

RESEARCH ARTICLE

**Sleep Disorder prevalence
among students of Ahvaz
Jundishapur University of
Medical Sciences**

Hatam Boostani 1, Atieh Chapari Ilakhchi 2, Zeinab Sardari 3*

1 Assistant Professor, Department of Psychiatry, Golestan hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

2 Associate Professor, Department of Psychiatry, Golestan hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

3 Student of General Medicine, Department of Medicine, Student Research Committee, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

Correspondence

Zeinab Sardari
Student Research Committee,
Ahvaz Jundishapur University
of Medical Sciences, Ahvaz,
Iran.

Keywords

Sleep quality ,Medical
students ,Sleep disorder

Received

25 December 2016

Reviewed

19 January 2017

Accepted

03 March 2017

ABSTRACT

Background: Since humans spend a third of their life sleeping more than 30 people suffer from sleep disorders, it can be said sleep disorder is a major psychiatric problem (2). Medical students due to pressure of psychological stress are more susceptible to sleep disorders. This could be the effect on their performance. So in this study, the prevalence of sleep disorders in medical students of Ahvaz university and the relationship between living habits of some demographic factors were examined. **Method:** A cross sectional study. Over 150 students at the medical students of Ahvaz sampling was conducted. And a sleep questionnaire and were assessed daily habits. Collecting data using descriptive statistics and Spearman correlation coefficients were analyzed. **Results:** 110 students with average 25 ± 1.67 years participated in the study. That 58 persons (52.7%) Stager and 52 persons (47.3%) Intern were. 22(20%) of them have good sleep quality and 88 (80%) had poor sleep quality. In this study, the sleep quality of subjects and factors such as age, gender, marital status, smoking, Drinking coffee during the day, Drinking coffee during the night, Working and studying, night working and housing there were no significant relationship ($P > 0.01$). **Conclusion:** The study showed that sleep disorders are common among Interns and Stagers. But statistically significant relationship between sleep disorders and demographic factors and lifestyle habits don't exist.

INTRODUCTION

Sleep is an organized behavior which is considered as a vital necessity and it is according to the biological rhythm takes place repeatedly and plays an important role in human's health because sleeping is a relaxing condition which brain reaction is reconstructed and therefore causes improvement in physical condition, reduces stress and anxiety, causes improvement in matching and also it can be said that sleep is an organized behavior which is considered as necessity of life and repeats according to the biological rhythm in daily life and has an important effect on the human being's health since it causes relaxation of brain and its reconstruction. Therefore it seems that sleep causes physical improvement, reduction of stress and anxiety and improves the ability of matching and concentration on the daily functioning (1). People spend one third of their life sleeping and more than 30% of people in the world suffer from sleeping disorders, therefore it can be said that sleeping disorder is one of the most psychological disorders (2).

Among sleeping disorders the most common complaint is daily sleeplessness and sleeping conditions people are suffering with (4). No doubt not having enough sleep affects the central nervous system and being awake for

a long time causes progressive disorders in psychological behavior and even sometimes causes misbehavior in psychological functioning. Such as staying awake for a long period of time causes brain reaction to be slow, irritable and also it causes psychological disorders such as (parish, tiredness, depression and anxiety) and then hearth and nervous systems problems follows and security system will be weaken due to long time sleeplessness (1&5). Sleeplessness and sleep disorders are the reasons for reduction in daily and studying functioning and most of the road accidents are due to sleeping condition of the drivers and most of the other businessmen misconducts (2&5). The medical students are under extreme life pressure due to their psychological pressure and examination anxiety and need for full time activities in some cases, high working pressure and their living conditions such as residing in dormitory and in fact the sleeping condition in them changes after they enter into the medical university. This can cause differences in their behavior and quality and quantity of their life and affect the cognitive, psychic, and motion of the students which in return affects the life style of the medical students who are responsible for the health of people and it also causes them not to be

able to participate in classes regularly and therefore produces error in medical cognitions (2&5&6).

Present study is conducted to analyze sleeping disorder among the students of medical college of Jundi Shahpour in Ahvaz and its relation with some of the demographic elements and living habit of students to be able to arrange some programming on their behavior in this regard and reduce their difficulties and increase their functioning in accepting more responsibilities.

MATERIALS AND METHODOLOGY

This research is external-internal cross sectional conduction for all the student in the medical college in Ahvaz and researchers started their search after obtaining permission from research assistant of the university and Ethic and coordination committee of the University. The researchers' promise to keep all the secrets of the participants and then they started their work and those who had the capacity of participating in the research were chosen randomly. The type of research is cross-sectional- analytic and collection of the data is conducted with the use of "IAT", a three parts questionnaire with the first part consisting of demography such as age, gender, marital status and second part

consists of questions of Petersburg and third part consists of IPORTH questionnaires to evaluate the quality of sleep and feeling sleepy during day time. Pittsburgh questionnaire is an instrument for evaluating sleep quality and pattern. Tools for collection of information consist of sleep quality index of Petersburg (PSQI=Pittsburgh sleep quality index) which is used by Danial G, B, C et all for measuring sleep quality and help in recognizing the questionnaire about daily sleep and sleepiness of the students. This questionnaire will recognize desirable and undesirable sleep through evaluation of seven properties of people's sleep during the last month which consists of quality of sleep in person's opinion, duration of time for a person to go to sleep, duration of being asleep, sleep's efficiency, difficulties faced in sleep, use of sleeping medicines, and disorders in daily activity. The answers for these questions are being presented by the patient and most of the test's questions are according to multi answer's questions and short answers to be understandable easily. The answers are being graded from 0 to 3 and 3 shows maximum negative score which is maximum score in "Likert" scale. Max score of 5 or more shows undesirable and domain of scores are from 0 to 21.

Producers of the scale believe that a mark above 5 (> 5) is considered as sleep disorder. Calculation of questionnaire's standard of quality of Pittsburgh sleep (PSQI) is 86.5% validity and its stability is 89.5% which is used in many countries.

Criterion for "IPORTH" sleepiness is being planned for measuring the amount of daily sleepiness. In the scale 8 different conditions are being defined which a person may be having a nap or even sleeping. At these conditions nothing will happen and score 3 will be given when there is a chance of having a nap or even sleeping. Total score of 10 or even more shows that there was daily over sleeping condition in people who answered the questions. In the condition with score 14, there are 8 different conditions being defined which in those condition there are chances of a person having a nap or going to sleep. Answering these conditions are being rated from Zero to Three with zero means the person is napping which never takes place and score 3 means medium sleep which takes place most of the time and score 9 or more shows extra sleepiness in a person who answered the questions not having enough sleep (6). Therefore they are standard and accepted situations according to reliability and

validity and therefore IPORTH sleepiness scale is valid and trusted worldwide. This questionnaire has been evaluated in Iran in the year 2013 by Sadeghnaiet al. For validity and reliability of information a questionnaire form is being produced at first which consisted of demographic information, criterion for IPORTH sleepiness and questionnaire for evaluation of Petersburg sleep quality among 110 medical students. Completed questionnaires were collected and analyzed. Reliability Analysis of the questionnaires were conducted with "SPSS" test, and ability of it was accepted according to questionnaire and census distributed among the students of Jundi Shahpour medical students and after completion of the forms they were collected.

RESULTS

110 medical students of Jundi Shahpour University in Ahvaz at the level of internal-external students participated in this research and its descriptive statistics is as follows (table 1):

Descriptive statistical table:

(Table1)

52 Persons(47.27%)	25-20	Age
58 Persons (52.73%)	30-25	
36 Persons (32.7 %)	Male	
74 Persons (67.3%)	Female	Gender
58 Persons (52.7%)	Stager	
52 Persons (47.3 %)	Intern	Study Grade
85 Persons (77.3 %)	Single	Married Status
25 Persons (22.7%)	Married	
4 Persons (4.5 %)	Yes	Smoking
106 Persons (94.5 %)	No	
33 Persons (30 %)	Never	Drinking coffee during the day
0 Persons (0 %)	1 Cup <	
61 Persons (55.5 %)	1-3 Cup	
16 Persons (14.5 %)	> 3Cup	
75 Persons (68.2 %)	Never	Drinking coffee during the night
26 Persons (23.6 %)	Cup 1<	
6 Persons (5.5 %)	3 Cup -1	
3 Persons (2.7 %)	>3 Cup	
94 Persons (85.5 %)	Never	
6 Persons (5.5 %)	Sometimes	Working and studying
10 Persons (09.09 %)	Part time	
106 Persons (96.4 %)	Never	Night working
3 Persons (2.7 %)	Sometimes	
1 Persons (0.9 %)	Part time	
57 Persons (51.8 %)	Student dormitory	Housing
5 Persons (4.5 %)	Married student dormitory	
17 Persons (15.5 %)	Student house	
31 Persons (28.2 %)	Living with parent	

Results of Pittsburgh questionnaire: had desirable sleep but 78 persons (80%) had undesirable sleep.

110 persons answered Pittsburgh questionnaire and according to this research 22 persons (20%) of them

Table 2 showed on next page

P-value	Undesirable Sleep Person (percent)	Desirable Sleep Person (percent)		
0.849	Persons 42 (80.76%)	10 Persons (19.23%)	25-20	Age
	46 Persons (79.31%)	12 Persons (20.68%)	30-25	
0.684	60 Persons (81.08%)	14 Persons (18.91%)	Female	Gender
	28 Persons (77.77%)	8 Persons (22.22%)	Male	
0.125	68 Persons (80 %)	17 Persons (20 %)	Single	Married Status
	20 Persons (80 %)	4 Persons (20%)	Married	
0.775	47 Persons (81.3%)	11 Persons (18.9 %)	Intern	Study Grade
	41 Persons (78.84%)	Persons 11 (21.1 %)	Stager	
0.582	44 Persons (77.19%)	13 Persons (22.8%)	Student dormitory	Housing
	26 Persons (83.87%)	5 Persons (16.1%)	Living with parent	
	Persons 13 (76.47%)	4 Persons (23.5 %)	Student house	
	5 Persons (100%)	-	Married student dormitory	
0.701	76 Persons (80.85%)	18 Persons (19.14%)	Never	Working and studying
	5 Persons (83.33%)	1 Person (16.66%)	Sometimes	
	7 Persons (70%)	3 Persons (30 %)	Part time	
0.746	76 Persons (86.4 %)	18 Persons (16.98%)	Never	Night working
	5 Persons (5.7 %)	1 Person (33.33%)	Some times	
	7 Persons (8%)	3 Persons (13.6%)	Part time	
0.766	25 Persons (28.4%)	8 Persons (24.4 %)	Never	Drinking coffee during the day
	50 Persons (56.8 %)	11 Persons (16.16 %)	3-1 Cup	
	13 Persons (14.8 %)	3 Persons (13.6 %)	>3 Cup	
0.308	4 Persons (100%)	0 (0.00%)	Yes	Smoking
	84 Persons (79.24%)	22 Persons (20.75%)	No	
0.68	55 Persons (73.33%)	20 Persons (26.6%)	Never	Drinking coffee during the night
	25 Persons (96.1%)	20 Persons (26.6%)	<1 Cup	
	5 Persons (83.33%)	1 Person (3.84%)	3-1 Cup	
	3 Persons (100%)	0 (0.00%)	>3 Cup	

Results obtained by Iporth 110 persons answered the Iporth questionnaire: questionnaire. Among them 47 people (42.7%) had enough sleep, 16

people (14.5%) medium sleep and 47 people (42.7%) had not enough sleep.

Table 3 showed on next page

P-value	Insufficient Sleep Person (percent)	Medium Sleep Person (percent)	Enough Sleep Person (percent)		
0.384	20 Persons (38.46 %)	10 Persons (19.23%)	22 Persons (42.3%)	25-20	Age
	27 Persons (46.55 %)	6 Persons (10.34 %)	25 Persons (43.1%)	30-25	
0.617	34 Persons (72.3 %)	10 Persons (62.5 %)	30 Persons (40.54%)	Female	Gender
	13 Persons (27.7%)	6 Persons (37.5 %)	1 Persons 7 Persons (47.22%)	Male	
0.197	36 Persons (42.36 %)	12 Persons (14.11 %)	37 Persons (43.52 Persons %)	Single	Married Status
	Persons 11 (44%)	3 Persons (12%)	10 Persons (40%)	Married	
	22 Persons (37.93 %)	9 Persons (15.51 %)	27 Persons (46.55%)	Stager	Study Grade
	25 Persons (48.07%)	7 Persons (13.46 %)	20 Persons (38.46%)	Intern	
0.946	24 Persons (42.1%)	10 Persons (17.5%)	Persons 23 (40.35%)	Student dormitory	Housing
	2 Persons (40%)	1 Person (20%)	2 Persons (40%)	Married student dormitory	
	13 Persons (41.93 %)	4 Persons (12.90 %)	14 Persons (45.16%)	Living with parent	
	8 Persons (47.05%)	1 Person (5.88%)	8 Persons (47.05%)	Student house	
0.832	Persons 39 (41.48%)	Persons 15 (15.95%)	40 Persons (42.55%)	Never	Working and studying
	3 Persons (50%)	0 (0.00)	3 Persons (50%)	Sometimes	
	5 Persons (50%)	1 Person (10%)	4 Persons (40%)	Part time	
0.696	45 Persons (42.45%)	Persons 15 (14.5%)	Persons 46 (43.39%)	Never	Night working
	1 Person (33.33%)	1 Person (33.33%)	Person 1 (33.33%)	Sometimes	
	1 Person (100%)	0 (0.00)	0 (0.00)	Part time	
0.123	10 Persons (30.30 %)	8 Persons (24.24 %)	15 Persons (45.45%)	Never	Drinking coffee during the day
	32 Persons (52.45%)	6 Persons (9.83%)	23 Persons (37.7%)	3-1cup	
	Person 5 (31.25 %)	2 Persons (12.5%)	9 Persons (56.25%)	Over 3	
0.673	29 Persons (38.6%)	11 Person s (14.6%)	35 Persons (46.6%)	Never	Drinking coffee during the night
	15 Persons (57.6%)	3 Persons (11.5%)	8 Persons (30.7%)	Under 1 bar	
	2 Persons (33.3%)	1 Person (6.25%)	3 Persons (50%)	1-3 bar	
	1 Person (33.3%)	Person 1 (33.3%)	Person 1 (33.33%)	Over 3 bar	
0.716	1 Person (25%)	Person 1 (25%)	2 Persons (50%)	Yes	Smoking
	46 Persons (43.39%)	Persons 15 (14.15%)	4 Persons 5 (42.45%)	No	

DISUSSION and CONCLUSION

According to the results obtained in this research about 88% of the Stager and Internal students of Jundi Shahpour University of Ahvaz, had undesirable sleep and 47% of them didn't have enough sleep, 16% medium sleep and 47% had enough sleep. In a study, Ghoraishi et al conducted a study on 40.6% of the medical students of Zanjan University and according to Mosavi and colleagues in their study, 13.5% of the students of medical college of Azad University in Tehran didn't have enough sleep, 2% had bad sleeping quality.

Prevalence of quality of bad sleep among the medical students are different in our studies and also the other studies which have been conducted with the use of different methods. Capacity of the different samples and different conditions of weather and also differences in social and cultural and race can explain these differences. But what is important to mention here is that in most of the studies the undesirable sleeping conditions are almost the same which can have undesirable consequences and needs further studies and if results are still same, some practical evaluations is necessary to be conducted.

since there is a significant relationship in quality and quantity of sleep in this study ($P=0.00$), this means that undesirable quality of

sleep can cause Inadequate sleep and therefore the results are obtained totally according to the present study and according to quality and quantity of sleep.

This study did not show a significant relationship between sleep disorder and grade of study ($p=0.775$). Which does not coordinate with studies conducted by Ghoraishi and Nejomi. These differences can be due to insufficient samples to be studied in the above study and different method of questionnaires for analysis in Nejomi study and our study.

We noticed in this study that there is no significant relationship between sleep disorder and place of living ($p=0.582$). Unbelievably sleeping condition at home is much worse than sleeping in the dormitory and houses for the students. Insignificant relationship can be due to condition of living in different places for the students and even other conditions can cause reduction in the quality of sleep of the students which is not desirable with Ghorashi study and undesirable with Mahmodi's study (7).

In our study more than 80% of unmarried samples and more than 80% of married samples have undesirable sleeping conditions where there is no clear relation between them ($p=0.0125$). Results obtained from the study show that our study coordinates with Pedram and Nejomi and Aradeni and does not

coordinate with Ghorashi and colleagues which can be due to less married couples participants in our study.

Our study did not show any significant relationship between good quality of sleep and daily work ($p=0.701$). In our study we could not find any relationship between night work and sleeping quality ($p=0.746$) which coordinates with Pedram study, but does not coordinate with Ghoraishi's study.

In our study we could not find any significant differences between type and quality of sleep ($p=0.684$) and therefore our study disagrees with "Ca nellas, Mohn and Yercheski and also Pedram which can be due to less samples participants in the study, but it agrees with Aghajani, ghanaei and Masoodzadeh studies.

In our study there isn't significant differences between the amount of day consumption of coffee ($p=0.766$) and night consumption of coffee ($p=0.068$) and quality of sleep. Chinawa JM's study shows a special relationship between hours of sleeping and use of caffeine(6). In I.Hindmarch study there is a significant relationship between quality of sleep and use of coffee ($p<0.001$) (8). While in Hassenian, Smith (2009), Jame (2011), Goldest ein (2010) and Wright (2011) studies did not show any significant relationship between quality of sleep and drinking coffee (9). As the

results of different studies show the quality of sleep with drinking coffee disagree with one another and this reason can be due to different elements in different studies and also the differences between participants in different studies due to their gene reaction to coffee which seems more acceptable.

Our study did not show any statistical differences between those who smoke cigarette and those who do not smoke cigarette ($p=0.308$). Mohammadi Farkhan and colleagues, Ghoraishi's studies do not coordinate with our study which can be due to less amount of sample participants in our study, but it coordinates with study conducted by Mansouri.

In our study we could not find any significant relationship between the age of people and quality of sleep ($p=0.849$). Our study in this regard does not coordinate with studies conducted by Moudi, Mosavi Asl, Dehghan dehnoy, which can be due to less sample participants in our study and also some other elements such as not observing health and hygiene principles in sleep which is different from age and they are considered as undesirable quality of sleep. At the time this study was continuing at the time of the use of cyberspace.

These changes also could affect the study especially during the examination period which coordinates with Masoodzad.

This study showed that there is no relationship between sleep disorders among the medical University students which is one of the effective elements on the quality of life of these students. There is significant and meaningful differences between quality and quantity of sleep ($p=0.00$) and age, gender, education, drinking coffee at night and during the day, residential area, daily work, smoking, marital status, and quality and quantity of sleep.

Suggestions:

Since this study has been section ally conducted and in a very short period of time, therefore it is needed to continue the study during 7 years of study with more participants which can cause improvement in the study's quality.

REFERENCE

1. Shamsaei F, Cheraghi F. Comorbidity of public health sleep disorders in people of Hamadan. *Journal of Nursing and Midwifery Hamadan* : (20)2 : 139145-40 ;
2. Aqajani A, Qureshi A. Sleep quality in Zanjan university medical students. *Medicine magazine* 1387 60-67 . ; 1(66): :
3. Hirshkowitz M, Roda GS, Sharafkhaneh A. Sleep disorders. In: Sadock VA, Ruiz P editors. *Kaplan & Sadock Comprehensive text book of psychiatry*. 9th edition, Lippincott 2178- 200:22150; .
4. Nejomi M, Ghalebandi M, Akhbari R, Garimi. Sleep patterns prevalence of sleep disorders around the Iranian Medical students. *Journal of Medical Sciences University and Islamic Azad University Postgraduate Medical University* 1(19):55-59 1388; .
5. Mousavi F, Matini A, Tabatabai R, Golestan B. The prevalence of sleep disorders and related factors in medical students of Islamic Azad University Tehran. *Medicine magazine* 1389 278-284 : (20)4; .
6. Chinawa JM, Chukwu BF, Obu HA. Sleep practices among medical students in department of university of Nigeria Teaching hospital, Ituku

- Ozalla, Enugu, Nigeria
 Pediatrics Nigerian Journal of
 Clinical Practice • Mar-Apr 2014;17
 (2) :232-234
7. Mahmoodi M ‘The relationship
 between sleep hygiene habits and
 sleep patterns (Morning –Evening)
 academic achievement Qazvin
 University of Medical Students
 .Journal of Medical Sciences Qazvin
 75 -74 :(20)1392:5‘ .
 8. I. Hindmarch ‘The Leeds sleep
 evaluation questionnaire in
 psychopharmacological
 investigations—a review
 Psychopharmacology :(71)2 :1980 ‘
 179–173.
 9. Goldstein, Tina R.; Bridge, Jeffrey
 A.; Brent, David A. Journal of
 Consulting and Clinical Psychology ‘
 91-84 :(1)2008:76