

Who is sleepier on the night shift? The influence of bio-psycho-social factors on subjective sleepiness of female nurses during the night shift

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Sleepiness during work hours is the most common complaint of night shift workers. It is considered as a sensitive indicator of decrements in performance, such as behavioral lapses and errors that can be hazardous to the workers, and in the case of nurses, can be a risk to patient care. Levels of sleepiness vary between individuals, yet few have investigated individual factors as predictors of night shift sleepiness, and these have shown mixed results. The current study aimed to identify bio-psycho-social factors associated with subjective sleepiness during the night shift. Female nurses (n=92) working irregular rotating shifts were recruited from 17 wards in two general hospitals, using convenience sampling by clusters. Inclusion criteria were working at least 75% hour per week, with at least one night shift a week (28) of full time. Exclusion criteria were pregnancy, a diagnosed sleep disorder or chronic medical conditions that may affect sleep and/or function. The participants completed the ChronoType Questionnaire, a sociodemographic questionnaire, the Munich for shift sleep Arousal Scale-workers, the Pittsburg Sleep Quality Index and the Pre-Sleepiness Scale. Subjective sleepiness was measured hourly during two night shifts using the Karolinska Sleepiness Scale, and activity monitors assessed duration of sleep 24-hours before each shift. Findings showed that increased sleepiness was associated with increased age in nurses with early chronotypes and with more sleep arousal, but not sleep, in nurses with late chronotypes. High cognitive pre-activation was associated with increased sleepiness, especially in late chronotypes. The impact of increased sleepiness, especially social factors on night shift sleepiness is complex and depends on mutual interactions between these factors. Nurses most prone to increased sleepiness must develop personal strategies for maintaining vigilance on the night shift.