

Pattern and Problems of Sleep among Rural School going Children

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ABSTRACT

Introduction: Sufficient sleep is essential in children as it directly impacts mental and physical development. However, chronic sleep loss continues to increase in our country. In this context the present study aimed to shed light on the sleep schedule and pre-sleep behavior, of school going children.

Material and Methods: A cross sectional interview study was conducted on 380 school children of 4th-10th standard from 4 Government schools of Chennai within 10 km of Madha Medical College. The schools were selected by simple random sampling method. Childrens Sleep Habit Questionnaire was administered to them from August 2014 to January 2015.

Results: This study included 380 school children, 8-17 years with a mean age of 13.5±2.02. More than half 234 of the children were girls (61.6%). Total sleep time on weekdays was 8.4 hours that increased to 9.8 hours on weekends. Watching Television before going to bed was found in 92.6% of the children. Room sharing with family members was seen in 95.2% of the children. Co-sleeping was observed in 98.4% of the children. Day time sleepiness was observed in 63.2% of the children.

Conclusion: It has been observed from our study that there is a chronic sleep loss in the children which has to be addressed by creating awareness among the parents and the children regarding the importance of sleep. Regular sleep studies could be conducted in the schools to implement effective interventions for the harmful sleep habits like watching Television before going to bed.

Keywords: School Children, Co-Sleeping, Sleep Duration

INTRODUCTION

Sleep is an important part of everyone's life. One of the most important functions of sleep is the reorganization of the neural networks in the brain. During the day, new things are learnt, memorized, new skills are acquired, and new memories are set through creative associations. After a full day of waking, the brain is full of disorganized pieces of information that need to be integrated with things we have learned earlier in the day. Without this re-organization, the brain would harbor chaos, and would quickly run out of space to store new memories. Sleep is crucial for good health. It strengthens the immune system, fights inflammation, keeps in check the cell adhesion so that the heart and blood vessels are protected and helps in memory and mood. Due to various reasons, either due to societal changes, lifestyle choices, hectic school schedule; chronic sleep loss has become common in our society.¹⁻⁵ On average children aged 8-17 years need 9-11 years of sleep.⁶ But there is an increasing demand on their time from school (e.g., school projects), sports and other extracurricular and social activities. In addition, school-aged children become

more interested in TV, computers, the media and the Internet as well as caffeine products.^{7,8} – all of which can lead to difficulty falling asleep, nightmares and disruptions to their sleep. In particular, watching TV close to bedtime has been associated with bedtime resistance, difficulty falling asleep, anxiety around sleep and sleeping fewer hours.

The consequences of untreated sleep problems may include significant emotional, behavioral, and cognitive dysfunction.⁹⁻¹⁴ Surprisingly little attention has been paid to the impact of sleep problems in the vital preschool years and there have not been enough studies investigating etiologic factors of these problems.^{8,15} The best way to be sure that one is sleeping enough, is to wake up spontaneously without the use of an alarm clock and to feel rested once up.

The purpose of this study was to find out the sleep pattern of the school going children aged 8-17 years.

MATERIAL AND METHODS

This was a cross-sectional study incorporating parental report about the sleep habits and problems of school going children, conducted from August 2014 to January 2015. After obtaining permission from the institutional ethical committee, we selected 4 rural schools of Chennai randomly by using simple random sampling method. We collected the list of Government schools within 10 km of the college, assigned a number to each of the school. A table of random numbers was used to select the schools to be included in our study. The timing of all the schools that were included in our study was from 8.00 am to 3.00 pm. Permission was taken from the school authorities to conduct the study during their parent teacher meeting. The parents were contacted during the parent teacher meeting and the Children's Sleep Habit Questionnaire¹⁶ was administered by us.

The children with chronic illness, neurological problems and on medication affecting sleep were excluded from the study. The children included in the study were 380 of 4th to 10th standard from four Government Schools.

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The Questionnaire consisted of two sections. The first section consisted of the demographic details and questions related to co-sleeping behaviour of the child. It also had the written informed consent form. The second section consisted of Childhood sleep Habit Questionnaire (CSHQ). All the items were responded by the parents.

The Childhood sleep habit questionnaire consists of 31 items. The questionnaire tells us about the bedtime and wake time on week days and weekends and also the naps during the day. It has subscales that tell us about the bedtime behaviour, sleep related breathing disorder, day time sleepiness and sleep behaviour. Sleep duration of less than 9 hours was considered as short sleep duration.

STATISTICAL ANALYSIS

Statistical analysis was done using SPSS v 21. Descriptive statistics was calculated. Normality of data was checked based upon visual analysis of the Q-Q plot curve.

RESULTS

In the present study 380 school children aged 8-17 years were included in the study. The mean age of the children was of 13.5±2.02 years, 234 (61.6%) were girls and 146 (38.4%) were boys.

On school days 168 (44.2%) of the children went to bed between 10-11 pm to wake up between 6 – 7 am. Average sleep latency was 16.6 (SD=10.6) min. They spent around 8.4 hours (SD = 1.3) hours in sleep on school days. During the weekend the children went to bed between 11-12 pm to wake up between 9-10 am. There was no change in sleep onset latency but the time of going to bed and the wake time was delayed by 1-3 h. The total sleep time was increased by about 1-2 h on the weekends. They spent around 9.8 (SD=1.4) hours of sleep on the weekends as shown in Table 1.

Sleep Pattern	Children
Age	13.5±2.02 years
Bed time school days (p.m.)	10-11
Sleep onset latency school days (min)	16.6±10.6
Wake time school days (a.m.)	6-7
Total sleep time school days (h)	8.4±1.3
Bed time weekend (p.m.)	11-12
Sleep onset latency weekend (min)	16.6±10.6
Wake time weekend (a.m.)	9-10
Total sleep time weekend (h)	9.8±1.4
*Values presented as mean and SD	

Table-1: Sleep patterns among rural school going children

Pre Sleep Behaviour	Children (N)	(%)
Watch Television	352	92.6%
Book reading	22	5.8%
Playing with mobile	6	1.6%
Sharing bed room	362	95.2%
Sharing bed with family members	374	98.4%
Day time sleepiness	240	63.2%
Afraid to sleep alone and in the dark	234	61.6%

Table-2: Pre Sleep Behaviour among rural school children

Pre sleep behaviour: Most of the children (92.6%) were watching television before going to bed. Some of the children 22 (5.8%) were reading a book before going to bed and some of the children 6 (1.6%) were playing with their mobile before going to bed. More than half of the children 234 (61.6%) were afraid of sleeping alone and in the dark. Most of the children 362 (95.2%) were reported to share their bedrooms with their siblings or their family members and almost everybody 374 (98.4%) were sharing the bed with their siblings or parents. More than half of the children 240 (63.2%) were sleepy during the day.

DISCUSSION

In our study it was observed that the sleep duration of the children was 8.4 hours during week days. Guidelines for healthy sleep recommend that over a 24 hour period school aged children require 9 – 11 hours of sleep. During the weekends they were having adequate amount of sleep, but in the long run these children would suffer from sleep debt. The short term impact of sleep debt is that it may lead to obesity in children, may foster negative, depressive thoughts, in addition to that these children may process positive experiences as less pleasurable or memorable.¹⁷ The long term impact of sleep debt in school going children lays a road map for early trouble as they may not be able to concentrate so school becomes more challenging, mental health gets affected and tendency for committing suicide, tendency to go into substance and alcohol abuse may start early.¹⁷

Most of the children were watching Television before going to bed. Watching TV stimulates our brains and bodies at a time when we should be winding down, and the extra light we expose ourselves to when we peer at a screen could be throwing off our body clocks. This is because when it gets dark, our bodies release a hormone called melatonin that helps make us sleepy, and pre-bedtime bright light exposure especially exposure to the blue light emitted by screens large and small weakens melatonin release. Affect on sleep due to television watching was addressed by various authors in their studies.^{18,19,20} They have reported in their studies that there was a reduction in the total time spent in sleep, they also they had difficulty in waking up every day and they felt sleepy during the day. Another study reported that the duration of sleep was reduced by seven minutes for each hour spent on television.²¹ This issue could be addressed as it is an important modifiable factor that affects the sleep of the children.

Reading a book before going to bed is practiced by some children in our study. Reading a book reduces our stress levels by focusing the mind, distracting us from stressful thoughts, releasing muscle tension and lowering the heart rate.²² The other advantages are it creates a bond between children and parents, encourages children to read, establishes a habit of reading, to draw attention of the child for teaching good things through books and also opening the doorway for the children to write.

Some of the children were playing with mobile phones

before going to bed. Playing with mobile phones reduces the quality and quantity of sleep, they take longer time to reach the deeper stages of sleep and also spend less time in them.²² Deep sleep is very important for the body as this is the time when the body rejuvenates cells and repairs damage suffered during the entire day.

Co- sleeping has been found in most of the children in our study. Co sleeping is the practice of parents and young children sleeping in the same bed. In our study it was observed that almost all the children were sharing the bed with either siblings or parents. The disadvantage is that once the child gets used to co-sleeping, it becomes difficult for the parents to make them sleep independently in their own rooms.²¹ Co-sleeping has known to foster childhood dependency which may not be good for the child in the long run.

Day time sleepiness was observed in more than half of the children in our study. The prevalence of excessive daytime sleepiness in school children has varied across studies, ranging from 17.90% to 64.90%.^{23,24} It may lead to learning and attention deficit in children. This can be easily avoided by sleeping adequately at night.

It was observed in our study that more than half of the children were afraid to sleep alone and in the dark. Though every child is afraid to sleep alone sometimes, but before the fear turns into phobia, it should be tackled by reassuring the children about the fear or any stress at school or a scary movie or anything that is worrying them.

CONCLUSION

In our study it was observed that most of the children were watching Television before going to bed which may be the reason for delayed bed time among them. Sleep duration on weekdays was less than that is required per day. There is a need to address the importance of sleep hygiene among the children and their family members as sleep deprivation in the long run is detrimental to the health of the children. Sleep habits must be considered to be included along with nutrition and exercise in healthy lifestyle choices. This requires raising the awareness regarding the sleep needs especially of the school going children within school, family and community. Simple measures like setting a bed time for children and restricting watching Television, playing with mobiles or any gadgets before going to bed should be taken care of.

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