



Research Article

A CORRELATIONAL RELATIONSHIP AMONG SLEEP BEHAVIOURAL PATTERN WITH UNIVERSITY EXAMINATION PERFORMANCE IN FIRST YEAR MBBS STUDENTS: A CROSS-SECTIONAL STUDY

¹Anandarajan, B., ^{2,*}Kouser banu, K., ³Prathipa, A., ⁴Muthukumar, S., ⁵V.S. Dorairaj. ²Teena Lal,

^{1,2,3}Department of Physiology, Sri Muthukumaran Medical College, Near Mangadu, Chennai-69, India

⁴Department of wild life sciences, Madras Veterinary College, Vepery, Chennai, India

⁵Sri Muthukumaran Medical College, Near Mangadu, Chennai-69, India

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Background: The relationship between the sleep and food habits with exam performance is insufficiently addressed

Aim: This study was aimed to assess the prospective relationship between sleep habits and food habits with academic performance in first year MBBS students

Methods: This study was conducted between June to August 2014 at Sri Muthukumaran Medical College and included all the 150 students both males and females of 18-20 age group of first MBBS who were appearing for University examinations. A self-administered questionnaire was distributed to assess demographics, sleep and wake schedule, sleep habits, sleep duration and food habits.

Results: The final analysis included 150 students (Females: 97, Males: 53). Sixty students (40%) had outstanding performance, and ninety students (60%) had average performance in their University examinations. The average group had a higher percentage of students who felt sleepy during morning hours. In contrast, the outstanding performance group had an earlier bedtime.

Conclusion: Decreased nocturnal sleep time and increased daytime sleep are negatively associated with University examination performance in first MBBS students.

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INTRODUCTION

Examination anxiety is one of the deep-seated problems that students face. It may cause negative effect not only on their academic performance but also on eating pattern and sleep. Sleep and food are basic needs of human and has a dominant part in their quality of life, and their physical and intellectual health. Medicine students are more prone to the risk of sleep and eating disorders due to their special profession and education (Lashkaripour and Bakhshani, 2012). The inadequate quality of night time sleep can impinge on the declination of cognitive performance and concentration level of the student in conducting daily activities. Such effect can lead to the extent of night time sleep deprivation (dyssomnia), reduces individual's ability in dealing with daily tensions and increases the incidents of depressive and anxiety disorders (Beck et al., 2004) Poor eating habits are common among college students. Empirical research suggests that due to examination stress students become increasingly susceptible to poor nutritional behaviours (Ferrara, 2009).

Poor nutrition can give rise to a variety of neurological and neuropsychological symptoms, including sensory and reflex abnormalities, depressed mood, and impairments on memory, and reasoning (Lezak, 1995). Some students develop a pattern of skipping essential meals while others rely on physiologically inefficient sources of nutrition, such as junk food during examinations. This pattern of behaviour may contribute to poor nutrition, weight gain and other health risk factors (Anderson, 2003). Our research aims to estimate the incidence of sleep disorders and eating habits in first MBBS students and its effect on University examination performance.

MATERIALS AND METHODS

This is a descriptive-analytical study that is conducted on 150 medical students in Sri Muthukumaran Medical College Hospital and Research Institute, Chennai in the academic year of 2013 - 2014. Students who were willing to participate were given a brief description about the study and its objectives and consent was obtained prior to the study. Demographic information which included

*Corresponding author: Kouser banu

Department of Physiology, Sri Muthukumaran Medical College, Near Mangadu, Chennai-69, India

Table 1. Sleep habits of the study subjects including both male and females.

Sl.no	Variable	Number of subjects	Percentage of subjects
1	When do you usually go to bed?		
	A.< 10 pm	38	25%
	B.10 - 12 pm	54	36%
2	When do you usually wake up?		
	A.< 6am	34	23%
	B.6 - 8 am	59	39%
3	Do you drink coffee late at night?		
	A.Never		20.4%
	B.1 - 2 per week	30	29.3%
	C.3 - 5 per week	44	15.3%
4	How long it takes you to fall asleep?		
	A.sleep latency of 10 - 30 minutes		
	B.sleep latency of 30 - 60 minutes	55	36.6%
5	How many times do you wake up during your sleep?		
	A.None	36	24%
	B.1-2	94	62.6%
	C.3 - 4	20	13.4%
6	Presence of snores		
	D.5	None	0%
7	Presence of night mares		
	A.Yes	87	58%
8	Talking or explaining the subject in sleep		
	B.No	63	42%
	A.None	52	34.6%
	B.1-2	71	47.4%
9	Feeling tired in the morning		
	C.3 - 4	21	14%
	D.> 5	6	4%
	A.Yes	126	84%
10	Daytime sleepiness		
	B.No	24	16%
	A.Never	46	31%
	B.1 - 2 per week	79	53%
11	Subjective feeling about sleep quality		
	C.3 - 5 per week	20	13.3%
	D.Daily	5	3.3%
	A.Good	54	36%
12	sleep quality in the night before an exam		
	B.Better	76	50.6%
	C.Bad	20	13.4%
	A.Good	38	25%
13	subjective feeling about his/her performance in the examination		
	B.Better	56	37.3%
	C.Bad	45	30%
	A.Good	39	26%

Study tool: the questionnaire

A questionnaire containing 25 questions. The questionnaire included several different types of questions about sleep habits, sleep problems, food habits, food frequency, and frequency of preparation for the examination.

The first part contained 10 questions about demographic characteristics

Name, age, gender, University Register number (for future reference of university marks), day scholar or staying at hostel,

place of living permanent residence, day or night workload and mode of transport were collected.

The second part contained 4 questions about sleep habits

When do you go to bed, how many hours of sleep do you usually have, when you do usually wake up, do you usually drink coffee at night

The third part contained 7 questions about sleep problems

How long it takes you to fall asleep, how many times do you wake up during your sleep, and do you snore, presence of night

mares, talking or explaining the subject during sleep, feeling tired in the morning and daytime sleepiness.

The fourth part contained 4 general questions

Subjective feeling about sleep quality, sleep quality on the night before an exam, subjective feeling about his/her performance in the examination. Inclusion criteria were: First year MBBS students who were facing University theory and practical examinations. Exclusion criteria - Disqualified students were none.

Statistical analysis

All data were coded, entered, and then analyzed using the Statistical Package for Social Sciences program (SPSS), version 1.6. Descriptive results were expressed as mean \pm S.D. P-values < 0.05 were accepted as statistically significant

RESULTS

Out of 150 there were 97 (64.6%) female students and 53(35.4%) male students. The mean age of the participants were 19.37 ± 1.13 years and average BMI was 25.01 ± 5.56 . There was no difference between males and females or among different academic levels in the assessed sleep parameters; therefore, we analyzed the combined data from both sexes. Sixty students (40%) had outstanding performance, and ninety students (60%) had average performance in their University examinations.

DISCUSSION

Sleep is extremely important for ones mental and physical health. Medical college students have a lot of to do in a limited time. We have conducted this study so that we can sensitize our students about their poor sleeping habits. Different studies have indicated detrimental effects on the academic performance and health (Nikolai *et al.*, 2008). Even though enough sleep is necessary for cognitive function and memory consolidation, it did not seem to have any effect on the academic performance contrary to what other studies have shown (Smith, 1995; Omvik *et al.*, 2007; Wolfson and Carskadon, 1998).

Our study showed that students who obtained good marks were those who slept for more than 7 hours but the majority who scored less marks, were also mostly those who slept less. According to our study student slept an average of only 4.74 hours before the exam and females slept less (4.71+1.82 hours) as compared to males (4.77+3.27 hours). However this disturbance in the sleep cycle did not show any significant effect on their academic performance (Rocha *et al.*, 2010). To stay awake before the examination, the students used a variety of substances ranging from tea, coffee, energy drinks and soft drinks. Majority of these substances contained caffeine and the students were well aware of this fact. According to a study carried out among students of Nigeria, 14.9% of students used substances like antibiotics, analgesics and other drugs to stay up at night and study (Qureshi *et al.*, 2010). Another study, done in Bergen showed that caffeine increased sleeplessness and nocturnal worry (Gaultney, 2010).

In our study 64.3% of the students did not study adequately for the exam although 56% of them did pass the examination with good marks.

Conclusion

Majority of the students had reduced sleep in exam days and its reason was found to be late night study. Although our study did not find any link between sleep and academic performance, studies from different countries have shown that many college students are at risk for sleep disorders, and those at risk may also be at risk for academic failure. Timing of sleep and wakefulness correlated more closely with academic performance than total sleep time and other relevant factors. These findings may have important implications for programs planned to improve academic performance by targeting sleep habits of medical students

Limitations

The findings of this study are contrary to most of the other studies done abroad, so it should be interpreted with care and cannot be generalized. The study was conducted in only one Medical College and it is possible that results may differ when compared to other Medical colleges since the working environment is unique at different colleges.

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