Short sleep duration was associated with increased homocysteine: a community-based survey.

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Objective: Both short sleep duration and increased serum homocysteine are associated with higher risk of cardiovascular events. However, research on the relation between sleep duration and homocysteine is sparse. The aim of this study is to examine the association between sleep duration and serum homocysteine in the general population in the United States.

Methods: In total, 4,480 eligible participants over 16 years old who had serum homocysteine data and completed a sleep duration questionnaire were enrolled from the National Health and Nutrition Examination Survey of 2005 to 2006. The correlation between sleep duration and serum homocysteine levels was analyzed using a multivariate linear regression model and an extended-model approach was performed for covariate adjustment.

Results: In the demographic data, the level of serum homocysteine is lowest in the sleep duration of 7 hours and increased in both shorter and longer sides of self-reported total sleep time (grouped into ≦5 hours, 6 hours, 7 hours, 8 hours, and ≧9 hours). After an extended-model approach with adjustment for different covariates, people with ≦5 hours sleep length had significant higher homocysteine level compared with the reference group (sleep with 7 hours). In subgroup analysis by sex, BMI, and ethnicity, the association between short sleep duration (≦5 hours) and higher serum homocysteine level remained unchanged in women, obesity (BMI≧30), and non-Hispanic white even after adjusting for multiple covariates.

Conclusion: This study indicated that short sleep duration is associated with higher homocysteine levels in a nationally representative sample of US adults, especially in women, obesity (BMI≧30), and non-Hispanic white; this might increase the risk of cardiovascular disease or other atherothrombotic events. Future studies were wanted to investigate the roles of these two variates in the patients with cardiovascular diseases.

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