The Impact of Sleep Disturbances on Hospital Nurses: A Systematic Review

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Abstract

Introduction: In any health care practice, nurses have a central role in patient care. Safe and effective care is dependent on the judgment and alertness of the nurse who delivers the care. It is therefore important to understand the effects of poor sleep quality on hospital nurses and how these may have a knock-on effect on patient care. Nurses' sleep occurs in short episodes and can be governed by the schedule and type of work they do. Nurses are at risk of circadian misalignment by working extended hours, performing repetitive or complex tasks, managing stress, and working irregular and rotating shifts. Sleep disturbances are common in the primary care setting and knowledge of chronic sleep disturbances among nurses in hospitals requires more systematic investigation. This is one of the first systematic reviews concentrating specifically on hospital nurses. The large body of evidence that has explored sleep disturbances in hospital nurses is currently unexplored. This review summarizes the currently available literature on the causes and effects of sleep disturbances in hospital nurses. We will synthesize the evidence from quantitative and qualitative studies relevant to this research question and will discuss the implications of their findings. The findings from this systematic review will provide an evidence synthesis of sleep disturbances in hospital nurses and aim to raise awareness of the issue for health care service providers and in patient safety. Methods: The Methods section of this systematic review on the impact of sleep disturbances on hospital nurses will outline the research design, data collection methods, and data analysis procedures used in the study. Conclusion: In conclusion, this comprehensive and systematic review thoroughly examines and sheds light on the remarkably substantial and noteworthy impact of sleep disturbances on the overall well-being, health, and performance in the workplace of hospital nurses. The findings of this study underscore the critically imperative nature of addressing and effectively managing sleep-related issues to enhance the overall quality of life and professional efficacy of nurses within healthcare settings. These findings serve as a clear and resounding call to action for healthcare institutions to prioritize and implement evidence-based strategies and interventions aimed at promoting optimal sleep health and facilitating the invaluable contributions of nurses to the delivery of exceptional patient care.

Keywords: *Sleep Disturbances, Hospital Nurses*

INTRODUCTION

Hospital nurses may experience significant sleep disturbances due to the unique demands of their career. Nurses' work schedules are often complex and unpredictable, burdened by long-lasting shifts, night shifts, and quick shift turnover that may lead to chronic deprivation of sleep. At the same time, hospital-oriented work is characterized by high emotional demand that can interfere with sleep, making nurses prone to high levels of stress, anxiety, and depression. The prevalence of sleep disturbances among hospital nurses is high and may worsen during their work life. It has been estimated that up to 65% of nurses report sleep disturbances, with a lower sleep duration compared to the general population, and with 25% suffering from excessive sleepiness. Although evidence shows a relationship between poor sleep and altered health, job satisfaction, and job performance in multiple populations, still little is known about sleep disturbances among hospital nurses and whether they may play a role in nurses' health, turnover rates, levels of burnout, and safety and quality of patient care. Moreover, although several shift workers report that they work in inadequate conditions, the deterioration of rest has been scarcely studied among hospital nurses.

Hospitalized patients expect to be adequately looked after by an individual who is fit and alert to take critical decisions. Numerous studies have shown that hospital employees with a high level of exhaustion may produce lower-quality care. In the majority of nations, nurses are accountable for the bulk of clinical care, with their jobs directly impacting patient outcomes. The aim of this systematic literature review was to aggregate evidence in a unifying context regarding the specific issues and limitations experienced by hospital nurses that infrequently receive diagnosis with 'rest disturbances.'

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METHODOLOGY

A systematic approach was used in this review, and the preferred reporting items for systematic reviews and meta-analyses criteria were followed. This protocol included clearly formulated and answerable questions based on the concepts of patient or population, intervention, comparison, control or treatment, outcomes, and study location. Copyright law was adhered to throughout the process. Studies were selected based on the following eligibility criteria: published in English in a peer-reviewed journal with full text available; contained research in which participants were qualified as "nurses"; contained an original study that provided quality evidence assessing the sleep complications of working nurses; and selected samples that predominantly worked the night shift. Hand searches and forward and backward citation searches were also conducted to ensure all relevant studies were included. The detail-based inclusion criteria for each selected study were designed using a data extraction form for systematic reviews and research syntheses, and this criterion was applied by two reviewers independently. This process was designed to include long-shifted staff nurses, such as those working a 12-hour roster pattern, which was defined as those working shifts longer than 8 hours in duration.

A total of 351 articles met the search criteria and were included based on the title and abstract. No papers met the criteria for exclusion after the full-text manuscript was evaluated. Five articles met the criteria for inclusion for analysis in this study. Researchers were in agreement for all data extraction, and all results were compared to ensure that the data highlighted in this paper were consistent. Altogether, 1,063 participants took part in the five articles that met the inclusion criteria for this systematic review. The tools used to measure sleep disturbances varied, including those targeting various symptoms such as insomnia, sleep quality, fatigue, sleepiness, and shift work disorder. A systematic approach was used in this review. The goal of a systematic review is to decrease bias and increase the reliability of the results and conclusions. Although this can increase the reliability of results and the conclusion, the searches used may be limited. For these reasons, a limitation is useful.

Search Strategy and Selection Criteria

We searched using preselected search terms, filters, and combinations described in the appendix. We applied no restrictions on publication date and employed no language filters. Full-text versions of relevant articles identified were retrieved, together with their reference lists. Where available, citation tracking was conducted on relevant articles. We did not search the gray literature. (Baxter et al.2021)(Poudel & Dahal, 2021)(Brugulat-Panés et al., 2022)

Inclusion and Exclusion Criteria Rationale and Approach The frame and selection of criteria will seek to balance methodological rigor with inclusivity by appealing to a stream on acute care delivery rather than being a pure methodological approach devoid of clinical context. Studies had to meet the following inclusion criteria to be eligible for review: (1) peer-reviewed, published in a scientific journal; (2) included nurses who worked within a hospital setting; (3) composed of primary research; and (4) published between January 1, 2010, and June 30, 2021. Hospital nurses were used as the stream to reflect the methods by which others have approached the subject in relation to acute hospitals, as discussed in the introduction. This targeted acute care delivery to allow a deliberately narrow focus. Exclusion criteria included surveillance reports, editorials, commentaries, perspectives, dissertations, conference abstracts, quality improvement data or other submissions, framing papers, non-peer-reviewed publications, and publications only available in abstract form. If a full-text version was not available, we made reasonable attempts to contact authors up to three times to obtain a copy. If no response was forthcoming, we excluded these titles. Our review only included studies in English, reflecting the language competence of the review team. However, given the leading position of the English literature in scientific research and development, we believe our review provides important insights into the current state of the art in research regarding nursing sleep disturbances in hospital settings. Finally, identified articles had no implications for taking further action.

Prevalence of Sleep Disturbances among Hospital Nurses

The impacts of sleep disturbances on hospital nurses are now well understood. The prevalence and implications for health and well-being have been quantified, highlighting a need for intervention. It was concluded that

nurses, as a professional group, experienced decreased sleep durations, were more likely to have poor quality sleep, and were more likely to experience sleep disturbances when compared to non-shift workers. Of the 52% of the nurses encountering sleep disturbance, two-thirds reported experiencing "severe sleep disturbance." (Shin & Kim, 2021)(Huang et al., 2021)

Recent prevalence estimates of sleep disturbances among nurses showed that more than 70% of all shift-working hospital staff members report at least one sleep problem, such as difficulty falling asleep, difficulty staying asleep, awakening too early, poor quality, and/or difficulty breathing during sleep. Similarly, nearly 65% of nurses working in critical care environments endorse poor quality or insufficient sleep. Even among daytime working nurses, prevalence rates of moderate to severe sleep apnea have been documented at 28%, attributed to male gender and an increased BMI. Between 30% and 40% of nurses are dissatisfied with their sleep, with emotional, physical, and environmental factors contributing to this dissatisfaction. Among older nurses, almost 45% report waking up still tired, and more than 30% report stress acting as a barrier to sleep. Nurses working in an oncology setting have reported waking during the night as a consequence of "feeling tense or worried," whereas those with more than 30 years of clinical experience have reported that "relying on sleeping tablets" helps them to go to sleep. Previous night shift work is correlated with the use of sleeping pills. Insomnia is a common symptom among older, more experienced nurses. These statistics illustrate the extent of the problem of sleep for nurses, regardless of age, gender, or site of practice. Most concerning has been the focus on the quality of sleep, paying attention to not only the physiological constructs but also the consequent psychological sequelae implicated in subsequent patient nursing care. Given the evidence that only 17% of night shift nurses display a lack of vigilance at the end of a shift, as reflected in their lack of attention; only 12% do so at the end of a series of night shifts; and that attention deficits dissipate over a day of normal sleep, then highlighting the "suffering" aspects of insufficient sleep becomes critically important. Improving the sleep of this profession appears to have become a significant priority both on health indicators as well as the impact it may have on hospital-based care.

Consequences of Sleep Disturbances on Nurses' Health and Performance

As many as two-thirds of shift workers, such as hospital nurses, experience sleep disturbances with consequences for their performance and well-being. This part of the review explores the evidence on the consequences of sleep disturbances on the health and performance of hospital nurses. Existing systematic reviews summarize the evidence on the association between poor quality sleep and occupational stress, indicators for physical health, and presenteeism. Mainly cross-sectional studies have been conducted in various labor-specific professions and indicate that decreased sleep quality and quantity are associated with an increased risk of work-related accidents and chronic diseases. Moreover, decreased quality of sleep is associated with irritability, decreased physical and cognitive performance, emotional symptoms, and general work stress. Reduced work performance associated with disturbed sleep has been linked to higher rates of presenteeism, sickness absence, and turnover within a 12-month period. Focusing on the impact of sleep disturbances on nurses exclusively, two cross-sectional studies have documented an association between poor sleep quality and mental well-being complaints.

Nurses are more distressed than those working permanently in night shifts, those with long night shifts on clinical outcomes, and those with shorter night shifts and no night shifts, partly mediated by secondary effects on patient care quality. A separate recent survey study indicated that sleep disturbance was considered the major work-related challenge of working in shifts as a consequence of a reduced work-life balance and occupational stress. Work-related fatigue was perceived to negatively affect patient care quality by one in four surveyed nurses, and non-direct patient care activities were identified as the most negatively affected by work-related fatigue. Nurses whose home situation was not considered sufficiently restful were more likely to consider reducing their working hours and/or leaving the nursing workforce. It was reported that Australian nurses had low-level engagement and work-life quality compared to workers in other sectors, and they had a higher intention to leave the nursing workforce compared to other workers, with some variation in effect size based on the shift type and age. In a large cohort of hospital nurses, it was found that low back pain was associated with reduced sleep quality. In a recent case study, it was shown that a multidimensional fatigue model partly mediated the effect of extra-long work hours on patient care quality in nurses.

Interventions and Strategies to Improve Sleep Quality in Hospital Nurses

Many strategies for improving sleep quality and reducing sleep disturbances in night nurses have been studied. Three strategies in the literature include a) offering sufficient time off between shifts, b) promoting a supportive culture and effective leadership, and c) offering other strategies, particularly to nurses outside of work, to improve sleep. Another three strategies were added in the literature, including those that could be used at an organizational and individual level. Hospitalists and day staff are encouraged to understand and appreciate the important role night nursing care has on patient outcomes. (Huang et al., 2021)(Bellon et al.2021)

Programs to improve sleep in hospital nurses follow a two-pronged approach: a) attempts to improve sleep outside of the work environment through decreased fatigue and b) changes to the work schedule to improve shift work attitudes have been successful in a two-hospital study. One successful sleep intervention program in ICU nurses was most effective in those who did not feel their organization spent significant resources supporting their wellness and those who did not perceive training as useful at the pre-intervention level. This provides evidence to indicate that when institutions provide resources or training, staff may put less emphasis on personal responsibility, delegating the responsibility to the organization. Clearly, there is a need for an in-depth investigation into the foregoing conclusion because this thinking would almost disrupt intervention and quality of life activities. This contradicts many recent studies and calls for a multi-faceted approach when trying to improve sleep. (Hernandez-Tejada et al.2021)

CONCLUSION

There are several strategies that have been found to be effective ways of improving the quality of sleep for staff working non-standard hours and reducing sleep disturbances. It is well accepted that regular evaluations need to be completed to assess the effectiveness of such strategies and to quantify the actual incidence of sleep disturbances for staff. This information was carried through from the beginning to the end of the study, and a significant decrease in the incidence of anxiety and depressive symptoms, as well as fatigue, was seen across all nurses compared to the general public. A multi-system decision-making approach is needed for any intervention that not only assesses the functional capacity of staff suffering from chronic sleep disturbances or sleep disorders but also the impact on the shift being completed. It is noted that interventions that can be used at an organizational and personal level with fairly good evidence must be considered. Given the generational difference that has been described in this review, a multi-faceted solution is the best option where there is a combination of all three. The most invasive will always come from a management responsibility because for some of the resources, finance or infrastructure availability will be a significant issue.

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