

Cognitive Function Predicts Subsequent Sleep Quality But Not Vice Versa Among Older Adults In India

1087

Muhammad Thalil, PhD.
Center for Healthy Aging, Department of Human Development and Family Studies, The Pennsylvania State University

Key Takeaway:				
The brain may lead the way—better cognition precedes better sleep, not the other way around, among older adults in India.				
INTRODUCTION	METHODS	RESULTS	DISCUSSION	REFERENCES
Sleep quality and cognitive function are closely intertwined in later life, yet evidence on their temporal ordering remains mixed, particularly in low- and middle-income countries. Poor sleep may contribute to cognitive decline through impaired restoration, inflammation, and reduced brain health (1). Conversely, cognitive impairment may disrupt sleep through changes in regulation, daily functioning, and health behaviors (2). Understanding the directionality of this relationship can inform targeted strategies to promote healthy aging. This study examined whether baseline cognitive function predicts subsequent sleep quality and vice versa among older adults in India, and whether these associations vary across cognitive subdomains and by sex.	Two-wave data from the Longitudinal Aging Study in India-Diagnostic Assessment of Dementia (LASI-DAD, 2017-18 & 2022-24; N= 1,579; men= 696, women= 883) were analyzed. Sleep quality was measured using a single self-rated item assessing overall sleep quality during the past night on a 5-point Likert scale (1= very poor to 5= very good). Cognition was assessed using a standardized comprehensive battery covering orientation, memory, language/fluency, executive function, and visuospatial ability. Cross-lagged panel models were used to examine reciprocal associations between baseline sleep quality and follow-up cognition and between baseline cognition and follow-up sleep quality, adjusting for baseline levels of both constructs and sociodemographic, socioeconomic, and health-related covariates.	Sleep Quality (T1) Cognition (T1) Sleep Quality (T2) Cognition (T2) $\beta = 0.10^{***}$ CI = 0.05, 0.15 $\beta = 0.22^{***}$ CI = 0.18, 0.27 $\beta = 0.09^{**}$ CI = 0.03, 0.14 $\beta = -0.02$ CI = -0.06, 0.02 $\beta = 0.44^{***}$ CI = 0.40, 0.49 Higher baseline cognitive function was associated with better sleep quality at follow-up, independent of baseline sleep quality and covariates, whereas baseline sleep quality was not associated with subsequent cognitive performance. The unidirectional association was observed among men but not women.	Analyses by cognitive subdomains showed prospective associations for orientation and memory. In sex-stratified analyses by subdomains, orientation predicted subsequent sleep quality among women, whereas among men, language/fluency, memory, and visuospatial ability were significant predictors. Conclusions: Longitudinal associations between sleep quality and cognition were unidirectional, with cognitive function predicting subsequent sleep quality but not vice versa. These associations were more pronounced among men and differed across cognitive domains, suggesting that declines in specific cognitive functions may precede worsening sleep quality in later life and underscoring the importance of early cognitive health interventions to support sleep health in aging populations.	(1) Yaffe, Kristine, Cherie M. Falvey, and Tina Hoang. "Connections between sleep and cognition in older adults." <i>The Lancet Neurology</i> 13, no. 10 (2014): 1017-1028. (2) Guarnieri, Biancamaria, and Sandro Sorbi. "Sleep and cognitive decline: a strong bidirectional relationship. It is time for specific recommendations on routine assessment and the management of sleep disorders in patients with mild cognitive impairment and dementia." <i>European neurology</i> 74, no. 1-2 (2015): 43-48.
				CONTACT mkt5742@psu.edu +1-8142807286
				ALZHEIMER'S ASSOCIATION AAIC 26