

Paper Category:	Intervention Studies/Drug Treatment
Paper Title: (Arial Font; 14 Pt Size)	Beneficial Effects of a 12-Month Multidomain Intervention Program on Physical Activity and Brain Volumes among Community-Dwelling Older Adults with Physio-Cognitive Decline Syndrome
Abstract Body: (Arial Font; 12Pt Size)	<ul style="list-style-type: none"> • Background • Objectives • Method • Results • Discussions and Conclusions
<p>(Maximum word limit - 300 words)</p> <p>Background The aging process often leads to physical and cognitive deficits, which not only impact the quality of life for individuals and their families but also increase the healthcare burden.</p> <p>Objectives We investigate the effectiveness of a community group-based intervention among community-dwelling older adults diagnosed with physio-cognitive decline syndrome (PCDS). We aim to assess changes in cognition, physical activity, and neuroimaging to determine the role of group-based interventions in treating PCDS.</p> <p>Method We conducted a 12-month randomized controlled trial involving 76 community-living older adults with PCDS (intervention group: n=35, control group: n=41). PCDS was defined as the concurrent presence of physical declines, along with cognitive dysfunction. The multidomain intervention program incorporated physical exercise, cognitive training, nutritional advice, and health education lessons. Outcome measures included the mean differences in cognition (MoCA total scores), physical activity (handgrip strength, gait speed, and lower extremity strength and balance), and brain gray matter volume (assessed through MRI) between baseline and the 12-month intervention period for each PCDS group.</p> <p>Results The 12-month multidomain intervention resulted in a significant improvement in lower extremity functioning, as measured by the five-times sit to stand test (FTSST) results when compared to the control group (p=0.034). Neuroimaging results revealed significant group-by-time interactions that the intervention group exhibited a significant increase in volume in the left temporal pole and left</p>	

temporal fusiform cortex from baseline to follow-up (family wise error (FWE) corrected $p < 0.05$). Furthermore, there was a negative correlation between the time to complete the FTSST and the volume of both left temporal pole volume ($r = -0.207$, $p = 0.010$) and left anterior temporal fusiform cortex ($r = -0.160$, $p = 0.048$).

Discussions and Conclusions

A multidomain intervention may yield beneficial effects on physical activity and brain volumes in older adults with PCDS.

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