

Original Article

Sleep Pattern and Sleep Duration of Medical College Students

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Objective: To determine general sleep patterns and sleep duration of medical college students.

Study Design: Cross sectional study

Place and duration: 1st October, 2010 to 30th December, 2010

Materials and Methods: This descriptive study was a survey of students from first year to fourth year MBBS class. Two hundred students voluntarily participated in this study after being explained the nature of the survey. Purposive sampling technique was applied. Questions were asked about their bed time, wake-up time during weekdays and weekends. Students were further asked about study timings and sleep pattern during examination.

Results: Results of the study showed that 70% of students during weekdays went to bed after 12:00am. 82% went to bed after 2:00 am during weekends. Duration of sleep of 75% of students was less than six hours during weekdays. 40% of students remained awake the whole night just before examinations.

Conclusion: Health Education program regarding duration and quality of sleep should be emphasized in colleges to increase the awareness of students about the importance of adopting healthy sleeping habits, thus leading to improved quality of life and academic performance of our students.

Key Words: Sleep duration, bedtime, wake time, college students.

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Introduction

Most of the medical students start college life with some sort of knowledge of personal health but little or no knowledge of value of sleep. Students should learn the importance of fundamental triumvirate of health that is physical fitness, good nutrition and healthy sleep.¹

Recent studies have determined that many students have sleep patterns that can have detrimental effects on daily performance^{1, 2}. The art of getting good results lie in proper time management which leads to productive study habits. People who get up in the morning are usually more energetic and proactive. It is also seen that morning people get better grades than night owls.³ Duration and timings of sleep both are equally important for health and academic performance of students. Several studies outline the adverse effects of disturbed sleep for proper memory consolidation.⁴ Recent findings suggest that sleep favors restoration of synaptic plasticity and accelerated memory consolidation. Consolidation of memory takes place during REM sleep. It is the replay of information in the

hippocampus during this sleep which leads to permanent storage of information in the neocortex. In the absence of such replay episode, a person will not memorize and forget.⁵ Teenagers require considerably more sleep to perform optimally than younger children or adults. Adolescents need 9.2 hours each night compared with 7.5 to 8 hours for adults.⁶ Students who go to bed late are more likely to have poor sleep quality which may affect their mental health and academic performance.

Deprivation or disturbance of sleep may cause aggressiveness and apathy. This results in fluctuations between euphoria and depression and such people find it difficult to express themselves properly.⁷ It is also important that students should have same timings either for going to bed and waking up in the morning on weekends as on week days to prevent disturbance of circadian rhythm, because stability of circadian rhythm ensures better sleep.⁸ Insufficient sleep (<6 hours per night) can lead to 50% reduction in T cells which may compromise the immune system.⁹ A good quality of sleep is therefore essential to enable university students to comprehend, analyze and absorb enormous amounts

of information during study. This study was designed to describe the general sleep pattern and duration of our medical college students.

Materials and Methods

Duration of Study was from 1st October, 2010 to 30 December, 2010. We conducted a Questionnaire based survey of students at main campus of Islamabad Medical & Dental College Islamabad. Permission to conduct the study was obtained from the college administration and Heads of departments prior to commencement of study. Purposive sampling technique was applied. The respondents remained anonymous and were assured that their responses would remain confidential. Two Hundred students from 1st year MBBS to 4th year MBBS class participated voluntarily. The protocol of the study was explained to the students. Students were given two page questionnaires to be completed during one hour. The survey instrument asked students about their bed time and wake up time during weekdays versus weekends. There were questions about sleep duration, sleep timings and sleep interruption during examination. The survey further probed about day time alertness during examination.

Frequency and percentage were applied for qualitative variables. Mean with standard deviation was calculated for these variables.

Results

The participants of this study were from 17 to 21 years. Mean age was (20.2) SD ± 1.47 . 70% of the students were females and 30% were males. 70% of the students go to bed after 12.30 am during weekdays. On weekends 82% of the students went to bed after 2 am. The students who get up early in morning were 35.9% (5-6am) 50% get up after 7 am during working days. On weekends and holidays only 30% of the students got up till 9 am (Figure I) 73% of the students had different bed time and wake time in weekdays and weekends. In more than 75% of students duration of sleep was up to 6 hours in week days. Only 25% of students had sleep for 8 hours or more than this. (Figure II).

During examination 36% of the students started their studies in early morning (5-7am). 40% of the students interrupt their sleep after 3 hours and 36% interrupt after 4 hours during examination. 80% of the students showed dissatisfaction for sleep after interruption. To gauge the sleep pattern just before examination, a Linkert's scale was designed. Grade 1 showed those students who did not woke up just before examination, grade 2 showed those who awoke sometimes and grade 3 showed those who did not sleep whole night before examination. Their percentages are

mentioned in figure no 3. Out of these students who remained awake whole night before examination 40% had complained that they were usually unable to express themselves properly in the examinations and 12% said that sometimes they were totally blank during written or viva examinations.

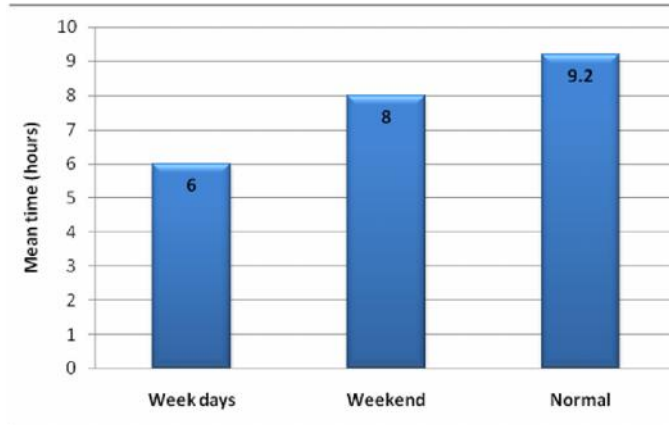


Figure I: Sleep Duration

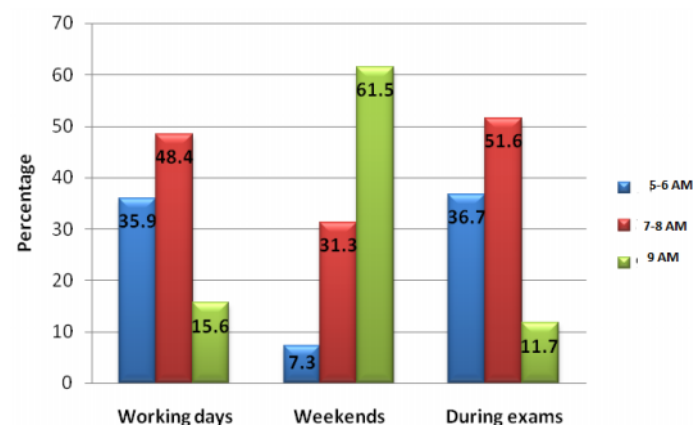


Figure II: Wake up time

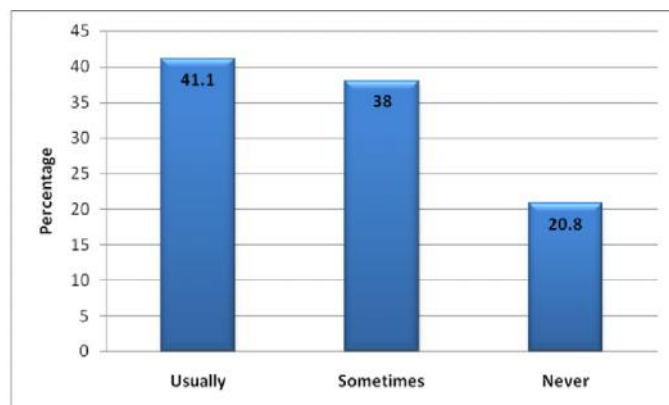


Figure II: Students awake whole night before exam

Discussion

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.¹⁰

The results of our study may help our students for better time management. Normal sleep duration is essential for optimal performance. This enables an adult learner to absorb information quickly during learning process and respond actively. The duration of sleep of our students was less than the standard requirement during weekdays. Same problem is highlighted in a study in Taiwan.¹¹ Early morning wake up time is a sign of zest. Most of our students were not morning birds rather they were night owls. A study in a University of Washington showed that morning birds have high GPA than night owls.¹³

Sleep which satisfies a student is called a good sleep. Maintenance of circadian rhythm is essential for good quality of sleep. In 75% of our students the sleep timings and wake up timings were different in weekdays and weekends. This causes a disturbance of circadian rhythm and poor memory consolidation.¹⁴

Main concern of a student from normal quantity and quality of sleep is proper memory consolidation which makes a student comfortable, confident and quick. Most of our students ignore both parameters of the healthy sleep which are good quality and normal duration.^{15, 16} More than 76% of our students interrupted their sleep after 3-4 hours during examinations days to study. After this interval most of the students showed dissatisfaction with their sleep pattern. It is a lamentable fact that many students in our study mentioned that they do not sleep whole night before examination.

Most of the students of this group had complained that they were unable to express themselves properly and had poor performance in the examination. A reasonable percentage (12%) mentioned that they were sometimes totally blank during written or oral examination.

Conclusion

Health education program regarding duration and quality of sleep should be emphasized in colleges to increase the awareness of students about the importance of adopting healthy sleeping habits. Students should try to follow a good regimen with going to bed early and they should avoid the habit of studying whole night just before examinations. This Health education may improve the life quality and academic performance of our students.

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