

Original Research Article

Sleep pattern among the medical students in Western Odisha

Mamata Rani Giri^{1*}, Arun Kumar Sahoo²

¹Department of Community Medicine, PRM Medical College, Baripada, Mayurbhanj, Odisha, India

²Social Worker in Poverty Reduction and Population Control, Balasore, Odisha, India

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*Correspondence:

Dr. Mamata Rani Giri,

E-mail: mamatagiri98@gmail.com

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ABSTRACT

Background: Adequate sleep is required for optimal functioning of human body and mind. Attention and concentration difficulties are related to inadequate sleep among the students. Medical students are considered a stressful group of students because of their hectic schedule. The present study was carried out to know the sleeping pattern among the medical students.

Methods: A cross-sectional study was conducted in VIMSAR, Burla, Sambalpur in 2016 among the MBBS Students. Fifty students from each batch were selected by simple random sampling method. Information were collected in a pre-designed pretested questionnaire and was analyzed with Ms-Excel.

Results: One hundred and fifty students were selected as the study subjects. The mean bed time during working days was found to be 11:22 pm. Majority of the students 70 (46.6%) were going to bed between 11-12 am. The mean wake up time during working days was 6:52 am and week end was 8:14 am. 75 (50%) students sleep for 6 hours and 42 minutes. 7 (6%) students sleep for 4 hours and 30 minutes. The mean duration of sleep in working days was 6 hours and 46 minutes and in the weekend was 7 hours and 34 minutes.

Conclusions: There was less duration of sleep as compared to the recommended sleep duration along with the increase in the mean bed time sleep. It is a concern for the students to prevent the sleep disorder development in future.

Keywords: Medical students, Sleep pattern, Western Odisha

INTRODUCTION

Sleep has important physiological functions. It has two major effects on the body. The first effect is on the nervous system & the second effect on the functional system of the body. Sleep facilitated learning and memory, cognition, clearance of metabolic waste products and conservation of metabolic energy.¹ Average sleep requirement per day for adult person is 7 to 9 hours.² Adequate sleep is required for optimal functioning of the human body and mind.³ Attention and concentration difficulties are related to inadequate sleep among the students.⁴ In the last few years there has been a growing attention to sleep and sleeplessness related

problems. It was estimated that the prevalence of sleep disorder among the general population ranged from 22% to 65%.⁵ Medical students are considered a stressful group because of their extended period of study years and hectic schedule. With this background the present study was carried out to know the sleep habits among the medical students.

METHODS

It was a cross-sectional study conducted among the medical students in VIMSAR Medical College, Burla, Sambalpur, Odisha from November to December 2016. Each batch consists of 150 students. All the students of

1st, 2nd and 3rd (Part-1) MBBS willing to participate in the study were the study subjects. Students having past history of sleep disorder and currently using sleep medication were excluded from the study. Sampling was done by simple random sampling methods. Fifty students were selected randomly from each batch of 1st MBBS, 2nd MBBS and 3rd MBBS (Part-1) after explaining the objective of the study and assuring the maintenance of privacy and secrecy the verbal consent was taken from the participants. The relevant information was collected in a pre-designed and pre-tested questionnaire. The questionnaire was made from sleep pattern from sleep questionnaire and Epworth sleepiness scale for daytime sleepiness. It was distributed in the theory class of the community medicine of the respective batches which was allotted to me. The students who were not participated as study subject were requested to leave the hall after taking the attendance from them. At the end of the classes the questionnaire was collected. It was analyzed using MS Excel.

RESULTS

The total number of study subjects were 150 students. The mean bed time during working days was found to be 11:22 pm. Majority 70 (46.6%) students were going to bed between 11 to 12 AM. followed by 35 (23.3%) students was going to bed between 10-11 PM. But very few students were sleeping after 1:0 am during the working days.

Table 1: Bed time of students during working days.

Bed time (hours)	No. of students (f)	%	Mid value (xg)	fxg	Mean bed time
9-10	12	8.0	9.5	114	11:22 pm
10-11	35	23.3	10.5	367.5	
11-12	70	46.7	11.5	805	
12-13	27	18.0	12.5	337.5	
13-14	5	3.3	13.5	67.5	
14-15	1	0.7	14.5	14.5	
Total	150			1706	

Table 2: Bed time of students during weekend.

Bed time (hours)	No. of students (f)	%	Mid value (xg)	fxg	Mean bed time
9-10	4	2.7	9.5	38	11:56 pm
10-11	44	29.3	10.5	462	
11-12	27	18.0	11.5	310.5	
12-13	38	25.3	12.5	475	
13-14	31	20.7	13.5	418.5	
14-15	6	4.0	14.5	87	
Total	150			1791	

Table 3: Wake up time of students during working days.

Wake up time (hours)	No. of students (f)	%	Mid value (xg)	fxg	Mean wake up time
5-6	31	20.7	5.5	170.5	6:52 am
6-7	51	34.0	6.5	331.5	
7-8	55	36.7	7.5	412.5	
8-9	9	6.0	8.5	76.5	
9-10	2	1.3	9.5	19	
10-11	2	1.3	10.5	21	
Total	150			1031	

Table 4: Wake up time of students during weekend.

Wake up time (hours)	No of students (f)	%	Mid value (xg)	fxg	Mean wake up time
6-7	22	14.7	6.5	143	8:14 am
7-8	43	28.7	7.5	322.5	
8-9	48	32.0	8.5	408	
9-10	26	17.3	9.5	247	
10-11	11	7.3	10.5	115.5	
Total	150			1236	

The mean bed time of the students during weekend was 11:56 PM. More number 37 (24.6%) of students was going to bed after 1:00 am.

Table 5: Average duration of sleep during working days.

Duration of sleep (hours)	No of students (f)	%	Mid value (xg)	fxg	Mean sleep time
4-5	7	4.7	4.5	31.5	6 hours and 46 Min.
5-6	18	12.0	5.5	99	
6-7	75	50.0	6.5	487.5	
7-8	33	22.0	7.5	247.5	
8-9	12	8.0	8.5	102	
9-10	5	3.3	9.5	47.5	
Total	150			1015	

Table 6: Average duration of sleep during weekend.

Duration of sleep (hours)	No of students (f)	%	Mid value (xg)	fxg	Mean sleep time
5-6	8	5.3	5.5	44	7 hours and 34 Min.
6-7	30	20.0	6.5	195	
7-8	65	43.3	7.5	487.5	
8-9	39	26.0	8.5	331.5	
9-10	8	5.3	9.5	76	
Total	150			1134	

Table 7: Sleep onset latency.

Sleep onset latency (mins)	No of students (f)	%	Mid value(xg)	fxg
1-15	76	50.7	8	608
15-30	46	30.7	22.5	1035
30-45	8	5.3	37.5	300
45-60	16	10.7	52.5	840
60-75	4	2.7	67.5	270
Total	150			3053

Table 8: Night awakenings, use of sleep aids.

Variables	Number	Percentage
Night awakenings		
Present	36	24
Absent	114	76
Use of sleep aids		
Used	43	28.6
Not used	107	71.4

From Table 3, regarding the wake up time of the students during working days, it was observed that 55 (36.6%) students wake up between 7-8 am followed by 51 (34%) students wake up between 6-7 am. A very few students 4 (2.6%) wake up after 9 am. The mean wake up time during working days was 6:52 am and during week end was 8:14 am, as the more number of students 48 (32%) wake up between 8-9 am. From Table 4 it was found that majority of the students 75 (50%) sleep for 6-7 hours followed by 33 (22%) sleep 7-8 hours. A less no of students 7 (4.6%) sleep 4-5 hours.

Table 9: Nap taken during day time, feeling drowsiness during class hour.

Variables	Number	Percentage
Nap taken		
Yes	52	34.6
No	98	65.4
Drowsiness		
Yes	49	33
No	101	67

The mean duration of sleep in working days was 6 hours and 46 minutes and the week end sleep hour was 7 hours and 34 minutes. From the sleep onset latency, 76 (50.6%) students had latency within 15 minutes, 40 (30.6%) students had latency of 15-30 minutes and 16 (10.6%) students had a long latency i.e. within 45-60 minutes. When it was assessed for the night awakenings 36 (24%) students had history of one or more night awakenings. Regarding the use of sleep aids 43 (28.6%) students needed some aid to fall asleep and the aid was mostly mobile phone. 52 (34.6%) students took nap during day time. 74 (49.3%) students felt drowsy during the class

hour which comes to the score of 01 as per the Epworth sleepiness scale.

DISCUSSION

Medical students are in the risk group of not having adequate sleep. In the present study 25 (16.6%) students had sleep less than 6 hours, which was similar to the findings of Devalia et al.⁸ In a study conducted by Rasekhi et al 62% students had total sleep hours of 4-6 hours.⁹ O'brien et al in his study observed that in 28% sample during the working days, the sleep hour was 6-7 hours.¹⁰ A study conducted by Buboltz et al, the mean sleep duration for working days and weekends were 8 hours 2 minutes and 8 hours 27 minutes respectively, which was more than the present study findings.¹¹ The present study revealed that the no of students sleeping after 01 AM was increasing almost similar to findings of Walter et al.¹¹ 28.6% of students were needed some aid to fall asleep (mostly mobile) but in a study conducted by Jaydeep et al, 1.2% students used to take sleeping or altering medication always. while in a study by Pagel et al 16% medical students were taking sleeping pills.¹² The lesser the sleep duration grater was the fleeing of drowsiness among the students during the class hours.^{13,14}

CONCLUSION

The sleep pattern among the medical students reveals that there is less duration of sleep as compare to the recommended sleep duration along with the increase in the mean bed time sleep. It is a concern for the students to prevent the sleep disorder development in future.

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