

Original Article

The relation between sleep lifestyle and academic outcome in medical graduates

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Abstract

Sleep is key element of body homeostasis. The medical graduate needs to regulate sleep habit to improve academic outcome. Method – The cross section observational study of sleep pattern, sleep duration & sleep habit were done in 300 graduate students. Result – Home residing 30% graduates had deprivation of sleep (less than 6 hours/day) and their outcome in academics were compromised compare to graduates with proper sleep habits. The Pittsburgh sleep quality index were higher (Morning Sleep Pattern 9.33 ± 3.8 and Evening Sleep Pattern 6.59 ± 3.3) in morning sleep pattern students ($p < 0.0001$) in both groups of graduates. Conclusion - The sleep is essential for better academic outcome in college students. The role of sleep habit needs to recognize by institution undergraduate.

Keywords : Academic , Graduates, Sleep Duration, Sleep Index

Introduction

Sleep is resting state of the body. Sleep is one of the important apparatus of circadian rhythm for sleep wake cycle. Sleep is essential to maintain homeostasis. The medical graduate students while joining the college foremost instant exposed to the environment external to habitat. The new surroundings with college curriculum and peer stress generally alter the physical and psychological health(1)(2), which may affect individual sleep that modify sleep duration and sleep habit. The learning ability and academic outcome known to affected by loneliness, social relationships in adolescents(3). The Medical graduates were mostly staying in campus at hostel accommodation. They requisite adjusting their sleep, food and daily lifestyle with new college curriculum. The average sleep duration directly correlated with individual academic performance(4). Hassan at all described 6 to 8 hours of sleep was good for academic achievements.

Buboltz et al reported that female had more sleep disturbance than men in US college(5). Buboltz also suggest how the “academic official can alter procedures to minimize students sleep disturbance and reduce the deleterious effect of sleep deprivation.”The high prevalence of sleep disorder among female graduate students were observed by Hamza et al(6). The effect of lack of sleep was related in their academic performance. These suggest we may need to look for association of sleep habit and performance of an individual in the academic. Student staying away from

home may alter their sleep pattern from their previous daily routines. Altered sleep pattern may have effect on academic outcome(7). The role of complete sleep needed to understand by medical graduate for the wellbeing of health as well as individual academic performance(8).

Aims & Objectives

Our aim of study was to relate sleep habit role in academic outcome of medical graduates.

Material & Methods

The cross sectional study, conducted on first and third semester under graduate students of municipal medical college. The study group selected by universal sample technique. Total 300 students voluntarily enrolled for study after given written consent. The institutional ethical clearance obtained prior to commencement of study. They answered Pittsburgh Sleep Quality Index (PSQI) and Östberg Morningness/Eveningness Questionnaires(9).

The Pittsburgh Sleep Quality Index (PSQI), which contains 10 questions, related to normal sleep habits. A value above 5 on this test indicates a poor sleep quality. The analysis of sleep pattern we used the Portuguese version of the Horne and Östberg Morningness/Eveningness Questionnaire value above 59 on this test labeled as morning type and other labeled as evening type participants.

We asked participants to keep sleep diary for two weeks including three weekends. They were explained to record their moment for bed-time, wake up time, sleep duration, sleep habits and demographics throughout study duration. The questionnaire was validated before study. Their academic progress was assessed by result of periodic examination in college. The results were calculated to score of 100 in periodic exam.

The data were sorted and analyzed using SPSS 13 by ANOVA and student t test. The p value of significance set at 0.05.

Observation & Results

The 261 (87%) records had kept out of 300 records. The records (39) discarded due to incomplete entry or absence in periodic examination. Table 1 shows demographic distribution and the proportion of student accommodating the hostel prayer 40 % higher than student accommodating at home. The ratios of male participants were higher than female participant.

Table 2 shows Pittsburgh sleep quality index between hostel and home accommodating students. Sleep quality index found higher and poor in home accommodating student compared to poster accommodating student. The 69 % Hostel accommodating student had disturbed sleep quality compared to home accommodating student.

Table 3 represent relation between sleep quality index with morning and evening type sleep pattern. Student with morning type sleep pattern had higher and poor sleep quality index compared to evening type sleep pattern students. The relation of sleep pattern and sleep quality index remain identical between hostel and home accommodating students.

Table 1 Demographic Distribution of Study Population

Variable		Number (n)	Percentage
Gender	Male	144	55 %
	Female	117	45 %
Accommodation	Hostel	183	70 %
	Home	78	30 %

Table 2 Distribution of PSQI in Group

Variable		Mean	% student with PSQI Score >5
PSQI Score	Hostel	7.85	69 % (n=126)
	Home	8.09	55 % (n=61)

Table 4 Relationship between sleep duration and score of periodic exam. Student with more than 6 hours duration had better performance in exam compared to sleep deprived student.

Table 3 PSQI in Moring and Evening type Sleep Pattern

Variable	Morning Type n (%)	Evening Type n (%)
Hostel (n =183) PSQI (Mean ± sd)!	87 (48 %)	96 (52 %)
	9.33 ± 3.8	6.59 ± 3.3
Home (n= 78) PSQI (Mean ± sd)#	51 (65 %)	27 (35 %)
	9.05 ± 1.6	7.26 ± 2.4

! p = <0.0001 # p= 0.0002

Table 4 Relation between sleep duration and Score of exam

Sleep Duration		Number (%)	Score of Exam
Weekdays*	< 6 hours	105 (40.2)	50.2 ± 6.2
	> 6 hours	156 (59.7)	60.4 ± 8.1
Weekends #	< 6 hours	52 (20.0)	42.3 ± 3.1
	> 6 hours	208 (80.0)	63.8 ± 5.1

*P <0.0001 # P <0.0001

Discussion

Hassan et al(4) found excellent performance in a group of students with long sleep duration compared to average group of student. Similar findings found in our study also that evening type sleep pattern students perform better than morning type sleep pattern students do. That student who had less than 6 hours sleep in weekend and they had incomplete sleep in weekdays had reduced academic performance to other matched group.

Hamza M et al (6) found significant relation between academic performance and sleep habit, student had higher academic grade with average sleep duration between 6 to 10 hours per day. Similar result also found in our study where student with more than 6 hours sleep duration and better performance in periodic exam compared to sleep deprived group.

Gilbert and Weaver(10) found that poor academic performance was directly correlated with deprivation of sleep rather than mental stress or other depressive condition. Our results also consistent with the same finding that poor sleep quality index in students secure less score in periodic exam.

Halizah Siraj et al (8) found that students in their college schedule had sleep deprivation and they were accomplish sleep in weekends. Student with more than 6 hours sleep duration have significant higher academic performance. Study also observed that the graduate medical students have deprivation of sleep in weekdays due to their academic curriculum and they manage their deprived sleep on weekends. Our findings were matched with Halizah Siraj studies.

Buboltz et al (5) reported that student from the college had a disturbance in sleep due to their curriculum and the sleep deprivation as well as sleep related disturbance more in women compared to men. We had not compared male and female sleep deprivation in the study but we had similar findings of sleep deprivation and deterioration of academic performance in college students.

Ali et al(7) try to correlate different type of sleep pattern and student academic performance, they did not found significant relation between sleep pattern and academic performance but sleep deprived student have average or reduced academic performance compared to student with more than 6 hours sleep duration. Our results are showing significant difference among the student with more than 6 hours sleep duration against deprived sleep in their academic outcome even student with evening types sleep pattern had comparable Pittsburgh sleep quality index to morning type sleep pattern student.

Conclusion

The sleep is essential for better academic outcome in college students. The role of sleep habit needs to recognize by institution undergraduate.

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