

Sleep Health and Addiction: A Short Systematic Review Study across Alcoholic, Smoking and Mobile Addict Population

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ABSTRACT

Sleep is essential for maintaining human cerebral activity, emotional regulation, and physical health (Walker, 2021). Assessing the fundamental elements of sleep associated with various addiction disorders (alcohol, smoking, and mobile) was the goal of this recent systematic review. Using PICO criteria, ten pertinent papers from 2021–2024 were found for this brief systematic review. Google Scholar, PubMed, and Scopus were the databases that were searched. The findings indicated that the smoking-addicted group has greater rates of sleep disturbances and lower sleep duration (Miller & McMahon, 2021). Additionally, they are more likely to encounter sleep issues during withdrawal phases, which has a detrimental impact on their overall sleep patterns (Houghton, 2022). Additionally, smoking increased the chance of developing Obstructive Sleep Apnea (OSA), which is typified by insomnia and severe sleep fragmentation (Wang & Zhang, 2023). The scenario for the group with an alcohol addiction, on the other hand, showed that drinking more alcohol regularly degrades sleep quality (Frontiers in Sleep, 2022), interferes with normal sleep architecture (Gao et al., 2023), and, ironically, those who are more likely to relapse during the first six days of abstinence may report better sleep quality (Hasler et al., 2023). However, the investigation for those with a mobile addiction revealed that excessive usage of mobile devices before to bedtime disrupts the sleep cycle and delays the onset of sleep (Levenson, Gruber, & Papp, 2021).

Keywords: *Smoking Addiction, Mobile Addiction, Alcoholic Addiction, Sleep Health.*

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1. INTRODUCTION

Sleep health is closely linked to wellbeing. The ability to recall, think, and reason is made possible by sleep, which allows the body and brain to recuperate. However, lack of sleep can lead to adverse brain activity, including poor judgment and even chronic health problems (National Sleep Foundation, n.d.). Sleep is essential for both physical and emotional well-being because it lowers the risk of numerous illnesses. Nearly every bodily function, including the brain, heart, lungs, and immune system, depends on sleep. Getting enough sleep improves cognitive function during learning, aids in memory creation, and even aids in information analysis. Another element that helps even more is the brain's plasticity, which makes it easier for the brain to adapt to new ideas. According to Columbia University (2022), the importance of sleep for a person's health has long been known. In today's world, sleep deprivation is a major issue that contributes to both physical and mental health problems (Huynh et al., 2024).

Sedentary lifestyle sleep disorders and sleep disruptions have become a serious worry in practically every community and culture in the modern era, which is characterized by a stressful work life. In addition to these factors, a variety of addictive behaviors, such as excessive use of mobile phones, smoking, and alcohol consumption, are linked to poor sleep quality. These addictions are detrimental to one's health since they reduce both the quantity and quality of sleep, which exacerbates the situation by creating difficult-to-break dependencies. (CDC, 2021; National Sleep Foundation, n.d.).

Ayurvedic Perspective on Sleep

Together with two other energy factors, sleep is considered by Ayurveda to be a fundamental component of human physiology. According to this perspective, one's happiness and a variety of other areas of life, including strength, knowledge, and even life and death, are significantly impacted by the amount and quality of sleep they get. Shri Ram..

Sharma Acharya, an enlightened healer, promoted simple thinking for the best possible health and vitality during the day and insisted that sleep is crucial for the conscious, subconscious, and unconscious minds, which control emotions, ideas, and health. According to him, sleep helps the mind get rid of superfluous and overanalyzing thoughts, allowing it to expand and flourish with balanced energy and learned skills

2. THE INTER RELATIONSHIP BETWEEN SLEEP AND ADDICTION

The troubling attitudes regarding addiction and sleep problems are wide-ranging and intricate. The physiological and neurochemical alterations brought on by addictions make it difficult for a person to fall asleep; yet, the type of sleep a person has also influences the severity of the addiction by altering their capacity for reasoning, cravings, and even stress management. Making successful policies to reduce the negative effects of addiction on sleep health and vice versa requires taking into account all of those relationships (Frontiers in Psychology).

3. ADDICTIONS AND SLEEP DISTURBANCES

It is often recognized that alcohol addiction negatively impacts sleep. Alcohol causes drowsiness at first, but it also interferes with restorative periods like REM sleep, which causes fragmented sleep and disturbs the regular sleep cycle (Rupp et al., 2021). Similarly, because smoking causes stimulating effects and withdrawal symptoms during the night, it is linked to more sleep disruptions and greater rates of insomnia (Wetter et al., 2023). A more contemporary behavioural problem, mobile phone addiction, has added a new dimension to sleep health issues. Due to circadian rhythm disruption caused by blue light generated by electronic devices, sleep cycles are delayed and the quality of sleep is reduced (Gupta et al., 2022).

4. SIGNIFICANCE TO PUBLIC HEALTH

When it comes to sleep health, it is not only important for an individual's well-being but also for the performance of the entire population. Chronic conditions like diabetes, heart disease, mental health issues, and other illnesses are linked to sleep deprivation. These risks are significantly higher in populations with addiction, and they put additional strain on healthcare systems. Addiction-related sleep disorders also lower productivity and increase societal expenses.

5. AIM OF THE ARTICLE IN CONTEXT

The aim of this systematic review is to assess evidence on the association between sleep disturbances with alcohol, smoking and mobile phone addictions. Review of the literature

Topic	Study	Key Findings
Smoking and Poor Sleep Quality	Sun and Li (2024)	Higher smoking frequency linked to worse sleep quality (higher PSQI).
Smoking and Poor Sleep Quality	Chana et al. (2023)	Daily discrimination, depression, nicotine withdrawal linked with sleep issues in minorities.
Effect of Sleep Quality on Alcohol Use	Baskerville WA, Grodin EN, et al. (2023)	Better sleep quality linked with higher relapse risk during early quit attempt period.
Prevalence of Insomnia Related to Alcohol Use	Lehinger et al. (2023)	Bad sleep quality linked with PTSD in men; high drinking & PTSD linked in men with poor sleep.
Mobile Phone Addiction and Sleep	Gong and Liu (2023)	MPA increases anxiety, worsening sleep; cognitive reappraisal reduces this, expressive suppression worsens it.
Blue Light Exposure and Sleep Disorders	Nature and Science of Sleep (2022)	Blue light from devices disrupts circadian rhythm, reduces sleep duration & quality.
Alcohol and Sleep	Boness et al. (2022)	Cross-sectional study of young adults; hazardous alcohol use linked with circadian factors (evening preference, mid-sleep timing, shorter sleep). Difficulty falling asleep linked to social/interpersonal problems.
Alcohol and Sleep	Miller et al. (2022)	Surveyed college students; alcohol consumption linked with physiological effects; insomnia intake

		proportionate with alcohol units.
Prevalence of Insomnia Related to Alcohol Use	Davis et al. (2022)	Veterans: insomnia linked with more PTSD symptoms but less alcohol use over time.
Prevalence of Insomnia Related to Alcohol Use	Hussain et al. (2022)	Heavy drinkers reported more insomnia & short sleep duration; women had more sleep dissatisfaction.
Mobility Addiction and Sleep	Guo et al. (2022)	Chinese students; insomnia increased gaming next day; no predictive effect beyond next day.
Screen Time and Sleep Quality	National Sleep Foundation (2021)	Increased mobile screen time before bed worsens sleep quality & delays sleep onset in adolescents.
Mobile Health Apps and Sleep	Behavioural Research	Brain Apps may help sleep hygiene but social media app use harms sleep quality & schedule.
Mobility Addiction and Sleep	Medical Students Study	21.7% smartphone addicted; depression & >4h/day use linked; calls for more research.

6. METHODS

Search Strategy Database

This review study followed the guidelines described under the PRISMA. A comprehensive search was conducted using five databases: Scopus, Pub med, Google Scholar.

7. STUDIES FOR REVIEW

Studies selection criteria: The inclusion and exclusion criteria of the studies were as follows—

Inclusion:

Articles published in the English language.

Databases listed as Scopus, Pub Med, Google Scholar.

Studies published from 2020 onwards to 2022.

Population was non-clinical.

Article with at least two of the proposed key terms in the Title.

Abstract Based on PICO Protocol.

Exclusion:

Article published in other than the English language

Qualitative study

Article with no proposed key terms.

Types of Studies:

Empirical (Data Based)

Types of Intervention / Phenomena of Interest:

Addiction

Selection of the studies:

Selection of the studies was as described below-

Search

The search was executed with the Keywords, which were “Addiction”, “Alcoholic / Alcohol”, “Smoking”, “Nicotine” and “Mobile”.

Screening

Screening was based on Abstract of the studies i.e. PICO

The study were selected on the PICO protocol as described below—

P (Population) = Addict

I (Intervention) =

C (Comparison) =NA

O (Outcome) = (Sleep Health)

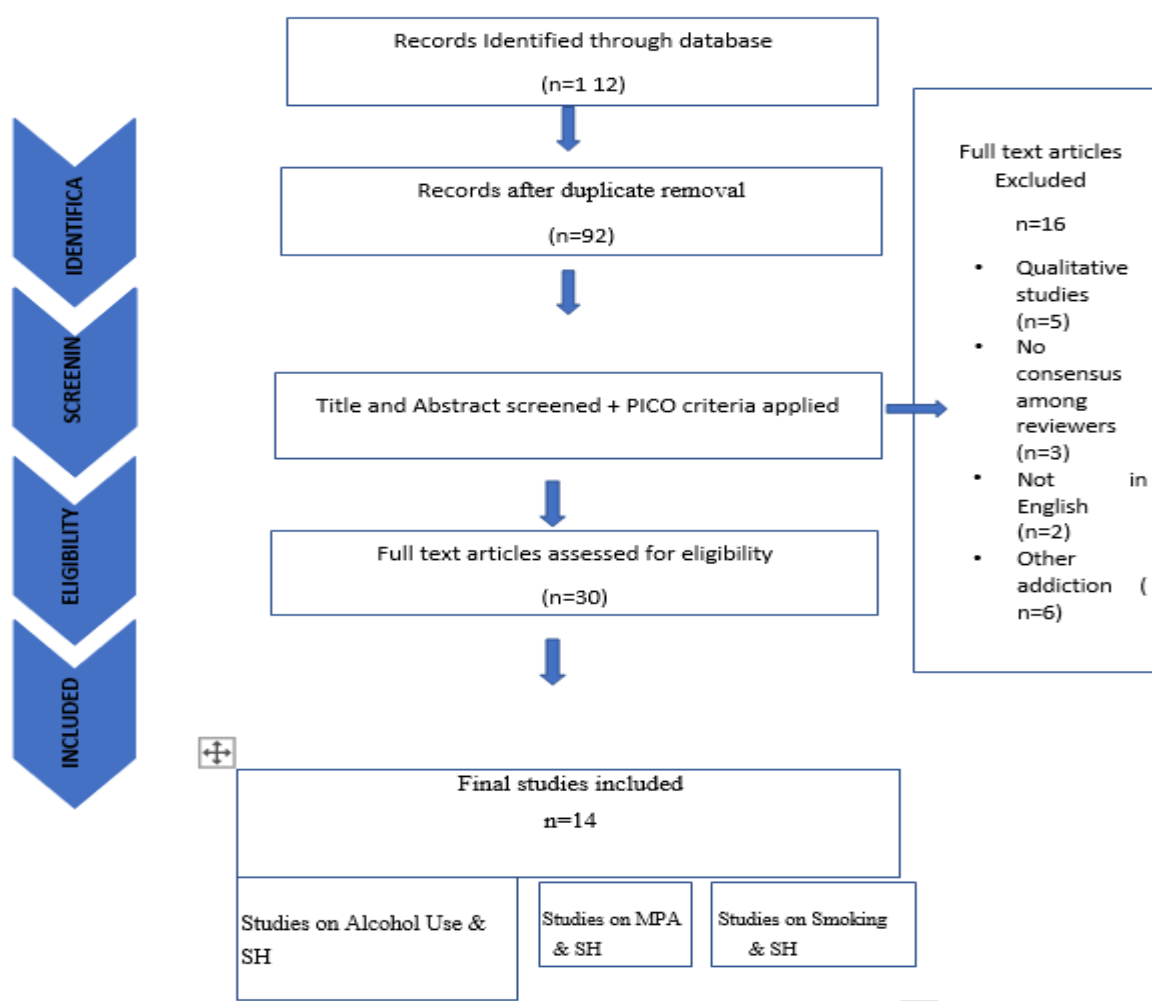
Selection-

Each reviewer reviewed the Title and Abstract of all the articles retrieved from the database.

Potentially relevant articles were further shortlisted for full text analysis.

Finally selected studies by each reviewer were reviewed by other reviewers and on the consensus of at least 2 reviewers, studies were selected finally.

Figure 1. PRISMA flow diagram depicting selection process



8. RESULT & DISCUSSION

(Table of studies)

Using database search engines, the literature search produced 432 scholarly research papers. Duplicate articles totalling 432 were eliminated. 220 articles were screened using the title and PICO criteria after the duplicates were removed. Twenty articles in all were determined to be suitable for full-text reading. Eleven of the twenty were disqualified due to factors like qualitative research, lack of reviewer unanimity, and non-English language. The current systematic review study comprised a total of 14 papers. The analyzed papers demonstrate the connections between smoking, cell phone addiction, alcohol consumption, and sleep issues. These are the review's primary conclusions.

Alcohol Use and Sleep Problems

According to Boness et al. (2022), excessive alcohol use might throw off sleep cycles, causing people to stay up later and sleep for shorter amounts of time. Social and personal problems were also linked to trouble falling asleep. Similarly, Miller et al. (2022) discovered that alcohol consumption can lead to issues including hangovers, nausea, and blackouts, all of which have a significant impact on sleep. People who slept better during an attempt to stop drinking were more likely to start drinking again, according to research by Baskerville et al. (2023). It suggests that getting more sleep may boost their confidence in their ability to stop, which could cause them to underestimate the chance of relapsing. Women reported higher levels of sleep dissatisfaction than men, while Hussain et al. (2022) found that excessive drinking exacerbated insomnia and short sleep duration. This demonstrates the necessity of treating sleep and alcohol issues differently for men and women.

PTSD, Alcohol Use, and Sleep

The effects of PTSD (post-traumatic stress disorder) on alcohol consumption and sleep were examined by Lehinger et al. (2023) and Davis et al. (2022). According to Lehinger et al. (2023), men who suffer from PTSD and have trouble sleeping are more likely to drink excessively than women. According to Davis et al. (2022), PTSD increased insomnia but, over time, decreased alcohol consumption, perhaps as a result of altered coping mechanisms. These studies demonstrate how crucial it is to take PTSD into account when treating problems connected to alcohol and sleep.

Mobile Phone Addiction and Sleep Problems

Guo et al. (2022) discovered that while playing mobile games didn't always result in sleep issues, those who had trouble falling asleep frequently played more the following day. According to a different survey, 21.7% of medical students were addicted to their phones, with despair and using their phones for more than four hours a day being the main contributing causes. According to Gong and Liu (2023), excessive phone use impairs sleep by raising anxiety. While certain emotional techniques exacerbated these consequences, others helped lessen them. According to studies published in *Sleep Medicine* (2021) and *Nature and Science of Sleep* (2022), using a phone at night interferes with sleep and makes it more difficult to fall asleep, particularly when blue light is present. While some mobile apps are designed to improve sleep, spending too much time on social media apps negatively affects sleep quality (**Frontiers in Psychiatry**).

Smoking and Sleep Quality

According to Sun and Li (2024), those who smoked more frequently had lower-quality sleep. Chana et al. (2023) found that depression and nicotine withdrawal were associated with sleep issues, particularly among racial and ethnic minorities. This demonstrates the strong correlation between smoking, sleep, and mental health.

Findings and Future Perspectives

The review summarizes the patterns, processes, and effects of sleep disruption in groups at risk for addiction by integrating findings from multiple studies. For instance, alcohol disrupts REM sleep and causes long-term sleep issues (Hela Koski, 2022). Additionally, about one-third of people with insomnia claim to use medications or alcohol to fall asleep, which feeds the vicious cycle (Miller, 2023). Similarly, excessive smartphone use raises anxiety and despair and results in poorer sleep (Nikolic, 2023). As each separate but connected disease exacerbates the other, this pattern exemplifies the cycle of addiction and sleep health. Additionally, it lists current research gaps and suggests more study, particularly in the area of treating addiction and sleep health at the same time. Targeted therapies that address both concerns at the same time are essential to enhancing health outcomes in the addiction population (Smith & Patel, 2025).

9. CONCLUSION

The research under discussion highlight the intricate, reciprocal relationship between sleep and a range of addictive behaviours, including behavioural and drug addiction. By emphasizing that sleep health ought to be at the forefront of addiction research and treatment-oriented approaches, this article introduces the reader to a broad, exploratory field of sleep research. It clarifies the connection between addictive behaviours and sleep disorders, which can help researchers, policymakers, and healthcare professionals develop solutions for those in need (Boness et al., 2022; Miller et al., 2022; Gong & Liu, 2023). To determine the best solutions, these interactions require further investigation. To investigate these correlations in greater detail and create focused solutions, more study is required (Smith et al., 2023).

Whether substance-related (drinking, smoking) or behavioral (using a mobile phone), addictive habits are consistently linked to serious disruptions in sleep health, according to this systematic study. Although the methods vary, the results all point to decreased functioning, poor sleep, and increased health risks. Improving sleep quality and addiction outcomes may be achieved by addressing sleep issues in addicted populations. There may be significant advantages to incorporating technology-assisted therapies, cognitive-behavioral techniques, and education on good sleep hygiene into de-addiction programs.

In summary, the quality of sleep should be viewed as both a cause and an effect of addiction cycles. A more successful route to comprehensive recovery would be a multidisciplinary strategy that incorporates sleep-focused therapies with addiction therapy.

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