

**Results** Comparing to the regular daytime workers, the workers with current but not persistent exposure to shiftwork had a 4.0-fold (95% CI, 2.7 to 5.9) increased risk of h-NFR, higher than the 2.2-fold (95% CI 1.5 to 3.3) elevated risk of h-NFR for persistent shift workers and the 2.1-fold (95% CI 1.4 to 3.2) for workers with prior exposures to shiftwork. The male employees with university attainments had an odd ratio (OR) of 2.8 (95% CI 1.0 to 7.8) for h-NFR, comparing to the male employees having simply mandatory education. For female workers, currently married/cohabiting status inversely associated with h-NFR (OR 0.5; 95% CI 0.2 to 0.9); and child-raising moderately increased risk for h-NFR (OR 1.9; 95% CI 1.0 to 3.7).

**Conclusions** Among semiconductor manufacturing on-site workers, shiftwork is a major risk factor for work-related fatigue, especially for the employees are adapting to shift schedules. In terms of gender differences, male on-site workers with the higher educational attainment are at the higher risk for work-related fatigue; domestic factors significantly affect female on-site workers in the recovery from work-related fatigue.

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# WORK-RELATED FATIGUE AMONG WORKERS ON SEMICONDUCTOR MANUFACTURING LINES

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**Objectives** To examine potential risk factors for work-related fatigue among the apparently healthy workers on semiconductor production lines.

**Methods** The data, including general health check-up records, need for recovery after work (NFR) scale questionnaires, personal and occupational history, were analyzed for 1545 on-site workers (1117 males, 428 females; mean age 37.6 years). The high-NFR (h-NFR) workers, whose NFR scores were within the top quartile, were defined as workers suffering from work-related fatigue.