

Lack of sleep affecting mental health

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ABSTRACT

Uneventful sleep with respect to its quality or duration of sleep can be termed as sleeplessness which is also called insomnia and affects mental health at various levels for all age groups. Similar to brick-and-mortar sleep an individual is pivotal for his mental construction. Through the review of many kinds of literature, multiple causes affect the quality of sleep and then impact mental health. We also found specific articles about mental health issues like suicidal behavior, which were related proportionally to lack of sleep.

From the development stages of a baby, the new neural connections are affected because of a lack of sleep. the review will present us with a picture to understand better about relative changes observed in mental health with changes in an individual's sleep. the gradual changes would also create an unchangeable impression on his overall physical, psychological, and social well being Covid has presented itself as a significant threat in all ways and, in turn, affects sleep quality and quantity deeply injuring a person mentally in keeping him healthy.

The age group between 13-48 seems to be most affected by this negligence toward proper sleep patterns. Many scientists and psychologists are working through their areas of expertise to create awareness and also to elevate people's mental well-being by educating them about sleep.

We here in this study have made efforts to study the relationship between sleep deprivation and mental health where sleep is very essential to maintaining the brain's mental activities at optimum, whereas disturbance of sleep, improper sleep routine, and ineffective sleep cycles are major contributors to detrimental mental health.

KEYWORDS *Sleep, covid 19, mental health, sleep quality*

INTRODUCTION

Sleep can be defined as mental and physical condition with natural occurrence having characters of altered state of awareness, sensory function is mildly suppressed, with not much of muscular actions, most notably during rapid eye movement (REM) sleep (Ferri et al., 2008).

Sleep is a necessary activity that, along with food and exercise, is critical for emotional and physical growth as well as for wellbeing and general health. (Hosker et al., 2019)

Lack of sleep is termed insomnia, where an individual is not sleeping sufficiently appropriately for his age. This imparts physiological effects on the brain due to variations in hormonal levels of melatonin and cortisol. And subsequently affecting his physical, mental, and behavioral health (Banno et al., 2022). Sleep issues may be related to psychological disorders. There is mutual cause in case of lack of sleep and mental health which has been studied and proved through experimental observations done. (Afonso et al., 2017).

Poor sleep quality can be the cause of a reduction in mental health. Significant lifestyle modifications and pandemic-related worries may raise stress levels and autonomic arousal, which would reduce the quality of sleep (Varma et al., 2021). As we can observe there is a vicious cycle relationship between lack of mental health and sleep because, Sleep deprivation would impact mental health causing various observable menatal disturbances and that inturn disturbs sleep cycle for any individual.

A nationally representative sample of young individuals experienced poor sleep and mental health consequences, such as melancholy, worry, suicidal thoughts, and trouble falling and staying asleep. (Nagata et al., 2019)

We categorized articles based on a few observed similarities

- Age-based sleep and mental health relationship

- Covid's effect on sleep and mental health
- Mental problems caused due to lack of sleep

REVIEW OF LITERATURE

Age-based mental health and sleep relationship

Even though getting enough sleep is frequently challenging, it is crucial for children's behavior and daily functioning to be at their best. The growth and strengthening of new neural connections, as well as brain development, are thought to benefit from REM sleep. (Bathory & Tomopoulos, 2017). Issues with children's and teens' mental health and insufficient sleep are associated with a number of potential reasons (Sampasa-Kanyinga et al., 2020).

Lack of sleep negatively affects learning and development as well as seriously compromises judgement, particularly in young individuals, sleep duration and risk-taking behaviors related to personal safety. These actions frequently precede suicides and accidents, two major death causing incidents in teenagers. (Weaver et al., 2018).

Lack of sleep may cause an increase in reaction to stress, that has been linked to a higher likelihood of mental health disorders developing. Short sleep cycles might make living an active, healthy lifestyle more challenging since they can in daytime lethargy and drowsiness. (Sampasa-Kanyinga et al., 2020).

Lack of sleep increases the risk of obesity, diabetes, accidents, attention and behavior problems, poor mental health, and subpar academic performance in children and teenagers. (Wheaton et al., 2014).

The quantity of neurotransmitters that regulate mood and thinking is harmed by lack of sleep. Working memory, cognitive flexibility, and inhibitory control are among the executive processes that are also compromised (Sampasa-Kanyinga et al., 2020).

Individuals of all ages struggle with sleep deprivation. It's possible to wrongly ascribe common patient symptoms like daytime weakness, sleepy driving, intellectual challenges to everyday worries like family or social problems rather than the more underlying reason of insufficient sleep (Chattu et al., 2019). Mental health of young people, sleep patterns, and alcohol usage are important factors that require careful examination. Young adults appear to have been more impacted than older age groups, which emphasizes the significance of defining these effects (Evans et al., 2021).

The relationship between using a cell phone at night and subsequently having a negative mood, acting out, losing self-esteem, and having issues was mediated by insufficient sleep. On the basis of data from the loss of sleep brought on by Internet use had a negative effect on mental health (Abi-Jaoude et al., 2020). It is still not so clear whether overall sleep patterns or specific sleep patterns of college students can be more correlated to their mental problems (Becker et al., 2018).

Covid's effect on sleep and mental health

Poorer sleep quality was significantly connected with an increase in depressive symptoms. As the COVID-19 issue develops, there is an urgent need for initiatives to support young people's mental health. Relieving concerns about catching COVID and promoting excellent sleep quality could help young adults' mental health. (Evans et al., 2021).

A crucial aspect of maintaining both physical and mental health is receiving adequate sleep of high quality. Sleep issues in turn exacerbate a wide range of conditions, including those with negative prognoses, like those associated to the COVID-19 pandemic, such as depression, a person's tendency for infection diseases. (Richter et al., 2021).

Throughout the COVID-19 pandemic, the first country to implement full fledged state-wise lockdown was Italy. This study sought to determine the prevalence of depressed symptoms, anxiety symptoms, and sleep disruptions in lockdown because confinement might have a detrimental effect on mental health (Gualano et al., 2020).

During the pandemic, the quality of sleep is frequently decreased and is linked to a 2- to 3-fold increased risk compared to people who get enough sleep, and experience state anxiety, moderate depression, and stress. (Varma et al., 2021)

Mental problems caused due to lack of sleep

According to particular ideas, there is a link between other mental health illnesses, such as insomnia, and sleep disruption, with sleep disruption frequently functioning to be the connecting link leading to emergence of many psychiatric disorders like **(Freeman et al., 2020)**

The amount of daily sleep a person needs to feel refreshed and function at their best has been defined as adequate sleep. Unfortunately, most young people don't get enough sleep. In addition, the likelihood that kids will get enough sleep declines with age. **(Hosker et al., 2019)**

Sleep deprivation may be a root cause various mental diseases, such as post-traumatic stress disorder, depression, and schizophrenia. Sleep issues may heighten negative affect, emotional dysregulation, and hyperarousal, which may exacerbate the onset of mental health illnesses. **(Freeman et al., 2020)**. The sleep which is less than 6 hrs can be a deprived condition where it affects not the productivity of an individual but also his mental state for a long run **(Hosker et al., 2019)**.

Rotational shift paramedics displayed sleep restriction during the 16-night shift. After the night shift ended and during the entirety of day one of recuperation, paramedics also reported substantial levels of stress, weariness, and sleepiness **(Khan et al., 2020)**. Notably, the highest correlation between mood and/or self-harm and sleep was found; sleeping for fewer than six hours every night tripled a young person's likelihood of reporting suicidal behaviour. **(Hosker et al., 2019)**.

Some of the elements that affect young people are having trouble sleeping include exposure to electronic media, caffeine use, persistent medical illnesses, neurologically based sleep disorders, and the stress of having to do well in class, take part in extracurricular activities, and keep up a busy social life. **(Hosker et al., 2019)**.

According to one study, psychological discomfort acted as a mediator in the connection between poor sleep and food security. Poor sleep is directly related to psychological anguish, which is linked to obstructive sleep apnoea and consequent restless nights **(Nagata et al., 2019)**.

In fact, the effects of regular The effects of everyday social media use on happiness, life satisfaction, and psychiatric suffering over time scores were completely attenuated when cyberbullying and insufficient sleep were included in models for girls. **(Stiglic & Viner, 2019)**.

There is a clear causal connection between sleep issues and mental health issues. difficulties with sleep are common result in a vicious cycle that worsens patients' quality of life and their mental health conditions. **(Terán-Pérez et al., 2021)** Sleep is a necessary activity that, along with food and exercise, is critical for emotional and physical growth as well as for overall health and well-being. **(Hosker et al., 2019)**

Additionally, stressful circumstances, including social isolation, can cause sleep disturbances that have a detrimental impact on the balance of mental health, primarily making the condition worse **(Terán-Pérez et al., 2021)**. Numerous psychiatric disorders frequently include SCRD as a comorbidity, but SCRD also plays a significant role in more severe, psychotic diseases like schizophrenia. Identified similar connections between schizophrenia and disordered sleep in the late nineteenth century, prior to discoveries in mood disorders. **(Lopez-Castroman & Jaussent, 2020)**.

Youth who get enough sleep experience better levels of optimism, self-esteem, self-acceptance, memory, learning, academic achievement, memory, behaviour, and overall quality of life **(Hosker et al., 2019)**.

How much mental disorders are peveled in recent trends have been evaluated through many studies relating to sleep disturbances at wider ranges and were shown with signs of depressive, bi-polar or psychotic diseases. **(Scott et al., 2021)**.

Population subgroups who have low sleep quality should receive more consideration. It also emphasizes the necessity of taking into account mental health and overall well-being in addition to the existence of comorbidities when providing care for individuals with sleep issues and when planning interventions to promote healthy sleep **(Berti & Barros, 2019)**.

All the various stages of the suicide process have a high correlation with sleep disorders. they frequently form a proximal component that occurs just before SIB emerges. They can therefore be viewed as a cautionary indicator that may also be used to prevent anything from happening **(Lopez-Castroman & Jaussent, 2020)**

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Currently, wearable technology makes it possible to measure both in clinical and natural contexts, sleep patterns and disruptions are characterised by a degree of feasibility and relative accuracy (**Lopez-Castroman & Jaussent, 2020**).

Due to its apparent significant involvement in the beginning and progression of mental disease, CBT-I may offer a compelling for improving sleep and other areas of mental health, there is a non-pharmacological solution (that may also be used online). (**Firth et al., 2020**).

In order to assess both the need for therapy and their possible influence on recovery and success, it is critical to regularly test for such difficulties. After a TBI, sleep disturbances are quite typical and have the potential to seriously hinder patient rehabilitation, recovery, and results. (**Mathias & Alvaro, 2012**).

Sleep issues may be related to psychological disorders. There is mutual cause in case of lack of sleep and mental health which has been studied and proved through experimental observations done. (**Afonso et al., 2017**).

Sleep issues are important risk factors for diabetes, and their effects are comparable to those of more conventional risk factors. Therefore, guidelines for the screening of diabetes should carefully take sleep disorders into account (**Anothaisintawee et al., 2016**).

sleep quality and duration continue to be important sleep indicators. It would appear rational and important to reintegrate the notions of In order to better understand how overall sleep affects public health, it is important to evaluate the length and quality of sleep. (**Bin, 2016**).

Understanding the mechanisms and abnormalities of arousal control that underlie both sorts of issues may be aided by understanding sleep difficulties. Contrary to anxiety and terror states, which are characterized by elevated cortical and peripheral arousal, sleep is a necessary and restorative state with decreased cortical alertness. (**Mellman, 2006**).

To assess sleep, three metrics were used: average daily sleep time, satisfaction with prescribed sleep time and subjective happiness with sleep timerate. (**Kim et al., 2022**).

Due to their work patterns, which commonly involve 24hour shifts, firefighters are regularly subject to sleep deprivation. (**Wolkow et al., 2019**).

For both men and women, being awakened at night was linked to present stress, sleep issues, and depressive symptoms. Accessibility stress was linked to all mental health outcomes in women but was linked to present stress and depressive symptoms in males (**Thomé et al., 2011**).

In both healthy volunteers and depressed patients, the majority of antidepressants inhibit REM sleep. As biomarkers for depression diagnosis, prognosis, and forecasting of the effectiveness of treatment, a number of sleep-EEG characteristics may be useful (**Steiger & Pawlowski, 2019**).

Young individuals in the United States who are food insecure have worse mental health and sleep outcomes, such as depressed symptoms, anxiety, suicidal thoughts, and problems falling and staying asleep. (**Nagata et al., 2019**).

Some of the elements that affect young people, sleep abnormalities are frequently seen. Prior studies have found recurrent subjective reports of sleep disruptions, but no particular objective sleep markers have been found (**Baddam et al., 2018**) The amount of sleep that firemen require to feel rested is not possible due to these schedules. Because daytime sleepiness has been linked to burnout in other professions, it increases the risk of daytime sleepiness for firefighters. (**Wolkow et al., 2019**).

We assessed the state-of-the-art studies on Relationships between subjective and objective sleep markers and anxiety, depression, and autism spectrum disorders(**Baddam et al., 2018**).

Sleep appears to be essential for memory encoding as well as consolidation, hence learning and memory are both greatly impacted by SD both before and after learning. The effects of SD can also affect emotional memory, which could result in a relative preservation of bad memories as opposed to happy and neutral memories (**Anderson & Bradley, 2013**).

There were interactions between the quantity, gender, and frequency of use when predicting the use of sleep medications and daytime dysfunction. Feeling down and less restful sleep were positively correlated, but sex had no effect on this association (Ogeil et al., 2013).

METHODOLOGY

Systematically collecting information for the study from reliable sources. Beginning in October 2022, a search for the journal articles was conducted. All papers released between 2008 and 2022 were included in the article. Duplicate papers and irrelevant material were eliminated during the method of screening. The terms "sleep", "mental health", "sleep quality," and "COVID-19" were highlighted in the search results. Mendeley and Google Scholar were two of the search engines used. Step by step, the articles were selected. Reading the article's title, abstract, and full text are the first three steps in the selection process. All of the titles discuss the value of sleep for physical and mental health well-being as well as the impact of sleep deprivation. All the data included is taken as reference from published articles in data bases.

Analysis

The Preferred Reporting Item for Systemic Reviews and Meta-analytic (PRISMA) technique is the one that is employed. All publications that made it through the selection process were then examined and summarised based on the goals, the year of publication, the amount of citations, and the recommendations for additional study

Inclusion and exclusion standards

- (a) Studies must meet certain requirements to be considered for the present research.
- (b) Studies have incorporated several selection criteria (sleep, mental health). These requirements reduced the quantity of research (b) Consequently, research where there is no meaningful analysis based on irrelevant information were removed. Name, Abstract, and Review

Final data set

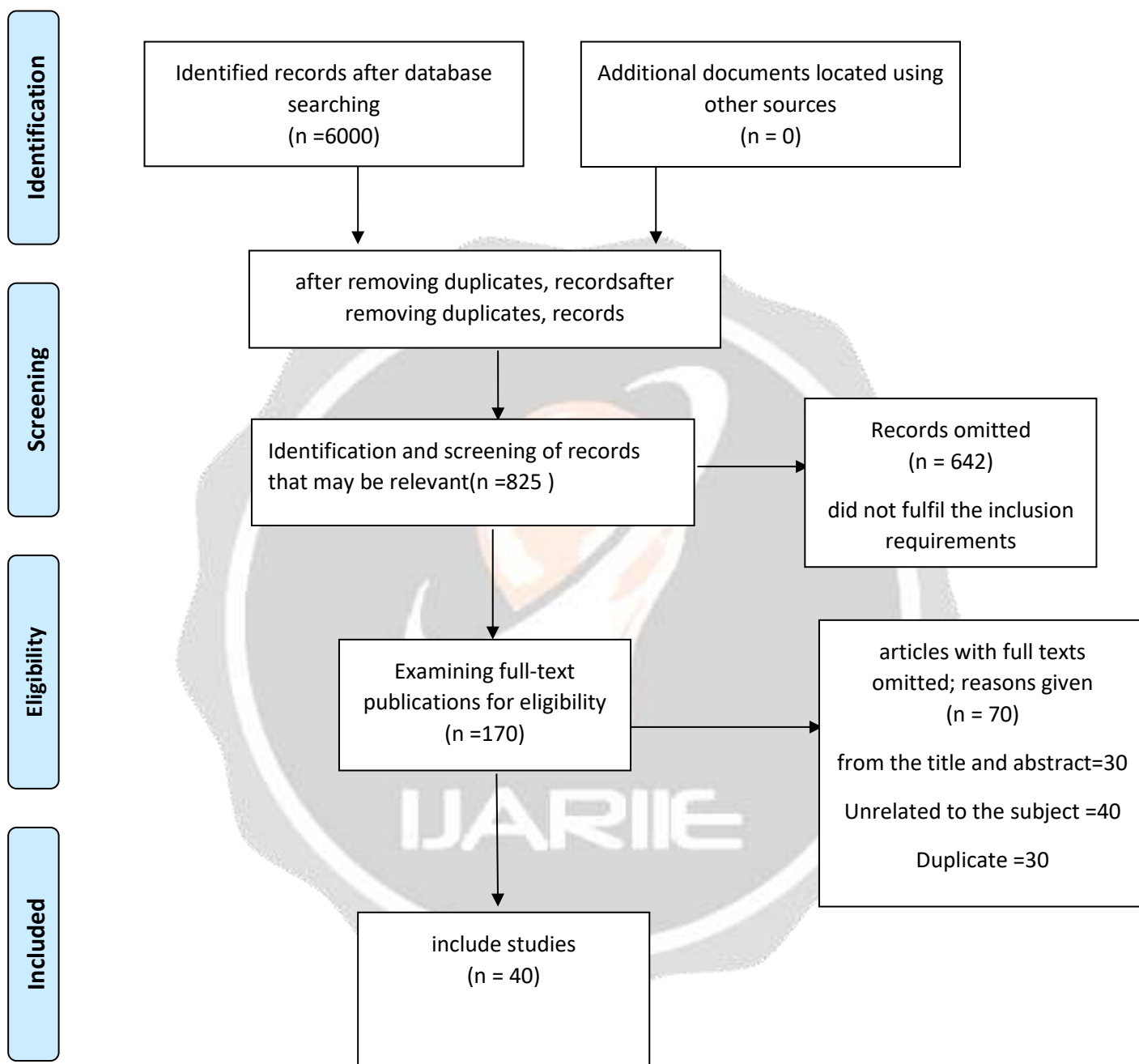
6000 research articles were found after searching all keywords in the research database. After scanning the title, The identical article appeared in two distinct databases.. After removing the duplicates, 4509 articles remain. 825 papers in all were reviewed. Due to their failure to meet the requirements for inclusion, 642 articles were eliminated.

170 articles were accessed to determine eligibility. Based on the title and abstract, a total of 70 articles were eliminated: (30) those that were irrelevant to the topic (40); and (30).

40 articles make up the final data set..

The earliest included study was published in 2006, while the most recent one was carried out in 2022. The Entire process is shown in the figure

PRISMA Flow Diagram



Discussion

Sleep is an integral part of an individual’s daily routine, physiologically the circadian rhythm maintains the psychological balance which makes the individual healthy as per WHO. We have observed throughout the literatures where the sleep deprivation irrespective of reasons affecting humans in all age groups. In both healthy volunteers and depressed patients, the majority of antidepressants inhibit REM sleep. As indicators for the diagnosis, prognosis, and forecasting of therapy outcomes in depression, a number of sleep-EEG characteristics may be useful when it is to analyse the quality of sleep. Lack of sleep has been not taken seriously in this technology driven world. It is affecting infants, childrens, teenagers, working professionals in

different scales. We observed in the above literature review that many factors are there causing disruption in sleep regularity which are personal professional self made and as such this would bring about imbalance in mental stature. For a teenager to have suicidal thoughts because of lack of sleep on regular basis is a sign towards bigger catastrophe. Many times the working class are unable to handle their work load and similar pressures in work environment without a peer to support they would succumb to narcotic thoughts that would aid them to keep them mentally fit instead of a sound sleep this never stops until a serious repercussion is faced. All these behavioural changes are significantly caused because of poor sleep making the root cause to be depression or similar internal face of an individual

The conclusion

We after referring to many literature studies were able to get a deep understanding into the subject of relating sleeplessness to mental health problems. The effect would be negative to have low quality sleep, where sleep is crucial in keeping the mental health at the best. The infant needs its valuable sleep to build a strong foundation for its future of cognitive thinking. The lack of judgement has been an effect observed due to poor sleep. Recently the effect of electronic gadgets of mobile and influence of social media has been causing physiological balance leading to insomnia in turn challenging mental health. Relative correlation between lack of mental health and sleep disturbance was observed in infants due to improper nutrition, and with children due to not sufficient physical activity and over exposure to blue light through mobile phones television and laptops during daytime especially before going to bed primarily leads to changes in cortisol and melatonins affecting sleep and as a linked chain towards that hampers the performance and overall development of a child.

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