networking, respondents were asked to rate their frequency of communication with other agencies. The highest level of communication was with the Department of Mental Health. Eighty-three percent (83%) of the respondents indicated they communicated with the Department on mental health related matters. The next highest communication networks were found with the county mental health boards (65% of respondents), consumer advocacy organizations (56% of respondents), and the Ohio Department of Alcohol and Drug Addiction Services (ODADAS; 55% of respondents) (see Figure 2). These figures suggest that communication around transformation activities is occurring with agencies that either provide or advocate for services to persons with mental illness. Communication that occurs outside of the mental health system is topic-specific and based on strong individual relationships. For instance, the Justice Working Group communicates with the Ohio Supreme Court and the Ohio Department of Rehabilitation and Corrections. These relationships have been in existence for a number of years, long before the introduction of the TSIG Grant. There appear to be weak communication ties with some larger state agencies, which may be critical to systems change, e.g., the Ohio Department of Education. At Time 1 reporting, this department had only three people dedicated to TSIG projects, yet school-aged children represent a large percentage of the transformation projects (32% of all first-draft CMHP projects).
Organizational Culture: Agencies have strict rules and rigid organizational cultures, hindering effective cross-system collaboration.

A significant finding of the interviews was that silos exist between and within departments on issues related to mental health. For instance, three individuals from the same organization were interviewed about supported employment. One staff member knew about the legislation being introduced about supported employment; another knew about the programmatic side of supported employment, while yet another staff member knew only about the financing of supported employment. When probed, they knew very little about what the others were doing even within their own department. These “knowledge inefficiencies” were found repeatedly in the interviews. While standardized roles and routines are common in large bureaucracies, they may also hamper system change. As one respondent stated “the main thing is to get people on the same page...our system is siloed, and for any of this to work that’s going to be a major barrier to break down--the silos in our state systems, and actually, the county systems.”
Intra-agency Collaboration: People’s capacity to work together is the most formidable challenge to achieving cross-system transformation in Ohio.

When asked about challenges to transformation in Ohio, fifty-four percent (54%) of the responses suggested that people’s capacity to work together was the biggest challenge to achieving cross-system transformation in Ohio (see Table 2). Participants named several areas that could deter systems from working together, including not having key stakeholders participate who are in positions that can influence system change, restrictive rules and regulations that prevent cross-system collaboration, the need to maintain momentum over the long period of the grant, fragmented communication between different state and local agencies, the need for active support from the new governor and department directors, poor understanding of the TSIG grant itself, and finally, the inability of working groups to make decisions that would influence system change.

According to respondents, another issue affecting collaboration is Ohio’s home-rule bent. Many believed that this could stand in the way of statewide transformation, “I think you’re going to have a lot of battles at the local level, trying to get people to change their minds…and that’s why I am most skeptical about TSIG, because we’ve got this home-rule thing going on here, where you can’t tell locals what to do…we’ve encountered it time and time again--getting change implemented locally is the biggest challenge.” As demonstrated by these comments, participants continually mentioned the need in Ohio to think about transformation as statewide, and to focus on implementation efforts locally.

Table 2. Comments of the 87 Respondents about Potential Challenges to Transformation

<table>
<thead>
<tr>
<th>Theme and comment</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity to Work Together (97 quotes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have right people at the table</td>
<td>21</td>
<td>24</td>
</tr>
<tr>
<td>Various systems’ rules, regulations, and culture restrict cross-system collaboration</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Maintaining momentum over the entire grant--long period of time</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Inability to communicate between systems openly and frequently</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Need support from new governor and new department directors</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Understanding the TSIG grant and its processes</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>The inability to, or lacking the power to make decisions about system changes</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

Summary and Next Steps

Preliminary study results suggest that Ohio’s mental health transformation grant activities show great potential for future mental health system change. Our data suggest that the transformation projects currently underway are advancing existing evidence-based practices, or are promoting emerging best practices that have been developed in Ohio. These programs address the unique mental health needs of adults, children, elderly individuals, trauma victims, individuals who are incarcerated, homeless, and those with physical health problems.
The findings also indicate that a few process improvements may be needed. A large number of participants identified a need for more communication about TSIG-related activities and progress. Working Group members often mentioned that they were not informed about TSIG activities (e.g., meetings). Participants also suggested that due to the long period of the grant (5 years) TSIG leadership needs to identify ways to keep workgroups motivated and productive. Participants recommended that more emphasis be placed on breaking down silos that exist within government culture, thereby strengthening relationships between state agencies as a means to share or develop resources.

This first phase report is only a snapshot of the transformation grant and its evaluation. By 2010, the TSIG system-level evaluation will have a total of eight data collection time points. We expect that both the quantitative and qualitative data from this study will provide a rich and detailed examination of Ohio’s transformation efforts, and provide valuable insight into what mechanisms are responsible for system-wide change.

REFERENCES


THE FAST$ FUNDING STREAM: RESULTS OF A STATEWIDE INITIATIVE DESIGNED TO INCREASE FAMILY EMPOWERMENT AND IMPROVE YOUTH WELL-BEING

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The Families and Systems Teams (FAST$) initiative involved the creation of a state-wide funding stream that was designed to better meet the needs of Ohio families containing children and adolescents with significant behavioral health care needs. The project was funded by the Ohio Departments of Mental Health, Job and Family Services, Youth Services, and Alcohol and Drug Addiction Services as part of a collaboration coordinated by Ohio Family and Children First. Over the past three years, FAST$ funds have been distributed to local service providers in all 88 Ohio counties in order to facilitate a variety of activities not covered under traditional Medicaid reimbursement plans.

Most importantly, FAST$-funded activities were designed to promote and develop a sense of family empowerment for caregivers of children and adolescents experiencing significant behavioral health issues. In essence, this effort was designed to support efforts that would give family members more “voice and choice” in the services offered to their children and adolescents. In addition, the funding stream was meant to enhance the services being provided to youth and families, as well as to encourage greater collaboration among service providers representing various human service agencies and organizations.

In turn, it was anticipated that these activities would impact Outcomes variables related to the well-being of children and adolescents whose families benefited from the services supported by this funding stream. Here, increased family empowerment, enhanced services, and intensified systems collaboration together were expected to be associated with both reductions in the severity of behavioral health problems and improvements in overall functioning levels of the children and adolescents who participated in activities supported by the FAST$ funding stream.

Evaluation Efforts

Both quantitative and qualitative data were gathered in support of the evaluation effort. Quantitative information was obtained through three primary data sources: the OSU enrollment forms and scales, the MACSIS claims database, and the Ohio Outcomes System database. Qualitative information was obtained in focus groups that were conducted throughout the state of Ohio with service providers/program administrators, parent advocates, and family caregivers.

Enrollment Figures

Enrollment figures indicated that, as of May 31, 2007, there were 4,967 youth who had received FAST$-funded services over the three years of this initiative’s existence. This includes a total of 1,038
new enrollments during the 2007 fiscal year, adding to the 3,929 youth that were enrolled in the 2005 and 2006 fiscal years. A total of 2,488 youth originally enrolled either during the 2005 fiscal year or 2006 fiscal year continued to receive services at some point during fiscal 2007. As of May 31, 2007, there were 2,864 youth receiving FAST$ services.

**Demographics**

Of the 4,967 youth enrolled in FAST$ over the past three years, 63.8 percent were male and 36.2 percent were female. Ethnicity was largely Caucasian (80.6%) followed by African American (15.9%). The average age of these youth was 12.4 years. Nearly half of the FAST$ youth were between the ages of 13 and 17 at enrollment. Interestingly, there was a significant difference ($t = 6.5, p < .01$) between the average age of girls (12.8 years) and boys (12.1 years).

**County Size**

In 2006, the OSU Evaluation Team conducted many presentations for local, regional, and statewide groups concerning the FAST$ evaluation effort. Inevitably, questions arose that centered on the relative comparability of counties. For that reason, the OSU Evaluation Team decided to pay particular attention to county size (categorized as a function of Census 2000 population statistics). Ohio’s eight largest counties (with populations greater than 300,000) comprise approximately 50 percent of Ohio’s population, yet accounted for only 26.9 percent of all FAST$ enrollments. The 19 mid-range counties (populations between 100,000 to 300,000) account for 25 percent of Ohio’s population and accounted for 21.8 percent of all FAST$ enrollments. The 61 small counties (populations under 100,000) comprise 25 percent of Ohio’s population, yet accounted for 51.4 percent of all FAST$ enrollments. Hence, the smallest Ohio counties took maximum advantage of FAST$ funding for the behavioral health care needs of their youth in terms of enrollment rates that were significantly higher ($\chi^2 = 745.4, p < .001$) than those of the large and mid-range counties.

**Family Empowerment: The Wants and Needs of Family Caregivers**

Measurement of family empowerment focused on the wants and needs of adult family caregivers. Research regarding the impact of providing care for a child or adolescent with significant behavioral health needs indicates that a number of variables are of particular importance regarding caregiver wants and needs including: information about behavioral health issues and their treatment, coping skills, social support, and attitude/advocacy issues. A set of items concerning caregiver wants and needs was adapted from the psychoeducational work of Fristad and Gavazzi (Goldberg-Arnold, Fristad, & Gavazzi, 1999) in order to measure the Family Empowerment variable in the FAST$ Project Evaluation. The Family Caregiver Wants and Needs Scale (FCWNS) was used to collect data from adult primary caregivers. Data from the FCWNS indicated a range of experiences regarding the wants and needs of family caregivers.

**Focus Group Data on Family Empowerment**

Qualitative data were collected from three categories of focus groups to examine family empowerment.

Service providers and program administrators. The most frequently cited mechanism by service providers and program administrators for bringing about an atmosphere of family empowerment and support was through the role of parent advocates (or those in similar positions such as family mentors or parent representatives). Advocates were thought to have significantly contributed to increased family
empowerment levels by giving families opportunities to express themselves, by listening to their feelings and what they believed would help them, and letting families know that everyone was there to help them succeed.

**Parent Advocates.** The parent advocates themselves stated they were most effective in empowering families by giving them useful information about how to help their children and families, in tandem with their transmitting the message that “they have a voice that deserves to be heard.” Additionally, parent advocates believed that by listening and just “being there” for the parents and children, they were able to positively empower families. Many advocates reported that this was especially the case when their efforts were couched within a “wraparound model” that provided even greater coordination of existing services in a more fully family-oriented context.

**Family Caregivers.** A general theme across focus groups of family caregivers was that they felt their sense of empowerment came most from the support they received from parent advocates or other individuals taking on similar roles. Family caregivers reported that these advocates were most helpful by encouraging family members to become “their own best family advocate.” Other common themes expressed by family caregivers included their belief that empowerment came from experiences in which what they had to say actually mattered to others, and when support was offered in a family context, not just in terms of their children’s needs.

**Enhanced Services: Medicaid Claims, Threats to Family Stability, and the Use of Flexible Funding**

Measurement of service enhancement was centered on project activities associated with additional services that were specifically delivered to families as part of their participation in the FAST$ Project. In the first year, in fairness to the relative infancy of this project, primary emphasis was given to enrollment and use of funds to support the delivery of services. For 2006 and 2007, however, more in-depth analyses of MACSIS data were performed.

**The MACSIS Claims Database**

A total of 4,334 FAST$ youth (87.3% of total FAST$ enrollment) were in the MACSIS Claims database. There were a total of 1,798,165 service units reported in the overall MACSIS claims database. These service units represented an average of 415 service units per youth enrolled in FAST$, or just over 103.7 hours of services recorded in MACSIS throughout the enrollment period. There were 1,656,788 mental health service units (92.1%) and 141,372 AOD service units (7.9%). The top three mental health service units involved: 1) Community support programs-Individual (738,679 units or 44.6%); 2) Other MH-Non-healthcare (301,113 units or 18.2%); and 3) Individual counseling (272,668 units or 16.5%). The top three AOD service units included: 1) Group counseling (108,525 units or 76.8%); 2) Individual counseling (15,167 units or 10.7%); and 3) Case management (5,722 units or 4.0%). Service units were spread unevenly across large (47.1%), mid-range (19.2%), and small counties (33.6%). Given the total FAST$ enrollments of the large, mid-range, and small counties (26.9%, 21.8%, and 51.4%, respectively) noted above, large counties generated substantially more service units per youth on average than mid-range and small counties, a difference that was statistically significant, $F(2,4330) = 92.6, p < .001$.

County size mattered with regard to type of service. AOD services were offered predominantly through large counties (61.4%), followed by small (30.1%) and mid-range (8.6%) counties, differences that were significant ($\chi^2 = 7165.3, p < .001$). Mental health service units across large, mid-range, and small counties (38.7%, 24.8%, and 36.1%, respectively) largely mirrored the distribution of total service
units and differences were significant ($\chi^2 = 7,165.3, p < .001$). Interestingly, 50 percent (44) of the counties did not have any claims for AOD services. Race/ethnicity mattered with regard to type of service as well. Minority youth were significantly more likely to receive an AOD service than Caucasian youth, 9.0 percent of total service instances versus 5.5 percent of total service instances ($\chi^2 = 1,687.59, p = .001$).

**Focus Group Data on Service Enhancement**

Qualitative data were collected from three categories of focus groups to examine service enhancement.

- **Service providers and program administrators.** Focus group participants reported that many of the services provided to families would otherwise have not been possible without the FASTS funding stream. Respite was the most commonly reported service enhancement. Other services provided through FAST$ funds included camps, recreation passes (YMCA), parent education programs, and mentoring services.

- **Parent advocates.** Parent advocates consistently reported that the FAST$ funding stream did enhance service provision through a variety of programs and delivery methods. Respite and camp enrollments were most frequently reported. Other types of services included therapeutic horseback riding and transportation related services (bus fare, gas cards).

- **Family caregivers.** Family caregivers who participated in the focus groups reported that a variety of services were offered to their families which were beneficial for them. Services included YMCA programs, mentoring, educational programs, and respite. In addition, they consistently noted that these services were further enhanced by the efforts of parent advocates, especially when a wraparound model of service was employed.

**Focus Group Data on Systems Collaboration**

All information regarding the impact of the FASTS funding stream on increased systems collaboration involved qualitative data generated through the three categories of focus groups.

- **Service providers and program administrators.** These participants indicated that the structure of the FAST$ funding stream influenced agencies and organizations to collaborate and otherwise work more closely with each other. In particular, partnerships between Family and Children First county coordinators, school personnel, court professionals, and state agency professionals (NAMI) were cited as evidence of groups working together more seamlessly to help families navigate various systems of care and attain those services and supports that led to desired improvements in outcomes.

- **Parent advocates.** Parent advocates stated that the FAST$ funding stream coincided with greater collaboration among different organizations and groups. A common perspective expressed by focus group participants was that FAST$ funds were the “key ingredient” in getting representatives of various agencies to collaborate in their work with children and families.

- **Family caregivers.** Family caregivers were explicit in their descriptions of the benefits that their families experienced when collaboration occurred. When the representatives of agencies and organizations were seen as working together, family caregivers reported that lines of communication were improved both quantitatively and qualitatively, which in turn was thought to provide better services to the families.
Outcomes: Youth and Family Well-Being

Ohio Scales Behavioral Health Outcomes

As noted above, scores from the Ohio Scales were used as the primary source of Outcomes data. The Ohio Scales consist of four subscales: Hopefulness, Satisfaction with Services, Problem Severity, and Functioning. (For more information about the Ohio Mental Health Consumer Outcomes System see http://www.mh.state.oh.us/oper/outcomes/.) There are three versions of the Ohio Scales that are reflective of three different sources of information: 1) the Youth (age 12-18) version contains all four subscales described above, and the information is provided by the youth about her/himself; 2) the Parent version also contains all four subscales, and involves the parent providing information about both the youth (for the Functioning and Problem Severity Scales) and his/her own experiences as a family member (Hopefulness and Satisfaction); and 3) the Worker or Professional version consists of the two youth-oriented subscales (Problem Severity and Functioning) and is reported by service providers.

Reporting on outcomes from a dataset like the FASTS data entails a number of challenges. The first of these arises from the multiple versions of the Ohio Scales. It would be simplest to report data only from youth who had all three versions completed at every time point. Unfortunately, this is a very small group, due largely to the lack of compliance with the state mandate to employ and report Ohio Scales using all three perspectives at time of termination. Hence, in order to include the greatest number of youth in the sample without overweighting the effects of any small group, our efforts periodically utilized a “proximal reporter” (PR) sample. Here, the Youth version is privileged and thus employed wherever available, the Parent version data is used in cases where there is not sufficient Youth version data, and Worker version data was used if neither the Youth nor Parent versions were available.

As a result, the PR Sample allowed for the inclusion of the maximum possible number of cases that, in turn, privileged data from the youth and parent respectively. Happily, in this instance the PR sampling strategy happened to create roughly equal contributions from each of the three versions. A second challenge arises from the nature of FASTS enrollment and subsequent participation in services, in that most youth had been receiving non-FASTS funded services before and during enrollment. Hence, the challenge became one of determining what if any changes were actually related to FASTS funded services. Of course, this was especially difficult because the FASTS database does not contain information about youth who were not taking part in FASTS funded services.

Nonetheless, it was believed that at least three questions could be examined which could provide initial evidence that would illuminate possible effects of FASTS on behavioral health outcomes. The first question revolved around the extent to which there was a noticeable benefit associated with the initiation of FASTS funded services. The second question focused attention on the possibility that there were differential benefits as a result of sub-group membership. The third question was centered on the meaningfulness of any and all change evidence that was generated as the result of various analysis procedures.

Question 1: Was there a noticeable benefit associated with FASTS enrollment?

As noted above, many youth who began to receive FASTS funded services already had been receiving other services and treatment prior to enrollment and continued to do so during the period of enrollment. The momentary act of enrollment in FASTS funded services, however, is often part of a larger set of events for youth and their families that takes place in a relatively short period of time. Hence, changes that happen in that relatively short period of time can be compared to changes that already were
occuring. To do this, Ohio Scales that were administered immediately prior to FAST$ enrollment were compared to Ohio Scales that were administered even earlier in time in order to identify any and all progress that already was underway. Next, Ohio Scales administered in the first months after FAST$ enrollment were examined in order to demarcate any and all change that was associated with the activities surrounding enrollment in FAST$ funded services.

Figure 1. Short-term changes associated with initiation of FAST$ (PR sample \( n = 141 \)).

Interestingly, there was a surprisingly clear effect associated with FAST$ enrollment. As the results in Figure 1 indicate, there are distinct differences between the time points, which show steady improvements from Time 0 to Time 2 on both Subscales. These differences across the entire time period are significant for both Functioning, \( F(2,340) = 4.28, p < .05 \), and Problem Severity, \( F(2,340) = 4.48, p < .05 \). Furthermore, the difference between the two early administrations (0 and 1) is not significant for either Functioning, \( t(170) = -0.57, p = .57 \), or Problem Severity \( t(170) = 1.00, p = .32 \). Hence, the significant improvement took place during the period of FAST$ enrollment (Time 1 to Time 2) both for Functioning, \( t(170) = , p < .05 \), and Problem Severity, \( t(170) = 2.15, p < .05 \). In sum, it appears to be the case that, although behavioral health progress generally follows a positive trajectory, there was a significant boost to improvement rates associated with the events surrounding FAST$ enrollment.

**Question 2: Were differences in improvement among sub-groups of youth detected within the FAST$ population?**

In order to examine whether similar rates of improvement occurred across demographic groups, changes from the initiation of FAST$ (IOF) enrollment (Time 1: 2 weeks prior to enrollment through 8 weeks post enrollment) to a second time point six to 12 months after FAST$ enrollment were examined. This longer time period was thought to allow for the development of a greater chance for improvement to be witnessed, and a wider pool of valid scale administrations to be considered. Potential sub-sample differences also were examined in terms of each of the three versions (perspectives) of the Ohio Scales, as it was possible that some of the demographic groups could have been confounded with reporter-type in
the PR sample. It is important to note here that, although some youth are represented in more than one of the following samples, the databases are not reflective of the same set of youth in each sample, and therefore they are not directly comparable.

**Youth Version**. In the Youth perspective database, the demographic groups generally showed significant improvements, and at the same time were not significantly different from each other. The one exception to this overall statement is the reported Functioning levels of the 32 Minority youths whose cases contained a Youth version of the Ohio Scales data at both IOF and Time 2. Although observed change for this sub-sample was positive, the level of change was not significantly different from zero, meaning that it cannot be reliably concluded that Minority youth actually showed improvement on the Youth version of the Functioning subscale. This null finding, however, should be taken with the proverbial grain of salt as 32 youth comprise a relatively small sample that cannot be used to confidently conclude that Minority youth experience significantly less improvement than White youth.

**Parent Version**. The differences between White and Minority youth that were hinted at in the Youth version are much more apparent in the Parent version. Not only is there a failure to observe significant improvement on either subscale for Minority youth, but there are enough youth reported on by parents and other adult caregivers to conclude that improvement among White youth is reliably greater than Minority youth in both Functioning and Problem Severity. Because these are not (all) the same youths as in the Youth version sample, however, what remains inconclusive is whether or not these differences are due to the youth themselves or rather are a function of the employment of the parent version of the Ohio Scales. Finally, no differences as a function of gender were detected. Both males and females show significant improvement over the course of their FAST$ enrollment.

**Worker Version**. Using the Worker version of the Ohio Scales, there was no evidence of differences in rates of improvement based on a comparison of White and Minority youth. Both groups show significant improvements, and the gains are similar for White and Minority youth on both Problem Severity and Functioning. At the same time, however, the first evidence regarding gender differences was generated. Here, female youth, while showing significant improvements in Problem Severity, displayed significantly smaller improvements than males.

**Question 3: Are these improvements meaningful?**

Like any mechanism for improving the lives of youth and families, there was a strong desire to know that the individuals who received benefits from this funding stream were able to experience outcomes that were meaningful. Although the preceding analyses provided some evidence of success in this regard, the results were by no means conclusive. With that said, in addition to group-level averages, we also can categorize individual-level outcomes. In this regard, a strategy was adopted that focuses attention on Reliable and Clinically Significant (RCS) Change scores. Reliable and Clinically Significant (RCS) Change refers to changes in behavioral health outcomes scores that are large enough to be considered meaningful (reliable), and result in a shift from clinical to ‘normal’ levels of a measure – or vice-versa (clinically significant change).

Here, an examination of the total number of youth who get better, get worse, or show no change (indeterminate) provides an overall snapshot of program outcomes related to the FAST$ funding stream. In addition, a comparison of the proportion of youth who begin services in the clinical range of behavioral health levels and become reliably improved (move to the non-clinical or normal range at Time 2) versus the proportion of youth who start off in the non-clinical range and end up reliably worse (move into the
clinical range at Time 2) was thought to be a useful way of expanding upon an understanding of improvements resulting from activities supported by the FAST$ funding stream.

Youth Version. The largest groups among youth-reported scales, both by numbers and proportions, are those that displayed no change. Among youth who began with clinical levels of Problem Severity, more than 40 percent showed RCS improvement, a rate three times higher than the rate of RCS decline among youth who started off in the normal range. On the Functioning scale, even though the number of clinically functioning youth showing RCS improvement was almost double that of normally functioning youth showing RCS decline (40% versus 23%), this represents about 30 percent of each group overall.

Parent Version. The largest groups among Parent-reported scales, both by numbers and proportions, are those that displayed no change. By raw numbers, youth beginning at clinical levels far outnumber those beginning in the normal range on both scales. This explains, at least in part, why there are more than twice as many examples of RCS improvement than decline on each of the scales. Proportionally, however, there are almost no differences in the rate at which youth improve or decline, and this is consistent across both subscales.

Worker Version. Among Worker-reported scales, the initial differences between the number of youth who begin at clinical levels and those who begin within the normal range were especially pronounced. As with the Parent-reported scales, this partially explains the higher number of RCS improvements. The rate of decline among the relatively small number of youth who were in the non-clinical range at Time 1, however, is actually greater than the rate of RCS improvement among the clinical sample, obviously a cause for concern.

Focus group perspectives on outcomes

In addition to the quantitative data generated through analyses of the Ohio Scales scores, the focus groups also were asked to respond to questions about outcomes associated with the FAST$ funding stream.

Service providers and program administrators. Numerous examples were given by the service providers/program administrators regarding successful outcomes for youth and families generated through FAST$ funded services. Common outcomes mentioned included reductions in out-of-home placement, child behavioral improvements, and positive gains made in family functioning.

Parent advocates. Parent advocates cited numerous examples of how FAST$ funded services had specifically helped youth and families. As in the service provider and program administrator groups, the most frequently mentioned outcomes included services that prevented out-of-home placement, as well as activities that improved family functioning.

Family caregivers. Family caregivers shared numerous stories about how services supported by the FAST$ funding stream had made a positive difference in the lives of their families. Not only were successful outcomes shared about FAST$ helping families stay together, but positive changes were highlighted in their children’s behavior and improvement in life skills.
**Discussion**

As noted in the introduction section, the FAST$ Project actually represents a funding stream that was designed to provide financial support for activities that would empower families and, subsequently, contribute to the well-being of children and adolescents with significant behavioral health care needs. Hence, this is not a traditional evaluation, at least in the sense that the efforts described in this document are not designed to pass judgment on a program per se, but rather a funding mechanism that supports a multiplicity of programs and activities.

Nevertheless, the available evidence suggests that the funding stream did in fact largely do what it was designed to do. Universally, caregivers are reporting significant gains in their sense of empowerment from time of enrollment to time of termination from FAST$-funded services. In turn, youth, parent, and worker perspectives indicate overall significant reductions in problem severity levels and significant increases in functioning levels.

At the same time, the data indicated that some families were more empowered than others, and quite substantial variations in empowerment change occurred across the 88 Ohio counties. Regrettably, one continued limitation of our findings is the fact that we were not able to take into account how the results may vary as a function of specific non-Medicaid-reimbursable activities supported by the FAST$ funding stream. Quite simply put, the incredible variation in these services (amply illustrated in the data generated by our focus group efforts) eluded our evaluation team’s best efforts to quantify the types and amounts of these activities.

In turn, there is a growing awareness of the role that variation in the amount of Medicaid-reimbursable services also may play in the findings presented in this report. This is especially notable with regard to county size, and lends itself to all kinds of questions that deserve more attention and analysis efforts. For instance, how did it come to pass that small counties enrolled youth at rates more than double their per capita representation in the state population, while the largest counties enrolled youth at only half their per capita representation? At the same time, why did the youth in those largest counties who were enrolled receive so many more units of service than youth in mid-size and small counties as reflected in the Medicaid claims data? Did the “dosage” of services affect outcomes? And so on.

One specific service that was at the center of the FAST$ initiative--parent advocacy--did receive both qualitative and quantitative attention in the evaluation effort. (See the full report at http://familyresearch.osu.edu for more information.) At the same time, however, there was a relatively small percentage of families (less than 20%) enrolled in FAST$-funded services that were connected to parent advocates. There is more than a bit of irony surrounding this percentage, in that most state-level administrators believed that the majority of families would have been involved with parent advocates as a function of being enrolled in FAST$ funded services. Hence, left unanswered are questions surrounding the mismatch between expectations and what occurred in actual practice. Were most of these families offered a parent advocate but refused to use one? Or were they never even offered the chance? Or did some of families use informal networks of support (friends, clergy, etc.) that were not counted as advocates by those in charge of the data collection effort? And so on. The state needs and deserves more information about this situation.

Further, the specific activities undertaken by these advocates on behalf of the families are not clearly documented, making analyses of their impact (beyond mere presence) quite difficult. Our
evaluation team recommends a more systematic examination of the process by which families are (or are not) linked to advocates, as well as support for an effort to document the actions taken by these advocates on behalf of the families with whom they are working.

This report leaves a number of other questions unanswered, including possible disparities associated with race. For instance, youth reports on the Ohio Scales provided hints of differences in Outcomes between White and Minority youth that became more pronounced in the data generated by parent reports. In essence, improvement among White youth was reliably greater than Minority youth on both the Functioning and Problem Severity domains. What is contributing to these racial differences? We believe that, while further study of these differences are warranted, there is enough evidence here to support our evaluation team’s recommendation to implement and evaluate the impact of cultural competency training for advocates and service providers.

Our use of the reliable and clinically significant change indices brings to light another important finding. While the overall analyses indicated positive gains across all children and adolescents in the sample, some youth clearly were getting better, and some were getting worse by the end of FAST$-funded services. Recognizing that the evaluation effort of FAST$ has now ended, our evaluation team recommends the systematic expansion of research on these reliable and clinically significant change scores for all youth being tracked through the Ohio Outcomes System database.

REFERENCES


Presentations of the Research

Center for Family Research. (2007). *The FAST$ fund stream: Results of a statewide initiative designed to increase family empowerment and improve youth well being, Final Report*. Available through http://familyresearch.osu.edu

Other Publications of the Research

There is a growing understanding that trauma at any point in one’s life may result in “emotional and behavioral reactions that jeopardize mental health” (The President’s New Freedom Commission on Mental Health, July 2003, p.71). However, additional studies are needed to provide greater understanding of the effects of trauma on different populations and to solidify our knowledge of more effective treatments to reduce its negative impacts. Trauma plays an important role in the lives of many youth and adults with mental health needs (Witness Justice, 2002). Trauma is now more frequently recognized as a significant factor in a wide range of health, behavioral health, and social problems (Felitti, 2003; Felitti et al., 1998). Trauma resulting from prolonged or repeated exposures to violent events can be the most severe (National Child Traumatic Stress Network, 2003).

Different individuals react to trauma in their own way, depending on the nature of and circumstances surrounding their traumatic experiences. However, trauma may be the “common denominator,” often with mental health consequences, for all victims of violence or disasters. No matter whether the cause of the trauma is a hurricane, loss of a loved one, sexual assault, child abuse, domestic violence, or other incident(s), the trauma experience is one thing that all victims share (Witness Justice, 2002).

Left untreated, trauma can have severe negative impacts on a person’s physical and emotional well-being. Trauma has been linked to hallucinations and delusions, depression, suicidal tendencies, chronic anxiety, hostility, interpersonal sensitivity (i.e., poor “social skills”), somatization (i.e., “chronic fatigue syndrome”), eating disorders, and dissociation (Meuser, Rosenberg, Goodman, & Trumbetta, 2002). Trauma victims are at a much higher risk for co-occurring mental health and substance abuse disorders, violence victimization and perpetration, self-injury, and a host of other coping mechanisms which themselves have devastating human, social, and economic costs. Trauma has also been linked to social, emotional, and cognitive impairments, disease, disability, serious social problems, and premature death (Anda et al., in review).

The Adverse Childhood Effects (ACE) study, which examined the health and social effects of traumatic childhood experiences over the lifespan of 18,000 participants, found that trauma is far more prevalent than previously recognized, that the impacts of trauma are cumulative, and that unaddressed trauma underlies a wide range of health problems (e.g., heart disease, cancer, chronic lung disease, liver disease, skeletal fractures, HIV-AIDS) and social problems (e.g., homelessness, prostitution, delinquency and criminal behavior, inability to hold a job) (Felitti et al., 1998; Felitti, 2003).
Trauma often goes undiagnosed or under-diagnosed in our public behavioral healthcare systems. In fact, many clients diagnosed with severe mental illness have trauma histories (Mueser et al., 1998), and prevalence rates within substance abuse treatment programs and other social services are similar (Center for Substance Abuse Treatment, 2000). In addition, some of the youth diagnosed with depression, attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder (ODD), conduct disorder, generalized anxiety disorder, separation anxiety disorder, and reactive attachment disorder may have trauma histories that drive behavior and symptoms, and directly contribute to their overall picture (Cook, Blaustein, Spinazzola & van der Kolk, 2003; Shonkoff, 2005).

As early as the mid 1990s, research funded by the Ohio Department of Mental Health (ODMH) and individual mental health agencies or boards began to focus attention on the role of trauma and its impact on youth and adults receiving mental health care. Research funded to identify clusters of youth receiving mental health and other services identified at least two clusters of youth whose lives were greatly influenced either by their being Victims of Sexual or Physical Abuse or having Witnessed and/or Been Affected by Traumatic Events, often surviving while others were less fortunate (Rubin & Taynor 1998; Synthesis, 2006b). Members of these two clusters alone may represent 20 to 25 percent of youth seen by mental health service providers (Rubin et al., 2008). Members of other clusters may also have experienced trauma as part of their complex histories. Some service models to address the needs of these youth have been known since the mid 1990s and preliminary analyses of outcomes data showed promise for their success (Rubin & Taynor, 1998). However, until recently, the trauma issues troubling many of these youth were still going unrecognized and not being addressed.

The situation has been even more problematic for the heterogeneous population of adults with severe mental disabilities. In research conducted in Ohio over the last 18 years (Rubin & Panzano 2002; Rubin et al., 1992; Rubin et al., 1996; Rubin et al., 2005), eight distinct clusters of people within this larger population have been identified. Members of these different clusters share common biopsychosocial histories in terms of strengths, problems, treatment histories, social/environmental contexts, and/or life situations.

Since 2001, the Ohio Cluster-Based Planning Coordinating Center of Excellence has highlighted the members of a cluster of adults (Synthesis, 2007a) who often appear to be capable of taking on more tasks, achieving more in their lives, and making more progress in their recovery. While they may say they want to work, go to school, or participate more fully in their community, they always have reasons why they cannot. They often indicate that their stress and anxiety prevent them from doing the things they want to do. However, they appear unwilling to investigate the sources of their emotions. Many members of this cluster have histories of trauma and/or abuse which make them much more fragile than they appear on the surface. Thus they often have trouble dealing with even minor crises and make many demands on staff to help them (Synthesis, 2007a). This cluster may represent about 15 to 18 percent of agency caseloads (Synthesis, 2006a).

While one might expect to see members of this cluster receiving individual or group counseling, or trauma-specific services, data collected since 2001 have consistently shown that only about 20 percent receive even 10 hours of individual counseling a year and that fewer than five percent receive any group counseling (Synthesis, 2002, 2004, 2006a, 2007b). Only recently have some agencies begun to offer trauma-specific services such as Eye Movement Desensitization and Reprocessing (EMDR) or Dialectical Behavior Therapy (DBT) for these consumers.

Another cluster shares a number of characteristics with the consumers described above; however this group has additional health issues on which they focus in order to unconsciously avoid having to deal
with their trauma and mental health issues. They represent about five to seven percent of agency caseloads (Synthesis, 2002, 2004, 2006a, 2007b). Thus, close to 25 percent of clients receiving primarily case management services could benefit from trauma-informed and trauma-specific services. These figures do not include two clusters whose members have co-occurring substance use disorders. These clusters typically represent about 25 percent of agency caseloads and many of these consumers are also likely to have experienced significant and/or recurrent traumas.

Every day thousands of people in Ohio experience abuse, neglect, violence, frightening accidents, serious injuries and illnesses, loss of loved ones, and other types of potentially traumatic events. Evidence shows that traumatic events can cause serious, immediate emotional and physical harm to people, as well as long-term problems that can alter entire lives. However, with the right kinds of support, protection and effective interventions, individuals can overcome these obstacles and build successful and productive lives. Adult and child serving systems help this recovery by providing a continuum of trauma-informed services and resources to reduce the negative impact of these adverse experiences.

In Ohio, we are getting reasonably clear pictures of mental health clients who may need trauma-informed/specific services. However, much like the nation as a whole, we still do not have a good picture of the current status of the availability of these services. The importance of providing trauma-specific services has been highlighted in Ohio’s Transformation effort. In an effort to address these issues, the Ohio Department of Mental Health (ODMH) convened the Childhood Trauma Task Force. The goals of the Task Force were to develop a strategic plan to:

1. create a shared vision of effective prevention and treatment around trauma
2. identify what is needed to improve service system competence, and
3. lay the groundwork for implementation of needed cross-system improvements.

As a first step in accomplishing these goals, the Task Force worked with other Department staff and the research team to develop a survey to determine what trauma-informed services are currently being offered in Ohio, who is receiving them, and what barriers exist to their implementation. The purpose of this study was to inform policy, practice, and the allocation of resources to more adequately address the needs of traumatized children, families, and adult survivors of trauma. For the purposes of the study, the following definitions of traumatic events were used:

**Acute Traumatic Events.** Some types of traumatic events involve serious injury to self, witnessing serious injury or the death of others, imminent threats of serious injury or death to self or others, or a violation of personal physical integrity. Such experiences usually elicit overwhelming feelings of terror, horror or hopelessness. Because these events occur at a particular time and place and are usually short-lived, they are referred to as acute traumatic events. Examples include school shootings, gang-related violence, terrorist attacks, natural disasters, serious accidents, sudden or violent loss of a loved one and physical or sexual assault (i.e., being beaten, shot, or raped).

**Chronic Traumatic Situations.** Exposure to trauma can occur repeatedly over long periods of time. Such experiences elicit a range of responses including intense feelings of fear, loss of trust in others, decreased sense of personal safety, guilt and shame. These are referred to as chronic traumatic situations and examples include physical abuse, sexual abuse, neglect, domestic/family violence, wars and other forms of political violence.
Methods

A Web-based survey was conducted between June 23 and July 16, 2007. To initiate the survey, a cover letter from one of the ODMH Deputy Directors was sent by e-mail to over 350 agencies around the state. The letter included the link to the web-based survey which could be accessed on SurveyMonkey™.com. Reminders were e-mailed to all agencies on July 7 and again on July 11. In the latter case, the e-mail also included a PDF file of the actual survey to make it easier for agencies to see the questions before they got on the website to respond.

Questions addressed in the survey pertained to the population served by the agency, the impact of trauma on agency consumers, referral sources, screening and assessment of trauma, types of traumatic events experienced, types of trauma-specific services offered by the agency, trauma-specific training needs, and barriers to implementing trauma-informed care.

Survey results

A total of 99 agencies responded to the survey. While confidentiality of responses was assured, agencies were given the option of identifying themselves, of which 63 did and 36 did not. (Some agencies had to exit the survey in order to collect additional information to answer all the questions. Because of technical limitations, these respondents had to re-enter their previous information in a new record. This created multiple records for some agencies. Duplicates were removed for agencies that had identified themselves. However, this was not possible for those that had not identified themselves. Thus, some duplicates may exist among the responses from agencies that did not identify themselves.). From the agencies which identified themselves, responses were received representing at least 37 counties (42% of all Ohio counties). Responses came from all the major metropolitan areas of the state as well as many rural communities. While some agencies in the study worked only with specific age groups (e.g., children), many indicated that they worked with people across the lifespan. In fact, 84 percent of the agencies worked with transition age youth (ages 19 to 24), 78 percent worked with adults (ages 25 to 69), and 47 percent worked with infants and toddlers (ages 0 to 3).

Trauma Experiences

Prevalence. As Figure 1 shows, agency respondents clearly believe that a meaningful proportion of their clients have suffered traumatic experiences. Nearly 50 percent of the agencies indicated that more than 60 percent of their clients had experienced acute events or chronic traumatic situations. In addition, more than 75 percent of respondents believed that when a client has experienced trauma, their mental health is greatly affected.

Referrals for trauma-related services come from a variety of sources. As might be expected, the child welfare agency and the courts were among the most frequently mentioned (by between 60% and 70% of the agencies). Interestingly, referrals were almost as likely to come from families and from the client him/herself. In addition, about 20 to 36 percent of the agencies reported referrals from domestic violence shelters or victims’ rights service providers.

About one half of the responding agencies have specific instruments or special procedures that they use to assess whether consumers have a history of trauma. Those who use a tool generally feel that it meaningfully informs treatment. In order for more agencies to utilize these tools however, technical assistance and training must be provided on the types of instruments or trauma assessment approaches available and in the implementation of these clinical methods.
Types of Trauma: Individuals can be exposed to a range of traumatic experiences. In the survey we asked agencies what types of traumatic events were experienced most frequently by their consumers. In 19% of the responses, family related events (domestic violence, physical and sexual abuse and emotional abuse or neglect) were mentioned most frequently, followed by sexual abuse (18%), physical abuse (17%), and emotional abuse and neglect (15%). Of special interest is the number of times having to move and live with a different person was listed (see Figure 2). This finding may suggest that the impact of these events on youth may be under-estimated.
Impact on mental health. Trauma experiences are often considered sequelae to psychological, behavioral, and emotional disorders (Fairbanks, 2008; Galea et al., 2002; Mueser et al., 1998; Mueser et al., 2002).

With this in mind, agencies were asked how much trauma impacted the mental health of their consumers. At least half of the responding agencies ($N = 99$) felt that traumatic events impacted the mental health of their clients to a “great degree.” Another 27 percent of agencies thought the impact of trauma on mental health was “very great” (see Figure 3).
Figure 3. Impact of trauma on mental health.

Availability of trauma services. While agency respondents believe that trauma affects the mental health of many consumers, about 60 percent of agencies reported providing some type of trauma services to clients in the age groups they served. This percentage was somewhat higher (69.9%) for agencies serving youth aged seven to 11. It was considerably lower for agencies serving infants (0 to 3); however this may be in line with the number of infants and toddlers served by responding agencies and viewed as having experienced trauma.

Types of trauma services. As shown in Figure 4 below, the number of agencies that provided specific types of trauma-informed care appears to vary widely. For example, of the 69 agencies that responded to this question, the most frequent type of trauma-informed services offered are General Awareness Training Programs (51), followed closely by Cognitive Behavioral Therapy (47) and Behavioral Therapy (43). In contrast, only 13 provide EMDR (Eye Movement Desensitization and Reprocessing), five provide Prolonged Exposure Therapy (PET), and only two agencies provide Trauma Recovery Empowerment Model (TREM) therapy. Agencies appear to be more likely to utilize non-specific therapeutic techniques with trauma survivors. Therefore, access to emerging or evidence-based, trauma-specific therapies such as EMDR, TREM, PET, or Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) is limited in the public mental health system.

Even when some of these trauma-specific services are being provided by an agency, more detailed analysis of actual service data are required to determine the number of consumers who actually receive them and the amounts they receive. For example, data collected by the Cluster-Based Planning Coordinating Center of Excellence indicate that few adults who are members of clusters with more extensive trauma histories are receiving the types of trauma services listed above. Those who do, receive only limited amounts of care (Synthesis, 2002, 2004, 2006a, and 2007b). Adults in the general outpatient population and various subgroups of youth may be receiving more of these services but the types and amounts are unknown.
Challenges to Providing Trauma Informed Care

**Professional training.** The ability to provide specific clinical services to address trauma issues requires the availability of licensed staff trained in these modalities. A total of 63 agencies responded to a question about whether agencies saw their staff as well trained in these areas. As shown in Table 1, agencies tended to see their staff as either well trained in these treatments or as generally lacking in specific therapeutic approaches. Depending on the specific treatment modality, between 19 and 31 of the agencies indicated that few (0 to 20%) of their licensed staff needed training. At the same time, between four and 21 of the agencies felt that more than 80 percent of their licensed staff need training. Looking across all the types of interventions, on average, 25 percent of the agencies indicated that at least 60 percent of their licensed staff needed training (Mean = 15.88 out of 63 agencies).
Table 1. Needs for Staff Training in Trauma Informed Treatment Modalities

<table>
<thead>
<tr>
<th>Treatment Training Needs</th>
<th>0-20%</th>
<th>21-40%</th>
<th>41-60%</th>
<th>61-80%</th>
<th>81-100%</th>
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<tr>
<td>General Awareness</td>
<td>31</td>
<td>4</td>
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<td>4</td>
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<td>Principles Of Trauma-Informed Care</td>
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<td>6</td>
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<td>4</td>
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<tr>
<td>Recognize Trauma</td>
<td>25</td>
<td>8</td>
<td>4</td>
<td>5</td>
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<td>2</td>
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<tr>
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<td>23</td>
<td>9</td>
<td>6</td>
<td>3</td>
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<td>9</td>
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<tr>
<td>Trauma-Focused CBT Training (TF-CBT)</td>
<td>19</td>
<td>11</td>
<td>10</td>
<td>3</td>
<td>14</td>
<td>6</td>
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<tr>
<td>Parent Child Interaction Therapy (PCIT)</td>
<td>21</td>
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<td>7</td>
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<tr>
<td>Family Functional Therapy</td>
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<td>3</td>
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<tr>
<td>Cognitive Processing Therapy</td>
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<td>9</td>
<td>3</td>
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<tr>
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<tr>
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<tr>
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<td>10</td>
<td>4</td>
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<td>8</td>
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<tr>
<td>Eye Movement Desensitizer &amp; Reprocessing</td>
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<td>Trauma Recovery &amp; Empowerment Model</td>
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<td>Addiction, Trauma, Recovery Integrated Model (ATRIUM)</td>
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<td>Prolonged Exposure Therapy</td>
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<td>4</td>
<td>4</td>
<td>1</td>
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</tbody>
</table>

NA = No answer; not applicable

**Funding for training and services.** While lack of trained staff is a critical barrier, there are other issues that may challenge an agency’s ability to offer trauma-informed care. Agency responses to this question present a relatively clear picture of the barriers to the provision of trauma-informed care (see Figure 5). Clinicians need to be trained and supervised in these specialized clinical techniques. However, training and supervision reduce the number of hours available to provide the direct services that support the agency. The need to overcome the loss of revenue when staff are being trained and supervised is critical to being able to provide these services. Agency respondents also indicated that funding was needed to support the actual provision of these services. This may imply that some payors have rules that limit reimbursement for trauma-informed care or for certain consumers. In contrast, the results indicate that staff and agency leadership support the need for trauma-informed services so that “buy-in” is not a major barrier.
Summary

“Trauma is becoming increasingly recognized as a significant factor in a wide range of health, behavioral health, and social problems. Trauma resulting from prolonged or repeated exposures to violent events can be the most severe” (Witness Justice, 2002). Everyday thousands of people in Ohio experience abuse, neglect, violence, frightening accidents, serious injuries and illnesses, loss of loved ones, and other types of potentially traumatic events. Evidence shows that traumatic events can cause serious, immediate emotional and physical harm to people, as well as long-term problems that can alter entire lives. However, with the right kinds of support, protection and effective interventions, individuals can overcome these obstacles and build successful and productive lives. Adult and child serving systems help this recovery by providing a continuum of trauma-informed services and resources to reduce the negative impact of these adverse experiences.
In an effort to address these issues, the ODMH convened a Trauma Task Force, which in conjunction with the research team at Synthesis, conducted this survey to determine what trauma-informed services are being offered in Ohio, who is receiving them, and what barriers exist to their implementation. Approximately ninety-nine (99) agencies responded to a web-based survey conducted from June 23 through July 16, 2007. While some agencies served only youth, many served a wide range of age groups.

The survey results indicated a general understanding of the importance of trauma and its impact on the mental health of both youth and adults. The study suggested that while some agencies may be providing trauma-informed care, others may be offering few of these services. However, the study did not address the actual types and amounts of services actually received by consumers and/or the outcomes of those services. In addition, while some agencies reported that many of their licensed clinical staff are trained in trauma-specific treatment modalities, other agencies reported that many staff require training.

Staff training and the ability to recruit qualified staff are also factors which currently limit the ability to provide trauma-informed care. Other important barriers include funding to support the service provision as well as funding which covers costs and lost reimbursement while staff are in training and being supervised.

REFERENCES


**Other Publications of the Research**

Upon initiating counseling services with a new client and second only to engaging with the client, the therapist’s most immediate concern may be to determine what the client’s presenting problem is. When the client is an adolescent and she or he disagrees with the accompanying parent(s) about the problem, the therapist is faced with a dilemma. This dilemma includes the problematic challenge of providing a correct assessment and putting together an appropriate treatment plan (Carlston, 2004; Hawley & Weisz, 2003; Yeh & Weisz, 2001). Hawley and Weisz have emphasized that successful therapy must include the adolescent’s concerns and maintain the parent’s involvement. Yeh and Weisz suggested that the parent-youth disagreement dilemma is compounded by the recognition that the “parent-child disagreement may be one factor that contributes to the poor outcomes often associated with conventional clinic-based treatment for children” (p. 1024). In a study in which they used the Child Behavior Checklist, Yeh and Weisz observed that for 63 percent of the parent-child pairs there was no agreement on any of the problem behavior items.

A number of other research studies have also addressed the phenomenon of disagreements between the parents and adolescents in their ratings of the adolescent’s problem behaviors. (Edwards, 2005; Handwerk, Larzelere, Soper, & Friman, 1999; Kramer, Phillips, Hargis, Miller, Burns, & Robbins, 2004; Treutler & Epkins, 2003; Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Several (Carlston, 2004; Edwards, 2005; Stanger & Lewis, 1993; Tarullo, Richardson, Radke-Yarrow, & Martinez, 1995; Van Der Ende & Verhulst, 2005) have encouraged the clinician to see the parent-youth discrepancies as clinically beneficial, which might include elucidating the extent of symptoms and scope of behavior patterns, clarifying the symptomatology, and informing us about family dynamics.

This study’s purpose was to enhance the professional community’s understanding of why parents and youths disagree in their responses to problem behavior items in the Ohio Scales, to emphasize how the parent-youth relationship functions as an integral factor in their disagreement, and to illuminate the clinician’s beneficial use of the parent-youth disparities in the assessment and intervention processes (Cox, 2007).

**Conceptual Framework and Study Design**

Researchers and clinicians have long been concerned with parent-youth discrepancies and have examined possible explanations (Achenbach, McConaughy, & Howell, 1987; Grills & Ollendick, 2003; Hartung, McCarthy, Milich, & Martin, 2005; Van Der Ende & Verhulst, 2005; Yeh & Weisz, 2001; Youngstrom, Findling, & Calabrese, 2003). In their classic meta-analysis, Achenbach et al. (1987) brought to light the significance of the informant’s situational specificity, which simply reminds us that different observers have different perspectives which are tied to the situations in which they observe the subject’s behavior--teachers in the classroom, clinicians in the clinic, peers as equals, and parents in the home.
Several researchers have considered the type of behavior being monitored as a major factor in the parent-adolescent disagreement phenomenon. A prominent and simple categorization is to separate problem behaviors into two groups: one is labeled as internalizing problem behaviors and the other as externalizing problem behaviors (Cantwell, Lewinsohn, Rohde, & Seeley, 1997; Edelbrock, Costello, Dulcan, Calabro-Conover, & Kala, 1986; Kashani, Orvaschel, Burk, & Reid, 1985; Kuo, Mohler, Raudenbush, & Earls, 2000; Sourander, Helstela, & Helenius, 1999; Wrobel & Lachar, 1998). Internalizing behaviors are more covert and tend to reflect the individual's moods or emotions. The externalizing behaviors tend to be more overt and observable, such as those associated with conduct disorder, oppositional defiance disorder, and attention-deficit/hyperactivity disorder. Parents probably have less awareness of the more covert internalizing problem behaviors and increased awareness of the more overt externalizing ones. One might conjecture that parent and youth would be more likely to agree on the more readily observable behaviors. However, studies have not been able to definitively demonstrate that such is the case.

A couple of theories have posited that parent-adolescent disagreements may be the result of their perceptual differences. Carlston and Ogles (2006) proposed the Anchoring Points (AP) paradigm as an explanation of parent-youth disagreement. They suggested that parents and adolescents have differing standards for defining typical or normal behaviors, and their perceptions of abnormal or problem behaviors are measured against their different preconceived standards. Carlston and Ogles used the term anchoring points to describe the baseline standards of behavior.

The Attribution Bias Context (ABC) Model (De Los Reyes & Kazdin, 2005) proposed that the parent-youth disagreements occur because the parents and youths differ in their beliefs about what causes the problem behaviors. The ABC model suggested that parents may be inclined to see the adolescent's problem behaviors as reflecting an attribute or characteristic that is intrinsic to the adolescent. However, the adolescent may be more disposed to view the problem behaviors as situational, resulting from the context of the events that led up to the given behavior.

This study also examined attachment style as a contributing factor in the parent-adolescent disagreement phenomenon. Sable (2000) provided a simple approach to attachment styles in her description of Bowlby’s criterion that insecure “attachment behavior is either over-activated or deactivated” (p. 340). Accordingly, deactivated attachment behaviors are present in the insecure-dismissing attachment style, wherein individuals minimize their need for emotional connection with others. Their intimacy-avoidant behaviors reflect their negative mistrust of others and their positive sense of self-sufficiency (Hanisch, 2006).

At the other end of the insecure attachment dichotomy is the over-activated insecure-preoccupied attachment style. While they may see others more positively and may have more positive expectations of others, they see themselves quite negatively—perhaps unworthy of a good relationship (Hanisch, 2006). Nevertheless, they feel a strong desire or need for relationships. The secure attachment style represents individuals with positive views of self and of others (Hanisch), and they are more emotionally equipped to enjoy satisfying relationships.

Research informs us that attachments styles can change as individuals are affected by life events (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000), and that negative life events may function to maintain insecure attachment styles (Hamilton, 2000; Waters, Hamilton, & Weinfield, 2000; Waters, Weinfield, & Hamilton, 2000) or change one’s attachment style (Waters, Hamilton, & Weinfield, 2000; Waters, Weinfield, & Hamilton, 2000; Weinfield, Stroufe, & Egeland, 2000). Allen et al. (2003)
discovered positive correlations between the adolescents’ level of secure attachment and the mothers’ understanding of the adolescents’ self-perceptions, the mothers’ supportive behaviors, and the strength of the mother-adolescent relationship during times of disagreement.

Berger, Jodl, Allen, McElhaney, and Kuperminc (2005) concluded that insecure attachment was a factor in the parent-adolescent disagreement for externalizing behaviors. In a study that did not specifically focus on attachment, Treutler and Epkins (2003) concluded that parent-child disagreements were affected by the relationship between the parent and the child.

This study looked at the Ohio Scales Problem Severity items for elements that might inform us about the usefulness of distinguishing between externalizing behaviors and internalizing behaviors, the value of the perceptual differences models, and the importance of attachment theory in understanding why parents and adolescents disagree about the problem behaviors.

**Research Questions and Hypotheses**

The study considered two research questions. The first basically followed previous research in asking if parents and adolescents agreed on the problem behaviors at the time clinical services were initiated. The second connected to the parent-child relationship and asked if the quality of the relationship, as perceived by the parent, affected the degree of parent-youth disagreement.

This paper covers six hypotheses examined by the research in an effort to answer the above two research questions. The hypotheses are listed below. All references to problem severity items refer to the twenty items or questions in the Problem Severity section of the Ohio Scales.

1. Parents and adolescents disagree on the Problem Severity items which represent internalizing behaviors.
2. Parents and adolescents disagree on the Problem Severity items which represent externalizing behaviors.
3. The parent-youth disagreement on the internalizing behavior items is larger than that for the externalizing ones.
4. Adolescents’ responses demonstrate higher internalizing problem severity than do the parents’.
5. Adolescents’ responses demonstrate lower externalizing problem severity than do the parents’.
6. The level of parent-youth agreement is directly related to the quality of the parent-youth relationship, as perceived by the parent.

**Methodology**

An extensive description of the development of the Ohio Scales is beyond the scope of this study’s presentation. However, it is valuable to recognize the Ohio Scales as an instrument designed to provide a “pragmatic [method] of gathering data” (Ogles, Dowel, Hatfield, Melendez, & Carlston, 2004, p. 275) in the assessment of children and adolescents as they enter the clinical arena and in monitoring outcomes during and after the provision of mental health services. There are three corresponding forms of the Ohio Scales: youth (Y), parent (P), and worker (W). The currently used short version consists of 44 questions or items, divided into four content areas: Problem Severity (20 items), Functioning (20 items), Hopefulness (4 items), and Satisfaction (4 items).
Because the study’s purpose centered on the parent-youth disagreement, only the youth and parent forms were utilized. The focus of this study was on the 20 Problem Severity items and one of the items from the Hopefulness Scale. The 20 Problem Severity items are identical in both the parent and youth versions. The Hopefulness Scale items are different, however, and the Hopefulness Scale item utilized was from the parent form only.

Ogles et al. (2004) described a Cronbach alpha of .93 and .91 for the youth and parent forms of the Problem Severity scale, respectively. Similarly, Ogles et al. (2004) and Ogles, Melendez, Davis, and Lunnen (2001) reported .72 (Y form) and .88 (P form) two-week test-retest reliabilities for the Problem Severity Scale. Studies of validity reported that the parent version of the Problem Severity scale “correlated with the Connor’s Parent Rating Scale (r = .89, p < .05) and with the Child Behavior Checklist (r = .85, p < .05)” (Ogles et al., 2004, p. 283). For the youth form of the Problem Severity Scale, validity correlated with the Youth Self-Report (r = .82, p < .05; Ogles et al., 2004). To date, the Ohio Scales authors have not reported any validity evaluation for the Hopefulness Scale; but they have reported a Cronbach’s alpha of .78 (Y) and .77 (P), and a two-week test-retest reliability of .74 (Y) and .79 (P) (Ogles et al., 2004).

Through the use of factor analysis, Ogles, Melendez, Davis, and Lunnen (2000) and Baize (as cited by Ogles et al., 2004) have established three factor loadings or item groupings in the Problem Severity scale: externalizing items, internalizing items, and delinquency items. This study did a factor analysis to confirm the previously established item groupings. Those groupings of internalizing and externalizing problem behaviors were the bases for hypotheses 1 through 5.

Hypothesis 1 used a two-tailed \( t \)-test to assess for a difference between the mean responses of parents and youths for internalizing problem behaviors. Hypothesis 2 used a two-tailed \( t \)-test to assess for a difference between the mean responses of parents and youths for externalizing problem behaviors.

Standardized difference scores were used in the determination of parent-youth discrepancies for hypothesis 3, and a one-tailed \( t \)-test compared the mean discrepancies for externalizing problem behaviors to those for internalizing problem behaviors. De Los Reyes and Kazdin (2004) recommend using the standardized difference score to give uniformity to the scales of variability among informants. It consisted of converting informants’ raw scores to \( z \) scores and then calculating differences between parents’ and youths’ \( z \) scores.

Hypothesis 4 predicted that the youths’ ratings would be higher than the parents’ ratings for the internalizing problem behaviors. A one-tailed \( t \)-test was used to check for a significant difference between the mean responses of parents and youths. Hypothesis 5 anticipated that the youths’ ratings would be lower than the parents’ ratings for the externalizing problem behaviors. A one-tailed \( t \)-test was used to check for a significant difference between the mean responses of parents and youths.

Hypothesis 6 used two separate comparisons. For both, the parents’ scores for relationship satisfaction were grouped into three sections: dyads with high scores, dyads with mid-range scores, and dyads with low scores. In the first comparison, \( q \)-correlations were calculated for parent-youth scores on the 20 Problem Severity items. Youngstrom et al. (2000) submitted the \( q \)-correlation as a way of looking at correlations between informants rather than correlations between items or sets of items. It is a means of assessing the disagreement for each parent-youth pair. \( T \)-tests were run to compare the \( q \)-correlations for dyads with high relationship satisfaction scores to those with low relationship satisfaction scores. Similarly, dyads were grouped according to standardized difference scores, and \( t \)-tests were performed to compare the dyads with high versus low relationship satisfaction scores.
The data for the above hypotheses came from a sample population of 452 pairs of adolescents (12 to 17 years of age) and their parents or caregivers. The study used secondary data, and did not use any data that could be used to identify the participants. The participants came from a general population of over 380,000 people (U.S. Census Bureau, 2006). The absence of identifying data in the study, the size of the participant sample, and the size of the population from which the participants came implanted guarantees of identity protection. Because the study used secondary data, it did not introduce any additional activities, measurements, or risks for the participants beyond that already encompassed in their participation in the agency’s counseling services (Cox, 2007).

**Results**

A confirmatory factor analysis was used to determine which of the Ohio Scales Problem Severity items grouped as internalizing (items 12-20), externalizing (items 1-6, 10, 11), and delinquency (items 7-9) behaviors. This study’s groupings concurred with that reported by Ogles et al. (2000) and Baize (as cited by Ogles et al., 2004). The items and their grouping are reported in Table 1.

Table 1. Factor Analysis Grouping of Problem Behavior Items

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Behavior Description</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Arguing with others</td>
<td>E</td>
</tr>
<tr>
<td>2</td>
<td>Getting into fights</td>
<td>E</td>
</tr>
<tr>
<td>3</td>
<td>Yelling, swearing, or screaming at others</td>
<td>E</td>
</tr>
<tr>
<td>4</td>
<td>Fits of anger</td>
<td>E</td>
</tr>
<tr>
<td>5</td>
<td>Refusing to do things teachers or parents ask</td>
<td>E</td>
</tr>
<tr>
<td>6</td>
<td>Causing trouble for no reason</td>
<td>E</td>
</tr>
<tr>
<td>7</td>
<td>Using drugs or alcohol</td>
<td>D</td>
</tr>
<tr>
<td>8</td>
<td>Breaking rules or breaking the law</td>
<td>D</td>
</tr>
<tr>
<td>9</td>
<td>Skipping school or classes</td>
<td>D</td>
</tr>
<tr>
<td>10</td>
<td>Lying</td>
<td>E</td>
</tr>
<tr>
<td>11</td>
<td>Can’t seem to sit still, having too much energy</td>
<td>E</td>
</tr>
<tr>
<td>12</td>
<td>Hurting self (cutting or scratching self, taking pills)</td>
<td>I</td>
</tr>
<tr>
<td>13</td>
<td>Talking or thinking about death</td>
<td>I</td>
</tr>
<tr>
<td>14</td>
<td>Feeling worthless or useless</td>
<td>I</td>
</tr>
<tr>
<td>15</td>
<td>Feeling lonely or having no friends</td>
<td>I</td>
</tr>
<tr>
<td>16</td>
<td>Feeling anxious or fearful</td>
<td>I</td>
</tr>
<tr>
<td>17</td>
<td>Worrying that something bad is going to happen</td>
<td>I</td>
</tr>
<tr>
<td>18</td>
<td>Feeling sad or depressed</td>
<td>I</td>
</tr>
<tr>
<td>19</td>
<td>Nightmares</td>
<td>I</td>
</tr>
<tr>
<td>20</td>
<td>Eating Problems</td>
<td>I</td>
</tr>
</tbody>
</table>

*Note. E = Externalizing; D = Delinquency; I = Internalizing*

Each informant’s internalizing behaviors were totaled to give a cumulative score for internalizing behaviors. The means for the parents and youths were compared using a $t$-test. The same process was used for externalizing behaviors. Table 2 presents the internalizing and externalizing behavior scores for 452 parent-youth dyads. Youths and parents produced internalizing behavior means of 8.41 and 7.57, respectively, and standard deviations of 8.14 and 7.10. The inferential statistics indicated significant
differences between the parents’ and youths’ internalizing behavior scores ($t = 2.398$, $p = 0.0169$, two-tailed), which supported hypothesis 1. Externalizing behavior means were 13.0 for youths and 14.3 for parents, with standard deviations of 8.38 and 8.66, respectively. Inferential statistics supported hypothesis 2, demonstrating that parents’ scores and youths’ scores differed significantly ($t = 3.255$, $p = 0.0012$, two-tailed).

The parent-youth differential for externalizing behaviors versus internalizing behaviors was evaluated using standardized difference scores. Absolute values were used for measuring the parent-youth item differences, and the means for the internalizing scores and the externalizing scores were calculated for each dyad. The $t$-test contrasted the means for the internalizing and externalizing scores. A one-tailed $t$-test was used, as hypothesis 3 anticipated the externalizing behavior disagreement to be less than the internalizing behavior disagreement. As seen in Table 3, the results did not substantiate the hypothesis ($0.6003 < 0.7672$, $t = 10.159$, $p < 0.001$, one-tailed). Rather, they showed the externalizing behavior disagreement to have been greater than the internalizing behavior disagreement.

Hypotheses 4 and 5 used one-tailed $t$-tests because they predicted the direction of the parent-youth disagreements. The results from Table 2 support the projection from hypothesis 4 that the youths’ internalizing scores would be higher than the parents’ ($8.41 > 7.57$, $t = 2.398$, $p = 0.0084$, one-tailed). Table 2’s results also confirm the assertion from hypothesis 5 that the adolescents’ responses for externalizing problem items would be lower than the parents’ responses ($13.0 < 14.3$, $t = 3.255$, $p = 0.0006$, one-tailed).

### Table 2. Mean Scores for Parents’ and Youths’ Internalizing and Externalizing Problem Behaviors

<table>
<thead>
<tr>
<th>Behavior Group</th>
<th>Mean Scores ($SD$)</th>
<th>$t$-test</th>
<th>$p$ (one-tailed)</th>
<th>$p$ (two-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internalizing</td>
<td>Youths 8.41 (8.14) Parents 7.57 (7.10)</td>
<td>2.398</td>
<td>0.0084</td>
<td>0.0169</td>
</tr>
<tr>
<td>Externalizing</td>
<td>Youths 13.0 (8.38) Parents 14.3 (8.66)</td>
<td>3.255</td>
<td>0.0006</td>
<td>0.0012</td>
</tr>
</tbody>
</table>

$N = 452$

### Table 3. Mean Standardized Difference Scores ($SDS$)

<table>
<thead>
<tr>
<th>Behavior Group</th>
<th>Mean Scores ($SD$)</th>
<th>$t$-test</th>
<th>$p$ (one-tailed)</th>
<th>$N$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internalizing</td>
<td>$0.6003$</td>
<td>10.159</td>
<td>&lt;0.001</td>
<td>452</td>
</tr>
<tr>
<td>Externalizing</td>
<td>$0.7672$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Ohio Scales has one item in the Hopefulness section of the parent (P) form that inquires about the parent’s satisfaction with his or her relationship with the child. It does not have a corresponding item on the Youth (Y) version. Hypothesis 6 proposed that there was a positive correlation between the parent-youth relationship, as perceived by the parent, and the parent-youth score agreement. Table 4 provides the results for two methods which were used to explore the hypothesis.

For both methods the parents’ perceived relationship satisfaction scores were partitioned into three separate groups: a high satisfaction level, a neutral level, and a dissatisfaction level. First, a $t$-test compared the mean q-correlation value for the high satisfaction group with the q-correlation mean for the
The second method compared the standard difference scores, and showed a significant difference ($t = 2.345, p = 0.020$) between the high-satisfaction mean (0.6249) and the low-satisfaction mean (0.7029). Because the mean of the standardized difference scores was lower for the high-satisfaction group than for the low-satisfaction group, it is noted that there is a positive relationship between the parents’ perceived relationship satisfaction and parent-youth agreement.

<table>
<thead>
<tr>
<th>Relationship Satisfaction Group</th>
<th>Test of Disagreement</th>
<th>High</th>
<th>Low</th>
<th>$t$-test</th>
<th>$p$ (two-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q-correlation, mean</td>
<td>0.5484</td>
<td>0.5097</td>
<td>1.076</td>
<td>0.283</td>
<td></td>
</tr>
<tr>
<td>Standardized difference score, mean</td>
<td>0.6249</td>
<td>0.7029</td>
<td>2.345</td>
<td>0.020</td>
<td></td>
</tr>
</tbody>
</table>

Note. $n = 192$ for the high satisfaction group. $n = 89$ for the low satisfaction group

Discussion, Significance and Implications of the Study Results

The first five hypotheses looked at externalizing and internalizing problem behaviors and differences in how parents and youths responded to them. As originally hypothesized, parents and youths did not agree on the internalizing behaviors, they did not agree on the externalizing behaviors, and youths scored the internalizing problems behaviors more severely than did the parents while the parents scored the externalizing ones more severely than did the youth.

Contrary to the original hypothesis, the parent-youth discrepancy for rating externalizing behaviors was greater than the parent-youth discrepancy for scoring internalizing behaviors. It was originally anticipated that the covertness of the internalizing behaviors versus the overt nature of the externalizing behaviors would create a greater discrepancy because the parents could not see what the adolescent was thinking or feeling, but they could observe what the youth was doing. Perhaps, as alluded to by the perceptual differences models, parents and youths simply diverge in their perceptual spotlighting. If the parents’ focus is on the behavior and the youths’ is more self oriented, the youth’s focus in both cases, internalizing and externalizing, is predominantly self oriented—which corresponds to their developmental task of identity development. In both instances the youth’s scores may reflect her or his internal processes, which creates an inherent gap between the youth’s scoring of externalizing behaviors and the actual behavior, and broadens the parent-youth discrepancy. Even though the results contradicted the hypothesis, this argument is consistent with the Attachment Theory explanation of parent-youth disagreement, as presented below.

Insecure attachment represents a loss of security and a heightened awareness of insecurity. The individual’s focus has become more security seeking. Security seeking might emphasize internal processes over external activities. Even externalizing problem behaviors’ levels of severity are connected to how they affect one’s internal sense of security. Thus, insecurity is self-centered. Externalizing problem behaviors might be seen as less severe because the youth is less concerned about how the action impacts others and more concerned with how it serves to reduce the youth’s
insecurity-induced anxiety. Perhaps the youth’s sense of disengagement—low caregiver attachment—provokes an insecurity that is self-centered (Cox, 2007, p. 92).

The study looked at attachment theory through a consideration of the results for the parent-youth relationship. Hypothesis 6 predicted that parent-youth agreement would correspond to the quality of their relationship, as perceived by the parent; and the pertinent question was “what do parent-youth agreement and disagreement tell us about their relationship?” Reciprocally, how might the quality of the relationship affect how well they communicate differences? Effective therapy requires giving significant attention to the interpersonal relationships within the family, and particularly to the parent-child relationship. Family and parent-child dynamics are critical.

The results for hypothesis 6 were inconclusive. The q-correlations part of the study did not give evidence that parent-youth item agreement was affected by the parents’ perception of the quality of the parent-youth relationship. However, the results for the standard difference scores substantiated the premise that the quality of the relationship, as perceived by the parent, influenced the degree of parent-youth agreement or disagreement.

The inconclusive results for hypothesis 6 encouraged additional data analysis. Specifically, correlations were run for the parents’ perceived relationship satisfaction and both parents’ and youths’ ratings of Externalizing Problem Behaviors, Internalizing Problem Behaviors, Delinquency Behaviors, and the total or collective Problem Behavior scores (total for all 20 items). Table 5 gives results that reinforce the premise that the quality of the relationship, as perceived by the parents, has a positive correlation with how both the parents and the youth scored on the Problem Severity scale. While it may be reasonable to anticipate that the parents’ subjective perceptions of the quality of the relationship might affect their scoring of the youths’ behaviors, we are left uncertain as to why it might impact the youths’ scores.

The study’s support for the proposal that the quality of the relationship is a factor in parents’ and youths’ responses to the Problem Severity items reinforced the corresponding proposition that attachment theory plays a role in explaining the parent-youth disagreement. Although backing for the effect of parent-youth relationship on the differences in their scoring was limited, it was strong enough to stimulate questions for further research.

Table 5. Pearson Correlations for Parents’ Perceived Relationship Satisfaction

<table>
<thead>
<tr>
<th>Informant Scores</th>
<th>Youth</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total/collective Problem Behavior scores</td>
<td>0.353*</td>
<td>0.513*</td>
</tr>
<tr>
<td>Externalizing Problem Behavior scores</td>
<td>0.363*</td>
<td>0.542*</td>
</tr>
<tr>
<td>Internalizing Problem Behavior scores</td>
<td>0.227*</td>
<td>0.225*</td>
</tr>
<tr>
<td>Delinquency Problem Behavior scores</td>
<td>0.183*</td>
<td>0.336*</td>
</tr>
</tbody>
</table>

Notes. $n = 441$; All correlations are between the parents’ Relationship Satisfaction score and youth or parent scores as identified in the column heading.

$p < 0.01$
Study limitations included the lack of sufficient validation for the item asking for the parents to indicate their relationship satisfaction with their child. The fact that the youths were not asked the same question was another study limitation. Unfortunately, the youths were not given the opportunity to disclose their half of the relationship equation, and we have no information about parent-youth agreement or disagreement regarding the quality of their relationship, nor is it known if that agreement or disagreement was related to their disagreement on the Problem Severity items in the Ohio Scales questionnaire.

Further research could more definitively consider the premises of the ABC Model and the Anchor Points theory. This could be accomplished by including questions specific to either model or both models. Research might also provide for assessing the informants’ attachment styles, thereby facilitating a more clear cut evaluation of the effect of attachment style on the parent-youth discrepancies. A qualitative study might be able to further explore the nature of the parent-youth relationship and search for themes that point to Attachment Theory, the ABC Model, or Anchoring Points. A qualitative study might illuminate factors that have heretofore been ignored, neglected, or dismissed.

This research study has confirmed the importance of recognizing the parent-youth relationship as a critical component of the clinical assessment and as a topic deserving further research. It has given therapists who work with adolescents an expanded awareness of the usefulness of Ohio Scales in assessing problem behaviors and as a tool in planning and executing successful interventions. It has also served to reinforce our realization that multiple informants enhance the clinician’s assessment of the adolescent’s mental health.

REFERENCES


**Other Publications of the Research**


**Presentations of the Research**

THE IMPACT OF AN INTEGRATED DUAL DISORDER TREATMENT MODEL IN DETECTING SUBSTANCE USE DISORDERS IN A POPULATION WITH SEVERE MENTAL ILLNESS

University of Cincinnati
Division of Human Services of the College of Education

Deborah A. Vorst, OTR/L, MEd
Randall R. Cottrell, DEd, CHES

The purpose of this study was to examine the effectiveness of an Integrated Dual Disorder Treatment (IDDT) Model in increasing the detection of dual disorders in a population with a severe mental illness and detecting dual disorders of substance use and mental illness at earlier points during hospitalization following institution of this model at a state hospital in southwestern Ohio.

This study was important to the Ohio Department of Mental Health (ODMH) because of multiple factors.

- Mental and addictive disorders have been recognized as a national health concern for many years following epidemiological studies in 1990 and 1994; i.e., numbers affected, co-morbid conditions, decreased functioning, and financial impact.

- The Patient Outcomes Research Team (PORT) study found limited use of evidence-based practices (EBP) known to be effective for improved functioning in individuals with schizophrenia in their 1998 report (Lehman, Steinwachs, & the Co-Investigators of the PORT Project, 1998).

- The Surgeon General’s 1999 Report on mental health in America supported research findings of treatment efficacy, optimization of functioning, and community living (US Department of Health & Human Services, 1999).

- The Ohio Department of Mental Health (ODMH) review in 2000 of the Surgeon General’s Report and PORT study identified lack of utilization of EBP Models in the state mental health system.

- ODMH launched an initiative to identify and implement EBP Models in 2000.

- Evidence-based practices were those interventions known to improve client outcomes through consistent research findings (Drake et al., 2001; Goldman et al., 2001; Torrey et al., 2001).

- The Integrated Dual Disorder Treatment (IDDT) Model was selected as an EBP for ODMH because of its history of outcomes research with findings of increased client engagement in treatment services, decreased substance use, remission (six months or more without evidence of substance use) on an outpatient basis.

- This study researched the adaptability and efficacy of an outpatient model, with modifications, to an inpatient setting. The aim was improved identification of dual disorders earlier in a patient’s hospitalization with longer-range goals of reducing relapse of both the mental illness and/or substance use disorder and avoiding re-hospitalization through earlier treatment.
Literature Review

Kessler et al. (1994) reported that in individuals with a severe 12-month disorder such as mania, psychosis, or depression with suicidal ideation which required hospitalization or resulted in seriously disturbed functioning there was a 97 percent co-morbidity rate with other mental or addictive disorders. Within the diagnostic categories of schizophrenia and bipolar disorder, lifetime prevalence rates of substance dependence/abuse were 47 percent and 56 percent respectively (Regier et al., 1990). In essence, “…while a history of some psychiatric disorder is quite common among persons age 15 to 54 in the United States, the major burden of psychiatric disorder in this sector of our society is concentrated in a group of highly co-morbid people who constitute about one sixth of the population” (Kessler et al., 1994, p.11). Co-morbidity of psychiatric disorders was also associated with higher utilization of expensive treatment services (Craig & Bracken, 1995; Dickey & Azeni, 1996).

The need to develop an integrated system of care to treat substance abuse disorders within the population with a severe mental illness became apparent as research was mounting in the late 1980s. This dual disorder group frequently experienced relapse of symptoms and displayed disruptive behavior as a result of substance abuse, which resulted in frequent episodes of homelessness and institutional living (Drake, Mueser, Clark, & Wallach, 1996).

The state of New Hampshire in 1987 began efforts to establish integrated treatment services for individuals with dual disorders by linking the state’s divisions of mental health and alcohol and drug abuse prevention with the New Hampshire-Dartmouth Psychiatric Research Center (Drake, Noordsy, & Ackerson, 1995). Several beliefs held by these early innovators were that the mental health system was responsible for the care of individuals with severe mental illness, that treatment for substance abuse disorders should be blended into the mental health system, that substance abuse treatment should be provided throughout all inpatient and outpatient programs, and that treatment must be matched to the needs of the client rather than expecting clients to fit into one traditional substance abuse treatment model. As attempts were made to treat this dually diagnosed population in the traditional substance abuse model, it became clear that a majority of people were not able to benefit from these standard treatment approaches. A study by the Center for Mental Health Services (1994) found such a lack of connection by the population with a severe mental disorder with the substance abuse delivery system that strong advocacy efforts were initiated for more integrated treatment systems that dealt both with severe mental illness and substance abuse by the same clinicians. This advocacy for integrated treatment for individuals with a dual diagnosis was reiterated by Kessler et al. (1996) and by the Center for Substance Abuse Treatment (2006a).

While epidemiological studies identified a high prevalence of substance use in individuals with a severe mental illness, several studies found under-identification of substance use disorders in this population. A study by Maisto, Carey, Carey, Gordon, & Gleason (2000) found that up to 60 percent of adult psychiatric patients who had not been diagnosed as substance abusers in their medical record did meet criteria for substance abuse on a structured interview. Farris et al. (2003) found screening on admission for a co-existing substance use disorder in patients with a diagnosis of schizophrenia to be critical. They reported that approximately 30 percent of patients with a co-existing substance use disorder had obvious substance use symptoms on admission. The remaining 70 percent of patients required more careful interviewing or testing to reveal their co-existing disorder. Other researchers have identified the following factors as obstacles to the assessment process in clients with dual disorders: clinician’s failure to take a thorough history, client’s denial and minimization of the problem, distinguishing effects of substance use from symptoms of a mental illness, attempts to establish one disorder as primary and the
other secondary, client’s cognitive and mood related distortions, history of sanctions due to substance use, low motivational level, and different norms for individuals with a dual disorder regarding consequences of lower amounts of substance use (Mueser, Noordsy, Drake, & Fox, 2003). The presence of co-morbid conditions needed to be diagnosed in order for appropriate treatment and aftercare referrals to follow (Center for Substance Abuse Treatment, 2006b).

Because one of the desired goals of the IDDT Model was to provide a continuum of treatment between inpatient and outpatient programs, the role of inpatient programs required consideration since treatment primarily occurred in the community. Since inpatient psychiatric hospitalizations were generally brief, active substance abuse treatment was often not thought to be appropriate to the client’s readiness for change. For this reason, effective uses for an inpatient hospitalization were thought to be detection, assessment, stage-specific treatment, and referral to appropriate linkages with the outpatient dual disorder system (Drake & Noordsy, 1995).

Research Questions

The research answered the following questions:

1. Will there be a higher detection of dual substance use and severe mental illness disorders following the introduction of the new Integrated Dual Disorder Treatment Model (IDDT) than prior to initiation of the model?
2. Will patients with dual substance use and severe mental illness disorders be diagnosed earlier following the introduction of the new IDDT Model than patients prior to initiation of the model?

Overview of the Methodology

In this study there was no participant contact, only record review. For the purpose of this study, information from previously collected documentation (medical records, demographic data) was utilized in order to answer the above two research questions. The alpha level was set at .05 for both the \( t \)-test and Chi-square test.

The following information was accessed and utilized to answer research question number one. A Patient Care System (PCS) administrator accessed the PCS files to establish the number of patients in the hospital and to identify the number of patients in the hospital who were dually diagnosed with a substance use and mental illness disorder on December 31, 2003, and on December 31, 2005 in order to establish detection rates at two points in time. The earlier point was eight months before implementation efforts of the model began and the later point was eight months after a fidelity site visit on April 21, 2005 that demonstrated model fidelity at 67 percent. These rates were used for comparison and to evaluate the effectiveness of screening measures. A Chi-square test was used to determine statistical significance between rates of detection at two points to answer question number one.

In order to answer research question number two, the PCS administrator again accessed PCS files. For patients identified as dually diagnosed on December 31, 2003 and December 31, 2005, a determination was made as to the point in time during the hospitalization when the dual diagnosis was made. A \( t \)-test was used to determine significance of change with regard to timing for the detection to answer question two.
Description of the interventions. Interventions in this study were driven by the inpatient fidelity scale and were primarily directed toward staff in the form of increasing awareness of substance use through education on the IDDT Model and using this awareness to impact diagnostic practices. The first component of the IDDT Model was screening of all patients for the presence of dual disorders. Registered nurses completed the formal substance use screening during the assessment process on admission. Physicians also were able to detect substance use during the comprehensive psychiatric assessment they performed upon admission. After implementation of the IDDT Model, all patients were formally screened and further evaluated if warranted for the presence of co-existing disorders upon their admission to the state hospital to determine diagnoses and treatment needs. The screening tool selected was the CAGE, an instrument that asked four questions of the newly admitted patients regarding cutting down on use, annoyance by others criticizing your use, guilt about use, and the need for an eye-opener to start the day. These questions were included during the clinical interview by the nurses. If indicated, collateral information was sought to provide additional information to the patients’ self reports.

Research Question #1. The following information was accessed through the PCS data base and was utilized to answer research question number one that asked, “Will there be a higher rate of detection of dual substance use and severe mental illness disorders following the introduction of the new IDDT Model than prior to initiation of the model?”

On December 31, 2003, prior to implementation of the IDDT Model, 47 patients were diagnosed with both a substance use and mental illness disorder. The hospital census on that date was 104 patients. Forty-five percent of the population had been diagnosed with a dual disorder. On December 31, 2005, sixteen months after implementation of the IDDT Model, 61 patients were diagnosed with both a substance use and mental illness disorder. The hospital census on that date was 99 patients. Sixty-two percent of the population had been diagnosed with a dual disorder. A Chi-square test was used to determine statistical significance between rates of detection at the two points in time before and after implementation of the IDDT Model: \( \chi^2(1, N = 199) = 5.495, p = .0203 \). The null hypothesis was rejected (Table 1). Based on these findings, the number of patients diagnosed with both a substance use and mental illness disorder after implementation of the IDDT Model was higher than the number of patients diagnosed with both a substance use and mental illness disorder before implementation of the IDDT Model. It was therefore concluded that the IDDT Model was effective in diagnosing dual substance use and mental illness disorders on the specific dates examined in this study.

<table>
<thead>
<tr>
<th>Diagnostic Status of On-rolls Patients</th>
<th>12/31/2003</th>
<th>12/31/2005</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( N )</td>
<td>( N )</td>
<td>( N )</td>
</tr>
<tr>
<td>Patients on Roll with a Dual Diagnosis</td>
<td>104 (100%)</td>
<td>99 (100%)</td>
<td>95</td>
</tr>
<tr>
<td>Patients on Roll without a Dual Diagnosis</td>
<td>108</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>203</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. \( \chi^2 = 5.495, df = 1, *p = .0203 \)

Research Question #2. In order to answer research question number two which asked, “Will patients with dual substance use and severe mental illness disorders be diagnosed earlier following the introduction of the new IDDT Model than patients prior to initiation of the model?” the PCS administrator again accessed PCS files.
For patients identified as dually diagnosed on December 31, 2003, and December 31, 2005, the number of days after admission when the dual diagnosis was made was determined. The time period for identification on both dates ranged from the day of admission to 18 years. The average length of time for the dual diagnosis to occur for those 47 patients that were identified as dually diagnosed on December 31, 2003, prior to implementation of the IDDT Model, was 462 days. In comparison, the average length of time for the dual diagnosis to occur for those 61 patients that were identified as dually diagnosed on December 31, 2005, after implementation, was 361 days. These means included six patients identified on December 31, 2003, who were still hospitalized in 2005. A t-test was used to determine if there was a significant difference in timing for the detection of dual disorders to answer question number two (\( t = .4155, df = 106, p = .6786 \)). The null hypothesis was not rejected (Table 2). These six patients identified on December 31, 2003, who were still hospitalized in 2005, averaged 3090 days from admission until date of substance use diagnosis and had been captured during the earlier count in December 2003. Because of their long length of stay due to forensic status, they were still on rolls in December 2005. Counting them again in 2005 was necessary due to the study design. In addition to these six patients, there were three patients on hospital rolls on December 31, 2003, who were not included in the dual diagnosis count because they were not yet dually diagnosed until 2004. These three patients averaged 732 days from admission to dual diagnosis and were captured due to the implementation of the annual screening process for dual disorders in the nursing assessment.

Table 2. Number of Days after Admission that the Dual Diagnosis was made before and after Implementation of the Integrated Dual Disorder Treatment Model

<table>
<thead>
<tr>
<th>Statistics</th>
<th>12/31/2003</th>
<th>12/31/2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>462 days</td>
<td>361 days*</td>
</tr>
<tr>
<td>n</td>
<td>47</td>
<td>61</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1349.7</td>
<td>1187.8</td>
</tr>
</tbody>
</table>

Note. \( t = .4155, df = 106, p = .6786 \)

*Includes 6 patients previously counted in 2003 due to forensic status and long length of stay (averaged 3090 days from admission to dual disorder diagnosis) and 3 patients on rolls in 2003 that were not dually diagnosed until 2004 (averaged 732 days from admission to dual disorder diagnosis) due to the new annual screening process.

An analysis of the data was also conducted with the six long-term patients removed from the count at both the 2003 and 2005 data points. This analysis contained the three previously mentioned patients with an average of 732 days from admission to dual diagnosis that were on rolls in 2003 but not diagnosed with a substance use disorder until the introduction of the annual screening in 2004. They were captured only in the 2005 analysis. This analysis found that there was a difference in mean number of days from admission to dual diagnosis between the 2003 and 2005 groups of 14.88 days. While not statistically significant, it was important from a treatment perspective in a hospital setting because it allowed earlier substance use treatment to occur.
Discussion and Implications

Because Ohio was the first state to implement use of the IDDT Model modified for an inpatient setting, there were no other studies for comparison. For that reason, the discussion focused on possible explanations of findings from this research study. The detection rate of dual disorders significantly increased following the implementation of the IDDT Model in this southwestern Ohio state hospital. During that period of time a Certified Chemical Dependency Counselor had been hired to complete assessments, an interdisciplinary IDDT steering committee was formed, and training on IDDT was implemented for all multidisciplinary staff to increase awareness of dual disorders in this inpatient population. Clinical supervision by a physician board certified in addiction psychiatry, an occupational therapist, and a social worker was initiated for treatment teams two times a month after the model was implemented the supervision discussed diagnosis, patients’ readiness for treatment, and treatment recommendations based on stage of treatment for particular patients. This supervision reinforced the education received by videoconference and on-site trainings and emphasized awareness of the existence of dual disorders within the inpatient, state hospital setting.

The length of time after admission for dual disorders to be recognized decreased, but did not reach significance after implementation of the model for sixteen months. A significant factor expected to contribute to the reduction in time to diagnosis of a dual disorder was the introduction of screening mechanisms for all patients. Acute patients were screened during the initial assessment period of their hospitalization and dual disorders were recognized earlier in these newly admitted patients. Three long-term forensic patients were captured for the December 2005 count because of an annual reassessment. Screening mechanisms for detection of dual disorders on admission and annually were added to the nursing assessment as part of IDDT implementation. Greater attention was also paid to the detection of dual disorders through educational opportunities offered to all staff and by the hiring of a chemical dependency counselor.

Recommendations for practice. Results of this study indicate the IDDT Model may have been effective in enhancing early detection but statistical significance was not obtained. Further study is needed to confirm this finding. This research would support continued use of this model, including the following specific elements: multi-faceted educational campaign and hiring dedicated staff with a team orientation.

Initial training of all clinical staff on basic information related to this model was completed. Department administrators identified staff members with an interest in the dual disorder population and encouraged participation in additional training sessions on a variety of IDDT topics relevant to their roles. This was followed by regular clinical supervision of treatment teams that demonstrated application to practice. Teams were encouraged to identify patients’ readiness for change and apply stage-specific interventions while they were hospitalized. Due to the first finding of increased diagnosing of dual disorders after implementation of the model that included an educational campaign, it is recommended that this training approach and ongoing clinical supervision be continued and used for other facilities interested in increasing awareness of dual disorders in their population.

Another recommendation for practice is to hire dedicated staff with a focus specifically on assessment and treatment of this population. A certified chemical dependency counselor was hired at the point of implementation for this project. This counselor was hired to participate in treatment team meetings, complete assessments, and recognize signs and symptoms of substance use that supported the gathering of collateral information that helped to identify previously unidentified dual disorders. This
individual also had a background in treatment of mental illness and was able to incorporate treatment of both mental health and substance use into practice. In addition, this individual served as a resource to treatment teams and invited other interdisciplinary staff members to function as group co-facilitators for IDDT stage-specific groups. This application to practice reinforced learning from previous staff training sessions and served to increase substance use recognition among multi-disciplinary staff members. This person may have contributed to the increased dual disorder diagnoses seen in this study. It would seem that hiring a certified chemical dependency counselor is partially supported by this preliminary research.

Additional practice recommendations included the designing of forms to provide visual cues for information deemed important to be collected for treatment purposes. As part of the implementation process, screening questions for substance use were integrated into the nursing assessment completed on admission and annually for longer stay forensic patients. This screening prompted a more in-depth SAMI (Substance Abuse Mental Illness) assessment and thus earlier recognition of dual disorders and also a means of structured identification later in hospitalization if additional information became available from the patient or collateral sources.

Recommendations to improve research. One recommendation to improve this research involved changing the methodology of data collection regarding the timing of the dual diagnosis after admission. Rather than collecting diagnostic data for all on-rolls patients on a particular date, it is recommended that data be collected on new admissions or discharged patients over selected periods of time before and after implementation of the model. This would have served to decrease the impact of the long-term forensic patients on the data and more accurately reflected acute changes in diagnostic practice.

Another recommendation to improve and assist with research is to increase the capabilities of the PCS data reporting system. During the data gathering phase, the researcher found discrepancies between the information listed on the electronic aggregate report sent from the Central Office of ODMH and individual patient review information regarding date of diagnosis. The reason for this was that the files used centrally only contain the effective date of the most current diagnosis. Because of this, the researcher was required to enter through PCS each patient’s individual file of a particular admission to learn of the date of initial diagnosis of dual disorders in order to accurately calculate time to diagnosis. In addition, the PCS system has recognized size limitations. For the program reviewed, it handled approximately 12 months worth of data. Beyond that, the information became inaccurate and required individual review also. This limits capabilities for accurate reports beyond 12 months unless files are individually accessed, which significantly increases time invested in research. If inaccuracies are not detected by researchers and aggregate reports are accepted at face value, the potential for decision making based on faulty data is increased.

Recommendations for future research. An overall recommendation is to develop a longitudinal research study. Participants would be entered into the study at admission and followed throughout intervention and beyond. The same variables and data collection strategies used in this study could be used in the longitudinal study. This type of study would help to confirm the benefits of the IDDT Model and potentially establish greater fidelity to evidence-based practice.

Another recommendation for research is to measure patient movement through stages of treatment during an inpatient hospitalization or longitudinally over multiple hospitalizations. For the greatest impact, this could involve both measurements made by inpatient and outpatient providers trained on identifying stage of treatment.
Another research topic includes assessment of quality of life measures in concert with stage of treatment. For example, do scores on quality of life issues such as vocational involvement, stable housing, and re-hospitalization rate show a correlation with stage of treatment? Does decreasing substance use due to engagement in active substance abuse treatment impact ability to maintain stable employment? Again, inpatient and outpatient providers would need to be involved in this measurement.

As this is a model of practice with multiple fidelity measures, analyzing the impact of particular interventions could be of great value. Examples include the use of motivational interventions by a greater number of trained staff members, increased number and types of family interventions, development of vocational programming, and increased patient involvement in community 12-step groups. There are multiple opportunities for research to improve evidence-based practice in the state hospital system.

REFERENCES


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