

ORIGINAL ARTICLE

SLEEP AND ACADEMIC PERFORMANCE

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Background: Sleep is an essential physiological process for life. Its quality is strongly related to psychological and physical health and other measures of well-being. Good quality sleep and adequate amount of sleep are important in order to have better cognitive performance and avoid health problems and psychiatric disorders. Sleep disturbances are an important issue among medical students and residents. This study was designed to find out the relationship between the academic performance of students with their sleep habits. **Methods:** A total number of one hundred apparently normal healthy students of First year MBBS Class were divided into three groups on the basis of their sleep habits before and after admission in to the medical college as follows: Group-1: Who had the same quality and duration of sleep in medical college as before admission. Group-2: Who had more sleep duration after admission to medical college. Group-3: Who had less sleep duration after admission to medical college. The academic performance of these three groups was compared by taking into consideration the percentage of marks obtained in the annual examination of first year MBBS class. **Results:** Fifty percent of Group-1, and 50% of Group-2 students secured more than 70% marks in the First Year MBBS while 37% of Group-3 students obtained more than 70% marks in First Year MBBS. **Conclusion:** Disturbance in sleep affects academic performance adversely. Decreased sleep duration affects the academic performance more adversely as compared with the increased sleep duration.

Keywords: Sleep disturbance, academic performance, medical students

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INTRODUCTION

Medical school is hard. Yes, it's true! Difficulty is not conceptual, but the sheer volume of information and medical vocabulary are the major causes of stress. Internalizing all of the vocabulary plus learning the complicated science behind the inner workings of the human body is a daunting task.¹ Sleep, learning, and memory are complex phenomena that are not entirely understood. However, animal and human studies suggest that the quantity and quality of sleep have a profound impact on learning and memory.²

Sleep is a physiological process essential to life. Its quality is strongly related to psychological and physical health and other measures of well-being.³ Good quality sleep and adequate amount of sleep are important in order to have better cognitive performance and avoid health problems and psychiatric disorders. Sleep disturbances are an important issue among medical students and residents. Postgraduates and undergraduates showed a higher percentage of sleep disturbances.⁴

Success in medical school is often tied to how much time can be devoted to learning a topic, and trying hard consistently. Getting adequate sleep goes hand-in-hand with getting exercise when working towards maintaining good physical health. Especially a medical student needs to make sure to be getting enough rest to perform the best academically.⁵ This study was designed to see the relationship between academic performance of students with their sleep habits.

MATERIAL AND METHODS

A total of 100 apparently normal healthy students of First Year MBBS class were included in this study. Students with any chronic disease or using any medication were not included. Students were asked to fill a questionnaire asking about their sleep duration and quality before and after admission to medical college.

Students were divided into 3 groups on the basis of their sleep habits before and after admission to medical college as following:

Group-1: Who had the same quality and duration of sleep in medical college as before admission.

Group-2: Who had more sleep duration after admission to medical college.

Group-3: Who had less sleep duration after admission to medical college.

The academic performance of these 3 groups was compared by taking into consideration the percentage of marks obtained by them in the First Professional MBBS Annual examination.

RESULTS

Twenty-eight percent (28%) students had same sleep duration and quality after admission to medical college as was before admission. A large majority (78%) of students had disturbed sleep duration and quality after admission to medical college. Twenty-six percent (26%) students had increased sleep duration in the medical college and 46% had decreased sleep duration in medical college as compared with before admission.

Fifty percent (50%) of Group-1 and 50% of Group-2 students secured $\geq 70\%$ marks in the First Professional MBBS examination while 37% of Group-3 students obtained $\geq 70\%$ marks in First Professional MBBS examination.

Table-1: Marks obtained by groups of 1st Year MBBS students [n (%)]

Group	$\geq 70\%$ Marks in 1 st Professional MBBS
Group-1 (n=28) (No change in sleep)	14 (50)
Group-2 (n=26) (Increased sleep)	13 (50)
Group-3 (n=46) (Decreased sleep)	17 (37)

DISCUSSION

Good refreshing sleep is one of the constituents for general wellbeing among students.⁴ Research suggests that sleep helps learning and memory in two distinct ways. First, a sleep-deprived person cannot focus attention optimally, and therefore cannot learn efficiently. Second, sleep itself has a role in the consolidation of memory, which is essential for learning new information.² The more you spread out your study time, the better you are likely to remember information later, compared to cramming all of your study time into one session. Research suggests that if you study new material and then sleep, you remember the information better than if you study new material and stay awake for an equivalent amount of time. Sleeping after a study session leads to better recall than not sleeping.⁶

Without adequate sleep and rest, over-worked neurons can no longer function to coordinate information properly, and we lose our ability to access previously learned information.^{2,7} Medical students are sleep deprived, which in turn may affect their academic performance.⁸

What makes medical school such a challenge is not just the material itself, but the massive amounts of information on each examination. Unlike in undergraduates, there is no such thing as cramming three days before a medical school examination.⁹

CONCLUSION

Disturbance in sleep affects academic performance adversely. Decreased sleep duration affects the academic performance more adversely as compared to increased sleep duration.

REFERENCES

1. Josh Herigon. Medical Studies are hard. Available from: <http://www.kevinmd.com/blog/2010/09/medical-school-hard-medical-student-thoughts.html> [accessed 30-10-2017]
2. Sleep, Learning, and Memory. <http://healthysleep.med.harvard.edu/healthy/matters/benefits-of-sleep/learning-memory> [accessed 4-10-2017]
3. Giri PA, Baviskar MP, Phalke DB. Study of sleep habits and sleep problems among medical students of Pravara Institute of Medical Sciences Loni, Western Maharashtra, India. *Ann Med Health Sci Res* 2013;3(1):51-4.
4. Pilcher JJ, Ott ES. The relationships between sleep and measures of health and well-being in college students: A repeated measures approach. *Behav Med* 1998;23:170-7.
5. <https://www.wikihow.com/Succeed-in-Medical-School> [accessed 30-10-2017]
6. Art Markman. <https://www.psychologytoday.com/blog/ultimate-motives/201611/how-sleep-enhances-studying> [accessed 4-10-2017]
7. Michael J Breus. More evidence that sleep enhances memory and learning. http://www.huffingtonpost.com/dr-michael-j-breus/sleep-learning_b_1719682.html [accessed 4-10-2017]
8. https://www.researchgate.net/publication/223985728_Sleep_habit_s_and_patterns_among_medical_students [accessed 30-10-2017]
9. <https://www.kaptest.com/blog/med-school-insight/2016/12/28/medical-school-is-worth-it-heres-why/> [accessed 30-10-2017]

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