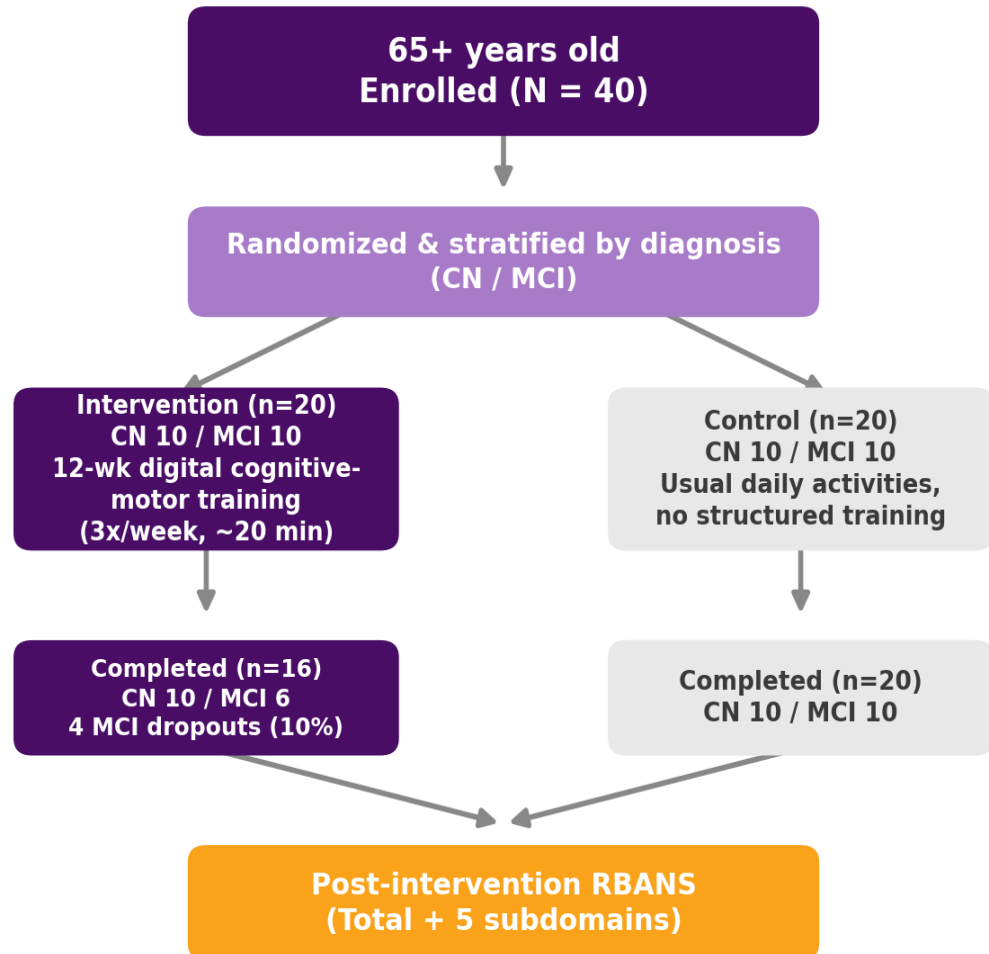
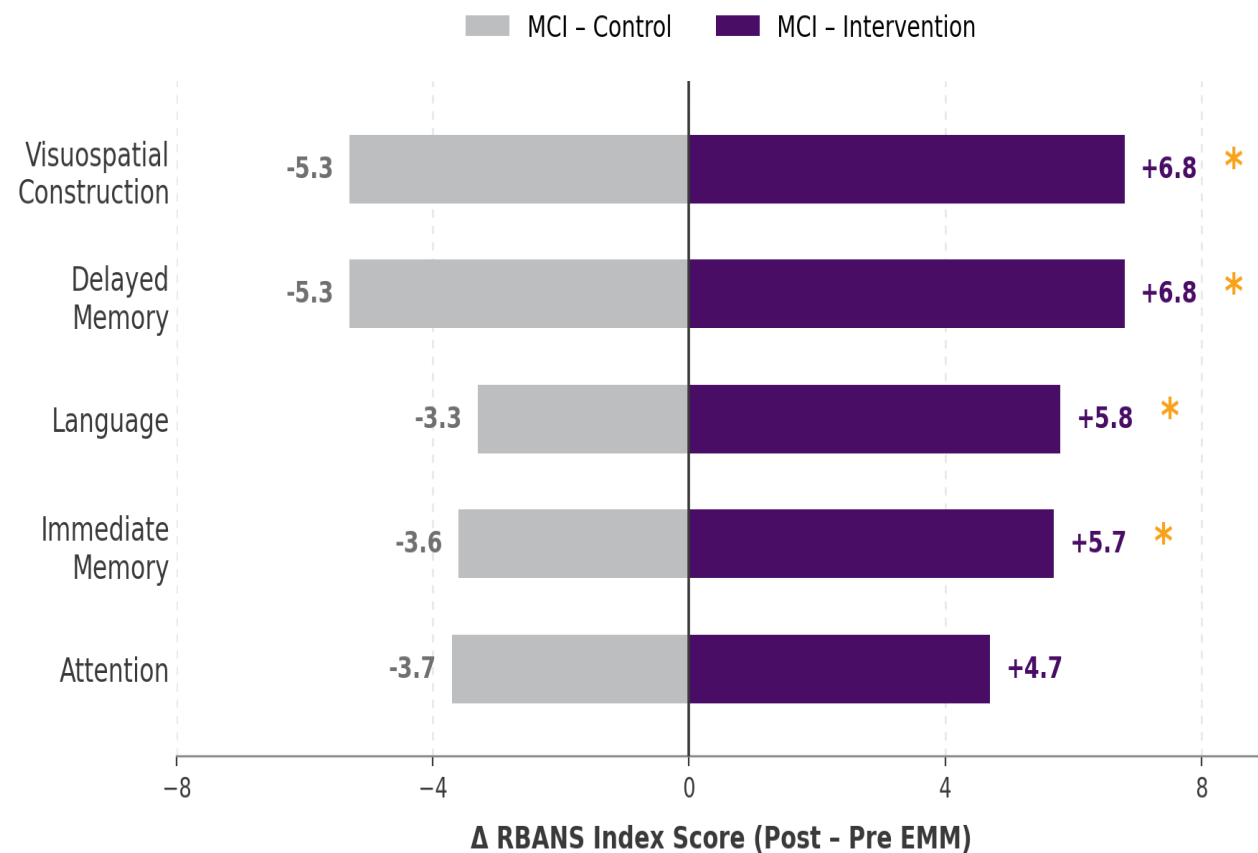


Efficacy of a Remote Digital Cognitive Training Program in Older Adults: A Controlled Comparative Study

P2-10

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A 12-week remote digital cognitive-motor training program significantly improved cognitive function in older adults with MCI, particularly in visuospatial, memory and language domains, whereas cognitively normal older adults showed no significant change.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	REFERENCES																		
Social isolation is an independent risk factor for dementia, particularly impacting older adults with cognitive impairments. While digital interventions offer scalable solutions, domain-specific evidence for their efficacy in Mild Cognitive Impairment (MCI) remains limited. This study evaluates a 12-week remote digital program combining cognitive and motor exercises, delivered via television set-top boxes, on cognitive performance and psychological well-being in older adults. 	We conducted a randomized controlled trial with 40 community-dwelling older adults (MCI=20, Cognitively Normal [CN]=20). The intervention group performed integrated cognitive-motor training through a remote digital platform three times a week for 12 weeks, with each session lasting approximately 20 minutes. Participants in the control group maintained their usual daily activities without any specific training during the same period. Cognitive function was assessed at baseline and post-intervention using the RBANS (Repeatable Battery for the Assessment of Neuropsychological Status) including total index score and five subdomains: Immediate Memory, Visuospatial, Language, Attention, and Delayed Memory. Data were analyzed using Aligned Rank Transform (ART) ANOVA to examine the interaction effects of Time, Group, and Diagnosis (Dx).	A significant triple interaction effects (Time × Group × Dx) was seen across most cognitive domains ($p < .01$), indicating that the intervention's efficacy was specifically pronounced in the MCI group. A significant triple interaction effects (Time × Group × Dx) was observed in several cognitive domains ($p < .0$). Specifically, the MCI intervention group showed substantial improvements in Visuospatial Construction, Delayed Memory, Language, and Immediate Memory. In contrast, the MCI control group exhibited declines in the same domains. Attention showed a positive trend in the MCI intervention group but did not reach statistical significance. The CN group showed no significant changes regardless of the intervention. No adverse events were reported, confirming the safety of the platform. 	A 12-week remote digital cognitive-motor training significantly improved the cognitive decline and improved functions in visuospatial, memory, and language domains among older adults with MCI. These findings suggest that clinical utility of TV-based remote digital therapeutics as a feasible, accessible, and home-based intervention to bridge the gap in dementia care for high-risk populations.  <table><tr><th>Domain</th><th>MCI - Control</th><th>MCI - Intervention</th></tr><tr><td>Visuospatial Construction</td><td>-5.3</td><td>+6.8 *</td></tr><tr><td>Delayed Memory</td><td>-5.3</td><td>+6.8 *</td></tr><tr><td>Language</td><td>-3.3</td><td>+5.8 *</td></tr><tr><td>Immediate Memory</td><td>-3.6</td><td>+5.7 *</td></tr><tr><td>Attention</td><td>-3.7</td><td>+4.7</td></tr></table> * Significant Time × Group × Diagnosis interaction ($p < .01$) Attention: positive trend, $p = .074$	Domain	MCI - Control	MCI - Intervention	Visuospatial Construction	-5.3	+6.8 *	Delayed Memory	-5.3	+6.8 *	Language	-3.3	+5.8 *	Immediate Memory	-3.6	+5.7 *	Attention	-3.7	+4.7	1. Wobbrock JO, et al. The aligned rank transform for nonparametric factorial analyses. Proc. ACM CHI. 2011. 2. Randolph C. RBANS Manual, 2nd ed. Pearson; 2012. 3. Livingston G, et al. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. Lancet. 2020;396:413-446. 4. World Health Organization. Risk Reduction of Cognitive Decline and Dementia: WHO Guidelines. 2019. CONTACT ceo@youngandx.com hoowon@chosun.ac.kr jjiyeoni@chosun.ac.kr YOUNGAND GARD 광주치매코호트연구단 ALZHEIMER'S ASSOCIATION AAIC>26
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