

## IMPACT OF SLEEP DISORDERS ON HEALTH

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### ABSTRACT

The relationship between sleep patterns and mental health has garnered significant attention due to its profound implications for individual well-being and public health. This study aimed to elucidate the complex interplay between various dimensions of sleep and psychological outcomes, with a focus on identifying modifiable risk factors and informing targeted interventions for mental health promotion. Sleep patterns are recognized as crucial determinants of mental health, yet the complexity of this relationship demands comprehensive investigation. This study aimed to explore the multifaceted interplay between sleep patterns and mental health outcomes, with a specific focus on sleep duration, quality, and regularity. A diverse sample of participants was recruited, and data were collected using a combination of objective measures such as actigraphy and polysomnography, alongside self-reported assessments of mental health symptoms. The findings of this study provide robust evidence of the significant impact of sleep duration on mental health. Inadequate sleep duration emerged as a prominent risk factor for various mental health disorders, including depression, anxiety, and mood disturbances. Individuals reporting insufficient sleep duration consistently exhibited heightened vulnerability to psychological distress, underscoring the importance of prioritizing adequate sleep duration as a cornerstone of mental health promotion efforts.

**KEYWORDS:** Sleep Disorders, Health, mental health, public health.

### INTRODUCTION

Sleep is not a simple process. It is affected by different parts of the brain and at different stages. A sound night's sleep is one of the most important elusive aspects of everyday life. Having a good night's sleep is vitally important for the feeling which

gives new strength and alertness into the next day. Miserably, the majority of adults can not get restorative sleep in today's life.

Individual health and wellness are dependent on sleep. The functioning of learning and memory depends upon how the body restores the energy resources and

synaptic homeostasis (Porkka et al., 2013). During the walking period, there must be a clearance of harmful toxins that are accrued in the brain (Xie et al., 2013). Insufficient sleep results in low-quality inflammation and anomaly in energy metabolism, leading to atherosclerosis processes (Meier et al., 2004). This is accompanied by tiredness, learning and memory problems, poor vigilance, motivation, and control of emotions (King, Belenky, and Van Dongen, 2009). Furthermore, it is found that sleep problems increase the risk for somatic problems (Grander et al., 2013). The individual is characterized by physical symptoms like pain or fatigue which leads to emotional distress and problem related to the functioning of the body. It also causes psychiatric diseases, problems in the immune system, metabolic disturbances and affects the circulatory, cardiac system, and mood disorders.

## **DEFINITION OF SLEEP DISORDER**

A sleep disorder (somniphathy) is "a disturbing pattern of sleep that may consist of difficulty, delayed or staying sleep, go to asleep at improper times, excessive total sleep time, or abnormal behaviors associated with sleep.

Sleep is related to the neurological system of the body and it provides rest and restores

the energy level of the body. Every individual spends one-third of his life span in sleep. Normal human sleep is comprised of NREM (Non-Rapid Eye Movement) AND REM (Rapid Eye Movement). The alteration between NREM & REM occurs about 4-5 times during a night of normal sleep.

## **Prevalence of Sleep disorder in India:**

The prevalence in India of sleep disorders is high. Despite this, the Indian National Health Policy, which was changed in 2017, fails to address the essential issue of the population's need for proper sleep, which could affect India's public health statistics. In this day and age, a comprehensive national sleep policy is required.

Adults and children both suffer from a lack of sleep which shows a high prevalence of sleep disorders. Sleep deprivation affects mood, cognition, and decision-making capacity, as well as causing obesity and increased cardiovascular mortality. Driving when tired increases the chances of being involved in a car accident. In these circumstances, India will need a National sleep policy with 5- 20 year public health objectives (Akhtar and Mallick, 2019)

After nearly 15 years, The National Health Policy of India for 2017 has been updated (the last health policy was formulated in

2002). Its goal is to provide the highest possible health and well-being for all citizens of all ages without causing financial hardship. The 2017 policy focuses on non-communicable illnesses, mental health, geriatric health, palliative care, and rehabilitative services, and it moves the emphasis from selected to comprehensive primary healthcare. Primary healthcare has received the most funding. It does not, however, address the crucial issue of getting enough sleep. The policy has neglected the effects of sleep restriction, deprivation, and disorders on public health and, as a result, the nation's health.

India has a large population and a growing economy. So far, little attention has been paid to the health consequences of a lack of sleep, both in terms of quality and quantity. Getting enough good quality sleep is essential for good health (Irish et al., 2015) and longevity. Adults should get at least 7-8 hours of sleep per night (Watson et al., 2015), and children should get at least 10 hours (Paruthi et al., 2016). The population, on the other hand, does not get enough sleep. In India, sleep disorders are very common. According to one study, as many as 33% of adults in India suffer from insomnia (Bhaskar, Hemavathy, and Prasad, 2016) Sleep deprivation has a profound and far-reaching impact on

health. Adults who are sleepy during the day may be less productive. People who lack sleep are less effective at making quality decisions are more likely to experience distress, (Glozier et al., 2010) become obese, and are more likely to develop coronary heart disease (Ayas et al., 2003).

First, there is a shocking lack of awareness about sleep disorders in the country, which has an impact on treatment-seeking behavior. Second, any intervention in this area will lead to a large impact.

Research has pegged the percentage of insomnia among adults in India to as high as 33 percent (Bhaskar, Hemavathy, and Prasad, 2016). In the general population, the recorded prevalence of insomnia is 9 percent and about 30 percent suffer from intermittent insomnia (Shah, Bang, and Bhagat, 2010).

### **Causes of sleep problems**

When sleep is inappropriate, then the day is miserable which ultimately results in poor concentration, irritability and headache will appear. Sleep is affected by various factors. The reasons for sleep disorders problems are directly or indirectly related to the following systems:

- a) **Physiological systems:-** Brain and the nervous system disease, Cardiovascular system, and immune system cause sleep problems including sleep conditions, pathology, sleeplessness, accidents, musculoskeletal disorders, hormonal changes, elevated risk of cardiovascular disease, obesity, metabolism, and diabetes, menopause, emotional disorder (depression, bipolar disorder), Alcohol and drug abuse also alter sleep disorder (Dinges, 2004).
- b) **Stress:** Stress can be positive or negative. Negative stress can create tension, anxiety, discomfort all of these leads to sleep problems, loss of health, and poor well-being. Occupational stress, school pressure, marital problems and illness, death in the family can cause short-term sleeping difficulties.
- c) **Anxiety:** It is also related to difficulty in sleeping. Excess anxiety makes it more difficult to fall asleep and stay asleep through the night. Anxiety can intensify sleep deprivation, spurring a harmful cycle involving insomnia and anxiety disorders. It also causes
- sleep-related problems or makes existing problems worse.
- d) **Substances use-** Substances like alcohol, caffeine, tea, etc. affect the individual's ability to sleep. The adenosine chemical is produced by the brain and it is auxiliary in persuading sleep. Substances such as alcohol, caffeine, tea often affect the capability of the person to sleep. The brain produces the chemicals of Adenosine and they are supplementary in stimulating sleep. All of these substances inhibit adenosine development thus preventing the person from sleeping. Among all, alcohol gives rise to sleep but affects the overall sleep quality.
- e) **Travelling:** Travelling across several time zones causes jet lag and having disturbed sleep. This upset biological or "circadian" rhythms. Travel will wreak havoc on a sleep schedule, as thrilling and rewarding as seeing the world can be. In unfamiliar cities, late nights out, uncomfortable beds in hotels and hostels, and long trips in rental cars or public transport can all make one feel more exhausted and sleep-deprived than normal.

f) **Environmental factors:** Sound sleep can be affected by room temperature i.e. too hot or too cold, noise pollution, bright lighting in the room, size of the bed, room partners' habits also affect sleep.

g) **Family disturbances:** Many factors in a family also causes sleep difficulties. Child sleep habits may also be disrupted by parental activities that are conditioned by parental cognitions and attitudes about sleep, as well as external stressors (e.g. career or marital issues). Family conflicts, defective home environment, sibling rivalry also contribute to disturbances. Children or family members can also interrupt sleep.

h) **Working time:** Working patterns and timings also affect sleep. The 24/7 lifestyle interrupts regular sleep. The workers who work in shifts, especially in the industry sector have severe sleep disturbances.

i) **Health Problems:** Unhealthy physical problems can inhibit the capability to stay asleep. People with medical issues might cause pain, back pain, or discomfort and

make sleep difficult. The self-reported sleep studies show a rise in the risk of cardiovascular illnesses and a loss of life/death rate (morbidity and death) in the self-assessing sleep conditions. In the case of women, pregnancy and hormonal imbalance also cause premenstrual syndrome (PMS) or menopause induce sleep deficits. Medication for hypertension, asthma, depression also cause sleeping difficulties as a side effect. Tiredness is a significant symptom of mental illness, such as severe depressive disorders, low depression, dysthymia, mixed anxiety depression, seasonal affective disorder, and bipolar disorder.

j) **Shift Work:** Workers who work on different shifts and scheduled continuous shift work may have an adverse effect on the sleep-wake cycle of the body.

## Treatment of sleep disorders

a) **Cognitive behavior therapy:** It explains how behaviors that maintain sleeping difficulties are identified and changed.

- b) **Relaxation techniques:** It refers to relaxation before going to bed. There are certain calming exercises, listening to music, breathing exercises, muscle relaxation, and certain meditation techniques that can help them to get relieved from sleeplessness.
- c) **Meditation:** It concentrates on breathing. The patient is asked to visualize a peaceful location such as a desert, beach, or grassy hill throughout these exercises. It also reduces anxiety and stress.
- d) **Exercise:** Health especially physical and mental health becomes better with regular exercise. It enhances hormone-endorphins which relieves mood and lower frustration.
- e) **Maintain a to-do list:** There is a need to prioritize the work to be done. The time and energy should be spent on planning in dividing vital and fewer priority tasks. The large task should be divided into small and more easily managed tasks. The free time should be given to recreational activities like listening to soft music. These will help in reducing blood pressure and help in relaxing the mind and body.
- f) **Sufficient quantity of sleep:** It recharges the brain and enhances appropriate focus and mood. The individual must have appropriate sleep.
- g) **Sleep should be comfortable:** The temperature, light, and noise levels to work out should be of comfort. The dark environment generally makes sleep easier.
- h) **Maintain a sleep diary:** It will help to work out the factors which are affecting our sleep. A sleep diary records information about sleep habits to understand the causes of sleep problems and what's affecting them. A diary includes what time a person goes to bed and what time he gets up, the total number of hours of sleep, how many times a person wakes up in the night, whether there is any nightmares, any medication, any substance use, the amount of physical activity, etc. Establish a routine: Daily routine of the sleeping pattern is very important for good sleep. An individual should always go to bed when they are sleepy, don't avoid sleep.

## TYPES OF SLEEP DISORDERS

**Insomnia:** Insomnia is the most frequent type of sleep deprivation (Ohayon, 2002). Insomnia is a disorder that has both nocturnal and diurnal symptoms. It's marked by a preponderance of dissatisfaction with sleep quality or duration, as well as difficulties falling asleep at night, frequent or extended awakenings, or early-morning awakenings with the inability to return to sleep. These issues arise despite enough sleep opportunities and are linked to clinically significant distress or impairment of the daytime performance, such as weariness, low energy, mood swings, and reduced cognitive skills, such as impaired attention, focus, and memory. When sleep issues occur three evenings a week for more than three months, insomnia is diagnosed (Diagnostic, 2013 & Sateia, 2014). Insomnia is defined as trouble falling asleep, staying asleep, or sleeping for a short period while having the chance for a full night's sleep.

The common symptoms of Insomnia include:

- Night sleep becomes Difficult.
- Sleep Walking.
- Non-restorative sleep

- Sleepiness is excessive in the daytime.
- Lacking energy.
- Poor concentration.
- Disturbance in mood and behavior i.e. irritability, aggression, and impulsive behaviors.
- Habit of forgetting things.
- Poor performance at work or school.
- Fatigueness and accidents.
- Deterioration in quality of life
- Depression.

Insomnia may be categorized by symptom, duration, and frequency. Insomnia occurs when the loss of sleep, from one night to several weeks, lasts for a short period. But in the case of Chronic insomnia signs of poor sleep quality persists for a month or longer for at least 3 nights a week.

Symptoms of insomnia can be anything from being linked to a medical or psychiatric condition, effects on the environment, stress and worry, or simply occurring without purpose. Stress is probably the significant single cause of insomnia, causing millions of people to lie awake at night.

**Sleep Apnea:** Obstructive sleep apnea involves breathing interruptions during sleep. A person with sleep apnea will have repeated episodes of airway obstruction during sleep causing snoring, snorting/gasping, or breathing pauses. This interrupted sleep causes daytime sleepiness and fatigue. Sleep apnea is diagnosed with a clinical sleep study. The sleep study (polysomnography) involves monitoring the number of obstructive apneas (absence of airflow) or hypopneas (reduction in airflow) during sleep.

## CONCLUSION

Everyone has felt the fatigue, irritability, and lack of focus that can result from a bad night's sleep. A single night of sleep deprivation leaves the individual tired and unpleasant the next day, but it has no detrimental health consequences. After a few restless nights, the mental impacts grow increasingly severe. It will be tough to concentrate and make decisions since the mind will cloud up. The person will start to feel sad and may find themselves sleeping during the day. As a result, the danger of injury and accident at home, at work, and on the road increases. Sleep deprivation has long-term consequences. It depletes mental capabilities and puts one's physical health at risk.

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