

外国語要旨

Association of sleep quality and long work hours with nutritional adequacy: A cross-sectional study among Japanese adults

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Introduction

Advancements in medical care have increased the life expectancy. In this situation, a future goal would be to increase the number of healthy living years without an increase in the years of healthy life lost.

Noncommunicable diseases (NCDs) are one of the major health problems in the 21st century. NCDs, such as cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes, have emerged as the leading causes of death and disability, necessitating urgent prevention strategies.

It is well known that dietary habits are associated with the risk of developing NCDs. Several reports have suggested that NCD incidence is related to the intake of various nutrients. Habitual dietary intake is influenced by multiple factors, such as lifestyle, socioeconomic status, and social environment. Therefore, it is important to understand the associations between these factors and nutrient intake.

Recent research indicates that “poor sleep” and “long work hours” are common problems among people in some countries. Some studies have reported that dietary intake is associated with sleep and long work hours; however, there is no clear understanding about these associations. Therefore, in the present study, we investigated the association of sleep and long work hours with dietary intake among Japanese adults.

Study design

Data for this cross-sectional study were derived from the health diary study 2, a nationwide population survey conducted in 2013. A total of 5,000 participants (2,429 men and 2,571 women) were selected based on population-weighted random sampling, controlling for age, sex, and population size (cities, towns, or villages). These participants were asked to complete a questionnaire. As a primary outcome, we determined the adequacy of nutrient intake, which was evaluated by comparing the self-reported intake with the following two indices of the dietary reference intakes for Japanese (2015): estimated average requirement and tentative dietary goal for preventing lifestyle-related diseases.

[Study 1] Association between sleep quality and nutritional adequacy

Participants: A total of 1997 participants (940 men and 1057 women) aged 18–69 years were included in this study.

Methods: Dietary intake was estimated using a validated brief-type self-administered diet history questionnaire. Sleep quality was measured as levels of insomnia symptoms. Insomnia symptoms were assessed using the Athens insomnia scale (AIS), after which the participants were classified into three groups (absent, minor, and moderate–severe) based on the total AIS score to analyze the association between insomnia symptoms and nutritional adequacy.

Results: Nutritional adequacy was significantly associated with insomnia symptoms in men but not in women.

Conclusions: The severity of insomnia symptoms may be associated with nutritional inadequacy among Japanese adults, especially men.

[Study 2] Association between long work hours and nutritional adequacy

Participants: This study included male workers who were <60-years-old. Part-time workers and short-time workers (with weekly working hours of <35 h) were excluded. A total of 613 participants were included in the analysis.

Methods: Dietary intake and work hours were assessed using self-administered questionnaires. Working for more than 49 h/week was defined as long work hours. Participants were categorized into two groups based on working hours/week, i.e., 35–48 and ≥ 49 h/week. The differences in nutritional adequacy between these groups were analyzed.

Results: Nutritional adequacy was not different between workers in the 35–48 h/week group and those in the ≥ 49 h/week group.

Conclusions: Long work hours may not be associated with nutritional adequacy. However, the association between long work hours and nutritional adequacy may vary according to occupational factors; therefore, further studies are required to confirm this association.