

Comparison of Sleep Problems and Associated Psychiatric States in Military Active-Duty Army and Navy Personnel in Taiwan.

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Objective: For decades, sleep problems have been proven to link to mental disorders and are independent risk factors for suicidality. But further details in the connections between them in the military are still understudied. This study aimed to fill this gap by collecting self-reported responses from active-duty soldiers in Taiwan.

Methods: Using responses of sub-items of Pittsburgh Sleep Quality Index (PSQI) item 5 from 808 Taiwanese soldiers, we have compared army-navy and gender differences in total sleep hour per day, sleep problems, prevalence of relevant psychological factors and subclinical symptoms of post-traumatic stress disorder (PTSD). To examine their associations with each sleep problem, we applied logistic regression models by redefining all sleep problems as dichotomous variables as outcome variables.

Results: Compared with the Navy, samples in the Army slept fewer hours per day ($p < 0.001$), experienced more difficulties with daily activities ($p < 0.001$), and displayed less enthusiasm ($p = 0.001$). The female soldiers showed more sleep problems than male soldiers, namely, waking up in the middle of night ($p = 0.008$), feeling too cold ($p = 0.031$) or too hot ($p = 0.001$), having pain ($p = 0.033$), and having other reasons ($p = 0.002$). Samples from the male soldiers reported more problems with enthusiasm in the past month ($p = 0.008$). After adjusting for interaction between other variables, the greater magnitude of thwarted belongingness is associated with sleep problems caused by pain or other reasons (all $p < 0.05$). That of perceptive burdensomeness negatively relates to sleep problems caused by waking up in the middle of the night and coughing or snoring loudly while sleeping (all $p < 0.05$). All four subclinical symptoms of PTSD affect soldiers' sleep differently. The numbness and re-experience tend to be associated with longer sleep hours, otherwise, the avoidance is associated with shorter sleep hours, higher risks of not falling asleep within 30 minutes and waking up in the middle of the night ($p < 0.05$). Arousal, the another PTSD sub-symptom, is associated with an increased risk of having trouble with daily activities and having less enthusiasm in the past month ($p < 0.05$).

Conclusion: This study presents the differences in psychiatric states and sleep problems between soldiers in the Taiwanese Army and Navy, and the gender differences. Aside from anxiety and depression, the subclinical symptoms of PTSD also associated with both suicide and sleep problems. That leads us to believe that treating sleep problems is critical to preventing suicide in the military, especially

among those with subclinical PTSD symptoms.

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