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Nonpharmacological interventions for sleep disorders in pregnant women: a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 June 2024 and was last updated on 21 June 2024.

INTRODUCTION

Review question / Objective What is the efficacy and safety of non-drug sleep intervention in pregnant women?

Condition being studied Sleep disorders in pregnant women are common health problems during pregnancy. The prevalence of sleep disorders during pregnancy is greater in women, and the sleep status of patients during pregnancy is generally poor. Long-term poor sleep quality may not only increase the risk of complications in pregnant women, such as hypertension and gestational diabetes but may also have a negative impact on fetal development, such as increasing the risk of premature delivery and the risk of attention deficit hyperactivity disorder and attention deficit in children. Therefore, it is very necessary to pay attention to the treatment of sleep disorders in pregnant women.

Given the potential risks of drug use during pregnancy, nonpharmacological interventions for sleep disorders in pregnant women have attracted much attention. The purpose is to provide safe and effective treatment to improve the sleep quality of pregnant women. There are a variety of non-pharmacological interventions, including cognitive behavioral therapy, relaxation training, and exercise. These methods aim to improve sleep quality by improving the sleep habits, psychological state, and lifestyle of pregnant women. Compared with drug treatment, nonpharmacological interventions have the advantages of high safety, fewer side effects, and ease of implementation and are more suitable for promotion and application in pregnant women.

METHODS

Participant or population Pregnant women were diagnosed with sleep problems.

Intervention The experimental group received nonpharmacological interventions.

Comparator The control group received other treatments without nonpharmacological interventions.

Study designs to be included Randomized controlled trials will be included. Case reports, case series, and cross-sectional studies will be excluded. If the types of published articles are letters or conference articles, a comprehensive judgment will be made based on the contents of the research report. Usually, as long as the articles relate to the description of research methods and results, they can be initially included and then further screened based on the results of the research quality assessment.

Eligibility criteria Pregnant women were diagnosed with sleep problems according to various sleep disorder scales. For example, women with Pittsburgh Sleep Quality Index (PSQI) scores >5 who were determined to have insomnia or poor sleep quality will be included. Women with other severe mental illnesses, communication disorders, or cognitive impairments were excluded from the study.

Information sources The English databases used are PubMed, Embase, Web of Science, CINAHL, and the Cochrane Library; the Chinese literature databases included CBM, CNKI, VIP, and Wanfang. In addition, we will use Google Scholar and Google Search to retrieve gray literature. Unpublished studies will be searched from the official websites of international and local organizations and universities.

Main outcome(s) The primary outcome indicators reported were sleep quality, including the PQSI, sleep efficiency (SE), sleep onset latency (SOL), total sleep time (TST), and sleep improvement rate.

Additional outcome(s) Secondary outcome indicators included a series of adverse outcomes of sleep disorders, such as anxiety and depression in pregnant women, and adverse maternaloutcomes.

Quality assessment / Risk of bias analysis The Cochrane Risk of Bias Assessment Tool will be used in our study. Assessment content includes Random sequence generation, allocation concealment, blinding (blinding of all participants and blinding of the outcome assessment), data completeness, selective reporting, and other biases. The assessment results are divided into low-risk, high-risk, and uncertain risk. Two investigators completed the assessment independently; any disagreement between the two investigators will be resolved through negotiation with a third investigator.

Strategy of data synthesis Review Manager (Version: 5.4) will be used for the meta-analysis. For continuous data (such as sleep quality score, sleep duration, etc.), we will use the mean difference (MD) or standardized mean difference (SMD) as the effect size; for binary data (such as improvement rate of sleep disorder), we will use the risk ratio (RR) as the effect size. The confidence interval was 95%. The I^2 test was used to assess heterogeneity. When I^2 was less than 50%, there was no significant heterogeneity. Therefore, a fixed effects model was used to analyze the data. If the heterogeneity was high, a random effects model was used. We will further explore the sources of heterogeneity, including differences in interventions between different studies and differences in the characteristics of the participants, and further use sensitivity analysis or subgroup analysis to clarify the sources of heterogeneity.

Subgroup analysis If the number of included studies is sufficient, we will divide the included studies into different subgroups according to continuous variables (age, pregnancy stage, etc.) or categorical variables (type of intervention, pregnancy stage, etc.) for subsequent analysis.We will perform a sensitivity analysis on the factors that may affect the stability of the results, such as study quality, sample size, and study design. The stability of the results was evaluated by excluding some studies or adjusting the analysis strategy to observe whether the results had significant changes.

Sensitivity analysis We will perform a sensitivity analysis on the factors that may affect the stability of the results, such as study quality, sample size, and study design. The stability of the results was evaluated by excluding some studies or adjusting the analysis strategy to observe whether the results had significant changes.

Language restriction The included studies were in English and Chinese only.

Country(ies) involved China.

Keywords nonpharmacological interventions; sleep disorders; pregnant women; systematic review;meta-analysis.

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