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Research Article

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An investigation of the prevalence of sleep disorders among medical students of Shahroud Islamic Azad University in 2013

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ABSTRACT

Sleep is a natural phenomenon which is known as one of human physiological needs and is one of the important elements in the circadian cycle which is followed by the restoration of physiological and mental power. As people spend one third of their lives in sleep, sleep disorders can, for different reasons, disrupt the normal order of normal physiological sleep and leads to some problems such as fatigue, lassitude, irritability, reduction of physical and mental abilities, reduction of attention and concentration, headache and etc. Thus the present study aimed to investigate the prevalence of sleep disorders among medical students of the Medical Sciences Faculty of Islamic Azad University, Shahroud branch. The present study was carried out on 42 medical students who were chosen by simple random sampling method and did not have any known mental disease or significant medical and physical problems and disability. Students answered the Pittsburgh Sleep Quality Index (PSQI), and then the data was transferred to SPSS-v20 software and was analyzed. In this investigation 88.1% (37 students) were females and their average age was 22.666±0.901. Among these, 28.6% (12 students) were healthy, 64.3% (27 students) had borderline symptoms and the others had symptoms of the disease. Sleep is one of human's physiological and basic needs and sleep disorder threatens human health; so paying attention to sleep health has an important role in providing the mental and physical health of the society population.

Key words: sleep disorders, Pittsburgh Index, medical students

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INTRODUCTION

Sleep is an organized behavior which is repeated every day as a vital necessity and based on the biological rhythm, and from long ago it has been considered by many scientists in various medicine fields especially psychology, psychiatry and physiology as it has a major role in human's general health [1]. Sleep is a relaxing situation in which brain function is restored; brain and other body systems get changed during sleep, but brain changes are more than those of the other parts. During the time of awakening, brain is constantly active but its activity is reduced in the sleep mode. Also during sleep, the physiological changes such as temperature decrease, blood pressure and pulse are reduced [2]. Since everything seems better after the night's sleep, thus it can be said that sleep leads to conditions such as reinforcement of physical powers, decrease of stress and anxiety, reinforcement of the power of coordination and concentration of life activities [3]. Lack of sleep doubtlessly affects the actions of the central nervous system and long awakening is often associated with progressive disorders of psychiatric actions and it sometimes leads to abnormal activities and behavior of the nervous system. Slow flows of thought and irritability and even mental disorders or psychosis are seen after a long awakening. Therefore, it can be said that sleep leads to a natural balance

between various nervous systems [4]. Sleep disorders are one of the most common complaints of medical and psychiatric patients and about a third of US adults have experienced various types of sleep disorders. Kaplan writes: The most common complaint about sleep is related to sleep onset and maintenance disorders and he next states that insomnia can be acute or chronic. In acute insomnia, a period of sleeplessness happens which is accompanied by anxiety and severe life changes such as career changes or time for school exams. In some people, insomnia might be caused by the loss of or mourning a dear one or any other change in life; this kind of insomnia is not serious, though it is accompanied by a mental stress or severe depression. Chronic insomnia is a kind of insomnia in which the main problem is seen in the sleep onset stage. Those suffering from this kind of insomnia usually have a clear complaint about the present insomnia. The duration of this insomnia expands over time and continues for weeks and can be harmful [5]. Sleep is an important criterion in the maintenance of human physical and mental health, and any disorder in its normal flow, in addition to developing mental problems, can reduce the person's efficiency as well [6]. Sleep disorders are prevalent 15 to 42 percent in the total population. These disorders lead to negative undesirable results in people's quality of life and performance[7]. Insomnia, by reducing the quality of life, endangers the person's physical, mental, social, and emotional health; and poor sleep quality is related to the increase of tensions, irritability, depression and less satisfaction with life in general [8]. Generally speaking, it could be said that people are widely different in adapting to the day and night needs and changes. Those with only some symptoms of sleep disorders in the circadian cycle don't seek treatment and those who refer to a doctor often complain about the severity or duration of their symptoms. For example people who are engaged in shift works, usually seek treatment after the bitter experience of sleeping on duty or during driving. Although sleep disorders are one of the major health issues, the problems caused by it have been less considered which is despite the fact that every year various reports are published about road accidents, industrial accidents caused by drowsiness, reduced productivity related to work shifts caused by sleep disorders and the high expenses imposed on society resulted from using hypnotic drugs. But these economic and social effects have not been sufficiently addressed by policy makers and health authorities and researchers [9].

Therefore, prevention of students' sleep disorders and reduction of mental stress plays an important role in the increase of interest in work and group cooperation and the sense of responsibility. Thus, the present study investigated the prevalence of sleep disorders in 2013 among medical students of Faculty of Medical Sciences of Azad University of Shahroud.

EXPERIMENTAL SECTION

This is a cross-sectional study on 42 medical students of Shahroud Islamic Azad University who have been chosen by simple random sampling participated in the present study. The inclusion criteria were the absence of any known mental diseases or significant medical and physical problems and disability. The questionnaire used in this project was the Pittsburgh Sleep Quality Index (PSQI). This questionnaire investigates the following 7 components:

a) Subjective Sleepy Quality (question 9)
b) Sleep Latency (questions 2 and 5a)
c) Sleep Duration (question 4)
d) Sleep Efficiency (questions 1, 3, 4)
e) Sleep Disturbance (questions 5b to 5i)
f) Use of Sleep Medication (question 6)
g) Daytime Dysfunction (questions 7 and 8)
In scoring PSQI, the minimum and maximum score considered for each component was from zero (absence of problem) to 3 (very severe problem). At the end the scores of each component are added together and turn into a total score (0-21) which is as follows:

0-7 absence of problem, 8-12 mild symptoms, 13-16 moderate symptoms and 17-21 severe symptoms [10]. The validity and reliability of the questionnaire have been confirmed in different studies [6, 10-11]. The collected information was analyzed using SPSS-V20 statistical software and statistical tests.

RESULTS AND DISCUSSION

In this study, 42 questionnaires were completed by students with full consents from which 37 (88.1%) were females and 5 (11.9%) were males. 3 (7.1%) were 21 years old, 16 (38.1%) were 22 years old, 16 (38.1%) were 23 years old,

6 (14.3%) were 24 years old and 1 (2.4%) was 25 years old. Among these people, 12 (28.6%) were healthy, 27 (64.3%) had borderline symptoms and 3 (7.1%) had higher-than-cut-off-point scores. There was a significant meaning between sleep disorders and gender (female) in this research (p=0.001)

Table 1: The investigated components in the samples

Variable	Minimum	Maximum	Average	Standard deviation
Age	21	25	22.666	0.901
First component	0	3	1.547	0.992
Second component	0	3	1.190	0.968
Third component	0	3	2.071	1.045
Fourth component	0	3	1.309	1.278
Fifth component	0	3	1.309	0.715
Sixth component	0	3	0.595	0.766
Seventh component	0	3	1.333	0.786
Total of components	2	19	9.357	3.747

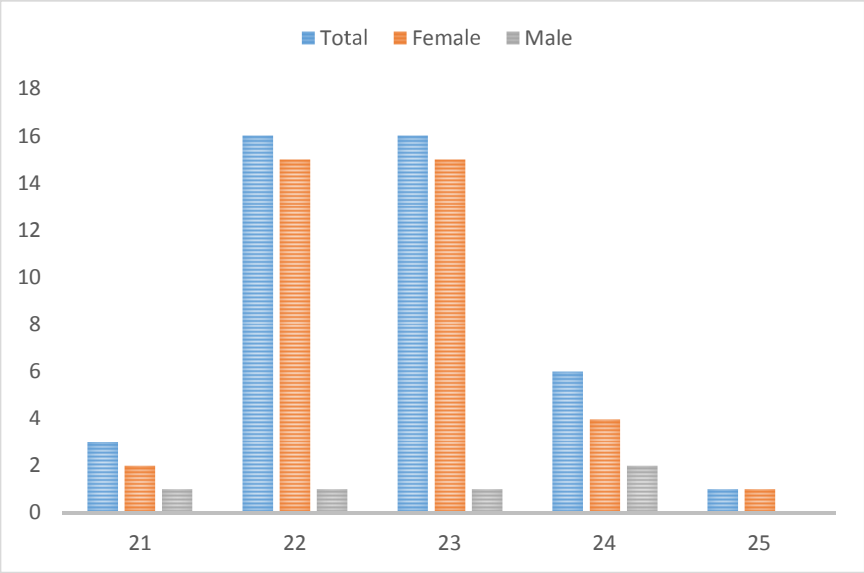

Fig 1: Age distribution frequency between male and female students

DISCUSSION AND CONCLUSION

The present study is a cross-sectional study aimed at determining the prevalence of sleep disorders among medical students of Medical Sciences Faculty of Shahroud Islamic Azad University. The findings of this study showed that more than half (64.3%) of the studied population have mild symptoms of sleep disorders which is slightly higher than the study of Aslani et al. in Shahr-e-Kord [12]. In a study aimed at the prevalence of sleep disorders and its relationship with personal and social variables among Polish people, it was reported that about one fourth of the population suffer from insomnia and this number is higher among women [13]. In an investigation of sleep disorder prevalence in Australia, the results show that 21% of the people suffer from insomnia for more than one year [14]. In this study sleep disorder symptoms were more observed among females which are consistent with similar studies in Poland and Australia. In a study aimed at investigating the prevalence of sleep anomalies in patients suffering from psychiatric disorders among the whole Tabriz population, 1013 participants between 15 to 75 years old were investigated and the total prevalence of sleep disorders was reported to be 35.22 [11] which was lower than this study's results, but the differences in the prevalence of sleep disorders are not unexpected in different societies. Abbasi et al. have investigated the relationship between sleep quality and general health level in chemical warfare casualties with bronchiolitis obliterans from whom 77.4% of the samples were not in good general health and the average scores of sleepiness scale in them has also been reported inappropriate [15]. Ahmadvand's study on insomnia in people more than 18 years old showed that those with a history of mental disorders suffer from insomnia two times more than those without a history of mental disorders [16]. In the study the simultaneity of mental disorders and

sleep disorders has also been reported based on which 17.7% of those complaining about insomnia suffered from depression and anxiety [17].

Limitations

Firstly sleep disorders might be worse than those reported in the present study, as students may give socially desirable answers such as not having sleep problems. Thus, the study might be limited by underreporting. Secondly, the present study was a cross-sectional study based only on a limit period of students' life which might not be representative of the students' general sleep behavior. Thirdly Comparison between different studies in different societies/countries is not an easy task because there is much variability in operational definitions and different measures are used to evaluate sleep disorders.

CONCLUSION

Despite several publications regarding the subject, students and professionals tend to ignore the sleep disorders and their possible concerns. Sleep is one of human's physiological and basic needs and sleep disorders threaten human health. Thus paying attention to sleep health will have an important role in providing mental and physical public health. Considering the fact that students are one of the most important and influential members of the society, therefore it is recommended to do proper counseling, better planning and support facilities should be delivered to students likely to suffer from sleep disorders.

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