

Research Article



Association between change in working time arrangements and sleep disturbance

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Abbreviations

CI: confidence interval; EWCS: European Working Conditions Survey; HPA: hypothalamic-pituitary-adrenal; ILO: International Labor Organization; KWCS: Korean Working Conditions Survey; LFS: Labor Force Survey; OR: odds ratios; OSHRI: Occupational Safety and Health Research

ABSTRACT

Background: Change in working time arrangement (WTA) can be harmful to workers' sleep and health. This study aimed to investigate the association between change in working time arrangement and sleep disturbance.

Methods: This study used data from the Fifth Korean Working Condition Survey and included 33,203 paid workers. We performed a stratified analysis by sex. After dividing the participants into 6 groups based on whether or not they experienced WTA changes, and their weekly working hours (≤ 40 , 41–52, ≥ 53 hours), we calculated odds ratio (OR) using the weekly working hours ≤ 40 hours and with no WTA change as the reference group.

Results: Of the 33,203 paid workers, participants who experienced change in working time arrangement had higher prevalence of all three types of sleep disturbance symptoms (difficulty in falling asleep, waking up repeatedly during sleep, and waking up with a feeling of exhaustion and fatigue) in both sexes. Compared to the reference group at 95% confidence interval (CI), the group with change in WTA showed elevated OR values of 1.91 (95% CI: 1.73–2.11), 1.93 (95% CI: 1.74–2.14), 2.47 (95% CI: 2.26–2.71) for male workers; and 1.93 (95% CI: 1.73–2.16), 2.02 (95% CI: 1.80–2.27), 2.24 (95% CI: 2.01–2.50) for female workers, for difficulty in falling asleep, waking up repeatedly during the sleep, waking up with a feeling of exhaustion, and fatigue, respectively.

Conclusions: Workers who experience change in work time arrangement show a high risk of sleep disturbance in both sexes.

Keywords: Working time arrangement; Sleep disturbance; Korean Working Condition Survey

BACKGROUND

According to the International Labor Organization (ILO), the 2 dimensions of working time arrangements (WTAs) are volume and schedule. The volume of working time refers to the total amount of working time and is generally evaluated as the working time per week. Work schedules, on the other hand, can be divided into when to work and type of flexibility; first, when to work is a measure of how work time is distributed, such as daytime/evening/night, weekend, and shift work. Second, type of flexibility can be broadly divided into fixed hours (working time/schedule does not change), employer-led flexibility (working time/schedule

