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Sleep Habits and Sleep Patterns in Healthy Adult Population in Chennai

Medical Science

KEYWORDS : sleep pattern, sleep quality, adolescents, academic performance

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ABSTRACT

Sleep disturbances affect daytime behavior and cognition functions in children. It is essential to study the quality of sleep in adolescents, as it is a way to approach their psychosocial difficulties.Objectives: To determine the prevalence of sleep disorder and to analyze the variations in sleep habits in south Indian adolescents.Materials and Methods: The study was done among 300 students in St. Bead's higher secondary school, Chennai, India. Females were excluded from this study. This was a self report study using a questionnaire. The data was collected and analyzed statistically. Results: Sleep quality: About 16% of the students have less than 6 hours of sleep per day, 70% of students have sleep between 6-8 hours per day and 18% of students have sleep more than 8 hours per day. About 41% of students have reported sleep disturbances due to exam stress. Classroom sleepiness was found in 30% of the students and evening sleep was found in 9% of the students.35% of the students are involved in television watching and 9.6% are involved in computer related activities before bedtime. It was found that 51% of the students who were involved in sporting activities had less sleep related problems but increased quality of sleep. It was also found that academic performance had no relation with sleep habits. Conclusion: The issue of day time sleepiness, television watching, night time computer related operation represents major concerns on the sleep pattern and behavior in high school children in south India.

INTRODUCTION

Sleep affects physical growth, behaviour and emotional development besides determining cognitive functioning, learning and attention(1). Apart from physiological, psychological and environmental factors, socio-cultural factors also play a major role in determining sleep pattern of a person(1-4). However, the variations within such a population and relationships between the various aspects of behaviour relating to sleep and wakefulness have not been described adequately. Much of the emphasis in the many sleep laboratories which have been established throughout the world has been on all-night electroencephalogram monitoring.(5)

Important as such methods are in providing basic information on the nature of sleep and dreams, they do not tell us all we want to know about people's usual pattern of sleep and wakefulness and the factors which influence this pattern. For instance, electronic methods used in the laboratory do not tell us at what time our experimental subject usually goes to bed and to sleep at night when he is at home, nor do they tell us how often he dozes during the day, how often he takes sleeping tablets, how he feels about the quality of his sleep, and so on. This information can be obtained by means of detailed subjective reports in the form of either daily sleep charts kept for several weeks or a sleep questionnaire. Such methods of subjective reporting have been used among various occupational groups as well as hospital patients and healthy people of different ages (6).

METHODS AND MATERIALS

It was a Cross-sectional questionnaire-based study. The study was done on 300 students in St.Beads higher secondary school, Chennai, India. This was a self report study using a questionnaire which included items about sleep pattern and also about other day to day activities like sports, indulgence in computer related operations and television watching before bed time. This was a self report study using a questionnaire which included items about sleep pattern and also about other day to day activities like sports, indulgence in computer related operations and television watching before bed time

SLEEP QUESTIONNAIRE

A questionnaire was designed which asked such questions as 'at what time do you usually go to bed at night on weekdays?', and 'how would you describe your usual sleep?'. A range of possible answers was provided and the most appropriate were selected by each student. The total delay before falling asleep, duration of night awakenings and of sleep during the night and day, etc., were each calculated in hours per week rather than hours per 24 hours, thereby partially overcoming differences between weekdays and weekends which have been described elsewhere for hospital patients (7) and which have been reported here also. The answers to questions relating to the frequency of recall of nightmares and difficulty in getting off to sleep were recorded only as 'yes' or 'no'.

SPSS 10.0 for Windows was used for the statistical analysis. Descriptive statistics was calculated for all continuous variables and results are shown as mean±SD. For categorical variables, Chi-Square Test with Category Collapse and the Fisher's Exact Test (wherever applicable) were run. To test the strength of correlation between different sleep parameters two-tailed Pearson's Correlation (between numerical variables) or the two-tailed Spearman's correlation (between categorical versus categorical or numerical variables) were applied.

RESULTS:

The results are summarized in table 1. This was a self report study using a questionnaire. which included items about sleep pattern and also about other day to day activities like sports, indulgence in computer related operations and television watching before bed time. It was found that 51% of the students who were involved in sporting activities had less sleep related problems but increased quality of sleep, where as students who indulge in television watching and computer related activities just before bed time had poor quality of sleep.16% of the students have less than 6 hours of sleep per day, 70% of students have sleep between 6-8 hours per day and 18% of students have sleep more than 8 hours per day. About 41% of students have reported sleep disturbances due to exam stress. Classroom sleepiness was found in 30% of the students and evening sleep was found in 9% of the students.

TIME OF FALLING ASLEEP AND WAKING UP

The mean time of going to bed on weeknights was about 11p.m. but was 1 hour 20 minutes during weekends(Friday and Saturday nights). The mean time for waking up in the morning were much later on weekends than on weekdays. Unlike the times of going to bed, there was a statistically significant difference between the mean times of waking up in the morning both on weekdays and at weekends. The majority of students took less than 15 minutes to fall asleep on weeknights and a few minutes less again at weekends (P < 0 05). However, about 10% took more than half an hour to fall asleep on weeknights and 5% took as long on weekends. Most subjects finally got out of bed less than 15 minutes after waking up on weekdays but spent about three times as long lying in bed after waking up on

weekends (P<0-001).

Table 1:

	Mean time in hours	S.D. in minutes	Statistical Significance of Differences
1. Time of going to bed on Weeknights	23:05	40	
2. Time of going to bed at weekends	00:25	72	1.- 2. P <.001
3. Time of waking up in morning on week-days	07:23	25	3.- 4. P <.001
4. Time of waking up in morning at week-ends	09:12	68	

NIGHT AWAKENING.

The majority of students (63. 7%) did not wake up during the night or woke up less than once per week. The mean total duration of night awakening was 20 minutes per week, and 7% reported more than a total of 1 hour awake during the night each week .The commonest reasons given for waking up during the night were spontaneous awakening, Noise , Light, Night time eating habits, Leg movement . Early morning awakening need to pass urine, noise, nervous tension, and dreams or nightmares. About 41% of students have reported sleep disturbances due to exam stress.

SLEEP DURATION

16% of the students have less than 6 hours of sleep per day, 70% of students have sleep between 6-8 hours per day and 18% of students have sleep more than 8 hour per day.

SLEEP QUALITY

In response to a question about the quality of their usual sleep, 62% of the students described it as 'very good', 35% as 'moderately good', 3% as 'moderately bad', and none described it as 'very bad'. The majority (93.05%) 'never' took hypnotic drugs, 5.5 % 'occasionally' took them, but only 1% took them 'frequently'. A majority of subjects said they had no recall of disturbing dreams or nightmares in recent months, whereas 27% had 'occasional' and 4% had 'frequent' episodes of this recurrence.

SLEEP PATTERN IN THE CLASSROOM

Classroom sleepiness was found in 30% of the students and evening sleep was found in 9% of the students. As a night of bad sleep can have an adverse effect on an adult's performance at work the next day, an insufficient amount of rest can also have a negative impact on how well middle or high school students perform in the classroom.

DISCUSSION

The present study is an overview of the self-reported sleep habits and sleep characteristics among 300 school students and an investigation of some basic relationships within these data. There were large inter individual differences in sleep duration, sleep quality, and sleep pattern.

Our results mainly focus on significant developmental processes in the sleep-wake system during the school-age period and provide normative data on sleep patterns and sleep quality. The results also highlight on the relationship between sleep and subjective daytime sleepiness. The new set of findings includes clear indications that although sleep schedule and sleep quantity vary with age, sleep quality remains remarkably stable within this age group. The prevalence of sleep disruptions was assessed with the use of a new definition based on objective measures of sleep quality.

In our study, The majority of students (63. 7%) did not wake up during the night or woke up less than once per week. The mean total duration of night awakening was 20 minutes per week, and 7% reported more than a total of 1 hour awake during the night each week. The issue of sleep fragmentation, or night waking, during the school-age period merits special attention. The average of close to two night waking per night remains quite stable across the school age period and is strikingly similar to that found with the use of the same methodology in normal infants and toddlers (8).

Multiple factors decide the sleep quality. In our study, in response to a question about the quality of their usual sleep, 62% of the students described it as 'good', 35% as 'better', 3% as ' bad', and none described it as 'worse'. The majority (93.05%) never took hypnotic drugs, 5.5 % occasionally took them, but only 1% took them often. A majority of subjects said they had no recall of disturbing dreams or nightmares in recent months, whereas 27% had rare and 4% had often episodes of this recurrence. In yet another study, it has been repeatedly demonstrated that the sleep of infants, children, and adolescents is sensitive to environmental stress. Increased stress and the anxiety associated with it are likely to activate an alarm response that triggers the activity of the adrenocortical system and facilitates hyper vigilance. (9).

LIMITATIONS

The behavioral aspects of sleep but is limited in its capacity to provide more detailed information on the basic structure of sleep and the underlying physiologic systems. Nevertheless, we believe that this methodology facilitates large-scale studies on children's sleep in their natural sleep settings for future. These studies have special informative value and should be further applied to explore normal and impaired sleep, to accumulate normative data, to establish clear definitions for specific childhood sleep disorders, and to further investigate the relationships between sleep and its impact on child development.

CONCLUSION

Several aspects of the usual pattern of behaviour relating to sleep and wakefulness among school students were investigated by means of a detailed sleep questionnaire. The mean duration and times of sleeping were different from weekdays to weekends. Therefore, the total duration of sleep was calculated in hours per week rather than hours per 24 hours. Multiple environmental factors decide the quality and pattern of sleep. The study can be extended on a huge population in near future.

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