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Napping and Errors in Night Shift Nursing

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Background

The Joint Commission issued a sentinel event alert in 2011 about risks to patient safety caused by fatigue and sleepiness in nurses working long 12-hour night shifts.

• Napping mid-shift has been proposed as a means of reducing the physiological demands and mental decline of fatigue and sleepiness.

• However, implementation of napping and other fatigue relief measures by nurse managers has not been widely implemented.

Research Questions

1. Does fatigue and sleepiness from 12-hour night-shift work contribute to nurses making patient errors?

2. What specific nursing errors can be attributed to fatigue and sleepiness during 12-hour night-shift work?

3. Are there measurable benefits of mid-shift napping on error reduction?

4. What time considerations are necessary for mid-shift napping to have an impact on error-causing fatigue and sleepiness?

Methodology

An integrated literature review was conducted using eleven articles from the Cumulative Index to Nursing and Allied Health Literature, the ProQuest Nursing and Allied Health Database, and the Academic Search Complete databases were searched. Analysis was performed by means of a data display matrix.

Conceptual Framework

Herzberg’s Motivation-Hygiene Theory was used to examine factors that would help nurses recognize fatigue and sleepiness as factors toward patient safety risks during the night shift.

![Conceptual Framework Diagram](image)

Results

Compared to day-shift nurses, night shift nurses were 1.17 times more likely to report a medication error and 2.1 times more likely to report a near-miss medication error.

Baseline alertness declined over time and parasympathetic activity was less stable in participants who did not take mid-shift naps.

Measurements of sleepiness increased 1.40 points during night shift and fatigue increased 0.69 points when compared to day shift.

The fastest 10% of reaction times on psychomotor vigilance tasks were significantly faster after a mid-shift nap than in no-nap conditions, $p = 0.023$.

Discussion

Fatigue and sleepiness are perceived to cause decreased alertness and increased errors and sleepiness. Bottlenecks in information processing cause cognitive slowing and decreased motor coordination.

A nurse may have skewed judgement or misconceptions, resulting in risky or inappropriate behavior, errors of reasoning, and inaccurate observations. Poor communication may result.

Self-reported errors include: medication errors, incorrect charting, unintentional neglect, and mistaken patient identities.

Decreased sleepiness and bodily fatigue and increased alertness and mood were reported after mid-shift naps. Information processing was faster; mental flexibility increased, and involuntary eyelid closures decreased.

Sleep inertia, or post-nap grogginess, may be minimized by prophylactic napping before arriving to work and by limiting mid-shift naps to no longer than 45 minutes. Napping after midnight and before 0500 hours were perceived to have the most benefit.

Conclusion

Naps during night shift increase speed of response times, promote mental flexibility, and decrease subjective sleepiness. Naps must be appropriately timed and of the correct duration in order to have the intended effects. Napping may not be a universal strategy for all nurses because of individual variability.

See attachment for references.