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ORIGINAL ARTICLE

A Study Of Sleeping Habits And Disorders Among School Students Of Pondicherry

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Introduction

Human beings spend nearly 20-25 years of their life in sleep. Although 25 years of sleep sound a bit odd in first look, it is a fact that every human being is a miniature form of the giant Kumbhakarna (A character of Indian epic Ramayana) who was considered as the doyen of the art of sleep.

Life of a human being can be divided into two, the time he is asleep and the time he is awake. The two phases are so closely interlinked that the quality of time he is asleep, affects the quality of his wakefulness and productivity, and likewise the various factors and events when he is awake affects the sleep also. There are two phases of sleep; the non rapid eye movement sleep (NREM) and the rapid eye movement sleep (REM),the initial NREM is the calm and restful sleep which is present after hours of wakefulness during the day. REM is not a very relaxing phase and sleep is not usually deep and is also associated with episodes of dreams.

Sleep has been known to influence the physical and emotional well being of adolescents by causing substantial biological and psychosocial changes [1].Adolescence is a period when the individual faces various types of stresses and transitions; both physiological and psychological. Adolescents and young adults (12-25 years) are at high risk for problem sleepiness with particularly serious consequences [2] so we selected this age group for the study of sleep habits and problems. Since sleep disorders are more prevalent in urban area as compared to villages, we planned the study in urban schools.

In our study we wanted to know about the various sleep habits, sleep problems and the various factors which can influence the sleep. Various disorders like somnambulism, bruxism, sleep apnoea, nocturnal enuresis etc. were chosen to study in our research.

Materials and Methods

The study was conducted during August-September 2008.It was a cross sectional study conducted among higher secondary school students of urban Pondicherry. Multistage random sampling method was used to select the sample. All the private higher secondary schools were enlisted. Total 6 schools were selected randomly. Permissions prior to study were taken from the school authorities. From each school 5 sections were selected randomly for the study. Self administered questionnaire was prepared and pretested. After making necessary corrections questionnaire was used for the study.

Epworth sleepiness scale (ESS) [3] was incorporated in the questionnaire.ESS is used to measure daytime sleepiness. This can be helpful in diagnosing sleep disorders. In ESS, numbers

are given for different situations where a person can fall asleep.

Following numbers are given: 0 = no chance of dozing,1 = slight chance of dozing,2 = moderate chance of dozing,3 = high chance of dozing.

Following situations are used:
1. Sitting and reading,
2. Watching TV,
3. Sitting inactive in a public place (e.g. a theater or a meeting),
4. As a passenger in a car for an hour without a break,
5. Lying down to rest in the afternoon when circumstances permit ,
6. Sitting and talking to someone,
7. Sitting quietly after a lunch without alcohol,
8. In a car, while stopped for a few minutes in traffic

The score obtained by adding the numbers leads to a total. Below 10 score is considered as normal while 10 or above is abnormal and needs advice from sleep specialist.

Information regarding age, sex, height, weight, sleeping time, wake up time, difficulty to fall asleep or staying asleep, medications for sleep, naps, day time sleepiness, habits and problems during sleep and after waking up etc. were included. Purpose of the study and the questions were explained to the students before administering it. Collected data were compiled and analyzed using Microsoft excel software. Proportions were used to see any difference between boys and girls.

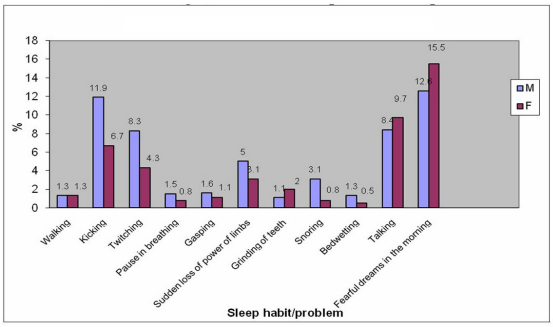
Results and Discussion

Total 1545 students in age group 14-20 years participated in the study.Mean age of the participants was 15.93 years(SD: 0.75 yr).Number of boys and girls were approximately equal(48.7% males,51.3% females) [Table/Fig 1].Mean BMI was 21.49 kg/m^2(SD:4.61kg/ m^2). Average night sleep duration was 7.0 hours (SD: 1.07 hr).

(Table/Fig 1) Age and sex wise distribution of students

Age (years)	Male	Female	Total
14-17	556 (73.8%)	663 (83.7%)	1219 (78.9%)
17-20	197 (26.2%)	129 (16.3%)	326 (21.1%)
Total	753 (48.7%)	792 (51.3%)	1545

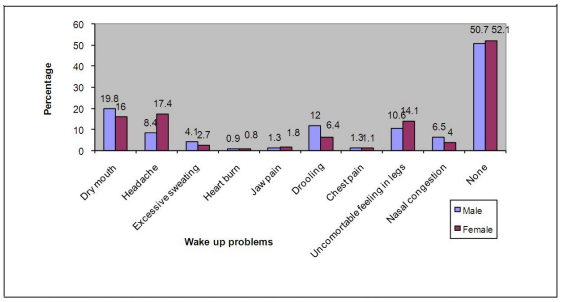
Most common sleep problem was fearful dreams in morning (M 12.6%, F 15.5%) followed by kicking. It was found that sleep problems are more in girls as compared to boys [Table/Fig 2].



(Table/Fig 2) Gender vs sleep habits and problems

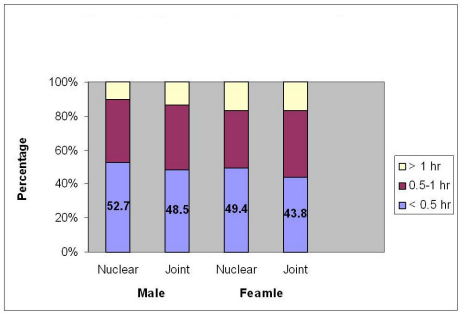
In a study among 13-19 years age group school students in France [4] it was observed that nightmares were significantly more common in girls. Similar finding is reported in our study also.In a study by Suri in Delhi [5] it was found that 5.8% school going children suffered from night terrors. About 12% of the entire population (13.3% males and 10.4% females) were seen to suffer from bruxism. Approximately 7.7% of the overall population was observed to suffer from bedwetting.The overall prevalence of snoring was found to be 12.7% (Males=12.8%, Females=12.6%).In our study we found lesser number of problems during sleep as compared to delhi study.

Most common problem after waking up was dry mouth in males (19.8%) and headache (17.4%) in females. Nearly 50% students had some problem in morning [Table/Fig 3] .



(Table/Fig 3) Gender wise distribution of problems at wake up

Family type didn't affect the sleep onset latency. Females had a greater sleep onset latency time [Table/Fig 4].



(Table/Fig 4) Sleep onset latency according to family type and gender

(Information for 41 students was unavailable)

As the study was done in urban area, 85% belonged to nuclear family. Nearly one third students were in habit of taking naps during day time. Boys and girls both had similar tendency to take naps [Table/Fig 5].

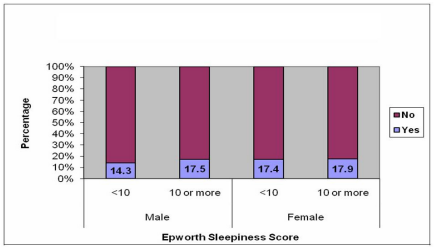
(Table/Fig 5) Relation of naps with family type and gender

Naps	Male		Female		Total
	Nuclear	Joint	Nuclear	Joint	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Yes	164(26.8)	34(31.2)	240(35.8)	33(29.2)	471(31.3)
No	448(73.2)	75(68.8)	430(64.2)	80(70.8)	1033(68.6)
Total	612(40.6)	109(7.2)	670(44.5)	113(7.5)	1504

(Information for 41 students was unavailable)

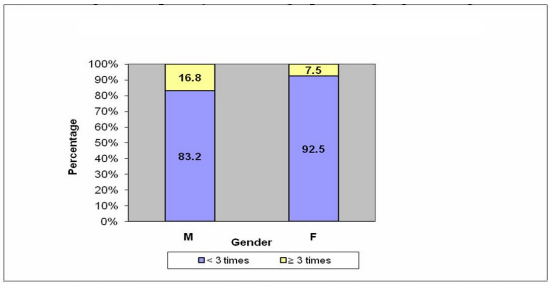
The complaint of excessive daytime sleepiness includes inappropriate and undesirable sleep during waking hours; reduced motor and cognitive performance [6]. Approximately 16% students feel that it is difficult to stay asleep. Daytime sleepiness was same in boys and girls.

It was found that day time sleepiness is not related to difficulty in staying asleep [Table/Fig 6].



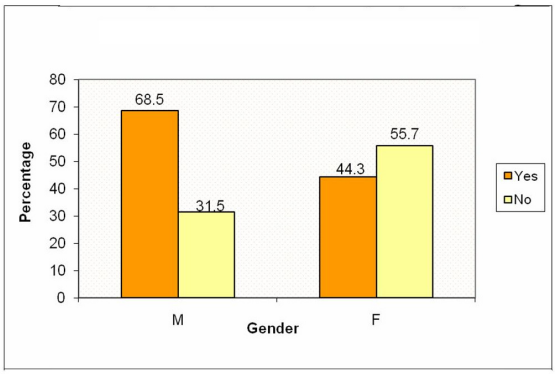
(Table/Fig 6) Gender wise relation of difficulty in staying asleep and day time score

Nocturnal awakenings were reported by approximately 16% students Boys wake up frequently in night as compared to girls [Table/Fig 7] .



(Table/Fig 7) Frequency of waking up during night and gender

More number of boys (68.5%) were taking naps compared to girls(44.3%) [Table/Fig 8].

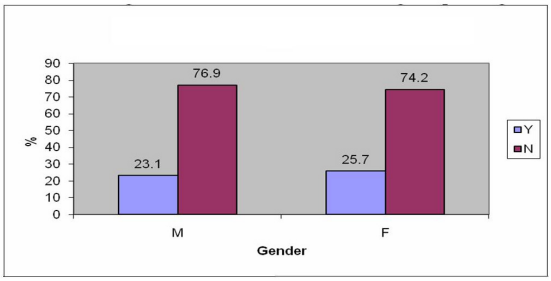


(Table/Fig 8) Relation of day time sleep and gender

Similar findings were reported by Gupta R et al [7] also.

Sleep was disturbed by stress in one fourth of the boys as well as one fourth of the girls. There was no significant difference between boys and

girls regarding disturbance of sleep by stress [Table/Fig 9].



(Table/Fig 9) Relation of stress disturbing sleep and gender

The study tried to obscure the sleep habits and problems among adolescents of both sexes. Sleeping habits and an inability to fall asleep varied significantly between countries as well as between age groups, but only slightly between the sexes [8]. In a study conducted among students with the higher education system (average age of 20 years), 21% reported that they experienced sleep difficulties. In another study, 36% of the sample reported that they were completely free of any sleep disturbance [9]. Apart from excluding other well-known factors affecting sleep, if sleep cannot cycle normally through REM and NREM, one may feel tired, fatigued, or sleepy, and may have trouble concentrating or paying attention while awake [10].

Sleep affects physical growth, behavior and emotional development besides determining cognitive functioning, learning and attention [11].For many sleep disorders there is an associated increase in daytime sleepiness and an increase in road traffic accidents. Sleep disorders such as sleep apnoea, particularly when associated with other medical diseases, are associated with increased mortality. Sleep walking is a condition in which sleep and arousal mechanisms seem to have locked in an unresolved conflict. Sleepwalking not infrequently leads to accidents but occasionally leads to death, and rarely sleep related homicide is reported [12].

Dreams only occur in the few moments before you wake up. Dreaming sleep is commonly accompanied by flaccid or relaxed paralysis. Preventing people from dreaming drives them mad. Sleep is necessary and provides rest from exertion and perhaps has some restorative functions as well. Night terrors consist of a frightening dream concerning some anxiety-laden topic and occur during REM sleep. Waking up from an anxiety, nightmare can be just as frightening but reassurance is possible. It must be admitted that the function of sleep remains a mystery, and its evolution remains a matter of conjecture. The state of sleep is unconscious pranayama, or the unconscious process of switching the life force from the five sense telephones. In sleep one practices the mortal posture or savasana. In this posture the body is still, the muscles have stopped working, venous blood is reduced, the heart slows down, and the energy from the five senses is switched off. Then the mind attains conscious pratyahara, or unconsciously returns within and becomes absorbed in an unconscious state of peace [13].Problem sleepiness in adolescents is most commonly associated with problem sleep patterns. A number of factors affect sleep patterns of adolescents and young adults. These factors include the adolescent's biological status and behavioral preferences, parent-child negotiations, and changing school schedules.[2]There is a compelling need to educate the students about the normal and abnormal sleep. This study suggests that there are no differences in majority of the factors and habits related to sleep between males and females.

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