



Connecting active duty and returning veterans to mental health treatment: Interventions and treatment adaptations that may reduce barriers to care



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HIGHLIGHTS

- ▶ Barriers to care include stigma, practical barriers, and treatment perceptions.
- ▶ Treatment adaptations and other interventions may help address these barriers.
- ▶ Adaptations include brevity, flexibility, and use of technology.
- ▶ Interventions also reframe perceptions and include military-specific components.
- ▶ Future research should examine the efficacy of these adaptations.

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ABSTRACT

Recent military operations in Afghanistan and Iraq have involved multiple deployments and significant combat exposure, resulting in high rates of mental health problems. However, rates of treatment-seeking among military personnel are relatively low, and the military environment poses several obstacles to engaging in effective clinical interventions. The current paper first reviews barriers and facilitators of treatment-seeking and engagement among military personnel, including stigma, practical barriers, perceptions of mental health problems, and attitudes towards treatment. Next, this paper reviews treatment adaptations and other interventions that are intended to reduce barriers to care among active duty and returning military personnel. These include early interventions, brief formats, integrating clinicians into the medical and military context, technology-based interventions, addressing negative treatment perceptions, screening/early identification, and enlisting unit support.

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1. Introduction

Since September 11, 2001, American service members have deployed nearly 3.3 million times to Iraq or Afghanistan. This number, as of October 2009, reflects the fact that over 2 million individual service members have deployed, with nearly 800,000 deploying multiple times (Tan, 2009). Current military operations frequently involve multiple deployments and high intensity guerilla warfare, resulting in heightened exposure to traumatic events such as direct fire, witnessed violence, and physical injury (J-MHAT 7, 2011; Seal, Bertenthal, Miner, Sen, & Marmar, 2007; Wright, Huffman, Adler, & Castro, 2002). For example, commonly reported stressors among soldiers and marines returning from military operations in Afghanistan and Iraq include roadside bombs, length of deployment, handling human remains, killing an enemy, seeing dead or injured Americans, and being unable to stop a violent situation (Hoge et al., 2004). In studies of soldiers and marines who deployed to Iraq, 71–86% reported having engaged in a fire-fight, 50–57% had handled human remains, and 55–58% had experienced an improvised explosive device (Hoge et al., 2004; J-MHAT 7, 2011). Combat exposure is associated with a high risk of developing mental health problems, including posttraumatic stress disorder (PTSD), depression, and substance abuse/dependence (e.g., Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995).

Despite these needs, rates of mental health treatment-seeking among military personnel are low. Therefore, it is important to understand barriers and facilitators of treatment-seeking in this population. In order to facilitate receipt and delivery of effective treatments, it is also important to evaluate the empirical support for interventions designed to alleviate the mental health problems that are commonly encountered in military settings. Although several of these treatments have been evaluated for the veteran population, fewer have been tested among active duty personnel. In the present review we pay special attention to the challenges associated with active duty service members seeking and benefiting from mental health treatment (e.g. stigma, demanding work schedules, low emotional engagement), and discuss adaptations to evidence-based treatments that can improve their effectiveness when applied to the active duty and returning veteran population.

The present review begins with a discussion of the prevalence of psychiatric disorders and mental health treatment-seeking in military populations. We then summarize research on barriers and facilitators of treatment-seeking and effectively engaging in treatment. Next, we review treatment-outcome studies that have been conducted with active duty and returning veterans, with a focus on how these treatments address the challenges of delivering treatment in the military environment. Finally, we describe the importance of treatment adaptations that address barriers to care among military personnel, and programs that attempt to reduce the stigma associated with getting needed treatment.

2. Prevalence of psychiatric disorders

Studies estimate that 19–44% of soldiers returning from Afghanistan or Iraq (Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF)) meet current criteria for a mental health diagnosis (Hoge,

Auchterlonie, & Milliken, 2006; Kim, Thomas, Wilk, Castro, & Hoge, 2010; Milliken, Auchterlonie, & Hoge, 2007; Seal et al., 2007; Seal et al., 2009). Approximately 14–28% meet current or past year criteria for PTSD (Seal et al., 2009; Tanielian et al., 2008; Thomas et al., 2010), 13–14% meet criteria for depression (Seal et al., 2009; Tanielian et al., 2008; Thomas et al., 2010) and 3–5% meet criteria for alcohol or drug use disorders (Seal et al., 2009). In a representative sample of the U.S. population, the rate of current PTSD is estimated to be 3%, and the rate of major depressive disorder is estimated to be 7% (Kessler, Chiu, Demler, & Walters, 2005). Therefore, the estimated prevalence of PTSD is five to seven times higher and the prevalence of depression is twice as high among recently deployed service members. The prevalence of alcohol and drug use disorders appears to be similar across civilian and deployed military personnel samples (Grant et al., 2004; Ramchand et al., 2011).

3. Mental health treatment-seeking

Despite high rates of mental health disorders, a large portion of soldiers do not get help for their difficulties. Several studies of recently deployed service members indicate that approximately half of individuals with a mental health problem do not seek mental health services (Hoge et al., 2006; Kehle et al., 2010; Tanielian et al., 2008). In a study of soldiers and Marines who met criteria for a psychiatric disorder, only 23 to 40% reported receiving professional help during the previous year (Hoge et al., 2004). Furthermore, most soldiers do not pursue follow-up care after their initial referral to mental health treatment. In a study of Iraq veterans, only 42% of those referred for mental health treatment received follow-up care (Milliken et al., 2007). Therefore, it appears that soldiers do not seek or receive mental health services commensurate with the high needs for treatment in this population.

4. Barriers to mental health treatment-seeking

Prior researchers have posited that one of the primary reasons soldiers do not seek treatment for psychological problems is the stigma associated with admitting psychological difficulties (Britt, 2000; Greene-Shortridge, Britt, & Castro, 2007; Porter & Johnson, 1994). Soldiers may believe that seeking treatment from a mental health professional will lead other soldiers to view them as weak and incapable of handling their own problems, and that their commanders will view and rate them differently. Britt (2000) examined the stigma associated with having a psychological versus medical problem among soldiers ($N=800$) returning from a peacekeeping mission to Bosnia. Britt (2000) found that 61% of soldiers agreed with the statement that admitting a psychological problem would harm their career (compared to 43% for admitting a medical problem) and 45% believed that admitting a psychological problem would cause their co-workers to have less confidence in them (compared to 22% for a medical problem). Overall, the stigma associated with admitting a psychological problem was significantly higher than the stigma associated with admitting a medical problem.

Similarly, a study of OEF/OIF veterans found that one in three service members were concerned about stigma associated with mental health treatment-seeking (Hoge et al., 2004), and another study of Iraq

veterans found that 70% had a concern about being labeled as having a mental disorder (Stecker, Fortney, Hamilton, & Ajzen, 2007). These concerns are likely to be elevated in the military environment due to the fact that commanding officers have access to service members' mental health records, and service members who are seen as "unfit" for service can be discharged or removed from duty (Porter & Johnson, 1994; Vogt, 2011).

In addition to the stigma of seeking treatment, researchers have found that service members perceive practical barriers associated with getting care, such as not having adequate transportation to get to treatment, not being able to get time off for treatment, and not having financial resources for treatment (Britt et al., 2008; Hoge et al., 2004; Sayer et al., 2009; Wright et al., 2009). Hoge et al. (2004) found that soldiers returning from Iraq who scored positively for a mental health problem were twice as likely as other troops to report fear of stigmatization and concern about practical barriers to obtaining psychological help. In addition, Britt, Greene, Castro, and Hoge (2006) found that among soldiers reporting a psychological problem, those who sought treatment for their problem reported lower stigma and fewer barriers to care than those who did not seek treatment. Research has shown that stigma and practical barriers to care represent two different dimensions regarding why service members do not seek needed treatment (Britt et al., 2008; Wright et al., 2009), and will likely require different interventions to encourage treatment-seeking.

Although most of the research on determinants of treatment-seeking in a military setting has focused on stigma and practical barriers to care, some recent research has investigated the role of personal beliefs about mental illness and treatment. Regarding personal beliefs about mental illness, one qualitative study of active-duty male Air Force personnel experiencing symptoms of PTSD found that soldiers felt they could handle the problems themselves, that they were not ready to talk about their problems, and that they did not want to make a big deal out of their symptoms (Visco, 2009). Similarly, Britt et al. (2011) found that Reserve Component veterans who had a mental health problem but did not seek treatment reported beliefs that the problem was not severe or that the veteran could handle the problem themselves. Beliefs that psychological problems can be handled oneself may delay treatment-seeking (MacKenzie, Gekoski, & Knox, 2006; Mackenzie, Knox, Gekoski, & Macaulay, 2004). Such beliefs may be more prevalent in military settings, where soldiers are expected to "tough out" difficult emotions (Nash, Silva, & Litz, 2009; Vogt, 2011).

Studies have also identified beliefs about mental health treatment that serve as barriers to care. These include beliefs that providers are untrustworthy or won't understand them, that treatment is not helpful, that treatment is only for extreme problems, and that negative side effects will be experienced in response to medication (Edlund, Fortney, Reaves, Pyne, & Mittal, 2008; Kim, Britt, Klocko, Riviere, & Adler, 2011; Sayer et al., 2009). In addition, a discouraging social network and lack of knowledge about mental illness represent potential determinants of treatment-seeking behavior in military populations (Sayer et al., 2009).

A small number of studies have empirically examined the relationships between these attitudes and treatment-seeking. In a study of soldiers who had deployed to Iraq, negative attitudes about mental health care were associated with decreased likelihood of seeking treatment (Kehle et al., 2010). Among National Guard and reservist soldiers, negative beliefs about psychotherapy and decreased levels of perceived unit support were associated with more stigma and barriers to care. Negative beliefs about mental health care have also been associated with decreased likelihood of seeking counseling and medication (Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009). Kim et al. (2011) examined treatment-seeking in active duty soldiers deployed to Iraq, and found that negative beliefs about mental health treatment and mental health professionals distinguished soldiers with a mental health problem who sought treatment from those who did not. These

studies suggest that stigma, access to care, and beliefs about mental health treatment all represent important barriers to mental health service use. Therefore, interventions that address these barriers would likely be of benefit in facilitating mental health treatment-seeking.

5. Facilitators of mental health treatment-seeking

In contrast to research on the barriers to mental health treatment seeking, little research has examined facilitators of treatment-seeking in military samples, and only a few studies have focused on active duty service members. Two studies have examined the relation between leadership and barriers to care. Wright et al. (2009) surveyed 680 soldiers in combat support units three months after deployment to Iraq. Findings indicated that soldiers who rated their leaders (officers) more highly on leadership skills and reported higher unit cohesion were less likely to report stigma towards mental health treatment-seeking. They were also less likely to endorse barriers to care such as scheduling and logistical difficulties. Britt, Wright, and Moore (2012) examined noncommissioned officer (NCO) and officer leadership (both positive and negative leader behaviors) as predictors of stigma and practical barriers, both between soldiers and within soldiers over a three month time period. These authors found that NCO leadership was a stronger predictor of stigma and barriers to care than officer leadership, which is consistent with the argument that NCOs have a more direct impact on their unit members (Knapp, McCloy, & Heffner, 2004; Van Iddekinge, Ferris, & Heffner, 2009). Furthermore, within soldiers, changes in negative leader behaviors were associated with changes in perceived stigma over a three-month time period, whereas positive leader behaviors were associated with fewer barriers over the same time period.

A third study was restricted to active duty Canadian military members who met criteria for a lifetime PTSD diagnosis (Fikretoglu, Brunet, Schmitz, Guay, & Pedlar, 2006). In this study, participants with a history of sexual trauma were more likely to seek treatment than those exposed to war zone trauma. Individuals with more instances of trauma exposure and whose symptoms interfered with functioning were also more likely to seek treatment. Finally, being married or previously married, as well as reporting an income of \$40–\$60K per year (vs. >\$80K), was associated with increased likelihood of seeking treatment.

Other studies of facilitators of mental health treatment-seeking among military personnel have relied on veteran samples. In one study of 174 veterans who had sought outpatient treatment for PTSD at a Veterans Affairs (VA) Medical Center, previous inpatient mental health treatment, but not PTSD symptom severity, was associated with future mental health service use (Elhai et al., 2007). In a study of Australian Vietnam war veterans, researchers found that veterans were more likely to self-refer for government-funded treatment if they had negative feelings towards others after arriving home, if they felt discriminated against for Vietnam veteran status, if they were reluctant to reveal their veteran status, or if they recently talked or argued about Vietnam (Dobson, Grayson, Marshall, & O'Toole, 1998).

One qualitative study of 44 Vietnam and OEF/OIF veterans examined the determinants of PTSD treatment-seeking (Sayer et al., 2009). Treatment facilitators were grouped into four themes: a) recognition and acceptance of PTSD and availability of help, b) treatment-encouraging beliefs, c) system facilitation, and d) social network facilitation and encouragement. Examples of treatment-encouraging beliefs were "getting help is socially acceptable," "treatment is helpful," and "the system is trustworthy." System facilitators included procedures that reduced stigma, improved access and PTSD recognition, as well as providers that promoted help-seeking. Taken together, these studies indicate that trauma history, symptom interference, prior treatment-seeking behavior, supportive organizational climate, social facilitation, systems that promote treatment-seeking, and beliefs about treatment represent

facilitators of treatment-seeking among military service members. Further research is needed to determine which of these facilitators are most important in determining treatment-seeking behavior.

6. Barriers to effectively implementing mental health interventions with military service members

Aside from barriers to accessing mental health treatment, such as stigma and difficult work schedules, certain barriers to effectively implementing mental health interventions have been noted among military personnel. First, researchers have observed that engagement in treatment and developing a therapeutic relationship are frequently a problem when treating military personnel (Flack, Litz, & Keane, 1998). Similarly, emotional detachment presents a particular challenge for the implementation of techniques that require significant engagement with traumatic memories and threatening stimuli (Reger & Gahm, 2008). Furthermore, anger is a prominent feature of combat-related PTSD, with one study of Vietnam veterans finding that anger accounted for 40% of the variance in PTSD scores after controlling for age, education, and combat exposure (Novaco & Chemtob, 2002). In a study of 103 veterans, Forbes et al. (2008) found that anger predicted worse PTSD treatment outcome (i.e., more symptoms at 9 month follow-up). The authors suggested that anger can impair the ability to engage in trauma-related fear during therapeutic exercises, interfere with the therapeutic alliance, inhibit self-reflection, and result in premature termination. Not surprisingly, researchers have noted that cognitive-behavioral interventions are difficult to implement with military populations until improved arousal management has been achieved (Creamer & Forbes, 2004).

These problems may be prominent among military personnel for several reasons. First, elevated rates of childhood trauma exposure and difficulty trusting civilians may lead to interpersonal difficulties, including challenges in developing a therapeutic alliance. Second, military training that emphasizes mental toughness, the need to shut down emotions, and the use of anger as an adaptive way to respond to threat could lead to trouble experiencing fear and other relevant emotions in mental health treatment (Creamer & Forbes, 2004; Forbes et al., 2008). Third, lengthy combat deployments that involve emotionally challenging work could encourage prolonged hyperarousal and emotional detachment, and potentially lead to changes in biology that result in “treatment resistant PTSD” (Creamer & Forbes, 2004; Reger & Gahm, 2008). Fourth, military service members are primarily male, and men have been shown to be less responsive than women to pharmacological and psychological treatment for PTSD (Foa, Keane, & Friedman, 2000). Finally, a particular barrier for active duty service members involves their fluctuating assignments and frequently changing duty stations, which results in high dropout rates from treatment (McLay et al., 2011). Although researchers and clinicians have often described these barriers to treatment engagement among military personnel, their conclusions have been primarily based on clinical observation and theory. Therefore, more research is needed to confirm the prevalence of these barriers, and to examine their relationship with treatment outcomes.

We next describe interventions and treatment adaptations that have been developed to address barriers to care and facilitate receipt of needed treatment among active duty and returning veterans. We first describe several early or preventive interventions that have been applied within the military context in the hopes of returning soldiers to duty quickly before symptoms reach a high level. We then address adaptations that have been made to traditional mental health treatment in order to enhance the likelihood that service members will access and engage in treatment. Finally, we describe interventions that are not intended to treat symptoms, but also serve to facilitate mental health treatment-seeking. Throughout our review, we focus on the importance of empirically evaluating the effectiveness of these interventions and modifications to ensure service members are receiving evidence-based care.

7. Early, preventive interventions that may address barriers to care

Early and preventive interventions are more likely than formal mental health treatments to be delivered in the operational environment while the service member is still in the presence of his or her primary unit. Therefore, preventive interventions may bypass some of the logistical factors that deter military personnel from seeking formal mental health treatment. They may also facilitate treatment-seeking by encouraging early recognition of problems that require further treatment, and by reducing stigma towards formal mental health treatment-seeking. In the present section we discuss a number of such interventions, and highlight the importance of establishing their efficacy. Table 1 summarizes early interventions, barriers/facilitators addressed, and outcomes for studies that included active duty or OEF/OIF veterans. To interpret effect sizes, we followed Cohen's (1988) guidelines: .2 = small; .5 = moderate; .8 = large.

7.1. Combat Stress Control Treatment

One category of these interventions falls under the domain of Combat Stress Control Treatment (CSC). This treatment adopts the U.S. Department of Defense's BICEPS, PIES, and PIE principles (Department of Defense, 1999). BICEPS is an acronym that subsumes the PIES and PIE principles, and stands for the following:

Brevity. Treatment is short-term, problem-focused, and geared towards return to service.

Immediacy. Offer treatment as soon as symptoms are evident. This conveys that a psychological injury is taken as seriously as a physical injury, and maintains an expectation of recovery and return to duty.

Centrality. Treatment is offered in a centralized Combat Stress Control unit, which is kept separate from the medical unit. The aim is to reduce stigma associated with seeking mental health services.

Expectancy. Treatment conveys the expectation that soldiers will recover and return to duty.

Proximity. Care is provided as close to the battlefield as possible. The aim is to reinforce the idea that soldiers will recover, do not need to be stigmatized and separated from their units, and will return to duty.

Simplicity. Aside from psychotherapy, treatment ensures that basic needs are met, such as rest, food, hygiene, and reassurance.

In one study of 38 active duty personnel who were referred by mental health providers, participants completed a two day CSC program while deployed to Iraq (Potter, Baker, Sanders, & Peterson, 2009). The program consisted of psychoeducational classes and individual therapy sessions that focused on stress reactions, coping skills, stress management, and interpersonal relationships. Program completers exhibited reduced PTSD symptoms and general distress, resulting in a moderate pre-post effect size. Although the study did not include a comparison group, these findings suggest the potential utility of applying this brief form of treatment to soldiers in a deployed setting.

7.2. Psychological debriefing

Other brief, early interventions are intended to prevent chronic symptoms and are based on the psychological debriefing model. This approach typically involves group sessions after exposure to traumatic stressors that focus on sharing emotional responses and normalizing common reactions (Raphael & Wilson, 2000). Such approaches may help combat stigma towards mental health treatment-seeking, since they are not presented as mental health treatment, but rather as an opportunity to share common reactions to extreme stressors in the context of an organizational duty. One of these models is termed Critical

Table 1
Intervention adaptations, barriers/facilitators addressed, and treatment outcomes.

Study	Sample	Intervention conditions	Setting	Treatment adaptations	Barriers/Facilitators addressed	Outcome measures	Average pre-post effect sizes (<i>d</i>)
<i>Early, preventive interventions</i>							
Adler et al. (2008)	952 active duty peacekeepers	Critical incident stress debriefing (CISD)	Base camps during deployment	Brief group debriefing Administered by military personnel	Practical barriers (time, access) Stigma	PCL; CES-D; Conflict Tactics Scale	0.06 8.5 month follow-up: .16
Adler et al. (2009)	2297 OEF/OIF returning veterans	1. Battlemind debriefing 2. Small Battlemind training 3. Large Battlemind training 4. Stress education	U.S. military installation; Small groups in classrooms; Large groups in theater	Brief Emphasize reintegration Reframe treatment perceptions Incorporated into standard reintegration training	Practical barriers (time, access) Stigma Negative mental health perceptions Early symptom identification	PCL; PHQ-Depression; Sleep problems; Stigma	1. .09 ^a 2. .02 3. .09
Blevins et al. (2011)	144 OEF/OIF returning veterans	1. Life Guard workshop intervention 2. Delayed intervention control	U.S. drill training sites	Brief, interactive workshop Incorporated into military training Peer support	Practical barriers (time, access) Engagement Encouraging social network	Short Form Health Survey-12, PHQ-9, Generalized Anxiety Disorder scale (GAD), panic screen from Brief PHQ, PCL-C, Buss-Perry Aggression measure, Dyadic Adjustment Scale (DAS), CTS, AUDIT	Significant changes: 1. PHQ-9, GAD, PCL-C, DAS 2. None
Bryan and Morrow (2011)	192 active duty soldiers	Defender's Edge (DEFED)	During deployment; skills training during battle drills, training, missions; services in medical offices	Emphasizes resiliency Reframes symptom/treatment perceptions Conducted in context of work duties Clinician military integration Medical and work duty settings	Practical barriers (time, access) Stigma Negative mental health perceptions Engagement Early recognition	–	–
Potter et al. (2009)	38 active duty soldiers	Individual and group Combat Stress Control (CSC) treatment	CSC Restoration Center at an Air Base during deployment	Uses BICEPS principles	Practical barriers (time, access) Stigma	PCL-M; Outcome Questionnaire-45	0.54
<i>Brief interventions integrated into military and medical settings</i>							
Cigrang et al. (2011)	15 OEF/OIF veterans	PE/CPT	Primary care clinic at an Army medical center	Brief Delivered in primary care	Practical barriers (time, access) Stigma	PSSI-I PCL-M PHQ-9 Behavioral Health Measure	0.43
Corso et al. (2009)	19 active duty soldiers	1. Writing exposure 2. Impact statement (cognitive restructuring) 3. TAU	Family medicine clinic at an Air Force base	Brief Delivered in primary care	Practical barriers (time, access) Stigma	PCL-M; Behavioral Health Measure-20	1. 0.72 2. 1.47 3. 0.49
Steenkamp et al. (2011)	8 active duty Marines	PE/CPT	Behavioral health clinic at Marine Camp	Brief In garrison Avoided stigmatizing language Targeted grief, shame, guilt	Practical barriers (time, access) Stigma Negative perceptions of mental health Military-related beliefs	PCL PHQ	1.73
<i>Virtual Reality Therapy</i>							
McLay et al. (2011)	20 active duty soldiers	1. VR-GET 2. TAU	U.S. Navy medical facilities	Virtual reality Physiologic monitoring Skills training Virtual reality	Practical barriers (time, access) Engagement Stigma	CAPS	1. 1.29 2. 0.44
Reger et al. (2011)	24 active duty soldiers	VRE	U.S. Army medical center	Virtual reality	Practical barriers (time, access) Engagement Stigma	PCL-M	1.17
<i>Telehealth service delivery</i>							
Litz et al. (2007)	45 service members, OEF/OIF or 9/11 exposure	1. Self-management CBT 2. Supportive counseling	Internet (while in U.S.)	Internet-based delivery	Practical barriers (time, access, resources) Stigma	BAI BDI-II PSSI-I	Pre-post 1. 1.00 2. 0.68 6 month follow-up 1. 1.63 2. 0.80

(continued on next page)

Table 1 (continued)

Study	Sample	Intervention conditions	Setting	Treatment adaptations	Barriers/Facilitators addressed	Outcome measures	Average pre-post effect sizes (<i>d</i>)
<i>Telehealth service delivery</i>							
Morland et al. (2011)	13 veterans (38% OEF/OIF)	1. In-person group CPT 2. Teleconference group CPT	VA clinic conference room	2 sessions p/week Group teleconference delivery Pretreatment PTSD psychoeducation Modified CPT language to ease understanding for veterans	Practical barriers (time, access, resources) Beliefs about mental health	CAPS	Significant difference on CAPS for both groups; no difference between groups
Strachan et al. (2011)	31 OEF/OIF veterans	1. PE/BA in-person 2. PE/BA home based telehealth	VA medical center or home (in U.S.)	Telehealth delivery	Practical barriers (time, access) Stigma	PCL-M BDI-II BAI	1. 0.50 2. 0.67
Tuerk et al. (2010)	47 combat veterans (72% OEF/OIF)	1. PE in-person 2. PE via telehealth	VA medical center or home (in U.S.)	Telehealth delivery	Practical barriers (time, access) Stigma	PCL-M BDI-II	1. 3.20 2. 2.58
<i>Group Therapy</i>							
Alvarez et al. (2011)	197 veterans (8% OEF/OIF)	1. CPT 2. TAU	VA residential treatment program	Group format Pretreatment PTSD psychoeducation Modified language to be more relevant for veterans	Practical barriers (resources) Beliefs about mental health	PCL, BDI, Brief COPE, Symptom Checklist-6, Quality of Life-BREF	1. 0.12 2. 0.04
Norman et al. (2010)	14 OEF/OIF veterans	Seeking Safety (SS)	VA medical center	Brief	Practical barriers (time) Treating complex problems	PCL-M; BDI-II	0.76
<i>Screening and Early Identification</i>							
Hoyt and Candy (2011)	Madigan Army Medical Center	Army-wide screening	U.S. Army medical center	Contact with provider Psychoeducation on symptoms Referrals from commanders	Stigma Early symptom identification Organizational support		
Engel et al. (2008)	30 primary care providers	RESPECT-MIL	U.S. Army primary care clinic	Screen mental health problems in primary care settings Interface between primary care and mental health clinics	Stigma Early symptom identification Treatment engagement		
<i>Enlisting fellow unit members to assist service members in need of treatment</i>							
Payne et al. (2008)	Active duty Army soldiers	Unit Watch	In garrison and operational settings; all unit locations/activities outside of clinic	Unit members reduce suicidal/homicidal risks and ensure soldier stays in outpatient treatment	Stigma of inpatient care Support network		
Greden et al. (2010)	National Guard and Reserves returning veterans	Buddy-to-Buddy	U.S. drill training sites	Peers assess mental health needs and connect soldiers with resources	Stigma Support network Early symptom identification		

PCL = PTSD Checklist; PHQ = Patient Health Questionnaire; CAPS = Clinician Administered PTSD Scale; PSSI-I = PTSD Symptom Scale, Interview Version; IES = Impact of Events Scale; CES-D = Center for Epidemiological Studies-Depression Scale; BDI = Beck Depression Inventory; CES-D = Center for Epidemiological Studies Depression Scale; BAI = Beck Anxiety Inventory; AUDIT = Alcohol Use Disorders Identification Test; CTS = Conflict Tactics Scale.

PE = Prolonged Exposure; VRE = Virtual Reality Exposure Therapy; VR-GET = Virtual Reality Graded Exposure Therapy; TAU = Treatment As Usual; BA = Behavioral Activation; CPT = Cognitive Processing Therapy.

^a Baseline scores were not provided. Therefore, average *d* was calculated using 4 month follow-up scores, with stress education as the referent group.

Incident Stress Debriefing (CISD) and consists of guiding groups through a seven-stage discussion after exposure to a severe stressor. In a randomized trial of CISD with platoons of 952 peacekeepers, the intervention was administered by behavioral healthcare providers who were also military personnel (Adler et al., 2008). CISD was compared to a stress management class and no intervention. Overall, PTSD symptoms in the CISD group were not significantly different from the no intervention group. For soldiers reporting a high degree of exposure to stressors, CISD was minimally associated with lower PTSD symptoms and aggression, higher organizational support, and more alcohol problems. The authors concluded that there are no clear positive effects of

CISD, although it provides an intervention that is sensitive to the military work culture and consistent with military traditions involving group debriefing.

A second study of psychological debriefing approaches as applied to active duty personnel examined the effects of an intervention titled "Battlemind" (Adler, Bliese, McGurk, Hoge, & Castro, 2009). Battlemind debriefing and training interventions emphasize reintegration to life in a garrison environment following combat and principles that resonate with soldiers, such as "mental toughness," unit cohesion, peer and leader support, and overcoming adversity. The intervention also provides information on common psychosocial reactions to combat. Finally, the

interventions reframe post-deployment difficulties as resulting from ineffective occupational skills that can become problematic at home if not adapted (e.g., maintaining tactical alertness in combat can lead to hypervigilance at home). Soldiers are encouraged to adapt combat skills for the home environment (e.g., forming close bonds with unit members can translate to forming close bonds with family members).

In a randomized trial with 2297 soldiers following deployment to Iraq, Adler et al. (2009) compared Battlemind debriefing and training to a stress management condition. Among soldiers with high levels of combat exposure, Battlemind debriefing and training resulted in fewer PTSD symptoms, depression symptoms, and sleep problems. Large group Battlemind training participants with high combat exposure also reported lower levels of stigma. These findings support the efficacy of this early intervention for at-risk service members post-deployment. However, it should be noted that a few studies of civilian populations have reported symptom exacerbation following psychological debriefing (Bisson, Jenkins, Alexander, & Bannister, 1997; Cuijpers, Van Straten, & Smit, 2005; Hobbs, Mayou, Harrison, & Worlock, 1996), suggesting the need for further research and cautious application of this approach.

7.3. Resiliency training

“Defender’s Edge” represents another preventive intervention that was designed for active duty Air Force Security Forces (Bryan & Morrow, 2011). The program emphasizes resiliency and reframes combat as “an athletic event requiring high levels of physical and mental fitness and endurance (pg. 18).” Skills training is conducted in five 30-minute modules occurring during battle drills, training, and actual missions. The modules consist of “Fatigue Countermeasures” (e.g., sleep hygiene), “Adrenaline Management,” (e.g., stress management), “Mission Focus” (e.g., cognitive restructuring, goal-setting), “Killing,” (e.g., trauma prevention, grief), and “Mind Tactics” (e.g., social support, distress tolerance). Skills were presented as necessary for “optimal combat performance.” The facilitator, a clinical psychologist, participated in the full spectrum of unit activities. This allowed the psychologist to develop a shared experience with service members, to reduce the perception that mental health is disconnected from the unit, and to deliver immediate consultation on a range of health issues. Clinical services were provided in the medical officer’s exam office to reduce the stigma of entering the mental health setting. The authors reported that among a squadron of 192 Air Force Security Forces deployed to Iraq, service members found the intervention to be helpful and trustworthy. Unfortunately, no information was provided on the extent to which the training reduced different mental health symptoms.

A similar preventive intervention, Comprehensive Soldier Fitness, focuses on developing psychological resilience and is currently being implemented Army-wide. One component involves training NCOs to be Master Resilience trainers (Reivich, Seligman, & McBride, 2011). As part of this training, service members learn how to develop self-awareness, self-regulation skills, cognitive restructuring skills (“building mental toughness”), and interpersonal/communication skills. Although the intervention is currently in the process of being evaluated, findings have not been published.

Another resiliency-based preventive intervention called “Life Guard: Bringing New Life to the Guard,” was based on the principles of Acceptance and Commitment Therapy (ACT; Blevins, Roca, & Spencer, 2011). ACT is a third wave behavior therapy designed to increase acceptance of private experiences (e.g., emotions, thoughts, sensations), increase distance from maladaptive thoughts, and encourage engagement in activities consistent with personal values (Hayes, 2004). In a study of Life Guard, 144 National Guard service members completed a two-hour interactive workshop that was designed to promote resiliency and post-deployment reintegration. The program focused on providing skills a service member could

use to assist fellow service members, thereby reducing the stigma associated with acknowledging the need for personal assistance. The training was administered by a team that included a nurse, a social worker, a psychologist, and a recreational therapist. It incorporated three skill sets: a) Awareness (recognizing the relationship between person and private experience), b) Acceptance (nonjudgmental acceptance of private events, such as distressing memories), and c) Value-Based Living (living in a goal-directed manner). Life Guard was presented in a fashion amenable to the military setting (i.e., densely packed schedules with few times when soldiers are in one location for treatment). Therefore, it was implemented when soldiers were assembled for drills and was condensed into a brief workshop. To increase engagement, PowerPoint presentations were avoided and interactive exercises were emphasized.

In comparison to a delayed intervention control group, intervention participants reported fewer symptoms of depression and greater relationship satisfaction. On the other hand, groups did not differ on PTSD symptoms, substance abuse, and overall mental health functioning. A limitation of this study is that participants were not randomized to condition, and there were differences between groups on variables such as combat exposure, injury, and PTSD. Further research is needed using randomized designs, comparing Life Guard to standard ACT protocols, and conducting long-term follow-up to determine whether such brief interventions can prevent development of mental health symptoms.

In general, the increased use of brief/early interventions such as CSC, Battlemind, Defender’s Edge, Comprehensive Soldier Fitness, and Life Guard may help reduce stigma towards mental health problems and treatments, and serve as a “gateway” for seeking more intensive psychotherapy. For example, the study of Defender’s Edge reported that 20% of participants voluntarily initiated contact with the integrated psychologist, which sometimes resulted in completion of a course of psychotherapy (Bryan & Morrow, 2011). These interventions also offer an opportunity to focus on early symptom management and arousal reduction, which can increase the effectiveness of later interventions. Furthermore, Battlemind specifically addresses the importance of not letting stigma deter a service member from getting the mental health treatment he or she needs.

8. Adaptations of mental health interventions that may address barriers to care

In addition to early and preventive interventions, several formal mental health treatments have been adapted to address barriers to care in the military context. The interventions that have garnered the most support for treating veterans are grounded in the cognitive-behavioral therapy (CBT) framework. These interventions tend to focus on altering maladaptive thought patterns and behaviors in order to alleviate psychological symptoms. The CBT interventions that have received the most empirical support for the treatment of trauma-related disorders among veterans are Prolonged Exposure therapy (PE) and Cognitive Processing Therapy (CPT) (VA/DoD, 2010). PE involves repeated exposure to traumatic memories and trauma-related cues (Foa & Kozak, 1986). It also incorporates psychoeducation (i.e., common reactions to trauma) and breathing retraining techniques. CPT involves exposure therapy via written narratives of traumatic memories, coupled with modifying “stuck points” or maladaptive beliefs that emerge from the narratives (Resick & Schnicke, 1992). These interventions generally involve 10–20 individual therapy sessions (50–90 min) and are administered by behavioral health professionals. Both PE and CPT have been chosen for widespread dissemination in the Veterans Affairs (VA) healthcare system.

PE, CPT, and other interventions have been adapted in several ways to address the needs of active duty service members and returning veterans. In the following section, we describe these treatment adaptations, how they address barriers to care, and the results

of treatment-outcome studies for these adapted interventions. Treatment adaptations have included: changing service delivery formats, addressing negative beliefs about mental health treatment and symptoms, and tailoring components for military-specific issues. Table 1 summarizes treatment adaptations, barriers/facilitators addressed, and outcomes for studies that included active duty or OEF/OIF veterans.

8.1. Changing service delivery formats

8.1.1. Brief Interventions that are integrated into military and medical settings

A few abbreviated versions of PE and CPT protocols have been evaluated. The use of abbreviated versions of mental health treatment protocols helps address the demands of a deployment environment that involves long work hours, unpredictable schedules, and frequent changes in location. In addition to brevity, interventions need to be flexible to adapt to the changing military environment. For example, treatment may need to be implemented on an altered schedule or in changing locations, including outside of the clinic. Researchers have recommended the use of ongoing needs assessments to assess changing cognitive, physiological, and emotional stresses that vary with the changing demands of the military environment (Reger & Moore, 2006).

These brief, flexible interventions frequently involve integration of mental health providers into military and primary care settings. This change in service delivery format could improve treatment in the following ways: a) reduce stigma, b) reduce the perception of clinicians as “outsiders,” c) provide more opportunities for soldiers to interact with service providers, d) educate providers on military culture and duties, e) allow service providers to collaborate with leaders and other professionals, f) encourage mental health and primary care providers to address the comorbid psychological and medical problems that are frequently observed in OEF/OIF veterans (Batten & Pollack, 2008), and f) allow clinicians to incorporate the military environment into exposure exercises (e.g., tactical training and drills allow for safe in vivo exposure; Hoyt & Candy, 2011).

In one of two small studies of abbreviated, combined PE/CPT protocols, 15 active duty OEF/OIF veterans received combined PE and CPT in four to six 30 minute appointments (Cigrang et al., 2011). This intervention employed the Primary Care Behavioral Health model/Behavioral Health Consultation (BHC) model, wherein psychologists were embedded in the primary care setting and served as behavioral health consultants to medical providers. Participants met with behavioral health consultants in the primary care setting biweekly, completed a detailed narrative of the most distressing deployment event, re-evaluated problematic beliefs, and completed in vivo exposure activities. If symptoms were not alleviated by the conclusion of treatment, participants could be referred to specialty mental health care. Treatment completers ($n=10$) improved on PTSD severity, depression, and global mental health functioning. Fifty percent of treatment completers did not meet criteria for PTSD at one month follow-up. Although the dropout rate was higher than civilian PE studies, it was comparable to studies with veterans (e.g., Schnurr et al., 2007). The average pre-follow-up effect size was moderate ($d=.43$), but smaller than the average pre-post effect size for a randomized trial of 65 OEF/OIF veterans who received the standard version of PE in a VA medical center ($d=1.66$; Tuerk et al., 2011).

In a second pilot study of a brief, combined PE and CPT intervention for active duty personnel, Steenkamp et al. (2011) reported significant reductions in PTSD symptoms in a sample of 8 Marines. The intervention was conducted in garrison via six 90 minute individual therapy sessions. Effect sizes were large and comparable to the full PE intervention (Tuerk et al., 2011). Both of these studies were limited by small samples and lack of a control group.

A third study examined an abbreviated version of CPT within a sample of 19 active duty service members (Corso et al., 2009). This treatment also implemented the BHC model, delivering five 30 minute sessions in a family medicine clinic. Other adaptations included providing information on post-deployment reintegration techniques and modifying terminology to be military-specific. Two brief versions of CPT were implemented: a) writing exposure alone, and b) impact statement alone (i.e., identifying and modifying problematic cognitions). These interventions were compared to each other and to a treatment as usual condition. The impact statement condition was the only condition to exhibit significant pre-post improvement on PTSD and global mental health, with a large average effect size ($d=1.47$). Participants in the writing exposure condition reported worse global mental health, which the authors suggest could be due to difficulty implementing exposure therapy in a brief format. This study was limited by a small sample size, high attrition, and a lack of random assignment.

In addition to the adaptations illustrated in the above studies, researchers have described other ways that clinicians have been integrated into the military context. In some cases, uniformed behavioral health providers are used to reduce stigma (Potter et al., 2009). Clinicians can also collaborate with military professionals to improve treatment efficacy by assisting leaders in recognizing the importance of implementing empirically supported treatments (Karlin et al., 2010). Providers may assist commanders in encouraging the receipt of appropriate mental health treatment among unit members. Communication with leaders can additionally reduce the number of occasions where soldiers are unnecessarily removed from their job duties due to misunderstandings about mental illness (Reger & Moore, 2006). Furthermore, clinicians can coordinate with leaders to allow soldiers to practice therapy tasks when they are not able to attend weekly treatment sessions (e.g., practice exposure exercises while in the field; Hoyt & Candy, 2011). In order to facilitate integration into military settings, mental health providers could receive education on military culture, including acronyms, the importance of rank, and the significance of stigma. It may be helpful for clinicians to perform role plays or analyze military case studies as part of this process (Reger & Moore, 2006).

8.1.2. Use of technology

Another way the service delivery format can be altered for the military context is through the adoption of technological advances. This includes the use of virtual reality devices and delivery of mental health treatment via telehealth (i.e., via telephone, Internet, or videoconferencing). Such advancements are expected to reduce the stigma associated with attending sessions in a mental health clinic and to increase willingness to engage in treatment. These advancements may also improve access to care, since they can introduce more flexibility into treatment timeframes and locations, and can even be more affordable (e.g., Internet-based self-help).

8.1.2.1. Virtual reality. Virtual reality exposure therapy (VRE) involves retelling traumatic memories in detail while immersed in a three-dimensional virtual environment that is customized to resemble aspects of the patient's traumatic event. VRE could be useful in reducing the stigma associated with mental health treatment among military personnel, since it does not involve traditional talk therapy. It may also be more approachable for young service members who are experienced with using technology to solve daily problems. Finally, VRE represents a more interactive and engaging treatment format that can address barriers to treatment engagement, such as emotional detachment (Reger & Gahm, 2008).

One study examined the efficacy of 3–12 sessions of VRE when conducted with 24 active duty OEF/OIF soldiers (Reger et al., 2011). The intervention resulted in an overall significant reduction in PTSD symptoms, with 62% of participants reporting a clinically significant change post-treatment. The effect size ($d=1.17$) was large, although

somewhat smaller than traditional PE delivered to OEF/OIF veterans at a VA medical center ($d = 1.66$; Tuerk et al., 2011). Although the Reger et al. (2011) study was limited by lack of a control group, a second study addressed this weakness in the literature by assigning 20 active duty OEF/OIF veterans seeking treatment in naval medical centers to VRE and treatment as usual conditions (McLay et al., 2011). The researchers employed a version of VRE that included up to 10 sessions of graded exposure, physiologic monitoring, and anxiety management skills training. The researchers hypothesized that these treatment alterations allowed soldiers to recognize and control excessive autonomic arousal and cognitive reactivity, facilitating engagement in therapy. The VRE group improved significantly on PTSD symptoms in comparison to the treatment as usual group, and the effect size was large ($d = 1.29$). One limitation of this study is that the treatment as usual condition consisted of a variety of treatment approaches, making it difficult to draw conclusions regarding the efficacy of VRE in comparison to other specific treatments.

8.1.2.2. Telehealth. Telehealth service delivery represents yet another use of technology to adapt interventions for populations who are difficult to access. Therefore, it may help address barriers such as changing duty locations and lack of access to behavioral healthcare providers. A pilot study of 12 OEF/OIF veterans who received PE via telehealth demonstrated PTSD and depression symptom reduction that was smaller but comparable to a comparison group of 35 veterans who received in-person PE (Tuerk, Yoder, Ruggiero, Gros, & Acierno, 2010). Although the study lacked follow-up data and relied on a small sample, pre-post effect sizes were large. A second study randomized 47 primarily OEF/OIF combat veterans to home-based telehealth versus in-person treatment involving 8 individual sessions of PE and behavioral activation. Both conditions resulted in significant reductions in PTSD and depression symptoms (Strachan, Gros, Ruggiero, Lejuez, & Acierno, 2011). Effect sizes were moderate, and telehealth treatment did not significantly differ from in-person treatment.

A third study by Litz, Engel, Bryant, and Papa (2007) included 45 service members with PTSD as a result of attacks on the Pentagon on September 11th or due to combat in Iraq/Afghanistan. Participants were randomly assigned to receive either self-management CBT or supportive counseling, both administered via Internet. Results indicated that both groups improved on mean PTSD ratings, with the self-management completers reporting significantly fewer depression, anxiety, and PTSD symptoms at 6 month follow-up. One drawback of self-management was that participants were less likely to complete treatment (in comparison to supportive counseling). Because more symptomatic participants were less likely to be located at follow-up, it was difficult to fully evaluate the impact of the intervention.

A fourth study delivered group CPT to 13 veterans (38% OEF/OIF) via video teleconferencing techniques (Morland, Hynes, Mackintosh, Resick, & Chard, 2011). CPT was further modified in this study to exclude the written exposure component, and was delivered twice weekly in 12, 90 minute sessions. Participants were randomized to in-person group therapy or videoconference group therapy. Both groups showed significant reductions in PTSD. No difference between groups was found, suggesting that telehealth service delivery was comparable to in-person treatment. Veterans also indicated high levels of acceptance and satisfaction with the videoconferencing modality.

In conclusion, a growing body of research is demonstrating that technology-based interventions are similarly efficacious to in-person interventions. In addition to the adaptations described above, technology can be used to assist in completing therapy assignments when a soldier is unable to attend regular sessions. For example, imaginal exposure exercises can be recorded on an MP3 player and repeated outside of session. Although no studies have evaluated the impact of technology-based interventions on stigma or service use, one study found that a majority of soldiers would be willing to use

a technology-based approach. Furthermore, 33% of soldiers who were not willing to talk to a counselor in person were willing to utilize a technology-based approach (Wilson, Onorati, Mishkind, Reger, & Gahm, 2008).

8.2. Group formats

A final way to adapt service delivery formats is to employ group therapy as opposed to individual therapy. Group therapy allows providers to increase access to care when resources are limited. Exposure to other group members can also help reduce stigma through normalizing reactions to stressors and providing social support (Foy et al., 2000). Therefore, group therapy formats may help to address barriers to care in the military setting. On the other hand, group therapy may be difficult to implement with active duty soldiers, particularly when the group is intended to be delivered in sequence and is not amenable to shifts in group membership. Furthermore, stigma and confidentiality concerns could discourage soldiers from engaging in treatments involving contact with fellow service members.

In one study of 104 male veterans (64% Vietnam era) in a PTSD Residential Rehabilitation Program, CPT delivered in a 14-session group setting resulted in more symptom reduction than treatment as usual (i.e., group interventions including some CBT elements). Language from the original treatment manual was modified to reflect combat experiences. Improvement was noted in PTSD symptoms, depression symptoms, psychological quality of life, coping, and psychological distress. In the CPT group, 16% of participants were classified as recovered and 41% were classified as improved (Alvarez et al., 2011). The average effect size was small ($d = .12$), and not as large as a study that employed the standard version of CPT at a VA medical center ($d = 1.24$; Monson et al., 2006). This may be due to the group therapy format, or to use of different assessment instruments. Strengths of this study included randomization to condition, use of valid and reliable assessment measures, and adequate sample sizes. Limitations included lack of long-term follow-up, therapist fidelity assessments, and comparison to specific efficacious treatments.

A second study evaluated an abbreviated version of Seeking Safety (SS), a cognitive-behavioral group intervention that integrates treatment for comorbid PTSD and substance use disorders (Najavits et al., 2008). The treatment focuses on interpersonal skills training, self-care, value-based decision-making, case management, coping with triggers, and emotion regulation. A pilot study with a 10 session version of SS was conducted with 14 OEF/OIF veterans attending a VA clinic (Norman, Wilkins, Tapert, Lang, & Najavits, 2010). Although the study reported a high drop-out rate (42%) and did not have a control group, completers were shown to have decreased PTSD, depression, and substance use symptoms. Due to the small sample size, statistical differences were not calculated, but the effect size for the treatment group was relatively large ($d = .76$). The authors noted the importance of addressing readjustment to civilian life and the need for social support from other veterans. They reported that veterans were more likely to engage in substance use treatment if they were first treated in a PTSD clinic and then referred to SS, or if they were allowed a few sessions to “try out” SS. They also noted that SS served as a gateway to more intensive treatment. Future studies need to employ RCTs with larger samples to establish the efficacy of SS with OEF/OIF service members, and to determine whether this intervention can be successfully adapted for active duty populations. In addition, the Norman et al. (2010) study suggests that further adaptations are needed to improve retention rates.

More research is needed to compare group therapy to individual therapy formats, with a particular focus on which approach can most effectively address barriers to care among military populations. Studies are also needed to determine whether group therapies can be effectively applied to active duty populations.

8.3. Addressing negative beliefs about mental health treatment

Several interventions have developed ways to frame techniques in less stigmatizing language, and to provide opportunities for service members to incorporate information that disconfirms their negative beliefs about mental health treatments and providers (i.e., Adler et al., 2009; Alvarez et al., 2011; Bryan & Morrow, 2011; Steenkamp et al., 2011). In the brief PE/CPT intervention described above, researchers avoided stigmatizing language by labeling the intervention as “Adaptive Disclosure” and “training” (Steenkamp et al., 2011). Researchers also avoided the use of the terms “PTSD,” “patient,” and “treatment.” In other CPT interventions, language was modified to remove complex jargon and stigmatizing phrases such as “faulty thinking patterns” (Alvarez et al., 2011; Morland et al., 2011).

Several preventive and resiliency-based interventions worked to reframe perceptions of treatment and mental health symptoms. As discussed in the context of the Defender’s Edge program, psychotherapy can be presented as a way to learn life skills that contribute to optimal combat performance. Behavioral health skills can be tied to pre-existing job skills sets, such as physical conditioning and survival training (Bryan & Morrow, 2011). Battlemind training reframed symptoms as common reactions to occupational stressors such as combat exposure (e.g., Adler et al., 2009). Information on the frequency of traumatic stress reactions following combat can also be provided to normalize these reactions. Finally, adversity can be presented as a necessary mechanism through which growth and development occurs (Bryan & Morrow, 2011).

The Battlemind intervention incorporated several of these elements, and was able to demonstrate decreased stigma among large group participants with high combat exposure (Adler et al., 2009). The group CPT study that used modified language (Alvarez et al., 2011) only demonstrated small treatment effects. Although the brief PE/CPT study used non-stigmatizing language and demonstrated large effects, it was limited by small sample size (Steenkamp et al., 2011). Defender’s Edge incorporated many reframing elements, but was not evaluated in regards to symptom or stigma reduction (Bryan & Morrow, 2011). Therefore, future studies will need to determine whether these techniques decrease stigma and facilitate mental health treatment-seeking and recovery.

In addition to the treatment adaptations described above, education can be provided prior to initiating treatment to help dispel negative beliefs about treatment-seeking. Because Army behavioral health providers report that the majority of soldiers receive some form of CBT and/or evidence-based pharmacotherapy (Wilk et al., 2011), soldier education should specifically focus on dispelling misperceptions about these treatments. For example, it will be important to explain the rationale and typical techniques used in CBT approaches to help reduce concerns and questions about the efficacy, timeframe, and nature of these treatments. Furthermore, service members can be provided with information on common medications and their side effects, addressing concerns about their addictive qualities or likelihood of impairing job performance. They could also be provided with information about the negative consequences of not seeking treatment, and how treatment can ultimately decrease their risk of separation from the military (Hoyt & Candy, 2011).

8.4. Incorporating targeted components into mental health treatments

Another means of concentrating on issues specific to military service members is to incorporate targeted components into existing interventions. For example, both the military version of the Cognitive Processing Therapy manual (Resick, Monson, & Chard, 2007), and the brief PE/CPT intervention employed in the Steenkamp et al. (2011) pilot study, incorporated segments to address traumatic grief and survivor’s guilt. The Defender’s Edge and Battlemind interventions addressed military-specific issues such as readjustment to

civilian life. Interventions may also consider addressing other common issues for service members, including anger management, emotional engagement, and relational problems.

8.5. Relapse prevention

One treatment adaptation that has been recommended, but not evaluated, is incorporation of relapse prevention components. Soldiers who have experienced high combat exposure, such as those who have deployed to the OEF/OIF conflicts, are at risk for chronic PTSD and trauma-related mental health problems. Furthermore, many soldiers enter the military with risk factors for the development of mental illness. In addition, active duty members are frequently placed back in situations where they will encounter further trauma exposure. Therefore, relapse prevention is likely to be an important component of military-adapted interventions. For example, soldiers in treatment can be encouraged to develop plans and coping strategies for high-risk situations (e.g., using relaxation skills or seeking social support when experiencing symptoms of PTSD or depression). “Booster” sessions and continued access to a mental health professional can also be utilized (Creamer & Forbes, 2004).

9. Other interventions designed to facilitate mental health treatment-seeking

In this section we describe programs that are not typically categorized as mental health treatments or treatment adaptations, but are intended to facilitate mental health treatment-seeking and engagement. These include screening and early intervention programs, and programs that enlist leaders and unit members in stigma reduction and treatment referral. These programs and corresponding barriers that may be addressed are summarized in Table 1.

9.1. Screening and early identification

One recommendation for facilitating receipt of needed mental health treatment is to implement broad screening of all service members during and after deployment. These assessments can help identify at-risk individuals, with an emphasis on risk factors specific to the military setting (e.g., multiple trauma exposure, traumatic brain injury, poor social support). One study describes the use of such procedures at Madigan Army Medical Center at Joint Base Lewis-McChord (Hoyt & Candy, 2011). Soldiers are screened the first week after deployment as part of an Army-wide Soldier Readiness Program. Soldiers are required to screen for behavioral health issues and establish a plan before going on leave or being released from active duty. They are screened again between 90 and 180 days as part of the Army-wide Post-Deployment Health Re-Assessment (PDHRA). At Madigan, soldiers receive face-to-face contact with a behavioral health provider to reduce stigma and barriers such as not knowing where to get care or schedule an appointment, as well as lack of trust in mental health providers. Clinicians also provide psychoeducation regarding mental health issues and use motivational interviewing to discourage minimization of mental health symptoms. For those who do not seek treatment on their own, uniformed providers are assigned to command consultation positions, and they field calls from concerned commanders regarding soldiers with problematic behaviors. These soldiers can then be referred for intervention.

Other programs, such as RESPECT-Mil, institute screening and referral for mental health problems in primary care settings, which represents another non-stigmatizing means of accessing large groups of soldiers (Engel et al., 2008). This requires education of primary care providers on mental health issues and referral resources. In the RESPECT-Mil program, a nurse care facilitator also ensures continuity of care by assisting with follow-up appointments, symptom monitoring, and enhancing the interface with mental health services. Although broad screening and referral procedures

are designed to facilitate treatment-seeking, their effect on mental health service use remains to be evaluated.

9.2. Enlisting fellow unit members to assist service members in need of treatment

A few interventions entail active involvement of the service member's unit in implementing measures to address mental health problems and facilitate further treatment seeking. Unit Watch is an intervention in which, following recommendations of a clinician, the soldier's command team works to prevent suicidal and homicidal behavior by searching the soldier's belongings and removing dangerous items, prohibiting access to alcohol and drugs, continuously observing the soldier, and ensuring that the soldier returns to treatment (Payne, Hill, & Johnson, 2008). Although this intervention has not been evaluated, the intent is to maintain the soldier in his/her unit and reduce the likelihood of psychiatric hospitalization, which is associated with a high degree of stigma.

Another example of how military members can be enlisted to reduce stigma and assist fellow soldiers with mental health needs is through the Buddy-to-Buddy program. This program involves having trained soldiers regularly check in with peers who have returned from combat, assess their mental health needs, and connect them with needed resources (Greden et al., 2010). One study reported that over 20% of participating soldiers were referred to formal treatment by their Buddy (Greden et al., 2010).

10. Conclusions and future directions

Current military service members are the recipients of a high degree of combat exposure, resulting in a host of mental health problems. Despite high rates of these problems, treatment-seeking is relatively low. Barriers include stigma, logistical difficulties, negative perceptions of mental health treatment and its consequences, and military values such as the need to maintain mental toughness. In addition to barriers to treatment-seeking, there are several barriers to effectively implementing mental health interventions with service members (e.g., difficulty with emotional engagement). However, the prevalence of these barriers and their relation to treatment outcomes are poorly understood. In addition to identifying the roles of these barriers, interventions are needed to reduce barriers and facilitate treatment-seeking among military personnel who could benefit from mental health treatment. These might include large group workshops that are primarily focused on stigma reduction, changing attitudes towards mental health treatment, providing information about mental health treatment, enlisting peer support, screening for mental health symptoms, and connecting at-risk military personnel with service providers. Policy changes may also be needed to: a) increase access to providers and behavioral health facilities, b) reduce concerns regarding confidentiality, c) increase unit cohesion and support for treatment-seeking, and d) mitigate the effects of mental health treatment-seeking on career trajectories.

Several brief, early and preventive interventions have been developed that can address barriers to care such as stigma, job duty interference, negative attitudes towards mental health treatment, and poor symptom recognition. More research is needed to determine whether these interventions reduce barriers to care and prevent development of severe symptoms. Multiple adaptations of formal mental health treatments have also sought to address barriers to treatment-seeking and engagement. These adaptations include incorporating flexibility and technology into the typical service delivery formats, abbreviating standard treatment protocols, integrating clinicians into the military and primary care contexts, providing treatments in group formats, providing psychoeducation and reframing perceptions, and including targeted components. Virtual reality and telehealth-based interventions are the only treatment adaptations

that have been evaluated against control groups. Support for their efficacy was found, suggesting that these interventions possess promise for overcoming barriers such as stigma, engagement, and access to care. Finally, interventions that involve widespread screening and increasing peer support can potentially improve early symptom recognition and facilitate receipt of needed treatment. Again, these interventions require further evaluation to establish their utility.

In conclusion, continued research is needed in multiple areas, particularly regarding mental health interventions and their adaptations to the military context. First, randomized controlled trials that compare adapted interventions to standard protocols are required. Research is also needed to determine whether adaptations to existing treatments will improve their efficacy and reduce barriers to care in active duty settings. Furthermore, several empirically supported treatments exist for trauma-related problems within the civilian population, but have not been applied to OEF/OIF or active duty populations. These treatments include the full version of ACT (Hayes, 2004), motivational interviewing for substance use disorders (Miller & Rollnick, 2002), behavioral activation for depression (Lewinsohn, 1975), Dialectical Behavior Therapy (Linehan, 1993), and Couples Therapy. Another set of interventions that have established efficacy for the treatment of trauma-related disorders in veterans, but not active duty soldiers, are pharmacological treatments. In general, the availability of pharmacotherapy can help reduce barriers to care because it requires less contact with a mental health professional. However, the fact that soldiers often harbor concerns about medication side effects (Britt et al., 2011) and the efficacy of pharmacotherapy implies the need for increased education on these interventions for military personnel. In order to address the methodological weaknesses of the extant research, future studies should include a) larger samples that are more representative of the military population, b) randomized intervention conditions, c) treatment fidelity assessments, d) control for co-occurring pharmacological treatment effects, and e) long-term follow-up. Researchers will also need to develop ways to address challenges to data collection with active duty samples, including difficulties with treatment engagement, retention, and follow-up.

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