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The authors have no conflicts of interest to disclose.

Overview of Meta Analyses of Non-pharmacological Interventions for Alzheimer's Disease

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Review question / Objective: **This review aims to summarize the available evidence from current meta analyses for the efficacy of non-pharmacological interventions for Alzheimer's disease.**
Condition being studied: **Alzheimer's disease (AD) is a common neurodegenerative disease which imposes a heavy burden. Currently, none of the medical treatments can slow down or stop the damage of and destruction of neurons, and the progression of the disease. Therefore, more potential and effective treatments need to be tapped. The role of non-pharmacological interventions to treat AD has been reported in many meta analyses (MAs), but robust conclusions have not been made due to variations in the scope, quality and findings. This review aims to summarize the available evidence from current meta analyses of non-pharmacological interventions for AD.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 July 2020 and was last updated on 03 July 2020 (registration number INPLASY202070014).

INTRODUCTION

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METHODS

Participant or population: Patients with Alzheimer's disease.

Intervention: Non-pharmacological interventions.

Comparator: Describe it according to the control group in the studies included.

Study designs to be included: Meta analyse of randomized control trials.

Eligibility criteria: The inclusion criteria were: (1) Meta analyses (MAs) that evaluated and defined non-pharmacological interventions aimed at treating AD patients. We only included MAs of randomized clinical trials (RCTs) merely. (2) Research subjects were patients with a definite diagnosis of AD regardless of gender and age. (3) Non-pharmacological intervention including but not limited to acupuncture therapy, music therapy, exercise interventions, and repetitive transcranial magnetic stimulation. (4) Including at least one of following outcomes ① Mini-mental state examination (MMSE); ②Activities of daily living (ADL); ③Alzheimer's disease assessment scale-cognitive section (ADAS-cog). The exclusion criteria included: (1) AD patients combined with other disease and mixed samples (AD participants and other types of dementia, mild cognitive impairment, or other related neurocognitive disorders); (2) Immunotherapies (vaccine、monoclonal antibodies) and nutritional components (nutraceuticals); (3) SRs without meta-analyses of outcomes; (4) SRs with network meta-analysis or Bayesian meta-analyses; (5) Protocols, meeting abstracts, reviews without full text, and republished literature.

Information sources: PubMed, Cochrane Library, Embase, and Web of Science.

Main outcome(s): 1 Mini-mental state examination (MMSE); 2 Activities of daily living (ADL); 3 Alzheimer's disease assessment scale-cognitive section (ADAS-cog).

Quality assessment / Risk of bias analysis: The methodological quality and evidence quality will be evaluated by AMSTAR-2 tool and GRADE system respectively.

Strategy of data synthesis: We will provide a narrative description of the findings of the included meta analyses (MAs). Tables will be produced to detail the included studies and their outcomes. In addition, we will synthesis these reviews and provide pooled treatment effects for all MAs which include the following outcomes: MMSE, ADL, ADAS-cog score.

Subgroup analysis: For each of the outcomes we will perform a sub-group analysis of different types of non-pharmacological interventions.

Sensibility analysis: No sensitivity analysis required in overview.

Country(ies) involved: China.

Keywords: Alzheimer's Disease; non-pharmacological intervention; overview.

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