

Shift Work Sleep Disorder and Complications

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Abstract

Shift work sleep disorder is actually a circadian rhythm disorder, the most common trouble faced by many individuals working in night shifts or rotational shifts, also refers as jet lag syndrome. This problem leads to disturbance in 24 hours body internal clock, as a result the internal clock needs to modify or reset the body sleep time. In this review we explain the complications and injuries faced in rotational shifts by shift work sleep disorders.

Keywords: Sleep disorder; Psychiatric patients; Biological processes

Nature of Regular Sleep

Sleep is a crucial behavior characterized by minimum movement, reduced responsiveness to stimuli, and species-specific timings [1]. Initially sleep begins with homeostatic process. In this process, sleepiness is characterized by the amount of prior sleeping and waking. The circadian process establishes the sleep phases with the light and dark cycles that cause sleepiness at night and wake by daytime. The ultradian process is the 90 to 120-minute cycles of NREM and REM sleep that the body experiences 3 to 6 times per night. Activities that disrupt these biological processes, such as shift work or disturbance in regular sleep timings influence the progression of sleep disorders.

Shift Work Sleep Disorder

Sleep disorders such as insomnia, fatigue, and excessive daytime sleeping are some of the most common complaints in patients with psychiatric disorders. A research study by Sweetwood et al. [2] found the overall prevalence of sleep disturbances to be 58% among male psychiatric patients and 21% among healthy controls. Similarly, in a European survey [3] of almost 1900 depressed subjects, 73% reported tiredness and 63% reported sleep problems during the 6 months prior to the study. Sleep disturbances may lead to poor sleep hygiene, medical conditions, and circadian rhythm disorders which are most common symptoms for scheduled sleep-wake periods and shift work sleep disorder. Sleepiness in the work station may lead to poor concentration on work, accidents and injuries. Persons undergoing shift works for more years are close to risk for a variety of chronic illnesses such as cardiovascular and gastrointestinal diseases and on the other end it shows negative results in performance of work in terms of increase in work related errors and accidents. Symptoms of this syndrome can be regulated by optimizing the sleep environment, by avoiding exposure to light, and by drugs and psychotherapies.

Internal Causes

Natural zeitgebers help the circadian rhythm to stay within a 24-hour cycle. They are light, melatonin, and social or physical activities [4]. Among them light and melatonin have prominent influence on determining endogenous circadian rhythms. Light stimulates the neurons and exposure of light timing effects on the entrainment of circadian rhythms. During evening times in Exposure to light causes lag in the circadian rhythm, that results in delay of sleep and consequently late awakening time Melatonin hormone levels start to increase 1 to 3 hours before an individual's usual sleep time [5,6].

Everyone experience moderate sleeping disorders, but we can you tell whether your sleeping problem is just a minor, passing annoyance or

a sign of a more serious sleep disorder or underlying medical condition, by observing daytime signs of sleep deprivation. We may experience the following symptoms with a sleep disorder [7].

- Feeling irritable or sleepiness throughout the day
- Difficulty in staying awake when sitting still, watching television or reading
- Have difficulty concentration
- Tired look and angry and cannot control emotions
- Require caffeinated beverages to keep yourself going

Treatment

Treatment for shift work sleep disorder was found very minimal. Pharmacological and behavioral remedies helps to reduce the risk to prone lag in the circadian rhythm, some of them where like change in work schedule, napping in between work and exposure to light. Another remedy was like when we go to bed straight after their shift get more sleep.

Work pattern

Night shift working individual's behavior is directly linked to their shift work schedule. Constantly working more than 4 consecutive 12-hour night shifts may increase the risk of injuries and accidents [6], so change in work habitat timing can show some relaxation for the individuals. It was found that the amount of sleep/wake and related disturbances in present day workers were related to their previous experience of night work [8-10].

Scheduled napping

Napping in between working shows prominent result in order to counter sleepiness in working hours, it also show significant difference in decrease of accidents while working [11].

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Napping during night shifts has been shown to offer some alleviation of the effects of sleep deprivation in nursing teams [12]. A short nap may not completely change the body timer, but it can give you some time before you grogginess sets again.

Hypnotic medications

Hypnotic medications are effective treatments with few serious side effects, asserted by Dr. Walsh. A review of several studies [13] showed that patients prescribed hypnotics report more positive effects and fewer adverse effects than patients treated with over-the-counter medications. The hypnotics currently prescribed in the United States are benzodiazepines, with the exception of zolpidem and zaleplon, Dr. Walsh explained. These nonbenzodiazepines are similar to benzodiazepines in that they act on similar receptor sites; however, evidence [14] suggests that zolpidem and zaleplon are more selective in terms of binding properties and have fewer side effects than benzodiazepines. Meta-analyses have found that hypnotics are significantly efficacious in reducing sleep latency, increasing total sleep time, reducing the number of awakenings during the night, and improving sleep quality.

Conclusion

patients with shift work sleep disorders needs an individualized and comprehensive approach, that includes proper diagnosis and management of health plan for sleep disorders, patient and behavioral interventions to optimize sleep and wakefulness, sleep and wake hygiene, planned napping, proper dietary habits, healthy exercise practise, timed light exposure, and limited night shift working-hours. It is likely that multiple factors in the child, parent, family, and environment interacting overtime contribute to the development and maintenance of sleep disorders. On overall it effects physical and mental consequences of the person.

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