Brief Report

Relationship between quality of sleep and mental health in female students of Shahid Sadoughi University of Medical Sciences (2015)

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Abstract

Introduction: The sleep deprivation leads to a severe mood changes such as depression and weak scientific performance. Health of students guarantees the scientific level and the development of each society. This Study conducted to investigate relationship between quality of sleep and mental health in female students of Shahid Sadoughi University of Medical Sciences (2015).

Materials and Methods: Design of this study was cross-sectional analytic that conducted on 250 female students of Shahid Sadoughi University of Medical Sciences through cluster sampling. Data were collected by Pittsburgh Sleep Index and Depression-Anxiety-Stress Scale-21. Statistical descriptive tests, ANOVA and t-test conducted in SPSS-16 software.

Results: The mean score of sleep quality in students was 5.83±2.17. 61.2 % of students had undesirable sleep. Based on the results, the mean score in students was 4.67± 3.71 for depression, 9.49 ± 4.66 for stress and 4.23 ± 3.69 for anxiety. The findings showed a significant relationship between quality of sleep and mental health (depression, stress and anxiety) (P=0.000). Based on results, indigenous (P=0.006), physical activity (P=0.002) and location of residency (P=0.001) were significantly correlated with score of sleep of quality.

Conclusion: Based on the results of this study, more than half of the students sleep quality is unsatisfactory. According to the study, poor sleep quality and mental health (depression, anxiety and stress) had a profound impact on each other. So, it is recommended the interventions regarding to students sleep quality improvement as an important factor for mental health promotion.

Keywords: Anxiety, Depression, Sleep quality, Stress, Students

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Introduction

Sleep has been considered as an important factor in the health of humans from a long time ago (1). So, Sleep is an inseparable part of human life and an important factor for resting the body and necessary for life. Suitable sleep is considered to be the most important human biofeedback (2). Prevalence of sleep disorders is about 30%, and it is estimated that 10% of people are continuously suffering from insomnia (3).

One of seven persons has a chronic sleep disorder in USA (4). Studies have also shown that more than 6 million people suffered from sleep disorders in Iran (5). Economically, the cost of sleep disturbance directly and indirectly is significant (6). Precise control of sleep is also an important part of clinical work because sleep disorders are often the primary symptom of a mental illness. Some psychiatric disorders are associated with certain changes in sleep physiology (7). Evidences also suggest that sleep patterns are predictors of depression (8).

The prevalence of depression has been reported from 2.4% to 37% in the general population of Iran and from 20% to 61% among students (9). Anxiety and depression are known as two major disorders in mental health (10). Overnight insomnia can affect the quality of life, and increase the risk of depression and anxiety and reduce the ability to cope with everyday stress (11). Therefore, this study conducted to investigate relationship between quality of sleep and mental health in female students of Shahid Sadoughi University of Medical Sciences.

Materials and Methods

This descriptive-analytic study was conducted in Shahid Sadoughi University of Medical Sciences in Yazd city. The sample size was determined to be 250 female students who were selected through randomized classification method among the faculties of Shahid Sadoughi University of Medical Sciences in Yazd (6 faculties). Data were collected using two questionnaires.

Research instrument

A) Pittsburgh Sleep Quality Index (PSQI): PSQI contains 19 items that are grouped into 7 components and assess sleep quality during the preceding month. Each component score ranges from 0 to 3; so, the overall sleep quality score has a range of 0 to 21. Score higher than 5 is indicative of poor sleep quality. Validity and reliability of this questionnaire have been reviewed and approved in Iran (12).

B) Depression-Anxiety-Stress Scale (DASS-21): It contains 21 items that are grouped into 3 components for assessing depression, anxiety and stress. Each component contains 7 items. A 4-point Likert-type scaling was used: 1 = never, 2 = low, 3 = moderate and 4= high. Each component score ranges from 0 to 3. Validity and reliability of this questionnaire have been reviewed and approved in Iran (13).

Initially, the researchers explained the purposes of this study to the students, and then the questionnaires were completed by the participants. The statistical analysis was performed, using SPSS software, version 16. The statistical analysis included descriptive statistics, ANOVA and t-tests.

Results

In this study, 250 female students were examined in terms of the quality of sleep. The mean age of students was 22.85 ± 3.25 years. Most of the students were single (76.8%), undergraduate students (56%), non-indigenous (65.2%) and living in dormitory (69.6%). Most students did not have regular physical activity (71.2%). Based on the results, the prevalence of depression, anxiety and stress in students were 40%, 48.8% and 64%, respectively. The results showed that mental health (depression, stress and anxiety) had a significant relationship with sleep quality (P=0.000) (Table 1).

Table 1. Relationship between mental health (depression, stress and anxiety) with the quality of sleep

Quality of sleep		Desirable	Undesirable	*P*
Depression	Normal	68(50.4)	67(49.6)	
	Having symptoms of depression	6 (6.6)	85(93.4)	0.000
Stress	Normal	52(62.7)	31(37.3)	
	Having symptoms of stress	23(15.9)	23(84.1)	0.000
Anxiety	Normal	65(55.1)	53(44.9)	
	Having symptoms of anxiety	11(9.9)	100(90.1)	0.000

Comparison of seven dimensions of sleep quality in two groups of normal and with symptoms of depression, anxiety and stress showed that there was a significant difference between healthy people and people with different degrees of depression, anxiety and stress in terms of subjective sleep quality, Sleep latency, sleep disturbances and daytime dysfunction.

The students had an average PSQI score of 5.83 (SD=2.17). Considering a cutoff point of 5, 153 students (61.2%) were identified as poor sleepers (PSQI>5). Sleep latency (1.35 ± 0.88) had the highest mean and use of sleeping medication (0.26 ± 0.27) had

the lowest mean. Sleep latency was in the range of 5-120 minutes. The mean of sleep latency was 35.45 ± 29.73 minutes. The mean of sleep duration was around 6 hours. The results of sleep disturbances showed that waking up in the middle of the night or early morning, nightmare and feeling too cold were the most common sleep disturbance. Also, difficulty breathing, pain and coughing or snoring loudly had the lowest frequent among sleep disturbance. The findings of this research showed a significant association between sleep quality with Indigenous status, physical activity and students' place of residence (*P*<0.05).

Table 2. The mean score of sleep quality based on variables

Variables		M±SD	*P*
Marital status	Single	5.95±2.25	0.13
	Married	5.46±1.86	
Native	Yes	5.3±1.88	0.006
	No	6.12±2.26	
Education level	Undergraduate	5.84±2.33	
	Masters	5.82±2.06	0.99
	PhD	5.83±1.94	
Physical activity	Yes	5.22±1.69	0.002
	No	6.08±2.29	
Drinking coffee	Yes	6.37±2.7	0.27
	No	5.76±2.08	
Drinking tea	Yes	5.91±2.38	0.42
	No	5.69±1.73	
Location	Dormitory	6.17±2.22	
	Home with parents	4.74±1.74	0.001
	Personal home	5.53±1.93	

Discussion

The present study showed a significant relationship between sleeps quality and mental health among students, which is consistent with the results of some other studies (14,15). In a study by Ghoreishi and Aghajani, sleep quality in people who had a history of depression and anxiety were lower than healthy people, but this difference was not statistically significant (7). Aloba et al. showed that sleep disorder is one of the earliest symptoms of psychiatric pathology (16). Lund et al. found that lower mood is one of the strong predictors of their sleep quality (17). Also, the results of Kaneita et al. showed that sleep disturbance and mental health in adults have a two-way relationship with each other (18). Not only sleep affects mood, equally mood can have a profound effect on sleep. Depression, anxiety and disturbed thoughts cause insomnia, also insomnia worsens the mood of the person, and this leads to more disturbing thoughts, so this cycle will continue.

In the present study, more than half of the participants had poor sleep quality. The prevalence of poor sleep quality have been reported 53.5% among students of Mohaghegh Ardebili University, 40.6% among medical students of Zanjan University of Medical Sciences and among students residing in dormitories of Tehran University of Medical Science (7,19,20). Also, Lashkaripou et al. showed that 62.4% of students had poor sleep quality that was higher in female students (21). In a study by Mesquita and Reimao, 60.38% of students had poor sleep quality (22). James et al. study also found that poor sleep quality was current in Nigerian medical students (23). Many factors can lead to poor quality sleep, such as working with the Internet, high psychological stresses in university environments, the study late into the night, training pressures.

Conclusion

The results of this study showed that the sleep quality of more than half of the female students is in an unfavorable condition that can affect mental health. Also, depression, anxiety and stress can cause poor quality sleep in students. Therefore, it is necessary to carry out interventions to improve the quality of sleep pattern and mental health in students. For example, holding workshops and advised to exercise and regular physical activity can help improve the quality of sleep and mental health.

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