Post-Traumatic Stress Disorder Symptomatology is Associated with Insomnia Severity Among Women Receiving Buprenorphine

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Background

- Sleep disturbances such as insomnia are common among individuals receiving medication for opioid use disorder (MOUD) and are associated with negative outcomes[1]
- Post-traumatic stress disorder (PTSD) is a major risk factor for insomnia and is common in MOUD patients[2]
- Women are at increased risk of developing both PTSD and insomnia[3]
- The current study is among the first to characterize how PTSD symptoms overlap with insomnia symptoms among women receiving MOUD
- Understanding how PTSD and insomnia overlap could benefit personalized intervention strategies

Objectives

1) Compare patient-reported insomnia symptoms in those with and without PTSD symptomatology among a population of women with OUD
2) Examine the association between the severity of PTSD symptomatology and severity of insomnia symptoms

Methods

Secondary analysis of data from a cross-sectional survey and interview study of non-pregnant women in outpatient OUD treatment

Inclusion criteria:
- Between 18-65 years of age
- Stabilized on buprenorphine for OUD for at least 6 weeks
- Not pregnant or >6 weeks postpartum

PTSD Symptomatology (PCL-5):
- 20-item questionnaire that assesses the 20 DSM-5 symptoms of PTSD
- Higher scores indicating greater PTSD severity
- Cutoff of > 31 used to define clinically significant PTSD symptomatology

Insomnia Severity Index (ISI):
- 7-item scaled tool that assesses overall sleep quality
- Higher scores indicating worse insomnia
- Cutoff of >10 used to identify clinically significant insomnia

References

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3) Kilpatrick, D. G., Resnick, H. S., Milanak, M. E., Miller, M. W., Keyes, K. M., & Friedman, M. J. (2013). National Estimates of Exposure to Traumatic Events and PTSD Prevalence Using *DSM-IV* and *DSM-5* Criteria: *DSM-5* PTSD Prevalence. *Journal of Traumatic Stress, 26*(5), 537–547. https://doi.org/10.1002/jts.21848
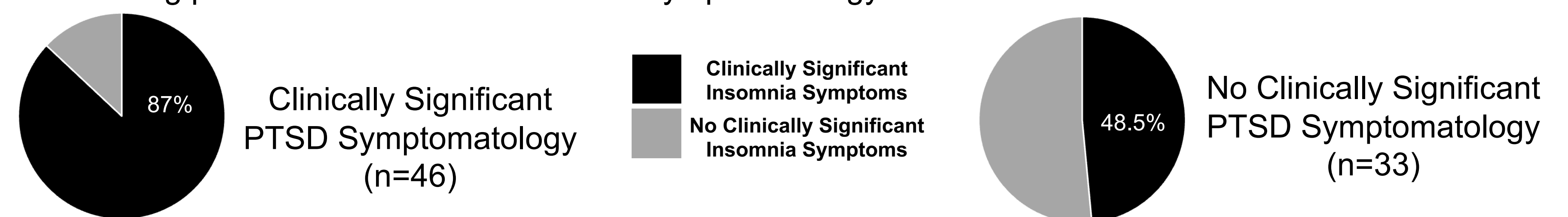
Results

- There were no significant differences between groups in terms of age, race, ethnicity, employment status, insurance coverage, or education.
- Within the group with clinically significant PTSD symptomatology, the average age was 35.9 (SD=8.9), and most participants were white (56.6%) and non-Hispanic/Latinx (93.5%).
- Within the group without clinically significant PTSD symptomatology, the average age was 38.6 (SD=9.4), and most participants were white (66.7%) and non-Hispanic/Latinx (97%).

TAKE HOME POINT 1: Participants with Clinically Significant PTSD Symptomatology were More Likely to Report Insomnia Symptoms than Patients Without PTSD Among Female Patients on Buprenorphine for OUD

Sleep Variables	Clinically Significant PTSD Symptomatology (n=46) N (%)	No Clinically Significant PTSD Symptomatology (n=33) N (%)
Clinically significant insomnia symptoms (ISI score >= 10)	40 (87.0%)	16 (48.5%)
Total ISI score (range: 0-28)	17.6 (6.2)	10.1 (7.8)
Difficulty falling asleep (% yes)	40 (87.0%)	20 (60.6%)
Difficulty staying asleep (% yes)	41 (89.1%)	23 (69.7%)
Problems waking up too early (% yes)	43 (93.5%)	22 (66.7%)

Figure 1: Insomnia among patients with and without PTSD symptomatology.

87% Clinically Significant PTSD Symptomatology (n=46)

- Clinically Significant Insomnia Symptoms
- No Clinically Significant Insomnia Symptoms

48.5% No Clinically Significant PTSD Symptomatology (n=33)

TAKE HOME POINT 2: Degree of PTSD Symptomatology is Significantly Associated with Insomnia Symptom Severity Among Female Patients on Buprenorphine for OUD

Insomnia Severity Index (ISI) Total Score

	Beta	t	Sig.	95% Confidence Interval for B	
PCL-5 Total Score	4.09	3.33	.001	.062	.249
Age	.082	.734	.465	-.118	.225
Social Support	.047	.390	.698	-2.031	3.017
Behavioral Treatment	.034	.281	.780	-3.236	4.294
Psychiatric Medication	.152	1.251	.215	-1.561	6.794

Our multiple regression model significantly predicted insomnia scores
- $F_{(5, 64)} = 4.12$, $p = .003$, $R^2 = .24$

These predictors accounted for 24.4% of the variance in insomnia scores
Degree of PTSD symptomatology was significantly associated with insomnia symptom severity

Discussion

- Insomnia symptoms were reported more frequently by women receiving MOUD treatment with clinically significant PTSD symptomatology than those without significant PTSD
- PTSD symptomatology is associated with increased insomnia symptom severity
- These findings align with existing research; as the relationship between insomnia and opioid use disorder is likely bi-directional, as is the relationship between PTSD and insomnia
- These data indicate that targeting PTSD within the context of emerging sleep health interventions could have impact on health outcomes among women receiving MOUD treatment
- There are limitations within this work in that the lack of male participants prevented any analysis specific to sex-differences; furthermore, this was a cross-sectional study, so understanding how these dynamics might change with time was not possible.

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