

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

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# Deployment Health Clinic

- 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<sup>1</sup>
  - GI Distress<sup>2</sup>
  - Cardiovascular disorders<sup>3</sup>
  - Health care utilization<sup>4</sup>
  - Physical health functioning<sup>5</sup>

# Psychological Trauma and its Impact on Physical Health

- Immediate impact of trauma and chronic stress may lead to changes<sup>6</sup>
  - Emotional/psychological states
  - Attention/perceptions
  - Neurobiological and Immunological
  - Health behaviors
    - Smoking
    - Alcohol or drug use
    - Lack of exercise

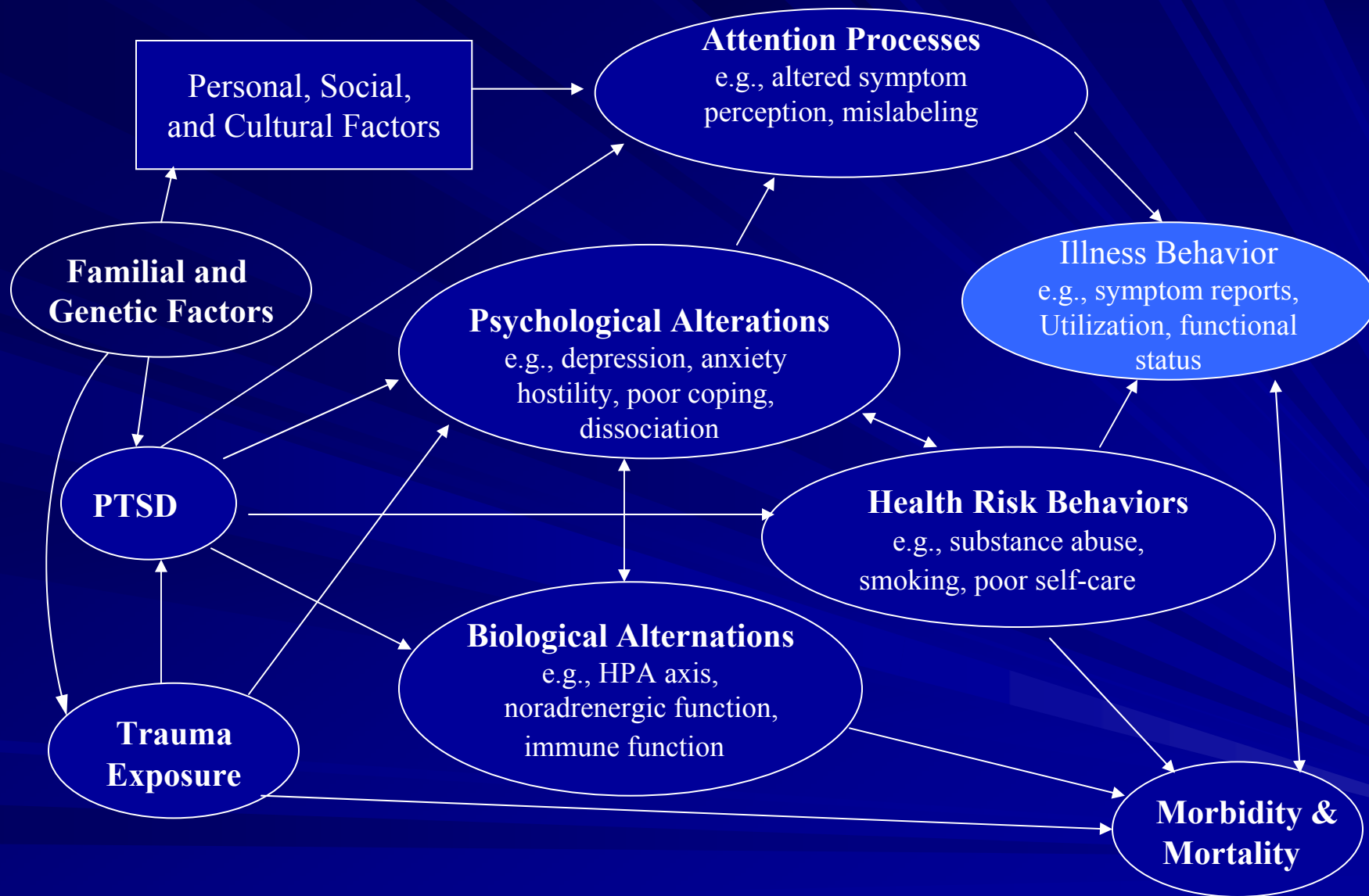


Figure 1. A Model of Trauma Exposure, PTSD and Physical Health Outcomes<sup>6</sup>

# PTSD Mediates the Relationship between trauma exposure and poor health outcomes

- Previous studies
  - WW II and Korean vets<sup>7</sup>
  - Female VN veterans<sup>8</sup>
  - Male VN Combat veterans<sup>9</sup>
  - Gulf War I veterans<sup>10</sup>
- 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)<sup>11</sup>

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

# 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<sup>12</sup>
- Desert Storm Trauma Questionnaire<sup>13</sup>

## ■ Problem Drinking

- PHQ<sup>14</sup>

## ■ PTSD Symptom Severity

- PCL-M<sup>15</sup>

# Instruments

- Physical Health Functioning: SF-36<sup>16</sup>
  - 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

	OIF/OEF	Population Norms	
	Veterans <i>n</i> = 104	Age 25-34 <i>N</i> = 199	Ages 65+ <i>N</i> = 293
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
PF	77.5 (20.2)	94.9 (11.4)	65.8 (28.3)
RF	47.3 (44.1)	91.9 (21.0)	60.0 (42.5)
BP	50.0 (23.5)	83.1 (18.2)	68.8 (25.4)
GH	56.6 (14.7)	79.4 (17.2)	58.6 (22.1)



# 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 ( $\beta = -.20, p = .03$ ).
- 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<sup>17</sup>  
Utilize frequent contact, therapeutic alliance to promote cessation
  - Integrated brief alcohol abuse treatment<sup>18</sup>  
Harm reduction approach to improve retention
  - Health and wellness interventions  
Benefits to mood/anxiety symptoms

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