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Original Research Article

Assessment of Sleep Quality of Newly Joined Medical Students- A Cohort Study Done in Kaims, Karwar, Karnataka

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Abstract: Medical students are exposed to variety of stressors during the course of their study. The study aimed to prospectively assess the sleep quality of newly joined medical students and to compare their initial sleep quality with that after 10 weeks. The study was conducted in Karwar Institute of Medical Sciences, Karwar, Karnataka. Prospective sleep quality of the students was assessed using Pittsburgh sleep quality index (PSQI) questionnaire. Assessment was done initially in the 1st week of October 2016 and again after 10 weeks in the last week of Dec 2016. On comparing the average scoring of various components of PSQI of the participants during initial and after 10 weeks statistically insignificant difference is noted. Improvement in global PSQI score was seen in 39.67% of participants. On the contrary, deterioration in global PSQI score was noted in 41.32%. 19.01% of them showed no change. There is no significant difference in the prevalence of poor sleep quality after 10 weeks. But the subgroup of participants with global PSQI score **≥5** did not remain the same after 10 weeks. Sleep disturbance among newly joined medical students could be due to variety of stressors in the due course of their academics. Counseling and close monitoring is required to reduce stress experienced by these students.

Keywords: Sleep disturbance, PSQI, Stress, Sleep quality.

INTRODUCTION

Sleep is controlled by biological rhythm called the circadian rhythm, which in turn is affected by various factors like physiological function, school and work schedules, medical conditions and genetic differences [1, 2]. The medical student population appeared to be at increased risk of sleep deprivation because of demanding academics [3, 4] and rigorous clinical training, reduced family supervision, exposure to new environment and difficulties encountered during study [5].

Newly joined medical students in the beginning are subjected to various types of stressors with an obligation to perform better in academics, supersede their peers, trying to get adapted to new environment. There are studies reporting stress among medical students regardless of academics to be 63.8% [6]. Studies have classified stressors as academic, psychosocial and health related [7,8].

The high level of stress might affect learning and cognition among the medical students [9]. However these newly joined students try to cope with those various stressors by getting adapted to the changing conditions, hanging out with friends, sports, music, cut short their leisure time and hrs of sleep, compensate their studies by staying awake at night. This could disturb the circadian rhythm of these students. These stress coping strategies among the students could impact their health and also their academic performance. The present study aimed for prospective assessment of sleep quality among newly joined medical students.

Aims and objectives:

To prospectively assess the sleep quality of newly joined medical students and compare their initial sleep quality with that after 10 weeks.

MATERIALS AND METHODS:

The study was conducted over newly joined medical students of Karwar Institute of Medical Sciences, Kara, Karnataka. The study was approved by Institutional Ethics Committee. The intention of study was explained to the students and they were assured that their identity will not be revealed. Those who volunteered to participate were included in the study group. Prospective sleep quality of the students was assessed

using Pittsburgh sleep quality index (PSQI) questionnaire.

Pittsburgh sleep quality index (PSQI)[10]

Pittsburgh sleep quality is a self-rated questionnaire consisting of nineteen questions is used to assess seven components of sleep - subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, and usage of sleep medication during the last one month. Each question of the questionnaire carries score from 0-3, with 0 being the highest and 3 being the lowest score. The seven component scores are then added to get a global PSQI score in the range of 0-21. A global score equal to or more than 5 indicates poor sleep quality in the past month. PSQI is reliable with Cronbach's α 0.83.

The students were asked to assemble in the lecture hall on a day of first week of October 2016 in the morning. A proforma consisting of sociodemographic profile and Pittsburgh Sleep Quality Index questionnaire to assess sleep quality were distributed to the participants. One of the authors explained the contents of the proforma and questionnaire to all the students. Rest of the authors addressed the queries of individual student separately. The participants were asked to mark appropriately. They were asked not to discuss among themselves. Adequate time was given to complete the questionnaire. Later, they were collected and the data was compiled in Microsoft excel.

Similar assessment of sleep quality using PSQI questionnaire was done on the same participants after 10 weeks on one day in the last week of Dec 2016. Data was compiled. Appropriate statistical tests were applied to compare the sleep quality with initial.

RESULTS:

Out of 150 students, 121 volunteered to participate in the study. 68 participants were male and 53 were female.

Table-1. Average scoring of different components of PSQI of the participants initial and after 3 months

	Assessment	
Components of PSQI	**Initial**	**After 10 weeks**
Subjective sleep quality	0.884	0.95
Sleep latency	0.645	0.686
Sleep duration	1.314	1.281
Habitual sleep efficiency	0.017	0
Sleep disturbance	1.107	1.033
Usage of sleep medication	0.091	0.165
Daytime dysfunction	0.959	0.983
Global PSQI score	5.008	5.099

N=121 Paired t test p=0.16

Statistically insignificant difference is noted (p=0.16) on comparing the average scoring of various components of PSQI of the participants as noted during initial and after 10 weeks.

Table-2. Sleep quality of participants after 10 weeks

Sleep quality	**Study group (N=121)**	**Avg change in Global PSQI score**	**Subgroup Female (N=53)**	**Avg change in Global PSQI score**	**Subgroup Males (N=68)**	**Avg change in Global PSQI score**
Improvement	48 (39.67%)	2.15	18 (33.96%)	1.94	30 (44.12%)	2.27
Deterioration	50 (41.32%)	-2.28	20 (37.74%)	-2.3	30 (44.12%)	-2.27
No change	23 (19.01%)	0	15 (28.3%)	0	8 (11.76%)	0

Paired t test for gender difference p=0.5

Improvement in global PSQI score was noted in 39.67% of participants. On the contrary, deteriorationin global PSQI score was noted in 41.32%. 19.01% showed no change. There was statistically insignificant gender difference in either improvement or deterioration of sleep quality after 3 months.

Table-3: Global PSQI score in the participants initial and after 10 weeks

Assessment	**Global PSQI score <5**	**Global PSQI score ≥5**
Initial	54	67
After 10 weeks	57	64

N=121

There is no significant difference in the prevalence of poor sleep quality after 10 weeks. But the subgroup of participants with global PSQI score **≥5**did not remain the same after 3 months.

DISCUSSION:

Medical course is considered to be tough when compared to other professional courses. Newly joined medical students undergo lot of stress after they enter into professional college. The choice of college made would be far from the place of their family. Hence they feel away from home and family members during the initial period. This could turn into stress and affect their sleep quality. After spending some days in the professional college they are exposed to newer stressors with coping to earlier stressors. This is could be because students are already exposed to stress during their early school days [11]. Early exposure to stress has been noted in earlier studies [12, 13]. Some may feel further adding of stressors to the earlier experienced. Hence their sleep quality is would get affected.

This study aimed to prospectively assess the sleep quality of newly joined medical students and compare their initial sleep quality with that after 10 weeks. Students were preparing for first internal assessment during the time of assessment of sleep quality after 10 weeks. Though there were small change in mean of various components of PSQI and global PSQI score they were statistically insignificant.

On critical analysis, it was noted that after 10 weeks the trend of global PSQI score among participants did not remain the same. Based on their self-report some participants had improved sleep quality whereas some had poorer sleep quality and some had no change. With this one can make out that students are exposed to various stressors in due course of time. Depending upon their ability some cope with the stress experienced by psychosocial and academic stressors and some may not. Hence their sleep quality show different trend with passing of time. There is insignificant gender difference in the trend of sleep quality. But earlier studies have reported the significant gender difference [6, 14, 15].

The prevalence of poor sleep quality with global PSQI score ≥5 remained similar after 10 weeks' time. Poor sleep quality can be attributed to academic stressors that the students experience after they join the course in the form of exams and assignments [16, 17].

CONCLUSION:

The findings of the study show that there is a need for stress management in all the medical colleges. Identifying the source of stress, conducting stress management workshops throughout the academics and maintaining a well-balanced academic environment by evaluating the existing curriculum would help the stressed out students to cope with stressors throughout their academics.

Limitations of the study:

The study group is small. Larger group study required to generalize the results.

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