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Impact of Sleep Habits on Mental Health in Adolescents

Shaik Ismail¹, Dr. Poonam Keshwani²

¹Research Scholar, Faculty of Social Studies, Dr. K N Modi University, Newai, Tonk, Rajasthan, India,

²Associate Professor, Dr. K. N. Modi University, Newai, Tonk Rajasthan (poonamkeshwaninewai@gmail.com)

Abstract: This study examined the impact of sleep habits on mental health among adolescents using a quantitative cross-sectional correlational research design. The study was conducted among teenagers aged 13 to 19 years enrolled in secondary and higher secondary schools in Rajasthan. A sample of 50 adolescents was selected through stratified random sampling to ensure representation across age groups. Data were collected using a standardized Sleep Habits Questionnaire (15 items) and a Mental Health Assessment Scale (12 items). The questionnaire comprised three sections: demographic information, sleep habits, and mental health indicators, including anxiety, depression, and stress. Data analysis was performed using descriptive statistics in a cloud-based Excel application and IBM SPSS (Version 25). The findings indicated that irregular sleep patterns, excessive screen exposure, and sleep disturbances were associated with higher levels of anxiety, depressive symptoms, and stress. The study highlights the significant relationship between sleep behavior and psychological well-being among adolescents. Promoting healthy sleep practices may serve as an important preventive strategy to enhance mental health outcomes in this population. In conclusion, healthy sleep habits are not merely a lifestyle choice but a crucial protective factor for adolescents' psychological health, emotional stability, and academic success.

Keywords: Sleep Habits; Adolescents; Mental Health; Depression; Anxiety; Sleep Quality Circadian Rhythm

INTRODUCTION: According to the *Woodfield, Michelle, Butler, et al. (2024)* found that the relationship between sleep and mental health is complex and multifaceted. While mental health diagnoses and symptoms can have a negative impact on sleep quality and quantity, poor sleep

also increases the risk of mental health diagnoses, symptom severity, and suicide risk. Sleep also has an impact on the school experience, both positively and negatively.

According to *Jalali, Rostam, and Khazaei, et al. (2020)*, sleep is an integral aspect of human health and life, and it is essential for learning, practice, as well as physical and mental wellness. It has an impact on individual learning abilities, academic achievement, and neural-behavioral functioning. The purpose of this study was to investigate the association between sleep quality and academic accomplishment among students at Kermanshah University of Medical Sciences. The findings revealed no significant relationship between sleep quality and academic ability. Nevertheless, a longterm study should be conducted to adjust for confounding variables.

According to *Singh, Ruchi, and Sharma, et al. (2009)*, sleep is a fundamental biological function that is required for both physical and psychological healing. Medical students, in particular, are known for having unpredictable sleep habits and experiencing sleep problems, exhaustion, and mood shifts as a result of their demanding schedules. The purpose of this study was to investigate sleep patterns and associate sleep deprivation with the incidence of anxiety, depression, daytime sleepiness, and performance in 100 first-year MBBS students using a validated questionnaire. 44% of students reported sleeping for more than 8 hours, while just 51% had a regular sleep schedule. Females (32%) were found to have a more consistent sleep schedule than males (68%) and reported greater performance and lower levels of anxiety and despair while sleeping for more than 8 hours. Day scholars had a more organized and consistent schedule than hostellers, as well as considerably superior performance ($p = 0.034$). This study identifies irregular sleep patterns as a major contributor of poor performance and mental disorders among medical students.

Zhang, Xiaoning, Dimitriou, et al., (2021), recruited 99 youths aged 15-17 from two public schools in Baishan City, Jilin Province, China. An online questionnaire was provided to adolescents, which included questions about their demographics, screen time habits, academic performance, anxiety level, sleep problems, and sleep-related impairment. Adolescents are enduring sleep problems in order to meet academic pressures during COVID-19, which is having a broader impact on their mental health. Many schools throughout the world continue to deliver online education to pupils; longitudinal studies on how COVID-19 has affected adolescents' sleep and mental health would be useful in assessing the pandemic's impact. Finally, 79.7% of adolescents reported a total sleep duration of <8 hours.

Adriansen, Rachel & Childers, et al. (2017) found that 61% of participants reported getting at least 7 hours of sleep per night, and 77% of participants reported taking naps during the day, with 51% of the naps lasting at least an hour. The study involved 116 college students in the Midwestern United States who completed a demographic survey and a 19-item Likert-type survey about their sleep habits and their perception of its health effects. Based on a comparison of the participants' sleeping patterns with the literature review, it was determined that, on the whole, participants did not have beneficial sleeping habits.

In this study conducted by *Georgios Mitru and Millrood et al. (2002)*. Despite scientific evidence suggesting that the biological requirement for sleep grows during development, many teens are experiencing a reduction in sleep due to a range of behavioral factors (e.g., academic workload, social and career possibilities). In an attempt to improve

academic performance and reduce behavioral issues, some school districts have instituted delayed start times and schedules to give high school students more time to sleep after parents, educators, and scientists recognized this possible issue. Many parents, educators, and scientists are therefore in favor of giving this information more thought in order to create regulations that might optimize children's learning and development possibilities. Although adjusting school start times may be an effective way to manage sleep deficit in most adolescents, some experience. Common sleep disorders, such as asthma or sleep apnea, induce sleep deprivation and, as a result, poor daytime performance. In such circumstances, surgical, pharmacological, or respiratory therapy procedures, or a mix of the three, are necessary to restore normal sleep and function throughout the day.

This research aims to investigate by *Johri, Kavya, and Pillai, et al., (2025)*, the causes and consequences of sleep deprivation in adolescents and propose appropriate prevention measures. Through bibliographic search tools, we examined material published since 2013 using diagnostic indicators and keywords. Mental health issues, as well as cognitive and social disabilities, are becoming more prevalent. Circadian rhythm disruptions, early school start times, and lifestyle choices all increase the risk of sleep deprivation. Excessive homework and social media use may contribute to insufficient sleep duration and quality, resulting in decreased academic and social challenges, increased risk-taking behaviors, stress, suicidal ideation, and poor physical health. Delaying school start times, limiting electronic device use before bed, encouraging physical activity, and adopting sleep hygiene education can all assist improve sleep quality and general well-

being in teenagers by serving as preventative measures. Parental engagement, including awareness and routine bedtimes, is also critical for promoting healthy sleep patterns. More study is required to identify effective interventions in education and healthcare that can address the growing sleep and mental health issue.

In this work, *Merikangas, K. R., et al. (2011)*, despite increased public awareness of mental disorders in children, a sizable minority of young individuals with serious mental illnesses have never received specialty mental health care. The stark racial differences in lifetime rates of mental health treatment underline the critical need to identify and address barriers to the detection and treatment of these disorders.

Short, M. A., Gradisar, M., et al. (2013) found that Australian teenagers received insufficient sleep on average during the school week. Adolescents frequently reported trouble falling asleep, unsatisfactory sleep, and the subjective sensation of restless legs. Sleepiness, weariness, depression, and anxiety were all common complaints. Late bedtimes, greater sleep start latencies, and shorter sleep duration were all related with poor daytime functioning.

Operational Definitions:

Sleep Habits: Patterns of sleep duration, regularity, hygiene practices, and sleep disturbances as measured by SHQ total score.

Mental Health: Level of psychological distress (anxiety, depression, stress symptoms) measured by total mental health score.

Objectives of the Study:

1. To examine the sleep habits (sleep duration, sleep quality, and sleep consistency) of adolescents.
2. To assess the level of mental health status among adolescents in terms of anxiety, depression, and emotional well-being.
3. To determine the relationship between sleep habits and mental health outcomes in adolescents.
4. To compare mental health levels between adolescents with adequate sleep and those with inadequate sleep.

Research Methodology:

A quantitative cross-sectional correlation study design was used. The study included teenagers aged 13 to 19 who were enrolled in secondary and higher secondary schools in Rajasthan. The sample was made up of 50 adolescents aged 13 to 19, chosen using stratified random selection. A standardized Sleep Habits Questionnaire (15 items) was used to collect data, as was a Mental Health Assessment Scale (12 items). The following questionnaire is divided into three sections: (i) demographic information, (ii) sleeping habits, and (iii) mental health. Descriptive statistics were utilized to evaluate the acquired data in a cloud-based Excel application with IBM SPSS (Version 25).

Research Hypotheses

H₀: There is no significant relationship between sleep habits and mental health among adolescents.

H₁: There is a significant relationship between sleep habits and mental health among adolescents.

Results and Discussion:

SECTION I: Demographic Information

Figure 1, the largest group of respondents consists of those aged 19 Years Above (36%), while the

smallest group is the 14-17 Years (16%) category. individuals aged 18 and older constitute the majority of the survey population, totaling 62% (26% + 36%). This suggests that the subject matter or the reach of the survey was more relevant to or accessible by young adults compared to younger adolescents.

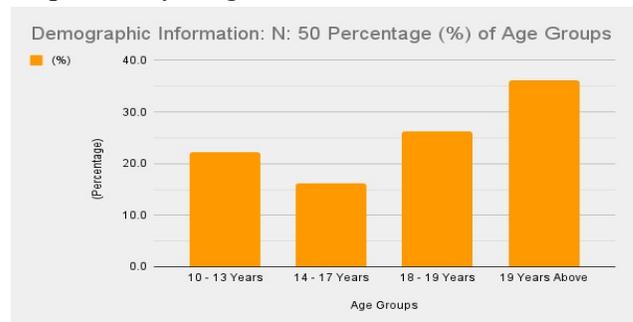
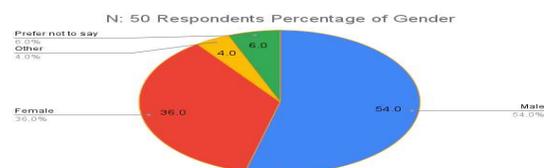


Figure: 1 shows of the age groups percentage of respondents (Data Source: Questionnaire)

The figure 2 shows that the majority of the 50 respondents are Male (54%), followed by Female (36%), with smaller representations for other (4%) and Prefer not to say (6%).

Figure 2, shows half of the respondents (50.0%) rate their academic performance as Average, while only 14.0% consider their performance to be Excellent. The data reveals that the vast majority of students perceive their performance as middle-of-the-road or better, with 84% falling into the Average, Good, or Excellent categories. However, the fact that “Average” accounts for half of the entire sample suggests a lack of high academic confidence. Slightly more respondents identify as having Poor performance (16.0%) than Excellent (14.0%).



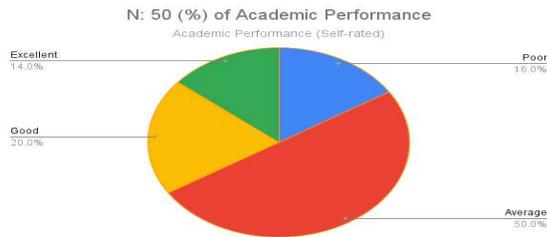


Figure: 2 shows of percentage of Gender with Academic performance-self rated (Data source: Questionnaire)

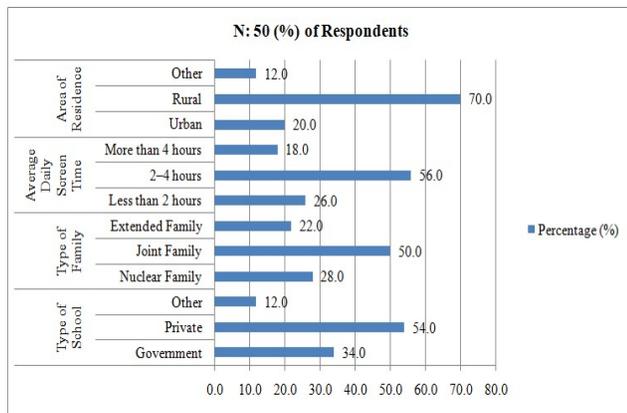


Figure: 3 show of percentage of Socio-Demographic and Lifestyle Factors (Data source: Questionnaire)

Figure 3 reveals that the typical respondent in this study (N=50) lives in a Rural area (70.0%), belongs to a Joint Family (50.0%), attends a Private school (54.0%), and spends between 2–4 hours (56.0%) on screen time daily.

Area of Residence: The majority of respondents belong to rural areas (70%), followed by urban areas (20%), while 12% fall under the “other” category. This indicates that the sample is predominantly rural, suggesting that the findings of the study largely reflect rural adolescents’ perspectives and living conditions.

Average Daily Screen Time: More than half of the respondents (56%) reported spending 2–4 hours daily on screens. About 26% spend less than 2 hours, whereas 18% spend more than 4 hours per day. This shows that moderate screen exposure (2–4 hours) is most common among participants, with a smaller yet significant group experiencing high screen usage, which may have implications for sleep and mental health patterns.

Type of Family: Half of the respondents (50%) belong to joint families, followed by nuclear families (28%) and extended families (22%). The dominance of joint family structures suggests stronger family interaction and collective living environments, which may influence behavioral habits, supervision, and emotional support systems.

Type of School: A majority of participants (54%) study in private schools, while 34% attend government schools and 12% fall into the “other” category. This distribution indicates a slightly higher representation of private school students, which may reflect differences in academic environment, access to technology, and lifestyle factors.

SECTION II: Sleep Habits

Figure 4 (A, B and C) shows adolescents’ sleep habits under three major dimensions:

Sleep Duration & Regularity, Sleep Hygiene Practices, and Sleep Problems, presented across five response categories (Never, Rarely, Sometimes, Often, Always).

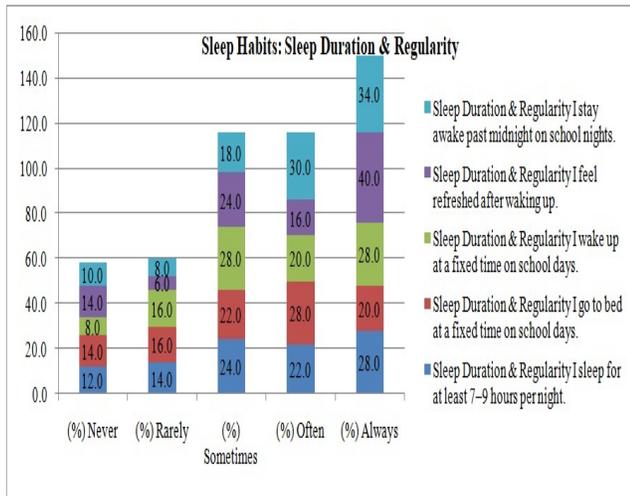


Figure: 4 (A) shows the percentage of responders in Sleep Habits: Sleep Duration and Regularity (Data Source: Questionnaire)

Sleep Duration & Regularity: The figure 4 (A) show mixed sleep patterns among respondents:

A considerable proportion reported “Always” sleeping 7–9 hours per night (28%), while 24% reported “Sometimes.” Regarding fixed sleep schedules, 40% “Always” feel refreshed after waking up, and 28% “Always” wake up at a fixed time on school days. However, 34% “Always” stay awake past midnight on school nights, and 30% reported doing so “Often,” indicating delayed sleep timing. Only a small percentage selected “Never” for healthy sleep behaviors, suggesting that irregularity is present but not universal.

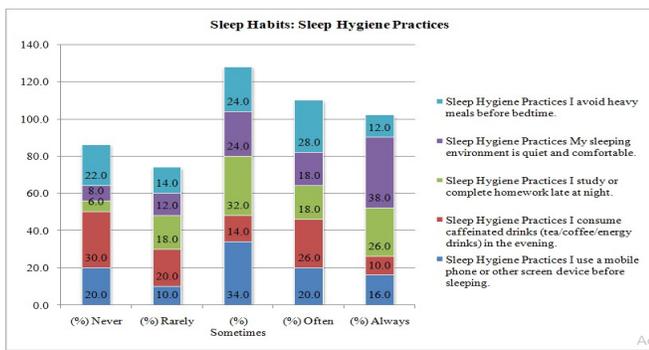


Figure: 4 (B) shows the percentage of responders in Sleep Habits: Sleep Hygiene Practices (Data Source: Questionnaire)

Sleep Hygiene Practices: The figure 4 (B) indicate moderate adherence to sleep hygiene practices: 34% “Sometimes” and 16% “Always” use mobile phones or screens before sleeping, indicating high exposure to blue light at night. 38% “Always” report having a quiet and comfortable sleeping environment, which is a positive indicator. 26% “Always” study or complete homework late at night, while 32% do so “Sometimes.” Consumption of caffeinated drinks in the evening is reported as “Never” by 30%, but 10% “Always” consume them.

Avoidance of heavy meals before bedtime is mostly reported as “Sometimes” (24%) and “Often” (28%).

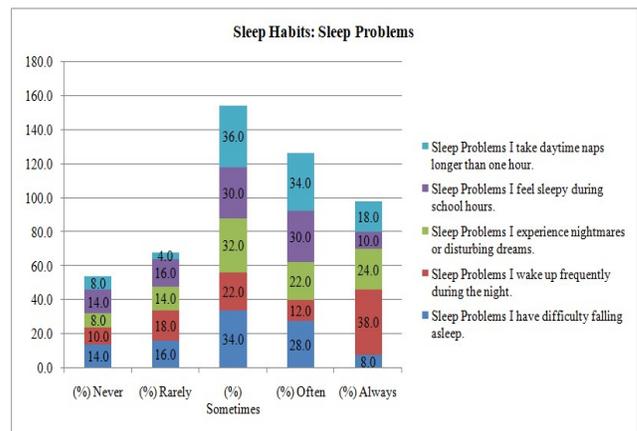


Figure: 4 (B) shows the percentage of responders in Sleep Habits: Sleep Problems (Data Source: Questionnaire)

Sleep Problems: Sleep-related difficulties appear moderately prevalent: 34% “Sometimes” and 28% “Often” experience difficulty falling asleep, indicating common sleep initiation problems. 38%

“Always” wake up frequently during the night, suggesting disturbed sleep continuity. Daytime sleepiness is reported as “Sometimes” (30%) and “Often” (30%), reflecting possible insufficient or poor-quality sleep. Nightmares or disturbing dreams are reported “Sometimes” (32%) and “Always” (24%).

SECTION III: Mental Health

Figure 5 (A, B and C) presents the distribution of adolescents’ mental health indicators under three dimensions: Anxiety, Depression, and Stress, categorized into four response levels (Never, Rarely, Sometimes, Often).

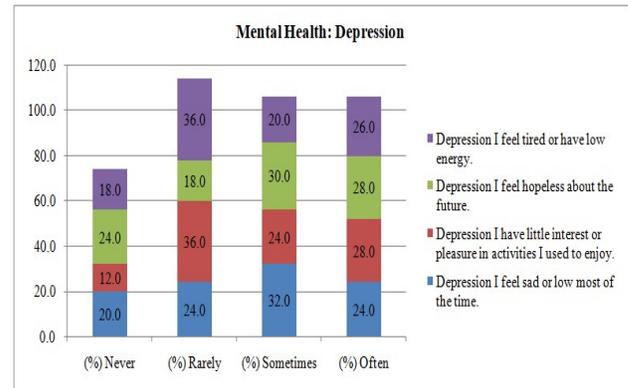


Figure: 5 (B) Shows of the percentage of respondents in Mental Health: Depression (Data Source: Questionnaire)

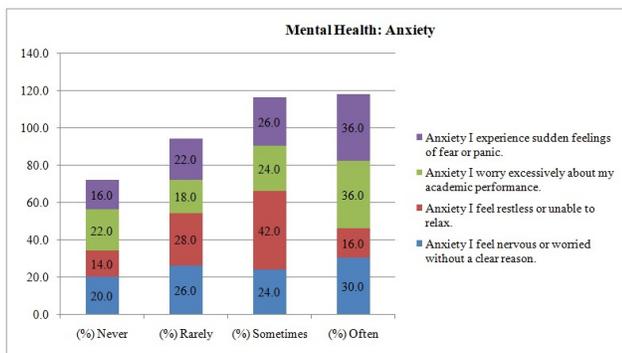


Figure: 5 (A) Shows of the percentage of respondents in Mental Health: Anxiety (Data Source: Questionnaire)

Mental Health: Anxiety: The findings indicate moderate to high levels of anxiety symptoms among respondents: A notable percentage reported feeling restless or unable to relax “Sometimes” (42%), indicating common emotional tension. 36% “Often” worry excessively about academic performance, suggesting academic-related anxiety is prominent. Sudden feelings of fear or panic are reported “Often” by 36% and “Sometimes” by 26%. Feeling nervous or worried without a clear reason is reported “Often” by 30% and “Sometimes” by 24%.

Mental Health: Depression: Depressive symptoms also appear moderately prevalent: 32% “Sometimes” feel sad or low most of the time, while 24% report this “Often.” Loss of interest or pleasure in activities is reported “Rarely” (36%) but also “Often” by 28%. Feeling hopeless about the future is reported “Sometimes” by 30% and “Often” by 28%. Low energy or tiredness is reported “Rarely” by 36%, though 26% experience it “Often.”

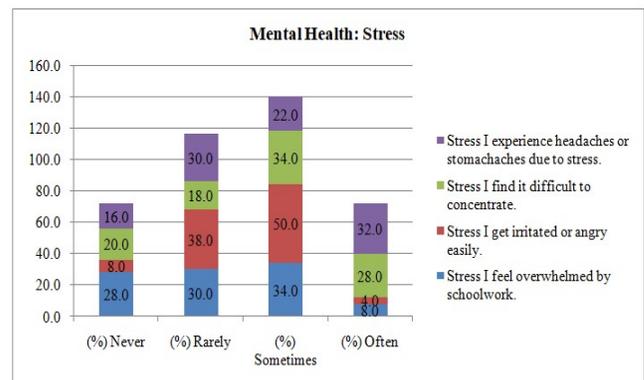


Figure: 5 (C) Shows of the percentage of respondents in Mental Health: Stress (Data Source: Questionnaire)

Mental Health: Stress: Stress-related indicators show a strong presence among respondents: 50% “Sometimes” get irritated or angry easily, the highest percentage within this dimension. 34% “Sometimes” feel overwhelmed by schoolwork, while 30% report this “Rarely.” Difficulty concentrating is reported “Sometimes” by 34% and “Often” by 28%. Physical symptoms such as headaches or stomachaches due to stress are reported “Often” by 32%.

Conclusion:

The present study examined the relationship between sleep habits and mental health among adolescents, focusing on sleep duration, regularity, sleep hygiene practices, and sleep-related problems in relation to anxiety, depression, and stress levels. The findings indicate that although a portion of an adolescent maintain adequate sleep duration (7–9 hours), irregular sleep timing—particularly staying awake past midnight—remains common. Moderate to high levels of screen exposure before bedtime, late-night academic activities, and inconsistent sleep hygiene practices were also observed. These behavioral patterns appear to contribute to sleep disturbances such as difficulty falling asleep, frequent night awakenings, daytime sleepiness, and nightmares. In terms of mental health outcomes, a considerable proportion of adolescents reported experiencing symptoms of anxiety, depression, and stress at least “sometimes,” with many indicating these symptoms “often.” Academic pressure emerged as a significant stressor, contributing to excessive worry, irritability, concentration difficulties, and emotional distress. Physical symptoms of stress, such as headaches and stomachaches, further highlight the psychosomatic impact of mental strain. The overall findings suggest a meaningful association between poor or irregular sleep habits

and increased levels of anxiety, depressive symptoms, and stress among adolescents. Inadequate sleep and poor sleep hygiene may impair emotional regulation, cognitive functioning, and resilience, thereby increasing vulnerability to mental health challenges.

Therefore, promoting healthy sleep practices—such as maintaining consistent bedtimes, reducing screen exposure before sleep, limiting caffeine intake, and encouraging balanced academic schedules—can serve as an important preventive strategy for improving adolescent mental well-being. Schools, parents, and policymakers should prioritize sleep education and mental health awareness programs to foster healthier developmental outcomes. In conclusion, healthy sleep habits are not merely a lifestyle choice but a crucial protective factor for adolescents’ psychological health, emotional stability, and academic success.

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