

Abstract

Association between sleep duration and all-cause mortality among participants stratified by Metabolic Syndrome status

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Background: The prevalence of Metabolic Syndrome (MetS) increases continuously; a limited number of cross-sectional studies have shown that sleep duration (SD) was associated with overall mortality among patients with metabolic syndrome; longitudinal observations remain scarce.

Objective: To examine the relationship between SD and all-cause mortality among participants by MetS status using national representative cohorts.

Methods: The data consisted of 21,172 participants aged ≥ 20 , who participated in the National Health and Nutrition Examination Survey (2005-2014) were analyzed. The vital status of the participants was determined by matching to the national death index database. The mortality risk was estimated using the Cox Proportional Hazard model, and the results were adjusted for age, race, gender, physical activity, family income, education, smoking, and alcohol.

Results: The prevalence of MetS was 33.7%. The median follow-up time was 5.8 years. Compared with the adequate SD group (≈ 7 -8 hours), MetS participants in the long SD group (≥ 9 hours) had a higher hazard of mortality [adjusted Hazard Ratio (HR) = 1.38 (95% confidence interval = 1.04, 1.83)]. Whereas no significant association was observed between short SD (≤ 6 hours) and mortality among MetS participants [adjusted HR=1.03 (0.85, 1.24)]. Among participants without MetS, SD was not associated with mortality: [adjusted HR=0.99 (0.80, 1.21)] and [adjusted HR=0.96 (0.74, 1.24)] for short and long SD, respectively.

Conclusion: We found that long SD was significantly associated with higher mortality among participants with MetS, whereas no association was observed between higher mortality and SD among non-MetS participants.

