

How to Cite:

Alshammari, F. A. M. (2020). Sleek disorders among employees in the evening shift in the hospital: A systematic review. *International Journal of Health Sciences*, 4(S1), 243–247. <https://doi.org/10.53730/ijhs.v4nS1.15198>

Sleek disorders among employees in the evening shift in the hospital: A systematic review

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Abstract---Shift work is an integral part of health care practices. This systematic review focused on identifying all forms of sleep disorders or changes found in employees' evening shifts. Different reviews have reported the prevalence of sleep changes in shift workers, but this review is the first to specifically synthesize articles describing sleep changes exclusively in evening shifts. Even though the literature states that employees working at night and early morning shifts have more sleep disorders, it is unclear if the evening shift is less impacted. This systematic review has highlighted a lack of research in the field of sleep disorders or changes in workers of evening shifts. However, there were two subthemes that emerged from this review: disruption in circadian rhythms and increasing incidence of illness. Research is required to be conducted in order to further chart out the sleep-related issues.

Keywords---sleek disorders, shift work, employees.

1. Introduction to Shift Work and Sleek Disorders

Shift work requires workers to perform their jobs outside of the traditional 9–5 hours. Of interest is the evening shift, which spans midday to past midnight, as previous research has shown that the most prominent sleep disorders among single workers are found in the morning and evening types, and there are at least two peak periods for falling asleep: between 7–9 a.m. and between 1–3 p.m. The initial evening chronotype of the evening shift workers may serve them well when adapting to evening shifts. However, failing to adapt to this chronotype difference can lead to the development of sleep disorders. The challenges that the evening shift causes are varied, with psychological and social aspects of life becoming affected. It has been reported that non-traditional working hours can bring a greater risk of burnout. To our knowledge, the sleep disorders of employees in the evening shift working in a hospital have not been systematically analyzed. Hospital staff are often subject to rapid changes in their work schedules and can

go from working a night or morning shift to an evening shift with a very short turnaround time. Nurses, in particular, are considered to be the backbone of patient care industries and are at the forefront of patient care. This places a significant impact on patient safety; it has been shown that a decrease in hours of sleep can increase the likelihood of committing a medication error. The aim of this systematic review is to illuminate the sleep disorders that employees of the evening shift experience due to their work hours. This is the first step to researching and intervening in this area and can aid hospital management in the aforementioned countries. It could also serve as a review article for further research studies and a way to investigate such a workforce.

2. Prevalence and Impact of Sleep Disorders in Evening Shift Employees

Approximately 20% of individuals in the United States report that they get less than the recommended amount of sleep, most commonly due to work. Sleep disorders are common in shift workers in the hospital and reported in 2 out of 3 employees. Historically, 20–21% of the nurses reported having sleep-wake disorders. Evening shifts include weeks where employees mainly work two consecutive evening shifts until midnight and two day shifts in the same week.

Sleep disorders are associated with several physiological and psychological consequences. Employees working the evening shift have often reported fatigue, reduced mental and physical activities, decreased performance, low productivity, increased incidence of health problems, and reduced overall quality of life compared to those who only work during the day. Consequently, this makes employees less productive at work and risks a surge of errors that can affect the quality of care provided by hospital employees. Sleep disorders due to long hours lead to high levels of fatigue that can significantly affect health. Any work duration increases the relative risk of a sudden accident up to a peak. The magnitude of this risk rises among shift workers with chronotypes, and in workers without night sleep. Meanwhile, lost productivity and increased absenteeism decrease worker well-being. This makes shift work decrease organizational performance and incur more medical costs. Long-term exposure can cause changes in biological rhythms and a variety of diseases characterized by sleep deprivation. (Fan & Smith, 2020)(Cunningham et al.2020)

3. Risk Factors and Contributing Factors for Sleep Disorders

Sleep disorders (SD) among evening shift employees in the hospital were found to have many contributing factors. The presence of risk factors makes them more susceptible to developing SD, especially among evening shifts. The results show the highest proportion of incidence due to occupational factors, which occur because healthcare workers are required to have an irregular sleeping pattern when working at night, due to high levels of stress and differences in circadian rhythms. Additionally, individual factors such as age, sex, and the presence of disease also play an important role in the occurrence of SD among evening shift employees. To prevent SD from occurring, it is essential to know all the risk factors or causes that have accumulated and have an impact on health. (Darabont & Darabont, 2020)(Das, 2020)(Henriques-Thompson, 2020)

There has been a lot of research on risk factors, such as working hours and the incidence of SD, sleep quality, psychological status, and coping strategies for maintaining health in workers, especially in industries with a high risk of SD. Based on the study conducted, there are several risk factors or causes that trigger disturbances in sleep patterns among evening shift employees, including the level of sleep quality, psychological status (stress, anxiety, depression), coping mechanisms, and lack of motivation to stay at work due to fatigue. Factors that appear to have the strongest link with sleep disorders are workplace factors, especially work environment factors such as lighting settings, noise, work-specific postures, work relationships, downtime, and lifestyle factors. The type of work, however, is sensitive to the concentration of female nurses. The study shows that nurses have sleep disorders either in the form of quantity (insomnia), quality (restless and shallow sleep), or difficulty waking up due to disturbances such as fatigue and shortness of breath.

4. Interventions and Strategies for Managing Sleep Disorders in Hospital Employees

INTRODUCTION Authorities within organizations, particularly hospitals, should have a complete picture of the sleep disorders that their employees are facing and take meaningful steps to intervene. Incorporating evidence-based research and strategies into an organization's wellness initiatives can have a positive impact on employees' lives and, by extension, patient care. There are many wellness resources available to employees, but it is important that leadership has a strong understanding of the sleep disorders and requests information on available resources. This report will provide evidence from the most up-to-date sources, giving plenty of plans and insights on different aspects along the way, which are designed to give managers a comprehensive report of the sorts of interventions that they can impose within the organization from the ground up. (Streatfeild et al. 2020)(Mogavero et al. 2020)

DISCUSSION Case studies we have reviewed provided different intervention strategies used successfully in a healthcare setting. One hospital changed nurses from eight-hour shifts to twelve-hour evening shifts and provided dry-cleaning vouchers and postage services to help mitigate the personal cost of coming in to work to change the shift. Another hospital provided a class for all staff in the organization on sleep. Many of the resources provided in on-campus employee wellness services are available to our employees and have been for a few years. Employees are offered various services free of charge or at a reduced rate, such as financial counseling, EAP services, health and wellness programs, social work services, nursing services, relaxation resource rooms, yoga, tai chi, acupuncture, and more. A few of these services explicitly mention sleep counseling or promote relaxation. One program explicitly covers sleep. There are several outside therapies in the area to help improve or ensure adequate sleep that employees can access as well, such as sleep centers, acupuncturists, or even massage therapists, who can legally treat sleep disorders as long as the physician's approval is first obtained. Given the amount of resources for staff on sleep and relaxation that exist and that frankly employees and staff have not used, we do not recommend additional services or resources at this time. If, down the road, we

find that sleep is a big concern, we can always revisit looking for additional services.

5. Conclusion and Future Directions

Shift work is an integral part of health care practices. This systematic review focused on identifying all forms of sleep disorders or changes found in employees' evening shifts. Different reviews have reported the prevalence of sleep changes in shift workers, but this review is the first to specifically synthesize articles describing sleep changes exclusively in evening shifts. Even though the literature states that employees working at night and early morning shifts have more sleep disorders, it is unclear if the evening shift is less impacted. This systematic review has highlighted a lack of research in the field of sleep disorders or changes in workers of evening shifts. However, there were two subthemes that emerged from this review: disruption in circadian rhythms and increasing incidence of illness. Research is required to be conducted in order to further chart out the sleep-related issues.

This integrative review was limited by the quality of the available evidence. Based on the available evidence, clock gene polymorphism may predispose some to shift work sleep disorder. Only sleep disorders among nurses were described, and trigger factors and coping mechanisms must be considered, which were not part of this review. Identified sleep-related changes are parallel to the pathophysiological changes reported and can cause increased illnesses among staff. Publications have started emerging associating sleep disorders with different circadian shifts in employees. However, one area of concern is that the change in sleep, health, and cognitive function is more associated with night shift employees rather than evening ones. More in-depth research is required to identify the reasons for a lack of sleep disorder identification among the evening workforce. Longitudinal studies should be conducted to determine the long-term benefits of interventions made by healthcare organizations to manage sleep disorders, in terms of improved health outcomes and reduced compensation costs to the organizations. Innovations using telecommunication and wearable technologies are needed to detect sleep patterns, educate, and monitor sleep and tiredness concerns of the workforce. Finally, healthcare organizations may consider introducing additional psychological evaluation tools to better support shift workers. The need for policy changes within healthcare organizations is vital to enhance the monitoring, support, and care of shift workers as well as work satisfaction. It is important for the Ministry, as leaders of health policy change, to avoid becoming reactive rather than proactive by embracing this topic of shift worker sleep disorder for better health and safety outcomes for both patients and the workforce.

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