

The Role of Social Support in Mitigating PTSD-Related Sleep Disturbances

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Abstract

Post-traumatic stress disorder (PTSD) is a condition which has been known to affect quality of sleep. Research has shown that there is indeed a strong relationship between PTSD and sleep quality; less is known about the role social support may play in that relationship. By using a 2x2 factorial design, this study aimed to explore the relationship between different levels of social support (high vs. low) and their impacts on PTSD severity (high vs. low) in sleep quality in veterans. A sample of 450 veterans across 10 different Veterans Affairs (VA) hospitals were asked to complete self-report surveys while wearing a sleep tracker for one week. A factorial ANOVA revealed significant main effects of PTSD and social support on the outcome of sleep, alongside a significant interaction effect. Veterans who were diagnosed with severe PTSD and had low social support reported having a lower sleep quality, whereas veterans who reported high social support showed mitigation in PTSD symptoms with increased sleep quality regardless of PTSD severity. These findings suggest that social support plays a role in reducing sleep disturbances caused by PTSD symptoms in veterans.

The Role of Social Support in Mitigating PTSD-Related Sleep Disturbances

Sleep is known as one of the most vital parts of both psychological and physical wellbeing—yet for individuals who suffer with post-traumatic stress disorder (PTSD) up to 87% of individuals experience disturbances in their sleep (Khazaie et al., 2016). Veterans often undergo repeated exposure to traumatic events, are often at a higher risk for developing PTSD and its associated symptoms, particularly impaired sleep (Gehrman, 2015). PTSD is a debilitating condition which is frequently associated with significant disruptions to sleep, including insomnia, nightmares, and fragmented sleep (Khazaie et al., 2016). These sleep disturbances not only exacerbate PTSD symptoms but limit how much a person can recover when the brain's capacity for emotional processing and memory consolidation is hindered (Saguin et al., 2025).

While clinical research has continually shown the negative effects PTSD has on sleep, not all individuals with PTSD experience sleep related symptoms in the same way or intensity. This explanation of this variation could lie in both environmental and psychological contrast. Social support is quite likely a buffer that might reduce the burden that PTSD symptoms can carry.

Previous studies have revealed that individuals who perceive a higher level of social support are better equipped to regulate stress and show improved psychological resilience (Havlik et al., 2025). While that remains true, specific mechanisms by which social support impacts PTSD-related sleep disturbances are less understood. With the lack of perceived support, individuals may feel isolated, which can aggravate PTSD symptoms, particularly those related to sleep disturbances.

Recent research

Method

Participants

The hypothetical sample included 450 veterans recruited by cluster sampling from 10 randomly selected VA medical hospitals throughout the U.S. Systematic sampling was then used by compiling a list of all veterans from the 10 selected hospitals who had a formal diagnosis for PTSD and picking every 10th veteran, picking 45 participants per hospital.

Design

An experimental 2x2 between-subjects factorial design was applied. The independent variable was PTSD (moderate vs. severe), the dependent variable was sleep quality, which was assessed through average sleep duration (hours), frequency of nightly sleep disturbances, and number of nightmares per week. The moderating variable was social support (high vs. low).

Measures

PTSD severity was assessed by using the DSM-5 PTSD checklist (PCL-5), a self-reported measure. Social support was measured by using self-reporting the number of perceived outlets of social support pre and post study over the course of a week. Sleep quality was tracked via a provided sleep-tracker which monitored various sleep related information. That data was then provided to the participants and asked to relay through a self-reported survey which asked for items related to average sleep hours, disruptions, and nightmares. Hypothetical group mean scores and standard deviation were calculated using R Studio. Cronbachs Alpha

Procedure

Participants signed an informed consent and were housed in a veterans' group housing for one week. The participants were distributed amongst 4 groups based on PTSD severity (high vs. low) and their perceived social support (high vs. low). During this time, the participants wore sleep tracking devices to monitor sleep behaviors and then completed self-reported surveys. No

identifying information was collected and all participants were debriefed at the end of the study. A factorial ANOVA was used to examine the main effects and interactions between PTSD severity and social support with sleep quality.

Results

A hypothetical 2x2 factorial ANOVA was conducted to examine the effects of PTSD severity and social support on sleep quality. The analysis revealed a significant main effect for both PTSD severity $F(1, 496) = 1.78, p < 0.001$, and social support, $F(1, 496) = 843.96, p < 0.001$. Veterans with severe PTSD reported significantly worse sleep quality ($M = 3.51, SD = 2.16$) compared to those with moderate PTSD ($M = 5.51, SD = 1.95$). Similarly, veterans with low social support reported poorer sleep ($M = 3.02, SD = 2.02$) compared to those with high support ($M = 6.00, SD = 1.41$). The interaction between PTSD severity and social support was not statistically significant, $F(1, 49) = 1.78, p = 0.183$, which suggests that both factors independently affect sleep quality, but their combined influence did not produce a significant moderating effect within the dataset. This means that veterans with severe PTSD and low social support exhibited the worst sleep levels ($M = 1.95, SD = 1.40$), while those with moderate PTSD and high social support reported the best sleep levels ($M = 6.93, SD = 0.93$).

Discussion

This study tested the hypothesis that social support moderates the relationship between PTSD severity and sleep quality. Veterans with severe PTSD were found to be more vulnerable to sleep disruptions when there was a lack of social support. In contrast, veterans with high levels of social support reported significantly better sleep levels, even with severe PTSD symptoms. This information supports prior research which shows that both emotional and structural support can enhance recovery and protect against chronic symptomatology in trauma-affected populations (Havlik et al., 2025; Bertolazi et al., 2015). Furthermore, there is evidence that suggests in combining social support and mindfulness interventions, they could be particularly powerful in improving sleep in severe PTSD cases (Sperlich et al., 2021).

Limitations and Future Directions

While the data suggests promise in the way of helping veterans suffering from sleep disturbances as a result of PTSD symptoms, there are several limitations to this study. First, this study is based off of computer-generated hypothetical data and design. It used an observational, cross-sectional design which limits the ability for causal interpretation. It is necessary to utilize experimental studies—particularly by randomizing controlled trials—to establish whether increasing social support actively improves sleep outcomes in PTSD patients. Another problem is the fact that social support is a self-reported measure which may not provide the most reliable form of information. By using a self-report survey, it leaves the perception of social support up to debate on how accurate the data is. Future research should both expand upon experimental studies in both design and size to allow for a greater generalization group.

Implications

The results have implications in both clinical practice and public health. Interventions that would allow an enhancement of social support—such as peer mentoring, group-based workshops,

or family/friend-inclusive therapy—may offer a variety of non-medication related solutions for sleep improvement amongst PTSD victims. Given that emotional support appears to outperform many structural variables in buffering sleep disturbances (Matsumoto et al., 2015), approaches to treatment should prioritize building emotional connection and interpersonal engagement. By tailoring these interventions to high-risk groups, such as individuals with severe PTSD and limited social support, it could be critical in mitigating PTSD related sleep disturbances and allowing for proper recovery.

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Appendix

https://docs.google.com/document/d/119OLdFip7e7NHS4uMREclAs_eaDUJSet/edit

Low Social Support vs. High Social Support Effects on Sleep Quality

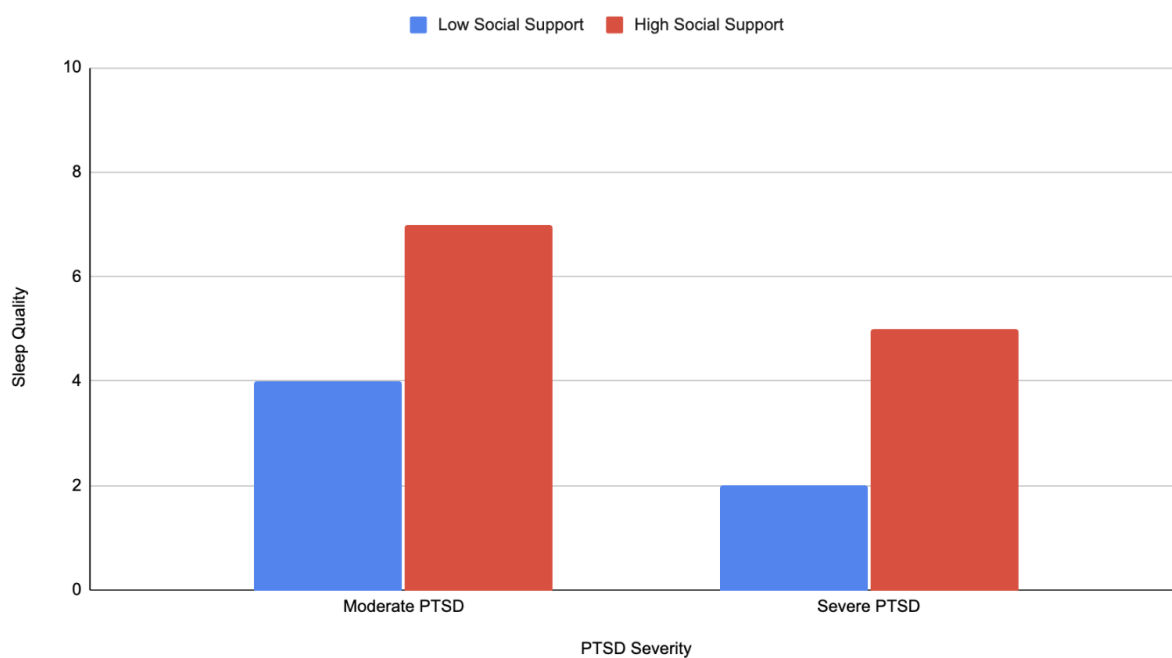


Figure 1

Bar graph showing the