

Untangling Psychological Trauma and Physical Pain: Moral Injury as Predictor and Moderator in Military Samples

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Introduction

- Military personnel are at higher risk of developing posttraumatic stress disorder (PTSD), chronic pain (CP) and moral injury (MI).
- PTSD and CP are linked.
- Role of MI in CP has not been explored.
- We examined the role of MI and PTSD on pain severity (PS) and functional interference (FI).

Methods

- Service members (n=666) completed the PCL-5, Moral Injury and Distress Scale, Pain Enjoyment of Life and General Activity Scale, and/or Defense and Veterans Pain Rating Scale.
- Hierarchical regression analysis was used to explore the associations between MI and PS and FI.
- Moderation analysis was used to investigate the role of MI in the association between PTSD and PS and FI.
- ANOVA was used to compare groups with no history of potentially morally injurious event (PMIE), subclinical MI symptoms, and clinical symptoms in their PS and FI.

Results

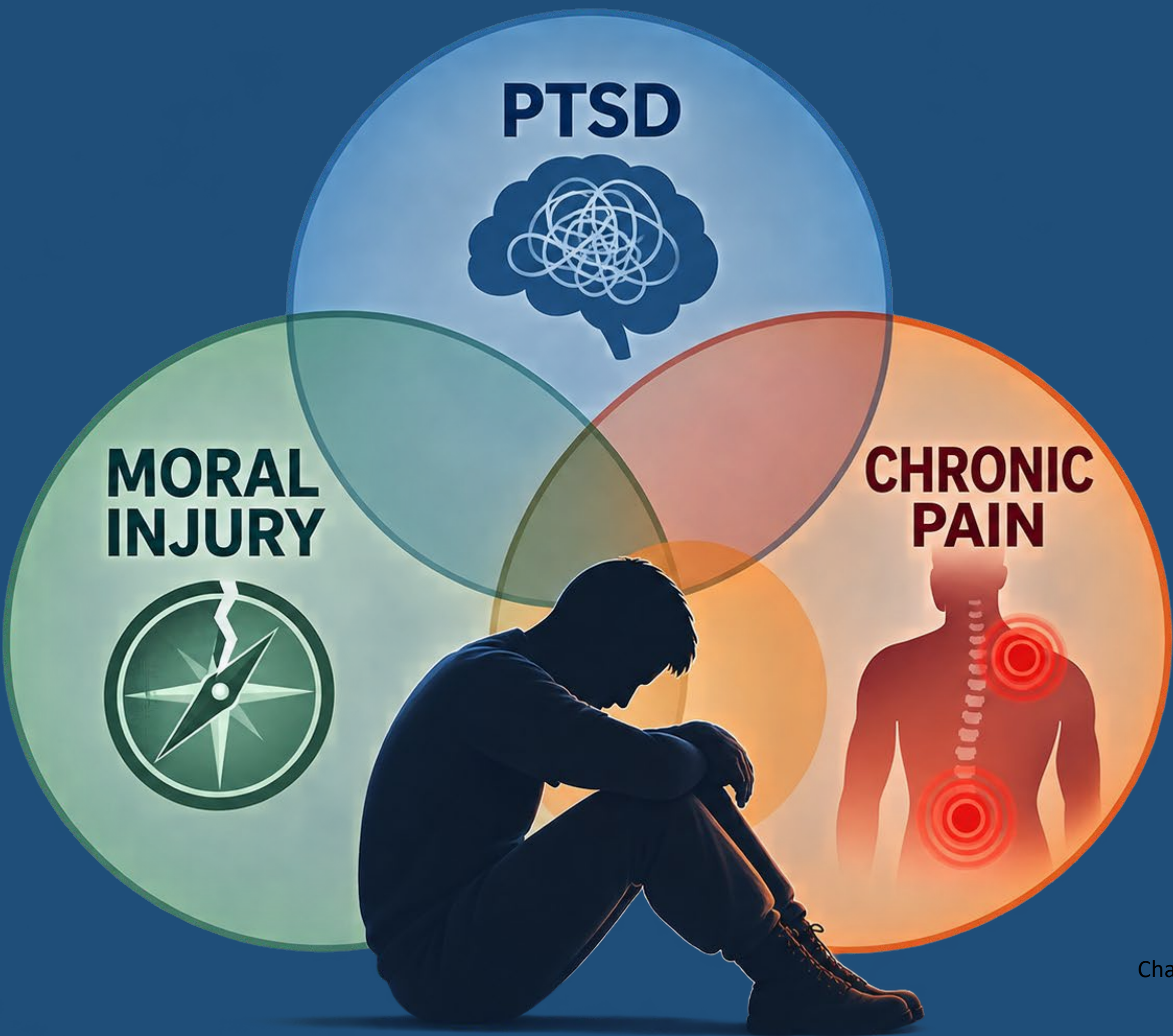
- PTSD was a significant predictor of pain severity ($ab=0.05$, 95% CI [0.04, 0.07]) and functional interference ($ab=0.05$, 95% CI [0.03, 0.07]).

Table 1. Demographic Table (N = 666)

Variable		N	Percentage
Sex at Birth	Female	194	31.19%
	Male	428	68.81%
Race	White	304	45.65%
	Black	135	20.27%
	Mean	SD	Range
Age	42.79	9.93	19 – 77
Moral Injury	36.44	17.15	0 – 72
PTSD	48.30	17.40	0 – 80
Pain Severity	5.40	2.22	0 – 10
Functional Interference	5.33	2.65	0 – 10

PTSD is a stronger predictor of pain severity and functional interference than moral injury.

Service members who reported PMIE and clinical moral injury symptoms show higher pain severity and functional interference than those with PMIE and subclinical moral injury symptoms.



Results

- Female sex at birth predicted functional interference ($ab=0.63$, 95% CI [0.11, 1.15]).
- Controlling for sex and PTSD, MI was not a significant predictor of pain ($ab= - 0.01$, 95% CI [– 0.02, 0.00]) or functional interference ($ab=0.01$, 95% CI [– 0.01, 0.03]).
- MI did not improve the prediction of pain ($\Delta R^2=.003$, $p = .209$) or functional interference ($\Delta R^2=.002$, $p = .267$).
- The MI×PTSD interaction was not significant for pain ($ab= 0.00$, 95% CI [– 0.000, 0.001]) or functional interference ($ab= 0.00$, 95% CI [– 0.000, 0.001]).
- Comparing groups with no history of PMIE, subclinical MI symptoms, and clinical MI symptoms revealed significant group differences in pain ($F(2, 611)=36.84$, $p < .001$) and functional interference ($F(2, 559)=81.38$, $p < .0001$).
- Patients with a history of PMIE and clinical symptoms scored significantly higher on pain and functional interference ($p < .001$).

Discussion

- PTSD is a stronger predictor of both pain severity and functional interference in the past 24 hours than moral injury. Previous research suggests potential mechanistic overlap in chronic pain and PTSD. Moral injury may develop through different mechanisms.
- Female gender is stronger predictor of functional interference.
- Level of symptom severity of moral injury was related to higher pain though unclear if this is moral injury per se or the overlap between PTSD and moral injury.
- Additional research is needed to dig deeper into these findings and replicate .

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