

INPLASY PROTOCOL

To cite: Bai et al. Global prevalence of poor sleep quality in military personnel and veterans: A systematic review and meta-analysis of epidemiological studies. Inplasy protocol 2022100038. doi: 10.37766/inplasy2022.10.0038

Received: 10 October 2022

Published: 10 October 2022

Corresponding author:
Wei Bai

yc07611@connect.um.edu.mo

Author Affiliation:
University of Macau.

Support: University of Macau.

Review Stage at time of this submission: Formal screening of search results against eligibility criteria.

Conflicts of interest:
None declared.

Global prevalence of poor sleep quality in military personnel and veterans: A systematic review and meta-analysis of epidemiological studies

Bai, W¹; Gui, Z²; Chen, MY³; Xiang, YT⁴.

Review question / Objective: What is the prevalence of poor sleep quality in military forces in epidemiological surveys?

Condition being studied: The rates of mental health diagnoses are high among military forces, which have garnered a great number of studies and clinical attention. Posttraumatic stress disorder (PSSD) and major depressive disorder (MDD) are common mental health diagnoses among them. Poor sleep quality, characterized by poor subjective quality, increased awakenings, frequent arousals, marked nocturnal hypoxemia, and periodic breathing, is a core presenting symptom of and often co-occur with many mental health disorders (i.e., PTSD and MDD). The Pittsburgh Sleep Quality Index (PSQI) is a widely used scale to assess subjective sleep quality and has been validated in many countries with satisfactory psychometric properties. To date, there are a number of studies exploring the prevalence of poor sleep quality in military forces, which are fraught with methodological limitations leading to inconsistent findings. Therefore, we conducted this systematic review and meta-analysis of epidemiological studies to examine the prevalence of poor sleep quality in military forces.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 October 2022 and was last updated on 10 October 2022 (registration number INPLASY2022100038).

INTRODUCTION

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METHODS

Participant or population: Military forces.

Intervention: Not applicable.

Comparator: Not applicable.

Study designs to be included: Cross-sectional or cohort studies.

Eligibility criteria: To be eligible, the following inclusion criteria according to the PICOS acronym are made: Participants (P): individuals who had been employed by the Army, Air Force, Navy or retired from above organizations (both active and retired will be included); Intervention (I): not applicable; Comparison (C): not applicable; Outcome (O): prevalence of poor sleep quality or relevant data that enable to calculate the prevalence of poor sleep quality; Study design (S): cross-sectional or cohort studies (only the baseline data of cohort studies were extracted). Exclusion criteria included: (1) studies published in non-English (2) sleep quality was evaluated by non-standardized scales To be eligible, the following inclusion criteria according to the PICOS acronym are made: Participants (P): individuals who had been employed by the Army, Air Force, Navy or retired from

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Information sources: Three researchers (WB, ZG, and MYC) independently searched relevant publications in PubMed, Web of Science, Embase, and PsycINFO from their respective inception to September 1, 2022 using the following search terms: Military personnel [MeSH], veteran, veterans, troop, troops, "military development", defense, peacekeeper, peacekeepers, "reserve service", Sleep Quality [MeSH], "quality of sleeping", "sleeping quality", "Pittsburgh sleep quality index", and PSQI. Three researchers (WB, ZG, and MYC) independently searched relevant publications in PubMed, Web of Science, Embase, and PsycINFO from their respective inception to September 1, 2022 using the following search terms: Military personnel [MeSH], veteran, veterans, troop, troops, "military development", defense, peacekeeper, peacekeepers, "reserve service", Sleep Quality [MeSH], "quality of sleeping", "sleeping quality", "Pittsburgh sleep quality index", and PSQI.

Main outcome(s): Prevalence of poor sleep quality or relevant data that enable to calculate the prevalence of poor sleep quality.

Quality assessment / Risk of bias analysis: Study quality assessment will be conducted using an eight-item assessment instrument for epidemiological studies with the total score ranging from 1 to 8 points. Study quality is collapsed into low (0-3 points), moderate (4-6 points), and high quality (7 and 8 points). Any uncertainty will be resolved by consensus or a discussion with the senior researcher (YTX). Study quality assessment was conducted using

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Strategy of data synthesis: Strategy of data synthesis: The pooled prevalence of poor sleep quality and corresponding 95% confidence interval (CI) will be calculated using the random-effect model. The heterogeneity is evaluated by I² statistic, with I² more than 50% indicating high heterogeneity. Funnel plot and Egger's test will be used to evaluate publication bias. Subgroup and meta-regression analyses will be performed to explore the source of heterogeneity. Subgroup analyses will be conducted when there are at least two studies in each subgroup.

Subgroup analysis: Subgroup analyses will be performed based on the following categorical variables: gender, sampling method, regions (based on the World Bank), scales/different cutoff values of scales, and comorbid diseases.

Sensitivity analysis: Sensitivity analysis will be conducted to test the consistency of primary results by removing each study one by one.

Country(ies) involved: China.

Keywords: Meta-analysis; military personnel; veteran; sleep quality.

Contributions of each author:

Author 1 - Wei Bai will complete the data collection, analysis, interpretation, draft the manuscript, and finish the approval of the final version for publication.

Email: yc07611@connect.um.edu.mo

Author 2 - Gui Zhen will complete the data collection, analysis, interpretation, draft the manuscript, and finish the approval of the final version for publication.

Email: yc27624@connect.um.edu.mo

Author 3 - Mengyi Chen will complete the data collection, analysis, interpretation,

draft the manuscript, and finish the approval of the final version for publication.

Email: yc27620@connect.um.edu.mo

Author 4 - Yu-Tao Xiang completed study design, and will complete the data collection, analysis, interpretation, draft the manuscript, and finish the approval of the final version for publication.

Email: xyutly@gmail.com