

INPLASY

Prevalence, Trends and Distribution of Dementia Among Elderly From 1990 to 2050 in China, A comprehensive Systematic review and Meta-analysis

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ADMINISTRATIVE INFORMATION

Support - Na.

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 18 December 2024 and was last updated on 18 December 2024.

INTRODUCTION

Review question / Objective This study presents a meta-analysis of recent research aimed at quantifying the prevalence of dementia among the elderly in China from 1990 to 2023, while also examining its prevalence within specific demographic groups.

Condition being studied Individuals aged 60 years and older, with dementia diagnosed through clinical examination tools, such as the criteria established by the National Institute of Neurological and Communicative Disorders and Stroke-Alzheimer's Disease and Related Disorders Association.

METHODS

Participant or population Individuals aged 60 years and older, with dementia diagnosed through clinical examination tools, such as the criteria

established by the National Institute of Neurological and Communicative Disorders and Stroke-Alzheimer's Disease and Related Disorders Association (NINCDS-ADRDA).

Intervention Not applicable.

Comparator Not applicable.

Study designs to be included Cross-sectional or epidemiology study.

Eligibility criteria The study utilized a population-based methodology, employing a sample that was broadly representative of individuals aged 60 years and older, with dementia diagnosed through clinical examination tools, such as the criteria established by the National Institute of Neurological and Communicative Disorders and Stroke-Alzheimer's Disease and Related Disorders Association (NINCDS-ADRDA). Additionally, the included study provided a comprehensive

description of the region under investigation, along with specific numerical prevalence estimates of dementia, and the study design was any type of cross-sectional or epidemiology study.

Information sources We conducted a comprehensive literature search utilizing Medline/PubMed, Embase, Web of Science, and the Cochrane Library from their inception until September, 2024. This search incorporated Medical Subject Headings (MeSH) terms, relevant keywords, and Boolean operators aligned with the PICOS framework, specifically focusing on the following items: "Dementia", "Alzheimer", "Epidemiology", "Cross-sectional study", "Prevalence", and "Elderly". We have conducted a recursive bibliography search of relevant reviews, examined government reports, collected grey literature, and analyzed major journals such as "Alzheimers & Dementia", "AGEING RESEARCH REVIEWS", "Aging & Disease" and "Journal of the American Medical Directors Association", to identify potential studies for inclusion.

Main outcome(s) Numerical prevalence estimates of dementia.

Quality assessment / Risk of bias analysis The quality of included studies was assessed by the Joanna Briggs Institute (JBI) critical appraisal tool in accordance with previous similar publications. A total of nine items were evaluated across all included studies, which were categorized into four elements: Yes (the item met the requirement), No (the item did not meet the requirement), NA (the item is not applicable), and Unclear (the item was uncertain whether it met requirements). Studies scoring 1 to 3 were defined as low quality, 4 to 6 as average quality, and 7 to 9 as high quality. Studies were not excluded regardless of their quality score to increase transparency and to ensure all available evidence in this area was reported.

Strategy of data synthesis We employed the DerSimonian-Laird random-effects model, applying the Log-transformed to compute the overall effect sizes. The 95% confidence intervals (95% CI) were estimated using the Wilson score method. A statistically significant level of heterogeneity was defined by an I² greater than 50 % or a P value less than 0.05.

Subgroup analysis Series of subgroup analyses were performed to examine any differences between the included studies or to account for the substantial heterogeneity., Sex (Male vs. Female), Age groups (60-70, 70-80, 80-90, Above 90),

Dementia type (AD, VD, Dementia, Others), Census (Country, Urban, Mixed), Sample size (3,000), Publication years (1990 – 2000, 2001 – 2010, 2011 – 2019, 2020 – 2023), Male to female ratio (Above 1, Below 1), Screen of dementia (MMSE/C-MMSE, AD8, Others), Diagnosis of dementia (MMSE, DSM-III/IV, NINCDS-AIREN, ICD-10/11, Others), Study quality (JBI scores above 6, JBI scores below 6), Region1 [(Developed regions, Developing regions, Underdeveloped regions, Mixed (National multicenter)], Region2 [(North, East, Central, South, Southwest, Special Administrative Regions, Mixed (National multicenter)], Region3 [(North, North-East, East, Central, South-west, North-west, Special Administrative Regions, Mixed (National multicenter)].

Sensitivity analysis Na.

Country(ies) involved The People's Republic of China.

Keywords Dementia, Alzheimer's disease, Prevalence, China, Meta-analysis.

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