

Effectiveness of psychosocial and lifestyle interventions in promoting behaviour change and reducing dementia risk in older people with memory concerns: a systematic review

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Introduction

- Older adults with mild cognitive impairment (MCI) or subjective cognitive decline (SCD) are at greater risk of dementia, particularly those from minority ethnic or socioeconomically disadvantaged backgrounds (1,2).
- Psychosocial and lifestyle interventions represent a promising approach for reducing dementia risk by targeting modifiable risk factors (3,4).
- Although many interventions aim to improve cognitive health by supporting lifestyle change, their mechanisms of action remain unclear.
- Our objectives were to...
 - Review lifestyle and psychosocial interventions that target modifiable risk factors for dementia.
 - Explore their effectiveness in promoting behaviour change and improving cognitive outcomes.
 - Explore how such interventions impact older people from underserved groups.

Methods

- PROSPERO registration: CRD420250654192
- Five databases were searched for randomised controlled trials (RCTs) of interventions aiming to reduce cognitive decline in older adults with MCI or SCD through behaviour change
- Intervention effectiveness, including for those from underserved groups, and behavioural mechanisms, using the COM-B model, were explored (5).
- Cochrane risk of bias (ROB) 2 tool was used to assess risk of bias.
- Cochrane's GRADE approach was used to evaluate the quality of evidence.

Results

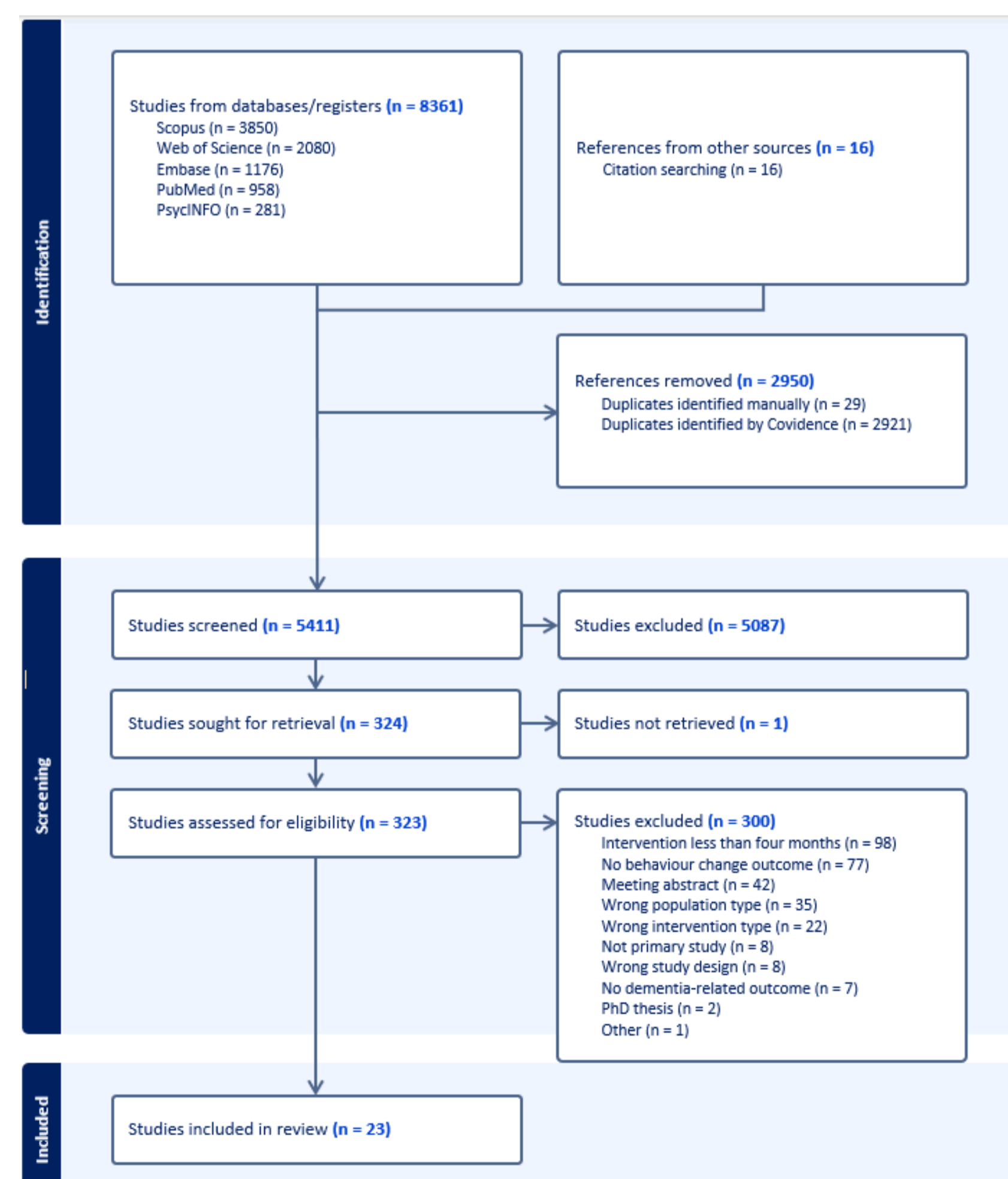


Figure 1. PRISMA diagram

- 23 studies reporting on 20 RCTs (13 multidomain; 7 single domain) were included (Figure 1).
- From lower ROB studies, we found low-certainty evidence that...
 - interventions including physical activity (k=10) or dietary components (k=7) were associated with improved cognition.
- And moderate-certainty evidence that...
 - interventions combining nutritional education and counselling for 6+ months improved dietary behaviour.
 - web-based or lower-intensity interventions promoting physical activity for 6+ months had little effect on physical activity levels.
- Interventions simultaneously targeting all three COM-B components showed greater overall effectiveness (Table 1).
- Physical activity improved through education, structured training, and enablement strategies.
- Diet improved through social support (provided by peers and/or facilitators).
- Two studies purposively sampled participants from underserved groups, and none explored the impact of social determinants on effectiveness.

Study ID	Capability	Opportunity	Motivation
Significant effect on behaviour change			
Andrieu et al., 2017; de Souto Barreto et al., 2017	✓	✓	✓
Cox et al., 2019; Sinclair et al., 2021	✓	✓	✓
Koblinsky et al., 2022	✓	✓	✓
Lautenschlager et al., 2008	✓	✓	✓
Liu et al., 2023	✓	X	✓
Moon et al., 2025	✓	✓	✓
Sakurai et al., 2024	✓	✓	✓
Shimada et al., 2018	✓	✓	✓
No significant effect on behaviour change			
de Souto Barreto et al., 2021	✓	✓	✓
Dodge et al., 2023	X	✓	X
Falck et al., 2020	✓	X	✓
Lenze et al., 2022	✓	X	✓
Liu-Ambrose et al., 2016	✓	✓	X
Rovner et al., 2018	✓	✓	✓
Xu et al., 2020	✓	✓	✓

Table 1. Targeted COM-B components in lower ROB studies
Green: all COM-B components targeted; bold: significant effects on cognition

Conclusions

- Interventions that integrate behavioural science may be more likely to achieve meaningful behavioural effects, showing promise for reducing dementia risk in this population.
- The impact of ethnicity and socioeconomic status on intervention response remains largely unexplored.
- Future research should explore intervention effectiveness and barriers to engagement for underserved populations to establish equitable and inclusive dementia prevention strategies.

References: (1) Roberts et al. *Neurology*. 2014;82(4):317-325. (2) Slot et al. *Alzheimers Dement*. 2019;15(3):465-476. (3) Ngandu et al. *Lancet*. 2015;385(9984):2255-2263. (4) Livingston et al. *Lancet*. 2024;404(10452):572-628. (5) Michie et al. *Implement Sci*. 2011;6:42.