Risk, Resilience, and Behavioral Health in the Ohio National Guard, 2008-2012

I. DEMOGRAPHICS: The Who
ONG sample demographics (1)

*Waves 3 and 4 include the dynamic cohorts

ONG sample demographics (2)

*Waves 3 and 4 include the dynamic cohorts
Clinical sub-sample demographics (1)

*Waves 3 and 4 include the dynamic cohorts

Clinical sub-sample demographics (2)

*Waves 3 and 4 include the dynamic cohorts
II. DEPLOYMENT CYCLES

Number of lifetime deployments per person at baseline

<table>
<thead>
<tr>
<th>Number of lifetime deployments</th>
<th>% of soldiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>36.0 %</td>
</tr>
<tr>
<td>1</td>
<td>31.3 %</td>
</tr>
<tr>
<td>2</td>
<td>17.9 %</td>
</tr>
<tr>
<td>3</td>
<td>8.2 %</td>
</tr>
<tr>
<td>4</td>
<td>2.7 %</td>
</tr>
<tr>
<td>5</td>
<td>2.0 %</td>
</tr>
<tr>
<td>≥ 6</td>
<td>2.0 %</td>
</tr>
</tbody>
</table>
Proportion deployed within past year by wave and location

III. RISK AND RESILIENCE
Three elements of risk

Pre-deployment risk factors
Sexual assault: most lifetime sexual traumas reported at baseline occurred outside of a deployment setting

- Sexual assault
  - Deployment-related: 6% (n=114)
  - Not deployment-related: 4% (n=106)

- Rape
  - Women: 5% (n=61)
  - Men: 7% (n=14)

*Women Men (n=61) (n=106) (n=228) (n=2616)*

Pre-deployment preparation: Most soldiers in the sample agreed that they felt well-prepared

- Strongly disagree
- Strongly agree

At baseline, soldiers had a comparable lifetime prevalence of civilian-related vs. deployment-related traumatic events.

Among both settings, assaultive-type events were more common.

n = 1839, respondents in baseline who specified their deployment status and did not have events of ambiguous settings or types.
Peri-deployment risk factors

On average, soldiers reported high levels of unit support during their most recent deployment

Scale from the Deployment Risk and Resilience Inventory: A Collection of Measures for Studying Deployment-Related Experiences of Military Personnel and Veterans
Although most sexual trauma occurred in a civilian setting, there was an appreciable exposure of deployment-related sexual trauma.

Women (n = 169)

- None: 54%
- Sexual harassment only: 27%
- Sexual assault only: 2%
- Both: 17%

Men (n = 1498)

- None: 86%
- Sexual harassment only: 13%
- Sexual assault only: 0.4%
- Both: 1%

*among those deployed

Many soldiers experienced extremely stressful combat-related events during deployment.

- Saw dead bodies: 34.8%
- Saw severely wounded people: 41.3%
- Took care of injured or dying people: 24.7%

n = 1668
Post-deployment risk factors

Pre-deployment   Peri-deployment   Post-deployment

Soldiers in general reported feeling supported post-deployment, but not necessarily understood

The people I work with respect the fact that I am a veteran
There are people to whom I can talk about my deployment
People at home understand what I have been through
When I returned, people made me feel proud to have served my country
The American people made me feel at home when I returned
The reception I received when I returned made me feel

Scale from the Deployment Risk and Resilience Inventory: A Collection of Measures for Studying Deployment-Related Experiences of Military Personnel and Veterans
Post-deployment unemployment: At each wave, about 18% of soldiers deployed in the past year lost a job, were laid off, or lost a large part of their income in the past year.

IV. Psychiatric disorders
IV. Psychiatric disorders

- An overview

Depression and alcohol use disorders were more prevalent than PTSD across all 4 years

![Chart showing prevalence of psychiatric disorders across years](chart.png)

Any (n = 2616) Depression (n = 1770) AUD (n = 1395) PTSD (n = 1172)

- Year 1: 26.1% (Depression: 14.0%, AUD: 12.3%, PTSD: 7.6%)
- Year 2: 19.4% (Depression: 12.3%, AUD: 8.3%, PTSD: 4.4%)
- Year 3: 21.3% (Depression: 10.9%, AUD: 11.7%, PTSD: 4.1%)
- Year 4: 23.0% (Depression: 12.0%, AUD: 13.1%, PTSD: 3.8%)

% out of those who completed each wave
Prevalence of all condition co-morbidity at baseline

Past 30 days
- No disorder: 85%
- One disorder: 19%
- At least two disorders: 12%

Past year
- No disorder: 74%
- One disorder: 17%
- At least two disorders: 7%

Lifetime
- No disorder: 41%
- One disorder: 19%
- At least two disorders: 42%

Baseline prevalence of other conditions among those with PTSD within the past year (N=188)

% with condition among those with PTSD
- Alcohol abuse: 7.45%
- Generalized anxiety disorder: 15.96%
- Alcohol dependence: 17.02%
- Depressive disorder: 48.94%

38% has no other condition, 41% had one other condition, and 20% had 2 or more.
V. Psychopathology by risk and resilience factors:

How do the “pre-, peri-, and post-” matter?
Those with prior lifetime sexual trauma exposure had a higher prevalence of past-year PTSD

% with past-year PTSD

<table>
<thead>
<tr>
<th></th>
<th>Women* (n=388)</th>
<th>Men* (n=2228)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior sexual trauma</td>
<td>23.6</td>
<td>18.2</td>
</tr>
<tr>
<td>No prior sexual trauma</td>
<td>4.7</td>
<td>6.3</td>
</tr>
</tbody>
</table>

*all comparisons significant at p<0.001

PERI-Deployment risk factors for PTSD

Pre-deployment | Peri-deployment | Post-deployment
Soldiers with traumas during deployment were more likely than those with non-deployment traumas to experience flashbacks and insomnia.

<table>
<thead>
<tr>
<th>Deployment events</th>
<th>Non-deployment events</th>
</tr>
</thead>
<tbody>
<tr>
<td>flashbacks</td>
<td>flashbacks</td>
</tr>
<tr>
<td>18%</td>
<td>13%</td>
</tr>
<tr>
<td>82%</td>
<td>87%</td>
</tr>
<tr>
<td>insomnia</td>
<td>insomnia</td>
</tr>
<tr>
<td>28%</td>
<td>16%</td>
</tr>
<tr>
<td>72%</td>
<td>84%</td>
</tr>
</tbody>
</table>

However, those with traumas during deployment were less likely than those with non-deployment-related events to report intrusive memories and fear/helplessness/horror.

<table>
<thead>
<tr>
<th>Deployment events</th>
<th>Non-deployment events</th>
</tr>
</thead>
<tbody>
<tr>
<td>fear, helplessness, or horror</td>
<td>fear, helplessness, or horror</td>
</tr>
<tr>
<td>41%</td>
<td>69%</td>
</tr>
<tr>
<td>59%</td>
<td>31%</td>
</tr>
<tr>
<td>intrusive memories</td>
<td>intrusive memories</td>
</tr>
<tr>
<td>34%</td>
<td>39%</td>
</tr>
<tr>
<td>66%</td>
<td>61%</td>
</tr>
</tbody>
</table>
POST-Deployment risk factors for PTSD

Soldiers with high post-deployment support were significantly less likely to have past-year deployment-related PTSD

Among those who had at least one potentially traumatic event during deployment, n = 1266. High post-deployment support = a score of 24 or higher on a scale that sums items ranging from 1 (strongly disagree) to 5 (strongly agree) – see slide 25
A combination:

Pre-, peri-, and post-deployment factors all matter for PTSD

Those with low levels of preparedness, unit support and post-deployment support have the highest prevalence of PTSD

e.g. HLH = high preparedness, low unit support, high post-deployment support. Among those who have been deployed and experienced a traumatic event during their most recent deployment (n=1294)
PRE-Deployment risk factors for depression

Those with lifetime sexual trauma exposure had a higher prevalence of past-year depression

<table>
<thead>
<tr>
<th>Group</th>
<th>Women*</th>
<th>Men*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior sexual trauma</td>
<td>37.1</td>
<td>19.8</td>
</tr>
<tr>
<td>No prior sexual trauma</td>
<td>10.6</td>
<td>12.5</td>
</tr>
</tbody>
</table>

(n=388) (n=2228)

*all comparisons significant at p<0.001
PERI-Deployment risk factors for depression

Soldiers who experienced potentially traumatic events during their most recent deployment were more likely to have past-year depression than those who experienced non-deployment-related events.

Includes respondents in baseline who specified their deployment status and did not have events of ambiguous settings or types (n = 1839).
POST-Deployment risk factors for depression

Soldiers with high post-deployment support were significantly less likely to have past-year Depression

Among those who have been deployed at baseline (N = 1668). High post-deployment support = a score of 24 or higher on a scale that sums items ranging from 1 (strongly disagree) to 5 (strongly agree) – see slide 25
A combination of pre- and peri-deployment risk:

What is it about trauma that matters?

Although soldiers with deployment-related events in general were more likely to have depression, the type of the event seems to matter more than the setting.

<table>
<thead>
<tr>
<th></th>
<th>Assaultive</th>
<th>Non-assaultive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian-related traumas only</td>
<td>19.9</td>
<td>6.1</td>
</tr>
<tr>
<td>Deployment-related traumas only</td>
<td>13.0</td>
<td>13.3</td>
</tr>
<tr>
<td>Both settings of trauma</td>
<td>17.7</td>
<td>7.1</td>
</tr>
</tbody>
</table>

Includes respondents in baseline who specified their deployment status and did not have events of ambiguous settings or types.
V. A look over time:

Knowledge requires a longitudinal approach

Individuals show different trajectories of stress response after traumatic events

Most ONG soldiers show resistance to PTSD symptoms across four years

*Resistance: 50%
*Mild, recovery: 36%
*Mild, stable: 11%
*Chronic dysfunction: 3%

PTSD symptom scale

<table>
<thead>
<tr>
<th>Months after event</th>
<th>Resistance</th>
<th>Mild, recovery</th>
<th>Mild, stable</th>
<th>Chronic dysfunction</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>50%</td>
<td>36%</td>
<td>11%</td>
<td>3%</td>
</tr>
<tr>
<td>20</td>
<td>50%</td>
<td>36%</td>
<td>11%</td>
<td>3%</td>
</tr>
<tr>
<td>32</td>
<td>50%</td>
<td>36%</td>
<td>11%</td>
<td>3%</td>
</tr>
<tr>
<td>45</td>
<td>50%</td>
<td>36%</td>
<td>11%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Risk factors at baseline affect what group each respondent belongs in

*Low income
*Low education
*High number of lifetime traumatic events

PTSD symptom scale

<table>
<thead>
<tr>
<th>Months after event</th>
<th>Resistance</th>
<th>Mild, recovery</th>
<th>Mild, stable</th>
<th>Chronic dysfunction</th>
</tr>
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<tr>
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<tr>
<td>20</td>
<td>50%</td>
<td>36%</td>
<td>11%</td>
<td>3%</td>
</tr>
<tr>
<td>32</td>
<td>50%</td>
<td>36%</td>
<td>11%</td>
<td>3%</td>
</tr>
<tr>
<td>45</td>
<td>50%</td>
<td>36%</td>
<td>11%</td>
<td>3%</td>
</tr>
</tbody>
</table>

*n=469, participants who completed at least two waves of the study, had a traumatic event during a deployment within 2 years of baseline assessment, and were bothered by the same event throughout the follow-up interviews.
The dotted lines here show how the trajectory shapes would differ if everyone had past-year alcohol misuse at all waves.

Solid line = no alcohol misuse, depression, traumas, or stressors. Dotted line: alcohol use at every point but no depression, traumas, or stressors.

The dotted lines here show how the trajectory shapes would differ if everyone had past-year depression at all waves.

Solid line = no alcohol misuse, depression, traumas, or stressors. Dotted line: depression at every point but no alcohol misuse, traumas, or stressors.
The dotted lines here show how the trajectory shapes would differ if everyone had at least one new trauma since wave one.

Solid line = no alcohol misuse, depression, traumas, or stressors. Dotted line: at least one new trauma at each wave but no alcohol misuse, traumas, or stressors.

Cumulative trauma effect

Most ONG soldiers show resistance to depression symptoms across four years.

Resistance: 52%
Mild, recovery: 17%
Mild, increasing: 20%
Chronic dysfunction: 11%

* n=727, participants who completed at least two waves of the study and were deployed within 2 years of baseline assessment
Risk factors at baseline affect what group each respondent belongs in

- Resistance: 52%
- Mild, recovery: 17%
- Mild, increasing: 20%
- Chronic dysfunction: 11%

Risk factors:
- Childhood adversity
- High number of lifetime stressors
- High number of lifetime traumatic events
- Not currently married

Number of depression symptoms vs. Months after event

* n=727, participants who completed at least two waves of the study and were deployed within 2 years of baseline assessment.

The dotted lines here show how the trajectory shapes would differ if everyone had past-year alcohol misuse at all waves.

Solid line = no alcohol misuse or PTSD. Dotted line: alcohol misuse at each wave but no PTSD.
The dotted lines here show how the trajectory shapes would differ if everyone had past-year PTSD at all waves.

VI. ALCOHOL MISUSE: Some findings
What is the relationship between mental health disorders and peri-/post-deployment alcohol abuse?

Both civilian and deployment-related factors are associated with incident alcohol abuse.
Those with both PTSD and depression have the highest probability of developing alcohol abuse

DD – any depressive disorder.
These are the predicted probabilities from multivariable logistic regressions adjusted for other variables (age, gender, race, education, income, deployment location, marital status, family history of substance abuse) entered in the multivariate regression model. Note: depression and PTSD are both defined as first occurring during or following deployment.

VII. SUICIDAL IDEATION: Some findings
About 2% of the soldiers reported suicidal ideation in the past month, and 11% in their lifetime.

Calculated within baseline sample (N=2616). This is “thought (they) would be better off dead, or had thoughts of hurting (themselves)” from the Patient Health Questionnaire - 9. Kroenke K, Spitzer R. The PHQ-9: A new depression diagnostic and severity measure. Psychiatric Annals 2002;32:1. Compared to general population with a prevalence of lifetime suicidal ideation between 4.8% and 18% (cdc.gov/ncipc/wisqars).

In the past 6 months, 7% of the clinical sub-sample have thought about suicide.

Wave 1 in-person sample N=500.
Deployment experience at baseline was not associated with current suicidal ideation

However, those with deployment history had fewer suicidal outcomes
Women were more likely than men to make a suicide plan in the past 6 months

In the past 6 months, those with a history of mood disorder had the highest level of suicide risk
Soldiers with more co-morbidity throughout their lifetime show a higher level of suicide risk

How do deployment, lifetime stressors and mental health affect suicidal ideation?
Among those deployed, current suicidal ideation are associated pre-, peri-, and post-deployment factors

Stressors experienced over lifespan are associated with current suicidal ideation
Among those never deployed, current suicidal ideation was associated with a lifetime occurrence of mental health conditions

How does alcohol dependence relate to suicidal ideation?

All p-value <0.05. Diagnoses by DSM-IV using: PTSD using the PTSD Checklist, Depression using the Patient Health Questionnaire, Anxiety Disorder using the Generalized Anxiety Disorder questionnaire and alcohol dependence using the MINI. For alcohol dependence the N=831 compared to N=907 for the other analyses.
Baseline alcohol dependence is significantly associated with incident suicidal ideation at follow-up

Baseline Alcohol dependence

Follow-up incident suicidal ideation

6% → 9%

p=0.0002

n=1587; percent alcohol dependence and suicidal ideation reported for participants meeting criteria

How does co-morbidity relate to suicidal ideation?
Soldiers with past-year PTSD are 5 times more likely than those without to have a history of suicidal ideation


Compared to PTSD alone, those with 2 or more conditions within the past year are 7 times more likely to have a history of suicidal ideation

VIII. Mental health service utilization

Among soldiers with mental health care need, less than half reported service use.

- Mental health service need at wave 2:
  - Yes: 17%
  - No: 83%
  (N=1319)

- Mental health service use among those with need between waves 2 & 3:
  - Yes: 37%
  - No: 63%
  (N=218)

*mental health need was defined as ≥ 1 mental health disorder, including PTSD, depression, GAD, or alcohol use disorder (AUD) including abuse or dependence, or past month suicidal ideation
Among those who reported service use, approximately 60% used VA or military care

*mental health need was defined as ≥ 1 mental health disorder, including PTSD, depression, GAD, or an alcohol use disorder (AUD; including abuse or dependence), or past month suicidal ideation

Utilization of mental health differs by psychiatric disorder

*% with any mental health condition reporting any mental health service use in past year

<table>
<thead>
<tr>
<th>Mental Health Condition</th>
<th>% Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD</td>
<td>61</td>
</tr>
<tr>
<td>Depression</td>
<td>43</td>
</tr>
<tr>
<td>GAD</td>
<td>57</td>
</tr>
<tr>
<td>AUD</td>
<td>23</td>
</tr>
<tr>
<td>Past month suicidal ideation</td>
<td>47</td>
</tr>
</tbody>
</table>

*n=218*
Greater psychiatric burden was associated with higher utilization of mental health services

<table>
<thead>
<tr>
<th>Number of mental health diagnoses*</th>
<th>% with any mental health condition reporting any mental health service use in past year</th>
</tr>
</thead>
<tbody>
<tr>
<td>one (n=145)</td>
<td>30</td>
</tr>
<tr>
<td>two (n=42)</td>
<td>50</td>
</tr>
<tr>
<td>three or more (n=29)</td>
<td>55</td>
</tr>
</tbody>
</table>

* n=218; p<0.01; mental health diagnoses included PTSD, depression, GAD, or an alcohol use disorder (AUD; including abuse or dependence)

Service use conclusions

- the majority of ONG soldiers who have mental health care need do not report accessing services
- greater psychiatric burden was associated with higher utilization of mental health services
- alcohol use disorder by far most common reported psychopathology
- those with AUD also least likely to use mental health services
- a little over half of those who access care report utilizing VA or DoD services
- the youngest group of veterans were least likely to use VA/DoD services