Short and long sleep durations are independent risk factors for cardiovascular disease

EurekAlert

DARIEN, Ill. A study in the Aug. 1 issue of the journal Sleep suggests that regularly sleeping for more or less than seven hours per day is associated with an increased risk of cardiovascular disease.

Results show that eight percent of the study population reported sleeping five hours per day or less including naps, and multivariable logistic regression analysis revealed that their risk of any cardiovascular disease was more than two times higher than that of people who reported a daily sleep duration of seven hours (adjusted odds ratio = 2.20). Nine percent of participants reported sleeping nine hours or more per day, and they also had an elevated risk of cardiovascular disease (adjusted OR = 1.57). Results were adjusted for potential confounders such as age, sex, race, smoking, alcohol consumption, body mass index, physical activity, diabetes, hypertension and depression.

"Our study findings suggest that abnormal sleep duration adversely affects cardiovascular health," said principal investigator Anoop Shankar, MD, PhD, Associate Professor in the Department of Community Medicine at West Virginia University School of Medicine in Morgantown, W.V. "Sleep disturbances may be a risk factor for cardiovascular disease even among apparently healthy subjects."

Shankar and lead author Charumathi Sabanayagam, MD, analyzed data from 30,397 adults who participated in the 2005 National Health Interview Survey, which collected information on demographic factors, socioeconomic characteristics, lifestyle and health. Sleep duration was assessed by the question, "On average, how many hours of sleep do you get in a 24-hour period?" Participants reported 2,146 cases of cardiovascular disease, which was defined as a physician diagnosis of angina, coronary heart disease, heart attack or stroke.

An elevated but less dramatic risk of cardiovascular disease also was found with reported daily sleep durations of six hours (OR = 1.33) and eight hours (OR = 1.23). The association between a daily sleep duration of five hours or less and cardiovascular disease was strongest in adults under 60 years of age (OR = 3.08) and in women (OR = 2.57). When subjects with diabetes, hypertension or depression were excluded from the analysis, the association with cardiovascular disease remained high for sleep durations of five hours or less (OR = 2.26) and nine hours or more (OR = 2.04).

Although individual sleep needs vary, the American Academy of Sleep Medicine recommends that most adults should get about seven to eight hours of nightly sleep to feel alert and well rested during the day.

According to the authors, the mechanisms underlying the association between short sleep and cardiovascular disease may include sleep-related disturbances in endocrine and metabolic functions. The negative effects of sleep deprivation include impaired glucose tolerance, reduced insulin sensitivity, increased sympathetic activity and elevated blood pressure, all of which increase the risk of hardening of the arteries. Long sleep duration may be related to an underlying sleep-related breathing disorder or poor sleep quality.

The authors cautioned that the cross-sectional nature of the study did not allow for a determination of causality. However, the results suggest that inquiring about habitual sleep duration could be an important aspect of preventative medicine.

"Our study findings may have important clinical and public health implications, such as screening for changes in sleep duration by primary care physicians as a potential risk factor for cardiovascular disease, or initiating public health initiatives focusing on improving sleep quality and quantity," said Shankar.

SOURCE [1]

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