



A STUDY ON SLEEP BEHAVIOR AND SLEEP CHALLENGES AMONG CHILDREN AGED 6 TO 15 YEARS ATTENDING A TERTIARY CARE HOSPITAL

Paediatrics

Dr Bhavya Shree H M*	Junior Resident, Department of Paediatrics, BGS Global Institute of Medical Sciences, Kengeri, Bengaluru, Karnataka, India *Corresponding Author
Dr Vinod Muniyappa	Professor, Department of Paediatrics, BGS Global Institute of Medical Sciences, Kengeri, Bengaluru, Karnataka, India
Dr Nagajyothi S	Associate Professor, Department of Paediatrics, BGS Global Institute of Medical Sciences, Kengeri, Bengaluru, Karnataka, India
Dr Shruthi K	Assistant Professor, Department of Paediatrics, BGS Global Institute of Medical Sciences, Kengeri, Bengaluru, Karnataka, India
Dr Madhukiran B T	Assistant Professor, Department of Paediatrics, BGS Global Institute of Medical Sciences, Kengeri, Bengaluru, Karnataka, India

ABSTRACT

Background: Sleep is vital for children's physical and mental development. However, modern lifestyle factors such as increased screen time, academic stress and reduced physical activity are impacting children's sleep quality. This study aimed to assess sleep behavior and identify sleep-related challenges among children aged 6–15 years attending a tertiary care hospital. **Methods:** A cross-sectional observational study was conducted between April 10 and May 10, 2025, in the Department of Pediatrics at BGS Global Institute of Medical Sciences, Bengaluru. A total of 150 children aged 6–15 years were selected using convenient sampling from outpatient and inpatient departments. Data were collected through parent interviews using a predesigned proforma after informed consent. Sleep disturbances were evaluated using the Sleep Disturbance Scale for Children (SDSC), with scores above 39 indicating a disturbance. Statistical analysis was done using SPSS version 22. **Results:** Among 150 children (mean age 10.47 years; 51% female), 51.3% had SDSC scores above the threshold. Common disturbances included difficulty falling asleep, daytime sleepiness, morning fatigue, and resistance to bedtime. Sleep issues were more prevalent among children with over 3 hours of screen time per day, lower academic performance, and limited outdoor play. **Conclusion:** There is a high prevalence of sleep disturbances among children, significantly associated with screen exposure and limited physical activity. Early identification through regular screening and promotion of healthy sleep practices are essential to mitigate long-term effects.

KEYWORDS

Sleep disturbances, SDSC Questionnaire, Screen time, Sleep hygiene.

INTRODUCTION

Sleep is a reversible behavioral state during which perception is reduced and responsiveness to external stimuli diminishes. Adequate sleep is essential for children's physical, cognitive, and emotional development, though sleep duration and patterns vary with age.

Recent studies indicate a growing prevalence of sleep disturbances among school-aged children and adolescents, including difficulty falling asleep, frequent night awakenings, and excessive daytime sleepiness. Contributing factors may include academic pressure, increased screen time, irregular routines, environmental stressors, and behavioral challenges. Despite affecting nearly 25% of children, sleep issues are often underreported, frequently misattributed to normal developmental behavior¹.

Parental reports suggest sleep onset difficulties in approximately 13.5% of children, while self-reports indicate up to 24%. Moreover, around 60% of children with sleep disturbances experience persistent symptoms for over a year². Such disturbances can significantly impact daily functioning, particularly academic performance, leading to daytime drowsiness, irritability, learning difficulties, and poor school outcomes³.

In developing countries especially in India, the cultural emphasis on excellence in academics, arts, and extracurricular often places undue pressure on children, adversely affecting their mental, physical, and sleep health.

This study aims to assess sleep patterns and behavioral challenges in children aged 6–15 years attending a tertiary care hospital. These settings provide a diverse population for evaluating sleep issues and associated risk factors. The findings are expected to raise awareness among healthcare providers and caregivers, supporting timely interventions to improve pediatric sleep health.

The objective of the study were to characterize sleep behaviors and determine the prevalence and types of sleep difficulties among children aged 6–15 years attending a tertiary-care hospital in

Bengaluru and to identify parent-perceived causes of sleep disturbances in this population.

METHODOLOGY

The study was cross-sectional and observational study, conducted over a period of 1 month, from April 10 2025 to May 10 2025, in Department of Paediatrics, BGS Global Institute of Medical Sciences and Hospital, Kengeri, Bengaluru. Convenient sampling technique was used. The study was initiated after obtaining approval from the Institutional Ethics Committee. Children aged 6 to 15 years attending the Paediatric Department of BGS Global Institute of Medical Sciences and Hospital, who met the inclusion criteria, were enrolled.

Considering prevalence of sleep disturbances as 48% (Riya Mary Tharakan et. al) with an absolute precision of 8% and confidence level of 95%, the minimum sample size required for the study was 150.

Exclusion Criteria

- Children with neurologic and psychological illness
- Those on treatment with antiepileptic or any other drugs likely to affect sleep
- Children with medical illness (like Hypothyroidism/ Asthma/ GERD/Cardiac disorders).

Informed consent was taken from the parents or guardians of the eligible participants. They were then asked to complete a demographic information form and a predesigned questionnaire regarding their child's sleep behavior.

The Sleep Disturbance Scale for Children (SDSC), developed by Bruni et al. in 1996 and endorsed by the European Sleep Research Society, was used as the assessment tool for evaluating sleep disturbances. The SDSC is a standardized, validated instrument widely used in pediatric sleep research⁴.

It comprises 26 Likert-type items, grouped into six subscales that reflect common sleep disturbances in children and adolescents: disorders of initiating and maintaining sleep, sleep breathing

disorders, disorders of arousal, sleep–wake transition disorders, disorders of excessive somnolence, and sleep hyperhidrosis.

Each item was rated by the parent, and the total score ranged from 26 to 130. A total score above 39 was considered indicative of sleep disturbance, based on previously established diagnostic criteria, with a sensitivity of 0.89 and specificity of 0.74⁴.

Statistical Analysis

The applicable data will be collected and entered into an MS Excel Spreadsheet. The data analysis will be carried out using Statistical Package for Social Sciences (SPSS) version 22. The appropriate Parametric and non-parametric tests will be used for the analysis of the data. $P < 0.05$ will be considered statistically significant.

RESULTS

A total of 150 children were included in the study.

The age wise distribution of the sample is depicted in Figure 1

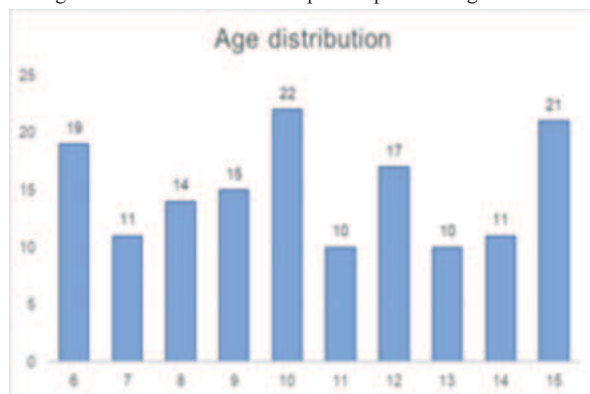


Figure1: Graphical Representation Of The Age Wise Distribution Of The Children Studied

The study population was 51% Female (77) and 49% Male (73). The gender wise distribution of the sample is depicted in Figure 2.

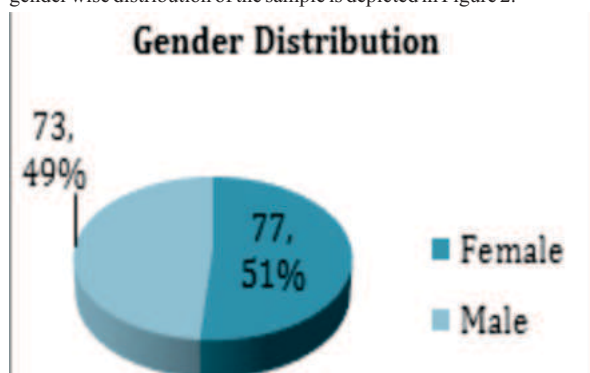


Figure 2: Graphical Representation Of The Gender Wise Distribution Of The Children Studied

Among the 140 children, 77 children (51.3%) had a score more than 39 which implied that they had some form of sleep disturbance (Figure 3).

Among the 6 domains which were subcategorized, the most commonly observed sleep disturbance was in the domain of initiating and maintaining the sleep, sleep wake transition disorder, followed by Disorders of excessive somnolence.

In our study, parents reported 14% of children had problem in falling sleep even after 30 minutes of getting on bed.

Bruxism was present in 14.6% of study population, of which 6% having it often (3 to 5 times per week). During sleep, it was found that 27.3% of children have sleep talking, 4.6% have sleep walking, 16% of children have hypnic jerks, 16% of children felt day time sleepiness and 15.3% felt day time tiredness, 12.6% of children had snoring issues. 4% of children experienced Nightmares (3 to 5 times a weeks). Prevalence in sleep challenges is depicted in Table 1

Variable	Prevalence	Percent (%)
Difficulty in falling asleep (> 30min.)	21	14
Teeth Grinding	9	6
Sleep talking	41	27.3
Sleep Walking	7	4.6
Snoring	19	12.6
Day time sleepiness	24	16
Day time tiredness	23	15.3
Hypnic jerks	24	16
Night terrors/ Night Mares	6	4

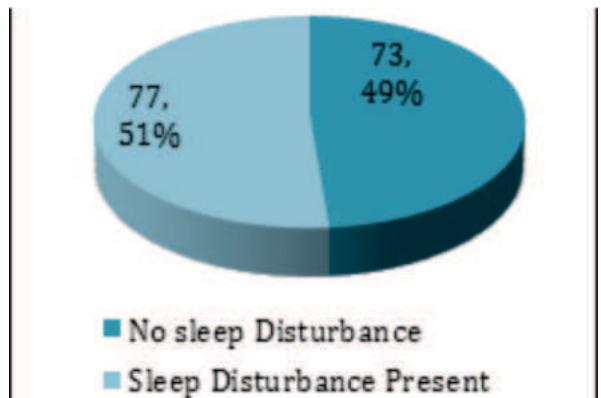


Figure 3: Graphical Representation Showing The Percentage Of Children With Sleep Disturbance

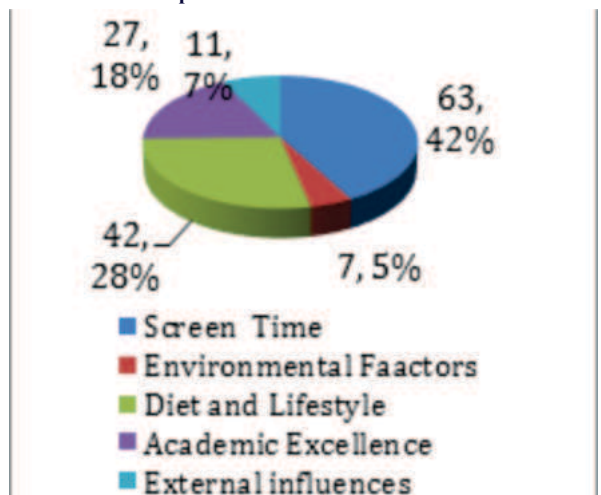


Figure 4: Various Probable Causes Of Sleep Disturbances In Children As Perceived By The Parents

The most common cause of sleep disturbance in the age group of 6 to 15 years was excessive screen time, use of smart phones, gadgets and television (42%), Diet and life style – less physical activity and junk food consumption (28%) followed by 18%, academic excellence pressure.

The various probable causes of sleep disturbance as perceived by the parents are depicted in Figure 4.

In our study, over 50% of children exceeded more than 3 hours of screen time daily, which was significantly linked to poor sleep and lower physical activity.

DISCUSSION

This study found that 51.3% of children aged 6–15 years had sleep disturbances, aligning with previous Indian research by Tharakan et al., who reported a prevalence of 48%⁵. The most common issues identified were related to initiating and maintaining sleep, sleep–wake transition disorders, and excessive somnolence. Notably, 14% of children had difficulty falling asleep even after 30 minutes in bed, while 27.3% experienced sleep talking, and 16% reported hypnic jerks—findings consistent with earlier studies highlighting parasomnias and non-restorative sleep symptoms in this age group.

Bruxism (14.6%) and snoring (12.6%) raise concerns for underlying sleep-disordered breathing, which may require further evaluation. Additionally, daytime symptoms such as sleepiness (16%) and tiredness (15.3%) suggest functional impairment that could affect academic performance, as supported by Beebe et al., who linked poor sleep quality to lower grades and behavioral issues in children⁹.

A key finding was that 42% of parents attributed sleep issues to screen exposure, particularly smartphones and television. This reflects a growing concern about the impact of screen time on melatonin suppression and circadian rhythm disruption, especially when used near bedtime. These findings mirror those of Thomas et al., who found delayed sleep onset in adolescents with excessive digital device usage⁷.

Lifestyle factors like low physical activity and poor diet were cited by 28% of parents as contributing factors, underscoring the importance of holistic health habits. Academic stress, reported by 18% of parents, also played a role, reflecting the pressure children face in competitive academic environments—particularly in urban Indian settings.

No significant gender differences were observed, but sleep disturbances were more common in specific age groups (10 and 15 years), likely due to developmental transitions during pre-adolescence and adolescence.

Need for Pediatric Screening

Despite its high prevalence, pediatric sleep disturbance is often underreported. Simple screening tools like SDSC can help identify children at risk early. This is particularly relevant in outpatient settings where concerns about academics or behavior may mask underlying sleep issues.

This study emphasizes the need for regular screening of sleep behavior during pediatric visits, alongside parental education on sleep hygiene. Given the high prevalence and potential long-term consequences, promoting healthy sleep practices through lifestyle counseling and limiting screen exposure should be part of routine child health care.

Limitations: single-center design, small sample size, cross sectional study and reliance on parental reporting.

CONCLUSION

This study highlights the high burden of sleep disturbances in children aged 6–15 years. The most common symptoms were difficulty falling asleep, parasomnias, and daytime fatigue. Screen exposure and lifestyle habits were key contributing factors.

Routine sleep assessments during pediatric visits, parental education on limiting screen time, and promoting regular routines can improve children's sleep and overall health. Pediatricians should actively inquire about sleep during clinical consultations to facilitate timely intervention.

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Conflict of Interest: None declared

Ethical Approval: The study was approved by the Institutional Ethics Committee

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