

hours. This cross-sectional study aimed to investigate the psychophysiological strain and recovery from work among retail employees.

Methods: A total of 36 healthy volunteers (2 men and 34 women, mean age 41.9 ± 12.5 years) working in retail sector in Finland participated in heart rate (HR) and heart rate variability (HRV) measurements over a period of 24 hours to estimate psychophysiological strain and recovery. 69% responded to a survey regarding recovery from work.

Results: Metabolic equivalent during the workday varied from 1.1 ± 0.6 to 5.2 ± 1.3 , with an average of 2.8 ± 0.9 . Older age had a weak association with lower HRV during leisure time ($r = -0.39$, $p < 0.05$) and a moderate association with HRV during sleep ($r = -0.56$, $p < 0.001$), but not during the workday. Lower HRV during work had a moderate association with lower mean and minimum HR ($r = -0.50$, $p < 0.01$, and -0.66 , $p < 0.001$, respectively) and higher HRV ($r = 0.68$, $p < 0.001$) during sleep. Despite irregular working hours, employees achieved sufficient sleep (7.8 ± 1.4 h). 64–72% reported experiencing adequate recovery after a work shift, between work shifts, and during time off less than once a week.

Conclusions: The psychophysiological strain in retail work was light-to-moderate accompanied by short periods of moderate-to-heavy workload. Overall, measured recovery was average but varied depending on age. However, self-rated recovery was low. Higher psychophysiological strain during work was associated with poorer sleep quality, as measured by HR and HRV during sleep. Therefore, shift schedules should be designed to allow adequate recovery between work shifts. Workload management and prioritizing sleep are relevant for public health but also essential for maintaining sufficient recovery from work in the retail sector.

Key messages:

- Retail work involves light-to-moderate strain, but periods of higher workload can affect recovery from work, emphasizing the importance of shift scheduling to ensure adequate recovery.
- From the public health perspective, to promote recovery from work, especially older employees might benefit from exercise to manage workload and improve recovery during leisure and sleep.

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Psychophysiological strain and recovery from work among Finnish retail sector employees

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Background: The retail sector is a major employer across Europe, especially for young employees. Retail work involves various load factors, including physical and mental strain and irregular working