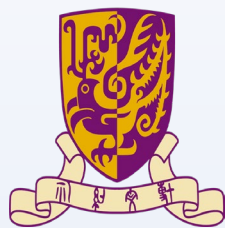


Application of Chatbots to Promote Physical Activity among Older Adults: A Systematic Review and Meta-analysis



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Background

- Insufficient physical activity (PA) is a prevalent issue among older adults globally ¹.
- Chatbot-delivered interventions have emerged as a novel approach to promote PA ². However, the effectiveness and usability of such interventions remain unclear.
- This systematic review and meta-analysis aimed to synthesize the literature using Chatbots to promote PA among older adults.

Methods

- A comprehensive literature search was conducted across EBSCOhost, Web of Science, PubMed, APA PsycArticles and APA PsycInfo.
- Standardized mean difference (SMD) with 95% confidence interval (CI) was calculated using random-effects models to estimate the overall effectiveness of Chatbot-delivered interventions.

Results

- ✓ A total of 14 studies published between 2007 and 2025 were included in the systematic review.
- ✓ Four studies (pooled n = 209 in the experimental group, n = 256 in the control group) were included in the meta-analysis.

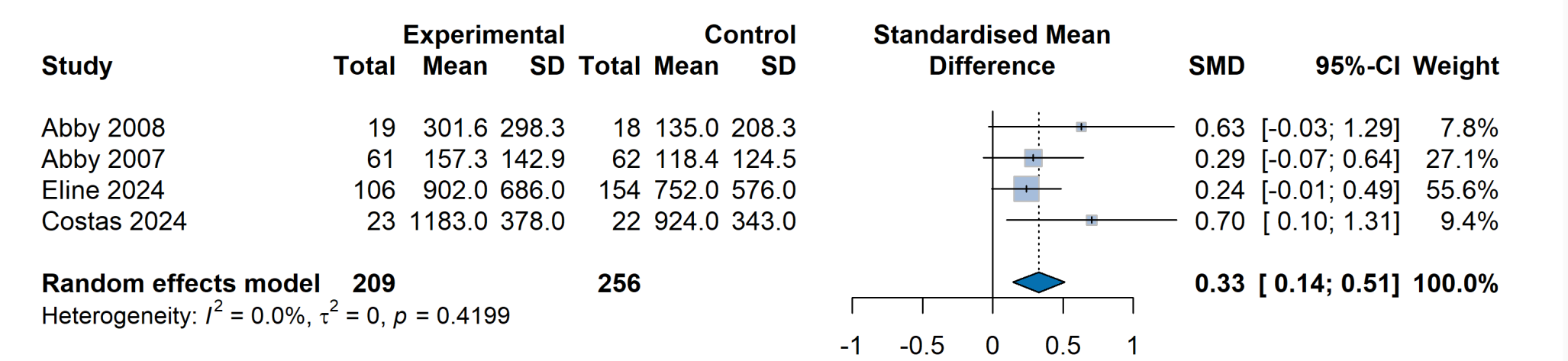


Figure 1. Forest plot of the efficacy of Chatbot-delivered interventions on physical activity levels among older adults
Note: SD: standard deviation, SMD: standardized mean difference

Feasibility of Chatbot-delivered interventions

Adherence and retention

- ✓ Six studies reported adherence and retention of using Chatbots
- ✓ Retention rates were high, ranging from 90% to 100%

Usability and enjoyment

- ✓ 12 studies assessed usability and enjoyment of using Chatbots
- ✓ All reporting positive impressions

Safety of Chatbot use

- ✓ Seven studies reported the safety of using Chatbots
- ✓ Three showed no participants indicated any adverse events
- ✓ Two reported muscle soreness

Conclusions

- Chatbot-delivered interventions appear to be effective in promoting PA among older adults with high usability.
- These findings suggest that Chatbots may serve as a promising and cost-effective tool for future PA promotion interventions targeting older adults.

Reference

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