

INPLASY PROTOCOL

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

Conflicts of interest:
None declared.

INTRODUCTION

Review question / Objective: What is the prevalence of mild cognitive impairment in community populations in epidemiology surveys?

Worldwide prevalence of mild cognitive impairment in community populations: a meta-analysis of epidemiology studies

Bai, W¹; Cai, H²; Chen, P³; Xiang, YT⁴.

Review question / Objective: What is the prevalence of mild cognitive impairment in community populations in epidemiology surveys?

Condition being studied: Mild cognitive impairment (MCI), a distinct stage between normal cognitive aging and dementia, has been investigated widely. In comparison with individuals with normal cognition, part of individuals with MCI will progress to overt dementia in the following five years and the risk of being diagnosed with Alzheimer disease (AD) is two times. Therefore, MCI can be a marker for the population at risk of AD and other dementias. Timely recognition of MCI is essential in facilitating preventive strategies. Epidemiology of MCI is of great importance and published data on the prevalence of MCI varies worldwide. Therefore, we conducted this meta-analysis to examine the prevalence of MCI in community populations.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 18 September 2021 and was last updated on 18 September 2021 (registration number INPLASY202190058).

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METHODS

Participant or population: Community sample.

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 were made: Participants (P): Community sample; Intervention (I): not applicable; Comparison (C): not applicable; Outcome (O): prevalence of MCI or relevant data that enable to calculate the prevalence of MCI, and individuals with MCI were diagnosed according to study-defined diagnostic criteria; Study design (S): cross-sectional or cohort studies (only the baseline data of cohort studies were extracted). Exclusion criteria included: (1) the diagnostic criteria of MCI were not mentioned; (2) studies published in non-English; (3) to increase the homogeneity, studies with mixed samples (e.g., both community and clinic samples) in which data on community sample cannot be extracted were excluded.

Information sources: Three researchers (WB, HC, and PC) independently searched relevant publications in PubMed, Web of Science, Embase, and PsycINFO from their respective inception to September 1, 2021 using the following search terms: ("aged" OR " old age " OR "elderly" OR "late-life")

AND ("prevalence" OR "epidemiology") AND ("cognitive dysfunction"[MeSH Terms] OR "mild cognitive impairment" OR "MCI").

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

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

Strategy of data synthesis: The pooled prevalence of MCI and corresponding 95% confidence interval (CI) will be calculated using the random-effect model. The heterogeneity was evaluated by I² statistic, with I² more than 50% indicating high heterogeneity. Subgroup and meta-regression analyses were performed to explore the source of heterogeneity. Subgroup analyses were conducted when there were at least three studies in each subgroup.

Subgroup analysis: Subgroup analyses will be performed based on the following categorical variables: gender, type of countries (developed vs. non-developed countries according to the International Monetary Fund, diagnostic criteria of MCI, average education year (dichotomized using the median splitting method), and sample size (dichotomized using the median splitting method).

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

Language: English.

Country(ies) involved: China.

Keywords: Meta-analysis; mild cognitive impairment; prevalence; epidemiology.

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.

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

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