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**ADMINISTRATIVE INFORMATION****Support** - None.**Review Stage at time of this submission** - The review has not yet started.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202550076**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 May 2025 and was last updated on 25 May 2025.**INTRODUCTION**

**Review question / Objective** The objective of this systematic review is to assess the impact of oral health interventions on cognitive outcomes in older adults. By synthesizing existing evidence, this review seeks to clarify the relationship between oral health and cognitive function, potentially guiding healthcare providers in developing integrated care strategies that address both oral and cognitive health.

**Condition being studied** Oral health is a critical aspect of overall health, particularly in older adults who often face challenges such as tooth loss, gum disease, and other oral health issues. These conditions can significantly impact their quality of life and may be linked to cognitive decline. Various oral health interventions, including preventive care and treatment strategies, have been implemented to improve oral health outcomes. This review aims to evaluate the effectiveness of these interventions on cognitive outcomes in older adults, providing insights into their potential benefits and informing future healthcare practices.

**METHODS**

**Participant or population** Inclusion: Older adults aged 65 years and above, regardless of gender, who are living in community settings or long-term care facilities. Exclusion: Individuals under 65 years of age, those with severe cognitive impairment that prevents participation in the study, and individuals with terminal illnesses.

**Intervention** The interventions will include any oral health interventions aimed at improving oral hygiene, dental care, or overall oral health in older adults. This may encompass professional dental treatments, educational programs on oral hygiene, and community-based oral health initiatives. Exclusion: Studies that do not specifically target oral health interventions or those that focus solely on pharmacological treatments without a behavioral or educational component.

**Comparator** This review will compare the oral health interventions with usual care or no intervention. Comparator PICO tags will include:

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Usual Care, No Intervention, and Placebo (if applicable).

**Study designs to be included** Randomised studies.

**Eligibility criteria** The review will include studies conducted in various settings, such as community health centers, nursing homes, and outpatient clinics. Research conducted in high-income countries will be included, while studies from low-income countries will be excluded.

**Information sources** Pubmed、Embase、Ovid 、web of science、The Cochrane Library、CNKI、VIP、WanFang Data、CBM.

**Main outcome(s)** Cognitive outcomes: change in cognitive function scores from baseline measured by any validated cognitive assessment tool at 6 months after intervention and at the end of the study. Data for this outcome will be synthesised using standardised mean difference.

**Quality assessment / Risk of bias analysis** Risk of bias/study quality will be assessed. ROB-2 (Risk of Bias 2) is recommended for assessing randomized controlled trials, as it provides a comprehensive evaluation of bias across multiple domains.

**Strategy of data synthesis** Data will be combined using a random-effects meta-analysis model, specifically employing the DerSimonian-Laird method to account for variability between studies. Missing data will be handled using multiple imputation techniques where appropriate, and sensitivity analyses will be conducted to assess the impact of missing data on the overall results. Formal synthesis is planned.

**Subgroup analysis** Subgroup analyses will be performed to explore differences based on the type of oral health intervention (e.g., dental care, oral hygiene education) and the cognitive assessment tools used (e.g., MMSE, MoCA). This will allow us to investigate whether certain interventions are more effective than others in improving cognitive outcomes.

**Sensitivity analysis** Sensitivity analyses will be conducted to assess the robustness of the synthesized results by excluding studies at high risk of bias and examining the influence of individual studies on the overall effect size.

**Language restriction** English and Chinese.

**Country(ies) involved** The study was conducted in China, and the research team consisted of scholars from the Shanghai Jiading District Mental Health Center in China.

**Keywords** Oral Health, Cognitive Outcomes, Older Adults, Interventions, Systematic Review.

**Contributions of each author**

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