International Platform of Registered Systematic Review and Meta-analysis Protocols

INPLASY

INPLASY202570118

doi: 10.37766/inplasy2025.7.0118

Received: 30 July 2025

Published: 30 July 2025

Corresponding author:
Yuezhen Xu

glbh2000@163.com

Author Affiliation:
xinjiang medical university.

Effectiveness of cognitive behavioral therapy on sleep quality in elderly patients with comorbid hypertension and insomnia: a systematic review and meta-analysis of randomized controlled trials

Gao, KG; Xu, YZ.

ADMINISTRATIVE INFORMATION

Support - Xinjiang Social Science Fund.

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

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202570118

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 July 2025 and was last updated on 30 July 2025.

INTRODUCTION

Review question / Objective Insomnia is a common sleep disorder in the elderly, which is often associated with chronic diseases such as hypertension. Cognitive behavioral therapy for insomnia (CBT-I) is considered as the first-line treatment for insomnia, but its effect on elderly patients with hypertension complications is not clear. Therefore, the purpose of this systematic review and meta-analysis is to accurately evaluate the effect of CBT-I on sleep quality in elderly patients with insomnia and hypertension.
P(Population):Elderly patients (aged≥60 years) with hypertension and insomnia
I(Intervention):Cognitive behavioral therapy (CBT), including face-to-face, group, digital CBT and other forms
C(Comparison):Routine nursing, health education, non CBT psychological intervention, blank control or placebo
O(Outcomes):Sleep quality (main outcome measures: PSQI total score; Secondary outcomes included sleep latency, sleep efficiency, total sleep time, ISI score, etc.)
S(Study Design):Randomized controlled trials.

Condition being studied Insomnia is a prevalent and disabling sleep disorder among the elderly, often co-occurring with chronic diseases such as hypertension. Cognitive Behavioral Therapy for Insomnia (CBT-I) is recognized as a first-line treatment for insomnia, but its efficacy in elderly patients with comorbid hypertension remains understudied. Considering the potential bidirectional relationship between poor sleep and cardiovascular health, it is critical to assess whether CBT can effectively improve sleep quality in this vulnerable subgroup.

METHODS

Search strategy We searched the English and Chinese databases from their dates of inception until July 29,2025. English databases include: PubMed, EMBASE, Cochrane Library, Web of science. The Chinese database includes: CNKI,

Wanfang, VIP. Search terms include: Cognitive Behavioral Therapy, CBT, Hypertension, Insomnia, Elderly, Sleep Quality, Randomized Controlled Trial. Example PubMed search:
("Cognitive Behavioral Therapy"[Mesh] OR "CBT") AND ("Hypertension"[Mesh] OR "High blood pressure") AND ("Insomnia"[Mesh] OR "Sleep disturbance") AND ("Aged"[Mesh] OR elderly OR older adults) AND ("Randomized Controlled Trial"[Publication Type] OR RCT).

Participant or population Elderly patients (aged≥60 years) with hypertension and insomnia.

Intervention Cognitive behavioral therapy for insomnia (CBT-I) in any form (in-person, group, digital, etc.).

Comparator Routine care, no intervention, placebo or other non CBT intervention.

Study designs to be included Randomized controlled trials.

Eligibility criteria
Inclusion criteria:
1. The type of study is randomized controlled trial (RCT)
2. Participants were elderly patients over 60 years old with hypertension and insomnia
3. Interventions are any form of cognitive behavioral therapy
4. The control was routine care, waiting list, placebo or non CBT intervention
5. The result is sleep quality (PSQI, ISI)
6. Language is English and Chinese
Exclusion Criteria：
1.Non-RCT studies
2.Participants without both hypertension and insomnia
3.CBT combined with other major interventions without separate effect estimation
4.Incomplete sleep outcome data
5.Duplicates or unavailable full texts.

Information sources PubMed, EMBASE, Cochrane Library, Web of science,CNKI, Wanfang, VIP.

Main outcome(s) Change in sleep quality scores (PSQI).

Additional outcome(s) Sleep duration、Sleep latency、Sleep efficiency、ISI score.

Quality assessment / Risk of bias analysis The Cochrane Collaboration's Risk of Bias 2 (RoB2).

Strategy of data synthesis Meta-analysis will be conducted using a random-effects model if statistical heterogeneity is significant (I^2> 50%). A fixed-effect model will be applied when heterogeneity is low.

Subgroup analysis None.

Sensitivity analysis None.

Country(ies) involved China.

Keywords Cognitive Behavioral Therapy; Hypertension; Elderly; Insomnia; Sleep Quality.

Contributions of each author
Author 1 - Kaige Gao - Author 1 (First author):Contributed to the study design, literature search and selection, data extraction and quality assessment, statistical analysis, and drafting of the manuscript.
Author 2 - Yuezhen Xu - Author 2 (Corresponding author, supervisor):Supervised the study design and implementation, reviewed and revised the research protocol and manuscript, and approved the final version for submission.