

# Role for physical fitness in the association between age and cognitive function in older adults: A mediation analysis of the SABE colombia study

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## Abstract

**Objectives.** We investigated the association between physical fitness and cognitive status. Further, we examined whether physical fitness mediates the association between cognitive functioning and aging. **Design.** Cross-sectional study. **Setting.** Urban and rural Colombian older adults. **Methods.** 4416 participants from the SABE study were included in the current analysis. Physical fitness was assessed with the handgrip test and the usual gait speed test. Cognitive status was evaluated through the Folstein Mini-Mental State Examination. A parallel mediation path was used to test the possible mediator role of physical fitness between aging and cognitive functioning. **Results.** Older adults with lower handgrip strength (HGS) were more likely to have mild-cognitive status than older adults with healthy HGS (OR = 1.53, 95% CI = 1.15; 2.02). In addition, older adults with a slower gait speed were more likely to have mild cognitive impairment (OR = 2.05, 95% CI = 1.54; 2.78). Age had an inverse relationship with cognitive function ( $\beta = -0.110$ , 95% CI = -0.130; -0.100) and it was also inversely associated with HGS ( $\beta = -0.003$ , 95% CI = -0.005; -0.002) and gait speed ( $\beta = -0.010$ , 95% CI = -0.011; -0.009). The indirect effects, which indicate that the effect of age on cognitive function is transmitted through mediators, showed that both gait speed ( $\beta = -0.028$ , 95% CI = -0.036; -0.020) and HGS ( $\beta = -0.014$ , 95% CI = -0.024; -0.005) were independent mediators of the detrimental effect of aging on cognitive function. **Conclusions.** Physical fitness mediates the effects of aging on cognitive functioning. Our findings suggest that physical activity can be a key factor to prevent cognitive deterioration during aging process.

## Author keywords

Aging  
Cognitive status  
Physical function