Category :**ICU organization**

A223 - ***Effects of rotating shift work schedule on sleep parameters in healthy intensive care unit nurses***

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Introduction:

Rotating shift work schedules can disrupt the circadian rhythm and negatively affect sleep. This study aimed to investigate the effects of rotating shift work schedules on sleep parameters in a cohort of healthy nurses working in an intensive care unit (ICU).

Methods:

A cross sectional observational study was conducted among a group of healthy nurses working in an ICU. Self-reported sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI). Sleep parameters were collected with a sleep diary and a multi sensor smartwatch that has been shown to adequately estimate sleep parameters (Fitbit Charge 5, Google, USA). Measurements were collected for 24 hours after a morning, an afternoon, or a night shift.

Results:

The sample of the study consisted of 22 nurses (19 female and 3 male) with mean age 42±8.2 years. The mean PSQI score was 7.6±0.32, while only 8 (36.4%) nurses had a PSQI score ≤5 which corresponds to good sleep quality. In total, there were 46 Fitbit recordings included in the analysis (Table 1). Reported sleeping time on the sleep diary and the time asleep measured by the smartwatch showed strong correlation (Pearson r=0.87, p<0.05). Moreover, the sleep parameters calculated by the smartwatch showed significant differences among the shift types. Sleep duration was longer after a night shift which could be attributed to the sleep deficit of the night shift. As hypothesized, the recordings after a night shift revealed an even poorer quality of sleep.

Conclusion:

The findings of this study suggest that rotating shift work schedules can negatively affect sleep parameters in healthy ICU nurses. Future research should focus on developing interventions to improve sleep quality and reduce the negative effects of shift work on health and well-being.

Table:

Parameter	Morning shift (n=14)	Afteroon shift (n=17)	Night shift (n=15)	p
Time asleep (hours)	6.4	6.1	7.7	<0.05
REM sleep cycles (n)	4.4	3.7	3.4	<0.05
REM sleep duration (%)	22.8	18.5	14.6	<0.05
Sleep score (%)	78	75	67	<0.05

Sleep parameters measured by Fitbit Charge 5.