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Long Working Hours and Obesity with Special Reference to Sleep Duration

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Jang *et al.* reported the association between work hours and obesity in 8,889 Korean workers (5,241 males and 3,648 females) with special reference to type of job and gender¹⁾. The authors concluded that the odds ratio (95% confidence interval) of obesity, defined as a body mass index ≥ 25 kg/m², for long work hours (>60 hours per week) in male manual workers was 1.647 (1.262–2.151). In contrast, long work hours did not significantly increase the odds ratio for obesity in male nonmanual workers and female workers.

Working hours and sleep duration have a trade-off relationship, and inadequate sleep habits can potentially cause health problems. Jang *et al.* also used “sleep hours per day” as one of the confounders for the association between work hours and obesity. Nakata reported that long work hours and short sleep are associated with poor self-reported health²⁾, and I have summarized the data on the relationship between working hours and sleep duration from their report in Table 1. When work hours exceed 10 hours per day, the prevalence of a sleep duration of less than 6 hours per day dramatically increases. According to a report by Jang *et al.*¹⁾, sixty hours of work per week means 12 hours of work per day, and the prevalence of a sleep duration of less than 6 hours per day would be much higher for workers working this many hours per week. Jang *et al.* also discussed sleep in relation to the mechanism affecting the association between work hours and obesity in the Discussion section of their report, and I would like to add some information concerning the job environment with special reference to long working hours and sleep duration.

Nakanishi *et al.*³⁾ conducted a cross-sectional study

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Table 1. Association between work hours and sleep duration per day

Work hours	Sleep duration ≥ 6 hours	Sleep duration < 6 hours	Total
6–8 hours	791	398 (33.5%)	1,189
8–10 hours	642	398 (38.3%)	1,040
>10 hours	136	214 (61.1%)	350
Total	1,569	1,010	2,579

Percentages in parenthesis were calculated for each category of work hours as follows: Number of subjects with sleep duration < 6 hours / total number of subjects.

concluding that overtime work has a relationship with short sleep duration (< 6 hours/day) even at 26 hours/month. Virtanen *et al.*⁴⁾ reported a cross-sectional study and two longitudinal studies that examined the relationship between long working hours and short sleep duration. A significant odds ratio for short sleep duration (< 7 hours/day) was observed in a case-control study when weekly working hours exceeded 40 hours. In addition, a longer follow-up study with a duration of more than 5 years also presented a significant odds ratio for short sleep duration for the same number of working hours.

Hammer and Sauter reported that work-life stress is related to poor health behaviors, including smoking, drinking, low levels of exercise and even decreased sleep duration⁵⁾, and that sleep factors are important for maintaining a good work environment. Overtime work is considered to be an important risk factor of cardiovascular disease (CVD), and obesity is also a fundamental risk factor of CVD in relation to metabolic syndrome. Jang *et al.* conducted a cross-sectional study to examine the association between work hours and obesity and further study is recommended to speculate about the causality of the association between long work hours and obesity in the form of a follow-up study that considers gender and type of job as confounders.

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