KINGDOM OF THAILAND

A Study of Melatonin Levels and Stress in Female Shift Worker

Abstract

This cross-sectional study aimed to measure the melatonin and stress levels among female shift workers in a glass-manufacturing factory. Ten subjects, who voluntarily participated in the study, were classified according to age into 2 groups: 20-25 year of age (younger group) and 35-40 year of age (older group). Each group contained 5 workers who worked in morning and night shift. Saliva samples were collected every 3 hours during working at the factory and staying at home. Statistical analysis was performed using Mann-Whitney U Test and the Wilcoxon Signed Rank Test.

During the night shift, the onset time of an increasing saliva melatonin level was 19:00 hrs, while the peak time was 22:00 hrs, both in the younger and the older group. However, during the morning shift, the onset time was similarly 19:00 hrs but the peak time was 01:00 hrs for the older group and 04:00 hrs for the younger group. The onset time of this study was different from previous studies. Which found 21:00-22:00 hrs was the most common onset time.

The melatonin level of workers who worked the morning shift was significantly higher than those on the night shift at 07:00 hrs among the older workers and at 19:00 hrs among the younger workers respectively. Nevertheless, the younger workers had a significantly higher melatonin level than the older workers at 19:00 hrs for the night shift.

Stress levels, labeled as mild and normal, showed no effect on the melatonin level. These finding indicate that aging and working in shift effects the melatonin level. Therefore, the company should be more concerned about older female shift workers' safety and welfare than younger shift workers' safety and welfare.

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