

INPLASY PROTOCOL

To cite: Qin et al. Risk factors for cognitive decline in elderly patients with type 2 diabetes. Inplasy protocol 202340056. doi: 10.37766/inplasy2023.4.0056

Risk factors for cognitive decline in elderly patients with type 2 diabetes

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Received: 17 April 2023

Published: 17 April 2023

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Review Stage at time of this submission: Preliminary searches.

Conflicts of interest:
None declared.

Review question / Objective: The purpose of this study was to explore the risk factors for the development of CF in elderly patients with type 2 diabetes using Meta-analysis, and to provide theoretical support for the early identification of CF and the development of preventive measures.

Condition being studied: CognitiveFrailty (CF) refers to the presence of both physical weakness and cognitive dysfunction in an individual, and numerous studies have shown that cognitive frailty in diabetes significantly increases the risk of adverse outcomes such as falls, disability, depression, prolonged hospitalization, and death in older adults. The risk factors included in various domestic and international studies are inconsistent, and the findings vary. Therefore, this study used Meta-analysis to explore the risk factors for the occurrence of CF in elderly patients with type 2 diabetes and to provide theoretical support for the early identification of CF and the development of preventive measures.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 April 2023 and was last updated on 17 April 2023 (registration number INPLASY202340056).

INTRODUCTION

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METHODS

Participant or population: Patients with diabetes mellitus aged ≥ 60 years.

Intervention: Diabetic patients with cognitive frailty.

Comparator: Diabetic patients.

Study designs to be included: Cross-sectional study ;cohort study;case-control study.

Eligibility criteria: ①Type of study: cross-sectional studies, cohort studies, and case-control studies that have been published in journals; ②Subjects: older adults (age ≥ 60 years) who meet the diagnostic criteria for diabetes mellitus established by the World Health Organization (WHO) 1999 diagnostic criteria for type 2 diabetes mellitus and the Chinese guidelines for the prevention and treatment of type 2 diabetes mellitus (2020 edition); ③Study content: risk factors for cognitive decline in older adults with type 2 diabetes mellitus, the (3) Study content: risk factors, influencing factors, associated factors, and etiology of cognitive decline in elderly people with type 2 diabetes; (4) Literature in Chinese or English. Exclusion criteria: (i) duplicate published literature; (ii) literature not related to the topic of this study; (iii) literature with incomplete data or full text not available.

Information sources: CNKI、Wipu Database、Wanfang Database、China Biomedical Literature Databse、PubMed、Cochrane Library、Embase、Web of science.

Main outcome(s): Risk factors or influences or correlates or causes of cognitive frailty in geriatric type 2 diabetes.

Quality assessment / Risk of bias analysis: The NewcastleOttawa Scale (NOS) was used to evaluate the quality of the literature for cohort and case-control studies; the literature for cross-sectional studies was evaluated using the Agency for Healthcare Research and Quality (AHRQ) recommended evaluation criteria.

Strategy of data synthesis: Meta-analysis was performed using RevMan software. Ratio (OR) and 95% CI were used as statistical effect measures. The heterogeneity test I-square $\leq 50\%$ suggested that the heterogeneity was small and the fixed-effects model was used for merging; conversely, the heterogeneity was large and the random-effects model was used. Sensitivity analysis was performed by comparing the consistency of the calculated results of the two effect models. If the number of original studies was ≥ 10 , funnel plots were used to determine whether there was publication bias.

Subgroup analysis: Subgroup analysis of risk factors from the final included literature.

Sensitivity analysis: Fixed-effects and random-effects models were used to calculate the OR and 95% CI of each risk factor, respectively.

Country(ies) involved: China.

Keywords: Type 2 Diabetes Mellitus; Cognitive frailty; Risk Factors.

Contributions of each author:
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