

Insomnia and Related Anxiety Among Medical Students

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ABSTRACT

Objectives: The objectives of the current study were to determine the prevalence of insomnia among students of college of Medicine, Majmaah University, Saudi Arabia and to identify the rate of anxiety-related insomnia.

Methodology: The study design was cross-sectional conducted at College of Medicine, Majmaah University. The sample size was taken as 190. Data were collected by a pre-tested questionnaire after obtaining ethics approval. Analysis of data was performed by SPSS.

Results: Students with the subthreshold, moderate clinical and severe insomnia were 48.9%, 17.4% and 3.7% respectively. Thirty-five (50.0%) of students who were insomniacs had mild anxiety. Forty-four (72.1%) and fifty-four (91.5%) students who had moderate and severe anxiety had insomnia respectively.

Conclusion: The study concluded that the prevalence of insomnia among medical students, Majmaah University is high. There is a significant association between insomnia and anxiety. More than half of students are complaining of insomnia and anxiety comorbidity.

Key words: Insomnia, Anxiety, Medical students

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INTRODUCTION

Insomnia is defined as “persistent problems in falling asleep, maintaining sleep, or poor quality of sleep”, it arises as a result of multiple environmental, medical, psychological and mental disorders [1]. Sleep is important for several brain functions, including how neurons communicate with each other. Recent studies stated that sleep plays a housekeeping role that removes toxins in the brain that build up while the person is awake [2]. Sleep deprivation due to work shift may cause disruption in the brain EEG recordings by affecting the biological rhythm

[3]. Gumustekin K et al. reported that sleep deprivation may delay wound healing [4].

Many studies demonstrated the effect of short duration of sleep and increased risk of hypertension and acute myocardial infarction [5,6]. In the Nurses' Health Study, Ayas et al. reported that short or long sleep duration is independently associated with an increased risk of coronary heart diseases [7]. Sleep deprivation can disrupt the autonomic control of heart rhythm and predispose to cardiovascular morbidity and mortality [8], it may also cause sympathovagal imbalances by affecting the biological rhythm due to work shift [9].

Insomnia in youth and adolescence is poorly recognized, under diagnosed and under-treated. Insomnia is considered as a nocturnal disorder that have an impact on individual's performance

during waking time, taking the physical and cognitive functions that sleep usually provides [10,11]. Insomnia related disorder is associated with depressive illnesses and other psychiatric problems and is independent risk factor for suicide and substance abuse [12-16]. The prevalence of insomnia differs with different age and gender. Elderly, female gender and excessive tea consumption is associated with increased risk of insomnia [17,18]. A study conducted in Riyadh; Saudi Arabia revealed a crude prevalence of insomnia as 77.7%. This study showed that insomnia was higher in females (88.7%) than for males (70.4%), and the young age group (64.2%) [19]. According to the results of the National Sleep Foundation, 59% of young adults from 18 to 29 years cannot fall asleep early at night, and not getting enough sleep [20,21]. Short sleep time in the adolescent has many negative somatic, neurodevelopmental and psychological consequences [22-24].

A study conducted on medical students of medical schools in a Saudi Arabia to assess sleep habits during clinical years showed that students acquired an average 5.8 hours of sleep each night, with an average bedtime at 01:53 am. Poor sleep quality was present in 30%, excessive daytime sleepiness (EDS) in 40%, and insomnia symptoms in 33% of the students [25]. Medical students tend to reduce their sleep, in an effort to adjust and cope with their workload and stressful environment and they may not consider sleep as the first priority and some reduce the sleeping time in order to have an extra hours for studying especially before exams [26,27].

Insomnia is becoming a real problem that interferes with students' performance and predispose to psychological problems. Studying this disorder is vital in order to assist in finding solutions and improving students' health and academic performance. The objectives of this study were to determine the prevalence of insomnia among students of college of medicine, Majmaah University, Saudi Arabia and to identify the rate of anxiety-related insomnia.

MATERIALS AND METHODS

The design was cross-sectional to study the prevalence of insomnia among college of medicine students, Majmaah University, Saudi Arabia. All college of Medicine students of both sexes and all levels are included in the study.

Students who were not registered for the current semester were excluded. The sample size was 190, taken by simple random sampling using the table of random selection. Data were collected by a pre-tested questionnaire after obtaining ethics approval. The questionnaires consisted of sociodemographic characteristics of the sample along with questions related to insomnia and anxiety. Epworth Sleepiness Scale (ESS) was included in the questionnaire [28]. The State Anxiety Scale (S-Anxiety) was employed for anxiety [29]. Data analysis was done by SPSS version 23. Descriptive statistics was used (frequency and standard deviation). For qualitative data, comparisons between groups were determined using the chi-squared test and p value less than 0.05 was considered as significant.

RESULTS

Table 1 shows the sociodemographic data. There were 145 (76.3%) male and 45 (23.7%) female students. Forty-four (23.2%) students were in level 1, 33 (17.4%) were in level 2, 35 (18.4%) were in level 3, 42 (22.1%) were in level 4, and 36 (18.9%) were in level 5. One hundred and eighty-seven (98.4%) of the students were single.

Table 2 shows the prevalence of insomnia among the students of college of medicine. Students with no clinically significant insomnia were 57 (30%). Students with the subthreshold, moderate clinical and severe insomnia were 48.9%, 17.4% and 3.7% respectively. Table 3 shows the characteristic of insomnia. Sixty (31.6%) of the students have no difficulty in falling asleep. Forty-nine (25.8%) have mild difficulty. Students with moderate difficulty, severe difficulty and very severe difficulty in falling asleep were 55 (28.9%), 14 (7.4%) and 12 (6.3%) respectively. Seventy-four (38.9%) of the students have no difficulty staying asleep. Mild difficulty presented in 52 (27.4%), moderate difficulty in 44 (23.2%). Students who have severe and very severe difficulty in staying asleep were 12 (6.3%) and 8 (4.2%) respectively. In waking early, 52 (27.4%) of students have no problems in waking early, 44 (23.2%) have mild problem, 46 (24.2%) have moderate problem; those who have severe and very severe problem in waking up early were 27 (14.2%) and 21 (11.1%) respectively.

Thirty-five (50.0%) of students who were insomniacs had mild anxiety. Forty-four (72.1%)

Table 1: Socio-demographic characteristics of the students.

Characteristic	No	Percent
	Gender	
Male	145	76.3
Female	45	23.7
Total	190	100
	Academic year	
Level 1	44	23.2
Level 2	33	17.4
Level 3	35	18.4
Level 4	42	22.1
Level 5	36	18.9
Total	190	100

Table 2: Insomnia among college of Medicine students (n=190).

Categories of Insomnia	No.	Percent
No clinically Significant insomnia	57	30
Subthreshold Insomnia	93	48.9
Moderate Clinical Insomnia	33	17.4
Severe Clinical Insomnia	7	3.7

Table 3: Characteristics of insomnia among students.

Characteristic	No	%
	Difficulty in falling asleep	
None	60	31.6
Mild	49	25.8
Moderate	55	28.9
Severe	14	7.4
Very severe	12	6.3
	Difficulty staying asleep	
None	74	38.9
Mild	52	27.4
Moderate	44	23.2
Severe	12	6.3
Very severe	8	4.2
	Problems of waking up too early	
None	52	27.4
Mild	44	23.2
Moderate	46	24.2
Severe	27	14.2
Very severe	21	11.1

Table 4: Insomnia and anxiety comorbidity.

Anxiety	Insomnia		Total	Chi square	P
	Yes	No			
	NO (%)	No (%)			
Mild	35 (50)	35 (50)	70 (36.8)	42.054	<0.001
Moderate	44 (72.1)	17 (27.9)	61 (32.1)		
Severe	54 (91.5)	5 (8.5)	59 (31.1)		

and fifty-four (91.5%) who had moderate and severe anxiety had insomnia respectively. The insomnia and anxiety comorbidity data are presented in Table 4.

DISCUSSION

This research was conducted to study the prevalence of insomnia among college of

medicine students, Majmaah University in Saudi Arabia. In general, our result shows that more than 2/3 of the students (70%) are insomniacs. In a study, Sing CY reported a rate of insomnia as 68.6% among Hong Kong college students [15]. In another study, Almojali et al. reported that 76% of students in King Saud bin Abdulaziz University for Health Sciences in Riyadh, Saudi Arabia were

insomniac [26]. Al Qahtani MS et al reported a high prevalence (78%.0) of insomnia among students of three medical schools in Riyadh, Saudi Arabia [30]. A high prevalence (86.3%) of poor sleep quality was reported by Haytham I et al who conducted a study among residents in programs supervised by the Saudi Commission for Health Specialties [31]. The reasons behind medical students sleep deprivation may be due to pre-sleep cognitions such as active thinking, worrying, planning, and analyzing problems and issues [32]. Lichstein KL et al. suggested that intrusive cognitions are far more prevalent than somatic factors in creating insomnia [33].

The characteristics of sleep problems was presented as difficulty staying asleep 38.9%, difficulty in falling asleep 31.6% and problems of waking up too early 27.4%. These findings are consistent with Narisawa H et al. and Shen Y et al. [34, 35].

Our results show that students who are insomniac and having severe anxiety were 54 (91.5%), and insomnia prevalence increases as the anxiety increases from mild to moderate to severe ($p < 0.001$). These findings agree with previous study conducted in Riyadh, Saudi Arabia. The authors also demonstrated that insufficient sleep and daytime sleepiness can lead to problems in interpersonal relationship, anxiety and depression [36]. Another study done earlier by Ford et al. reported that 40% of those with insomnia and 46.5% of those with hypersomnia had anxiety and others psychiatric disorders compared with 16.4% of those with no sleep complaints [37]. Monti et al. earlier reported an association between sleeping disorders and anxiety [38]. Our study concluded that the prevalence of insomnia among medical students, Majmaah University Saudi Arabia is high. There is a significant association between insomnia and anxiety, more than half of students are complaining of insomnia and anxiety comorbidity.

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AUTHORS CONTRIBUTION

Proposal development, data collection and writing the drafts of the proposal and the report

were done by all the students. Supervision of the work editing and proofreading the manuscript were conducted by Dr. Elsadig Yousif Mohamed and Dr. Salah Ahmed Abdulrahim. Data analysis were done by Dr. Waqas Sami. All authors contributed and approved the final manuscript.

CONFLICT OF INTEREST

Nil for all authors.

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