

Sleep Quality and Shiftwork: A Literature Review

Muhammad As'ad Asrofi¹, Wardah Rahmatul Islamiyah²

¹muhammad.asad.asrofi-2020@fk.unair.ac.id

¹Faculty of Medicine, Airlangga University, Surabaya 60132, Indonesia

²Department of Neurology, Dr. Soetomo General Hospital, Airlangga University Hospital, Airlangga University, Surabaya 60132, Indonesia

Abstract

Sleep is important to ensure the brain and body function well. Lack of sleep can affect your memory, mental abilities, motor skills, work performance and mood. Therefore, getting enough sleep is essential to maintain optimal performance in these areas. Improving and maintaining good sleep quality can improve the performance of health workers who work in shifts in hospitals to provide the best service to patients. One of the bad impacts of implementing a shiftwork system is the decrease in sleep quality for health workers who work in shifts in hospitals.

The prevalence of sleep quality disorders in nurses who work in hospitals with a work pattern of 2 shifts per day is 63.9%. This means that more than half of the nurses who work with this pattern experience problems with sleep quality. Meanwhile, the prevalence of sleep quality disorders in nurses who work with a work pattern of 3 shifts per day is 43%. Health workers' work shifts can affect their sleep quality, therefore health workers are advised to maintain sleep quality and improve shift patterns in accordance with American Academy of Sleep Medicine (AASM) recommendations there must be an off period in one shift week shiftworkers at the hospital.

Keywords: Shiftwork, Sleep Quality

1. Introduction

Sleep is a complex behavior, regulated by circadian rhythms and homeostatic processes (Tedjasukmana, Seleng and Sakasasmita, 2022). Sleep can be defined as a natural state in which the body and brain rest and restore energy. This includes a sleep cycle consisting of several stages, including light sleep, deep sleep, and REM (Rapid Eye Movement) sleep. During sleep, the body undergoes important processes such as physical recovery, memory consolidation, and hormonal regulation. Adequate sleep duration and quality are important for overall health and well-being. Sleep has a significant impact on a person's overall health. Sleep is an important physiological phenomenon because sleep disorders can have negative impacts on health (Badicu, 2018). Sleep greatly influences a person's overall health, as well as sleep disorders which have a negative impact on health (Badicu, 2018).

The prevalence of sleep quality disorders found in nurses working in hospitals with a work pattern of 2 shifts per day was 63.9% and 43% with a work pattern of 3 shifts per day (Nugroho, Sulistomo and Roestam, 2018). Lack of adequate sleep can decrease performance, increasing the likelihood of errors, workplace accidents, and injuries. Shift work can magnify these dangers and contribute to drowsy driving and driving accidents (Watson et al., 2015).

2. Sleep Quality and Shiftwork

2.1. Definition of Sleep Quality

Sleep quality is a person's feeling of satisfaction because the amount of sleep time meets their needs (Bessie, Buntoro and Damanik, 2021). Sleep quality is very important in the world of health, as there are increasing numbers of complaints about sleep quality. Frequent complaints about disturbances in sleep quality include difficulty in initiating sleep, disturbances in maintaining sleep, this affecting sleep duration. Poor sleep quality can be an important sign and symptom of many sleeping sickness and other medical conditions (Nugroho, Sulistomo and Roestam, 2018).

Sleep is very important for a person's emotional and physical health. Risk factors for obesity, diabetes, heart disease and depression are caused by lack of sleep (Xie et al., 2017). Regularly sleeping less than 7 hours per day is associated with adverse health consequences, such as weight gain and obesity, diabetes, high blood pressure, heart disease and stroke, depression, impaired immune function, increased pain sensitivity, and increased risk of death (Watson et al., 2015).

2.2. Sleep Disorders

Sleep disorders are a group of conditions that affect the ability to sleep well on a regular basis, resulting in significant impairment of social and occupational functioning (Xie et al., 2017). Sleep disorders are a collection of conditions that affect the ability to sleep effectively on a regular basis, which can lead to significant impairment in social and occupational functioning (Xie et al., 2017).

This condition includes various types of sleep problems, such as difficulty falling asleep at night, poor sleep quality, early morning awakenings, circadian rhythm disorders, parasomnias, sleep-related motor disorders, and sleep-related breathing disorders. Sleep disturbances often result in daytime fatigue. Individuals who experience insomnia often experience difficulty in carrying out daily activities, especially those involving aspects such as memory and learning (Xie et al., 2017).

2.3. Definition of Shiftwork

Shiftwork is a work schedule arrangement where workers or teams work in different time periods alternately. In a shift system, working time is divided into several different shifts or work shifts, which may involve morning, afternoon, evening or other shifts. The purpose of the shift system is to ensure the presence and availability of the required workforce within the required time period, especially in situations where work must be carried out continuously or over a long period of time. Shift systems are often used in industry, hospitals, call centers, and other service sectors that require 24-hour operations or flexible work schedules. Shiftwork are working hours outside of normal working hours which have an influence on physiological, psychosocial, performance, health and work safety (Saftarina and Hasanah, 2013).

Shiftworks are characterized by changing morning, afternoon and evening working hours outside normal working hours, namely 7 am to 6 pm (Torquati et al., 2019). According to the American Academy of Sleep Medicine (AASM), a healthy or good shift schedule for workers is the afternoon shift 17.00-01.00 and the night shift 23.00-07.00 with 8 hours of sleep (Watson et al., 2015).

2.4. Shiftwork Disorders

Shift work sleep disorders are characterized by complaints of insomnia or excessive sleepiness has a correlation with work schedules during normal sleep hours. There are various types of working hours, namely rotational shifts, night shifts and morning shifts. These sleep disorders are often reported to be associated with night shifts and morning shifts. These working hours result in workers on the morning shift and night shift experiencing reduced sleep time and inadequate. Apart from disrupting performance, poor attention can also affect work safety (Islamiyah, 2018).

2.5. Recommendations therapy for shiftwork disorders

The prevalence of sleep quality disorders found in nurses working in hospitals with a work pattern of 2 shifts per day was 63.9% and 43% with a work pattern of 3 shifts per day (Nugroho, Sulistomo and Roestam, 2018). Healthy shifting pattern is in accordance with the recommendations of the American Academy of Sleep Medicine (AASM), namely that there must be a break from work or off work within one week of the shift schedule. Then the next shift will be better if it is clockwise and not counterclockwise, which means that if today is the day shift then tomorrow will be the night shift then the day after tomorrow the morning shift (Watson et al., 2015). Health workers who work in shifts often experience symptoms such as excessive sleeping, insomnia, malaise, and poor health conditions due to ineffective sleep due to shift work (Setyowati et al., 2021).

3. Pathophysiology of Shiftwork

Night shift workers showed significantly more sleep disorders, mental health problems, than day workers: irritation, somatization, obsessive-compulsive disorder, interpersonal sensitivity, anxiety, angry mood, and delusional disorders. This data shows that shift work has a negative impact on mental health and social life (Ferri et al., 2016). Health workers who work rotating shifts have a tendency to fall asleep at work and lack more sleep. Those who work rotating shifts are more likely to report medication errors when compared to health workers who mostly work day shifts (Saleh et al., 2014).

Shift work is necessary to ensure continuity of care in hospitals and inpatient facilities. Night shifts in particular, are one of the most common causes of circadian rhythm disruption and can cause significant changes in sleep and biological function, affecting physical and psychological health and reducing performance (Ferri et al., 2016). The frequency of dosing errors increases on irregular shifts. Health workers who alternate day and night shifts experience more health problems and dissatisfaction with their working hours compared to colleagues who work 8-hour shifts (Saleh et al., 2014).

The available evidence indicates that exposure to night shift work is associated with an increased risk of cardiovascular and cancer diseases among healthcare workers. There are four biological mechanisms underlying the pathophysiology of cardiovascular and cancer diseases related to shift work, as documented in the literature. The first mechanism involves disruptions to the natural circadian rhythm and biological clock, leading to sleep disturbances, dietary issues, and other negative impacts on health. The second mechanism encompasses the melatonin regulation pathway as a molecular mechanism believed to be involved in the adverse effects of shift work on health, including the risk of cancer and cardiovascular diseases, among other aspects. A deeper understanding of the mechanistic pathways related to diseases associated with shift work is crucial in efforts to enhance public health and quality of life (Yau and Haque, 2019).

4. Conclusion

Maintaining good quality sleep is important for a health worker, especially shiftworkers who work in hospitals. Poor sleep quality can affect performance when working or carrying out daily activities. Therefore, to improve service performance for patients in hospitals, health workers have to maintain good sleep quality. The way to maintain sleep quality is by correct shift pattern management in accordance with recommendations from the American Academy of Sleep Medicine (AASM).

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