Posttraumatic Stress and its Relationship to Physical Health Functioning in Iraq and Afghanistan War Veterans

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- Integrated mental health and primary care
  - Post combat physical and mental health examinations
  - Psychoeducation
  - Brief treatment
    First line: behavioral interventions, health/wellness
  - Long-term MH care in collaboration with PTSD and general mental health clinics
  - Case finding
    Outreach and interagency collaboration
Psychological Trauma and its Impact on Physical Health

Trauma exposure and or PTSD have been associated with:

- Bodily pain\(^1\)
- GI Distress\(^2\)
- Cardiovascular disorders\(^3\)
- Health care utilization\(^4\)
- Physical health functioning\(^5\)
Psychological Trauma and its Impact on Physical Health

Immediate impact of trauma and chronic stress may lead to changes⁶

- Emotional/psychological states
- Attention/perceptions
- Neurobiological and Immunological
- Health behaviors
  - Smoking
  - Alcohol or drug use
  - Lack of exercise
Figure 1. A Model of Trauma Exposure, PTSD and Physical Health Outcomes
PTSD Mediates the Relationship between trauma exposure and poor health outcomes

Previous studies
- WW II and Korean vets\(^7\)
- Female VN veterans\(^8\)
- Male VN Combat veterans\(^9\)
- Gulf War I veterans\(^10\)

Most veterans were sampled years after service; demographic and health risk behaviors were assessed, but physical injury or chemical exposures were often not included as a covariates
Recent Findings Among OIF Veterans
Hoge et al. (2007)\textsuperscript{11}

\begin{itemize}
  \item Army Combat Infantrymen (N = 2,863) assessed by self-report 1 year following deployment:
    \begin{itemize}
      \item Controlling for injury sustained during deployment, PTSD symptom severity significantly predicted self-rated general health, missed work-days, and somatic symptoms.
      \item Although measured, problem-drinking was not controlled for, nor were other health risk behaviors (i.e., smoking) or chemical exposure.
    \end{itemize}
\end{itemize}
Current Study

Sample of OIF/OEF veterans presenting for medical and or mental health care at the Seattle Deployment Health Clinic of PSHCS

Hypothesis: PTSD would significantly predict lower physical health functioning, after accounting for demographic factors, health risk behaviors, combat and chemical exposure.
Sample Characteristics (N=108)

Racial distribution: 64.8% White, 5.6% African American, 1.9% American Indian, 4.6% Asian/Pacific Islander, 2.8% Hispanic, 10.2% “Other”, 10.2% did not respond

96.3% Men; Mean age = 33.3 (SD = 8.4)

2.1 years of college/technical training

51.9% Married

74.4% Employed (63.9% Full time)

71.3% Reservists.
Instruments

- Combat Exposure
  - Laufer’s Revised Combat Exposure Scale\textsuperscript{12}
  - Desert Storm Trauma Questionnaire\textsuperscript{13}

- Problem Drinking
  - PHQ\textsuperscript{14}

- PTSD Symptom Severity
  - PCL-M\textsuperscript{15}
Instruments

Physical Health Functioning: SF-36

- Physical Functioning
- Role Functioning
- Bodily Pain
- General Health
- Health Transition
Health Risk Factors

- 37% sustained injury during deployment, 11.1% were wounded in combat

- On average, sample was exposed to 8.7 ($SD = 3.2$) types of chemical exposure during their deployment

- 25.2% smoked cigarettes, 1 pack/day (mode)

- 23.4% indicated one or more problem-drinking behaviors
Mean scores of SF-36 physical health functioning for OIF/OEF veterans, males of comparable age, and males ages 65 and over

<table>
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<tr>
<th>OIF/OEF</th>
<th>Population Norms</th>
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<tbody>
<tr>
<td>Veterans</td>
<td>Age 25-34</td>
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<tr>
<td>n = 104</td>
<td>N = 199</td>
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<table>
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<tr>
<th></th>
<th>M(SD)</th>
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<tbody>
<tr>
<td>PF</td>
<td>77.5 (20.2)</td>
<td>94.9 (11.4)</td>
<td>65.8 (28.3)</td>
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<tr>
<td>RF</td>
<td>47.3 (44.1)</td>
<td>91.9 (21.0)</td>
<td>60.0 (42.5)</td>
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<tr>
<td>BP</td>
<td>50.0 (23.5)</td>
<td>83.1 (18.2)</td>
<td>68.8 (25.4)</td>
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<tr>
<td>GH</td>
<td>56.6 (14.7)</td>
<td>79.4 (17.2)</td>
<td>58.6 (22.1)</td>
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## Correlations

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<td>1. Age</td>
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<td>-0.08</td>
<td>0.08</td>
<td>0.13</td>
<td>0.06</td>
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<td>-0.14</td>
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<td>2. Smoke</td>
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<td>0.05</td>
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<td>-0.06</td>
<td>-0.21*</td>
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<td>0.34**</td>
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<td>0.50**</td>
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<td>9. Bodily Pain</td>
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<td>0.43**</td>
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<td>10. General Health</td>
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<td>11. Health Transition</td>
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Hierarchical Regressions

After accounting for covariates, PTSD severity significantly and negatively predicted

- Physical functioning, $R^2_{\Delta} = .06$, $p < .01$
- Role Functioning, $R^2_{\Delta} = .07$, $p < .01$
- Bodily Pain, $R^2_{\Delta} = .06$, $p < .01$
- General Health, $R^2_{\Delta} = .18$, $p < .01$
- Health Transition, $R^2_{\Delta} = .12$, $p < .01$
Other Risk Factors

- Trend toward significance for chemical exposure as a predictor in the second step of the regression predicting general health (β = -.20, p = .03).

- Other risk factors were not significant when PTSD was added into the regression models.
  - Consistent with previous evidence that PTSD mediates the relationship between war zone exposures and physical health.
Discussion

PTSD as a chronic stressor that impacts physical health functioning in OIF/OEF Veterans

– Across multiple self-report indices (e.g., role functioning, overall health, declining health)

– Even after accounting for other risk factors

– With levels of health functioning suggestive of significant impairment within a relatively young, presumably recently healthy population
Clinical Implications

These findings have important implications for treatment of health related concerns among veterans with PTSD

- Increased health care utilization
  Emphasize proactive treatment of health concerns

- Psychoeducation
  Mind/body relationship, importance of addressing PTSD symptoms for long-term health

- Integrated smoking cessation\(^{17}\)
  Utilize frequent contact, therapeutic alliance to promote cessation

- Integrated brief alcohol abuse treatment\(^{18}\)
  Harm reduction approach to improve retention

- Health and wellness interventions
  Benefits to mood/anxiety symptoms
References


