

## SLEEP HYGIENE AND ITS IMPACT ON MOOD AND ACADEMIC PERFORMANCE AMONG ADOLESCENT GIRLS: A MULTIDIMENSIONAL REVIEW

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### **Abstract**

*Sleep is a critical component of health, especially during adolescence a period marked by rapid biological, psychological, and social development. Despite the recommendation of 8–10 hours of sleep per night, adolescent girls consistently fall short, often due to poor sleep hygiene practices, academic stress, hormonal changes, and digital media exposure. The present review synthesizes recent findings on the prevalence, factors, and consequences of sleep deprivation in adolescent girls, with emphasis on its relationship with mood disorders, academic performance, and mental well-being. Notably, studies report that over 60% of adolescents experience poor sleep quality, which is linked to increased rates of anxiety, depression, and decreased cognitive functioning. Environmental factors such as screen exposure, caffeine intake, and irregular schedules were identified as major disruptors. Furthermore, puberty-driven circadian shifts and early school start times exacerbate sleep debt. Recommendations include promoting sleep education, limiting night-time screen use, and advocating for policy changes like later school start times. Improving sleep hygiene may be a crucial and modifiable factor in enhancing both academic outcomes and emotional resilience in adolescent girls.*

**Keywords:** Sleep hygiene, adolescent girls, academic performance, stress

### **INTRODUCTION**

Sleep is an essential physiological function that plays a pivotal role in brain development, emotional regulation, and physical health. During adolescence a stage marked by intense growth and psychosocial changes the demand for restorative sleep increases. Despite this, studies consistently show that adolescent girls are failing to meet sleep recommendations of 8–10 hours per night, often averaging only 6-7 hours on school nights [12].

According to the Pittsburgh Sleep Quality Index (2017), more than 60% of

the world's population suffer from poor sleep quality. Approximately 68.3% of students worldwide report problems sleeping due to inappropriate sleep habits that do not take into account sleep hygiene practices. Of these students, 50% complained about sleepiness on the day and at the 1st, and 70% gave them sleep deprivation. Sleep deprivation was classified as the third most common disorder among students and was associated with lack of attention, fatigue in academic outcomes, poor driving skills, carefree behaviour, depression, disrupted social interpersonal relationships, and poor

health. Evidence from research studies determined that the average number of sleep time under university students was reduced. College students often refrain from studying and making contacts on the week, and sleep on weekends and on malfesse caffeine, alcohol and other drugs. It showed that university students reported high levels of excessive sleepiness that day (5%), and were associated with coffee/tea consumption, alcohol consumption, and smoking. Certain habits and lifestyle factors, biological, psychological, parental, group pressures, and environmental factors negatively affect the quality of sleep in professional college students. The main factors that affect sleep are irregular sleep schedules, pressure, stress, relationships with classmates, the dorm surroundings, and delayed beds [11].

Sleep trains and PSQ are associated with reduced attention, concentration and memory, all of which are essential for maintaining effective learning and medical knowledge. Furthermore, PSQ increases individuals' sensitivity to various sleep disorders such as anxiety, depression, and insomnia, further affecting medical students' academic achievements and learning ability. To maintain a healthy period of sleep, a person can follow many behavioural and environmental factors that positively affect sleep quality and lead to vigilance during the day. This is commonly referred to as sleep hygiene. Some good sleep hygiene practices include consistent sleep times. Do not eat caffeinated drinks late in the day. Don't tire of physical or mental activity, hunger,

thirst, or large mixed diets. Environmental factors for good sleep hygiene include avoiding slight exposure before bedtime and creating a calm, cool, comfortable, dark floor. Good sleep hygiene is important for students. Because it helps you reduce daytime sleepiness, fall asleep more easily, and organize in her circadian rhythm. All of these factors are inherently important for optimizing mental health and endocrine function. Furthermore, inappropriate sleep hygiene practices and PSQ were associated with poor academic achievement among university students [18].

To identify relevant literature, a systematic review of the literature on sleep duration and mood among young people was performed using the academic databases Psycinfo, PubMed, Medline, Scopus, and Embase. Seventy-four studies, including 361,505 youths, were taken from 153 identified references, of which 73 were suitable for meta-analysis. Pooled results showed less sleep associated with an increased likelihood of mood defects and a 55% increase. Positive mood shows the greatest relationship with sleep duration, followed by anger, depression, negative effects, and anxiety [16].

Sleep hygiene practices are defined as behavioural practices that promote good sleep quality, reasonable sleep duration, and effective vigilance. Sleep hygiene is considered multidimensional and affects sleep duration and wakefulness, quality of the sleep environment, behaviour, emotions and physiological motivation for sleep with a bedtime approach. Sleep

hygiene is considered multidimensional and affects sleep duration and wakefulness, quality of the sleep environment, behaviour, emotions and physiological motivation for sleep with a bedtime approach. Practices to improve sleep hygiene include limiting naps to less than 30 minutes, avoiding meths like caffeine and nicotine near the bed, 10 minutes of aerobic exercise per day, and proper exposure to natural light during the day and at night, encouraging normal beats such as a better sleep cycle and a warm bath. Your bedroom needs an ideal temperature and a warm, dark and comfortable environment. Light from a lamp, cell phone, Television, or device causes difficulty when falling asleep[10].

During adolescence, the risk of sleep decisions is increasing around adolescence. This is due to the circadian rhythm that changes several hours after the second year of life. It makes it difficult for young people to sleep before going to bed, which leads to waking up at night, resulting in less sleep overall. This is further strengthened by the fact that school start later sleeps due to changes in rhythm, but not adjusted accordingly. Teens are expected to stick to the early beginnings of school, which leads to changes in circadian rhythms. This has several negative effects on people's minds, such as depression, anxiety, and stress. It can also affect individual social development and family life. This can affect the academic achievement of young people. Additionally, it has negative consequences for your physical health, including obesity,

hypertension and increased risk of heart disease. There was also self-harm, suicidal behaviour, and thought escalation among young people with direct correlations for lack of sleep [6].

Sleep disorders and inadequate intake are associated with drowsiness and negative health in daily and negative health, including impaired cognitive performance, mood, immune function, cardiovascular risk, weight and metabolism. Psychologists are increasingly focusing on social media, particularly selfie reduction and the impact of publications on youth. Searching for validation by "like" is essential to shaping identity and social interactions, but can lead to mental health issues and social media addiction. Students switching from high school to medical college [15].

Furthermore, previous studies have killed lower sleep hygiene habits. Current research on sleep hygiene behavior investigates how excessive use of technology is associated with poor sleep quality. The use of technology can be a truly unsettling period of sleep, as the blue light emitted from electronic devices is exposed and stressful content is observed in the media, preventing the durability of safe and healthy sleep hygiene. Sleep quality is identified as individual satisfaction, a mixture of sleep experiences, mixing of sleep beginning characteristics, sleep retention, awakening time, and attention. There may be several definitions of sleep quality from one person to another. For those who start sleep, the duration of sleep can be a sleepy

sleep. In contrast, relative difficulty in sleep is hardly important for those who are anxious and complain about repeated excitement [1].

[8] conducted an epidemiological overview of sleep disorders in the general population in 2017 and concluded that 1/3 of the general population has insomnia, between 4% and 26% experience excessive sleepiness, and between 2% and 4% experience obstructive sleep apnea, 32.1% for a general sleep disturbance, 43.2% for insufficient sleep, 5.3% for circadian rhythm sleep disorder, 6.1% for parasomnia, 5.9% for hypersomnolence, 12.5% for restless legs disorder and limb movements during sleep, 7.1% for sleep-related breathing disorder, and 12.2% for the presence of comorbidity.

A cross-sectional study was done by [14] and participants were schools of healthy men and women between the age group of 15 and 19 years ( $n = 132$ ). Stress was assessed based on the perceived stress scale (PSS), and sleep hygiene was assessed using the Epworth sleepiness scale for children and adolescents (eating chads). The results show that 8.8% of all information youths are academically overloaded. Both genders were moderately emphasized (male: 63.6%, female: 66.7%). The prevalence of sleep disorders was 23.5%, and stress was found to be associated with poor sleep quality. Discussion: This study shows that the prevalence of stress is high in young people and that their sleep hygiene has a negative effect. Therefore, early identification and management of school

stress is necessary to delay due to better academic achievement and wells.

The cross-section study was conducted by [7] and this study included 60 youths aged 10-18 years and was conducted in three central Kara districts in questionnaires that included elements of the PSQI scale and demographic information. Seven components were the most important parameters: subjective sleep quality, sleep delay, duration of sleep, habitual sleep efficiency, sleep disorders, sleep disorder use, and daily dysfunction. Results show that the mean age of the group was 1 years (SD: 0.0). Male students participated in this study, with 307 (50.8%) and 297 (9.1%) female students. In 90 (1.9%) students developed stressful life situations, with 37 (6.1%) males and 53 (8.7%) female students. 126 students (20.8%) reported the presence of the disease, with 61 (10.1%) and 65 (10.7%) women below. Students with stressful life events (39.56%) and 36 (28.57%) with medical problems have shown poor quality of sleep. Sleep disorders were reported higher for students with stressful life event 2 (2.19%) and disease 2 (1.58%). Illness students reported a higher rate of stressful life events 20 (21.97%). Most young people have high quality sleep, with some associated with sleep disorders.

A community-based cross-sectional study in southern Greece, 831 students between the ages of 13 and 19, completed a self-registered online questionnaire in terms of sleep and health habits. Data were mostly numerical or categorical, and

analyses were performed using T-test, Chisquare tests, and several logistics regressions. On weekdays, students sleep averaged  $7\pm1.1$  hours, significantly lower than  $7.8\pm1.5$  hours on weekends ( $P<0.001$ ). Almost 79% say they wake up and sleep inadequate, but at school, at least 73.8°LT made them sleepy at least once a week. Adequate sleep time $\geq8$  hours) is positively correlated with better academic performance (OR: 1.8, CI: 1.06–2.07,  $P = 0.022$ ) and frequent physical exercise (Never/rare: 13.5%: Sometimes: 21.2%: 65.3%;  $P = 0.002$ ). Conversely, there was a negative correlation between both adequate sleep and smoking (OR: 0.29, CI: 0.13–0.63) and alcohol consumption (OR: 0.51, CI: 0.36–0.71,  $p = 0.001$ ). In summary, this study shows that Heraklion and Crete students often experience sleep deficiency, which is associated with endangered academic achievement, reduced physical activity, and increased odds of unhealthy behavior such as smoking and alcohol consumption [2].

## **FACTORS AFFECTING SLEEP IN ADOLESCENT GIRLS**

### **Technology and Screen Time**

A New Zealand study of 692 adolescents (average age 16.8 years, 59% girls) found that each extra hour of evening screen time increased the odds of poor sleep efficiency by 20% and Girls reported significantly more poor-quality sleep (63%) than boys (44.5%), with higher technology use and caffeine intake [5].

### **Caffeine and Dietary Patterns**

A 2024 meta-analysis of 33 studies (ages 12–18) confirmed that high caffeine intake was linked to 67% increased odds of sleep problems (OR=1.67), while alcohol consumption correlated with insomnia (OR=1.17)[20].

### **Poor Sleep Hygiene Practices**

A meta-analysis of 41 studies (85,561 adolescents) identified good sleep hygiene (consistent routines, tech avoidance, physical activity) as protective, while factors like evening light, technology, and caffeine were risk factors for delayed sleep onset and reduced duration[3].

### **Light Exposure and Social Media**

Among adolescent girls and athletes, evening light exposure from screens increased sleep latency. Social media stressed girls more than boys, worsening fall-asleep time[4].

### **Pubertal & Hormonal Changes**

A large longitudinal study (N=4,682; 49% girls; ages 10–13) found that pubertal progression led to shorter, more variable sleep, which in turn increased family conflicts proxy for psychosocial stress[13].

## **EFFECTS ON MOOD AND ACADEMIC PERFORMANCE**

**Mood Disorders:** Meta-analysis of 361,505 teens shows that each hour of lost sleep increases the likelihood of mood issues by 55%, affecting happiness, anger, anxiety, and depression[16].

### **Depression & Daytime Performance:**

Girls with poor-quality sleep report more

depression, daytime sleepiness, and lower alertness these in turn correlate with academic difficulties[17].

**Academic Outcomes:** Adolescents logging  $\geq 8$  hours have a 1.48 greater chance of better academic performance [19].

### **SLEEP DURATION AND PSYCHOLOGICAL DISTRESS**

A longitudinal study (Fit Futures) showed that an extra 30 minutes per night reduced distress scores by 0.07, with similar effects in girls and boys[9].

### **RECOMMENDATIONS FOR ADOLESCENT GIRLS**

- **Sleep Schedule:** Go to bed and wake up at roughly the same time even weekends to avoid “social jet lag.”
- **Wind-Down Routine:** Incorporate device-free time and calming activities (reading, light stretching).
- **Limit Caffeine & Screens:** Avoid caffeine after late afternoon and screens 60 minutes before bed.
- **Environment:** Keep the bedroom dark, quiet, and cool.
- **Education & Monitoring:** Schools and families should set up sleep education programs and support healthy routines.
- **Advocacy:** Communities should consider advocating for later school start times.

### **CONCLUSION**

The present review highlights the growing concerns regarding sleep deprivation and

poor sleep hygiene among adolescent girls, a demographic uniquely vulnerable due to biological, psychological, and social transitions. Inadequate sleep has far-reaching implications from mood instability and academic underperformance to increased risk for chronic health conditions and mental illness. As the evidence demonstrates, contributors such as late-night technology use, caffeine consumption, academic stress, and circadian rhythm shifts significantly interfere with sleep quantity and quality. Moreover, environmental and psychosocial pressures amplify these effects. Addressing these issues through improved sleep hygiene practices, supportive family and school environments, and community-level interventions can play a transformative role. Sleep education and behavioural modification strategies should be integrated into adolescent health programs. Prioritizing sleep as a pillar of adolescent wellness is not merely beneficial it is essential for their mental, emotional, and academic development.

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