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Original

Study of Sleep Quality and its Relation with Educational Status of Iran University of Medical Sciences Students

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Abstract

Background: Undoubtedly, lack of good quality sleep is a major problem for students, affecting their educational success causing them academic failure. Therefore, this study is carried out aiming to determine sleep quality and its relation with educational status of Iran University of Medical Sciences students. **Methods:** This study is a sectional-analytic one performed on dormitory and non-dormitory students of Iran University of Medical Sciences. The criteria of entering the study include being student for at least one year, non-affliction to special diseases and not using drugs and tobacco. People were selected in proportional stratified sampling method after determining the sample volume (400), and Petersburg sleep quality questionnaires were distributed among them. After completion of the questionnaires, their data were extracted and introduced into SPSS version 21. The data obtained via T statistical tests for which Pearson correlation was analyzed were independent. **Results:** The sleep quality mark was higher than 5 for majority of the students including the dormitory and non-dormitory ones; expressing weak sleep quality. Sleep quality was 7.36 for dormitory students and 7.97 for non-dormitory ones; expressing significant statistical difference (p=0.018). The results suggest that educational status of non-dormitory students (0.22) is better than the dormitory ones (-1.23), and the difference is statistically significant (p=0.000). moreover, the results suggest that there is no relation between good sleep quality and educational status of the students (p=0.232). **Conclusion:** The study results suggest that sleep quality is not related to educational status. Considering that educational status is a complex matter and is affected by multiple factors including: intelligence, motivation and hard work, sleep quality plays less significant role regarding educational status.

Key words: Educational Status; Sleep Quality; Residence; Dormitory; Non-Dormitory

Introduction

Desirable sleep is an ensuring factor for mental and physical health which helps with coming into compromise with the others. This concept helps with increasing cognitive function of people and their focusing in daily activities. Sleep disorder on the other hand causes exhaustion,

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headache, lack of focus, problem solving ability deterioration, malfunctioning in cognitive functions and life expectancy quality decrement. Additionally, it can diminish problem solving merit or even speech ability. Moreover, ability of learning complex cognitive tasks and skill techniques diminish decrease because of sleep disorder.[1-4] Human health is related to sleep quality and quantity. Night time sleeplessness can affect the life quality, up to such as increasing chance of getting depression and increasing anxiety, as well as weakening ability of encountering daily stresses.[5] In such situations, one becomes angry and provoked easily. Night time sleep quality and quantity can affect the cognitive function and concentration level when doing daily activities.[6]

In addition, morning wakeup time can also affect the daily performance. According to a research performed by Lima et al in Brazil, it was discovered that the group of medical science students who wakeup very early in the morning, do not have good daily performance;[7] while in another researched carried out by Jones et al, it was concluded that performance weakness is related to waking up late in the morning.[8] Hence, it seems there is no clear agreement about waking up time. In the other hand, multiple researches suggest that night time sleep disorder can weaken the daily performance. The Hidalgo et al research in France is of such researches.[9] According to the studies carried out, it is said that sleep disorder complaining among students of medical branches is a common matter those afflicted with rarely seek for therapy.[10] Skipping therapy by the students does not only include sleep disorder; it also covers other psychological disorders as well.[11, 12]

Educational success of students is an essential matter in education which can cause decrement of science level of the future students if neglected. Considering that the graduated students of these fields must guarantee health and sanity of the society, significance of this matter is not to be neglected. Undoubtedly, a major problem for the majority of the students affecting their educational success and causing educational failure is lack of sleep. Educational failure of the youth is not only a personal problem, but is also a social problem to solve which, fundamental measures must be taken. Because problems caused by educational failure of the students will involve the society in the future. This study is carried out aiming to study sleep quality and its relation with educational status of the Iran University of Medical Sciences students.

Methods

The present study is a sectional-analytic one performed on students of the Iran University of Medical Sciences. Calculation of the sample volume is estimated using sample volume formula for prevalence studies considering the minimum prevalence in other universities in student community at P=38% and 5% error and also assuming accuracy of d=0.05 for minimum sample volume of 399. Statistical society of this study was all students studying in the Iran University of Medical Sciences during the data collection. Therefore, according to the list of students of each faculty and academic grades, 400 of them were selected with proportional stratified sampling method on condition of meeting the required criteria for entering the study which were being student for at least one year, no mental or physical diseases, not using tobacco or drugs and full consent on participating in the study.

The Petersburg sleep quality questionnaire was used to gather data. Several questions were added to the beginning of this questionnaire regarding evaluation of anthropological characteristics (age, gender, marital status, occupation status, university entering year) and educational status. The educational status was evaluated as self-reporting based on a -6 to 6 scale in comparison to the high school time. One of the best tools designed and made regarding sleep quality is the Petersburg sleep quality questionnaire which was formed in 1989 by Dr. Boys et al in Petersburg Psychology institute consisting of 9 items originally, but since question 5 includes 10 peripheral items, the entire questionnaire contains 19

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items overall which are to be marked in a 4-degrees Likert scale.[13] This questionnaire includes 7 sub-scales including: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication and daytime dysfunction. Achieving mark higher than 5 in the entire questionnaire means weak sleep quality.[13]

Boys et al (1989) who made and introduced this questionnaire for the first time, obtained the 0.83 for internal integrity of the questionnaire using Cronbach's alpha.[13] Justifiability and stability were obtained 0.86 and 0.89 respectively in the Iranian version of the questionnaire.[14] After determining the random sample and society, the prepared questionnaire is given to the studied students to fill in self-report method. After filling in the questionnaires, their information was extracted and introduced into SPSS version 21. After gathering the data, they are analyzed by independent statistical T and Pearson correlation tests. Significance level of tests was considered 0.05.

Results

Four hundred students of the Iran university of Medical Sciences were selected for this study in random with age average of 23.97(5.95) years old. Results of overall sleep status and its dimensions among the studied students based on residence status is included in table1. In this table, the 7-dimensions sleep quality in 4 classes (no sleep problems, medium sleep problems, serious sleep problem and very serious sleep problem) and overall sleep quality in two classes of weak and desired sleep quality are expressed.

Table 1. frequency distribution of overall sleep quality ant its dimensions for the studied students based on residency status

Dimension		Classification	Residence status			
			Dormitory		Non-dormitory	
			Number	Authentic percentage	Number	Authentic percentage
1	Overall sleep status	Desired	40	20	27	14
		Weak	156	78	168	84
2	Subjective sleep quality	No sleep problems	38	19	26	13
		Medium sleep problems	115	57	127	64
		Serious sleep problems	39	19	29	15
		Very serious sleep problems	9	5	15	8
3	Sleep latency	No sleep problems	35	17	25	13
		Medium sleep problems	91	45	89	45
		Serious sleep problems	52	26	62	31
		Very serious sleep problems	21	10	21	11
4	Sleep duration	No sleep problems	84	42	78	39
		Medium sleep problems	55	27	57	29
		Serious sleep problems	33	16	33	17
		Very serious sleep problems	28	14	31	15.6
5	Habitual sleep efficiency	No sleep problems	69	34	62	31
		Medium sleep problems	14	7	17	9
		Serious sleep problems	11	52	7	4
		Very serious sleep problems	103	51	113	57
6	Sleep disturbances	No sleep problems	22	11	6	3
		Medium sleep problems	153	76	171	86
		Serious sleep problems	26	13	20	10
		Very serious sleep problems	0	0	0	0
7	Use of sleep medications	No sleep problems	172	86	173	87
		Medium sleep problems	18	9	14	7
		Serious sleep problems	9	5	3	2
		Very serious sleep problems	1	1	7	1
8	Daytime dysfunction	No sleep problems	78	39	52	26
		Medium sleep problems	66	33	72	36
		Serious sleep problems	43	21	58	29
		Very serious sleep problems	14	7	15	8

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As seen in this table, the majority of the students, dormitory or non-dormitory, have weak overall sleep quality and are mostly (80%) challenged on average or seriously in 7 dimensions of sleep. More than half of the students have serious sleep problem regarding habitual sleep efficiency. In order to evaluate the relation between residency status and sleep quality, statistical T test was performed the results of which are included in table 2.

As the results of table 2 suggest, there is significant relation between overall sleep quality and daytime dysfunction, and residence status (p<0.05), while there is no significant relation between other sleep quality dimensions and residence status. Relation between sleep quality and its dimensions with educational status of the students are included in table 3.

As the results of table 3 suggest, the only dimension with significant relation with educational status of the students is the subjective sleep quality (p<0.05). In order to evaluate the residence status and educational status, independent statistical t test is used, the results of which is included in table 4.

As this table suggests, there is significant relation between the two mentioned terms (p<0.05).

Table 2. relation of sleep quality dimensions with residence status

	Sleep quality dimension	Residence status				*P*-value*
		Dormitory		Non-dormitory		
		Average	Standard deviation	Average	Standard deviation	
1	Overall sleep status	7.36	2.56	7.97	2.55	0.018
2	Subjective sleep quality	1.09	0.75	1.18	0.79	0.254
3	Sleep latency	1.30	0.88	1.40	0.84	0.228
4	Sleep duration	1.03	1.07	1.09	1.08	0.576
5	Habitual sleep efficiency	1.75	1.39	1.86	1.37	0.394
6	Sleep disturbances	1.02	0.49	1.07	0.36	0.366
7	Use of sleep medications	0.21	0.56	0.21	0.64	0.387
8	Daytime dysfunction	0.97	0.94	1.18	0.91	0.020

Significance level= 0.05

Table 3. relation of sleep quality and its sub-dimensions with educational status

	Sleep quality dimension	Educational status	
		R2	*P*-value*
1	Overall sleep status	-0.061	(0.232)
2	Subjective sleep quality	-0.111	(0.028)
3	Sleep latency	0.017	(0.734)
4	Sleep duration	-0.001	(0.977)
5	Habitual sleep efficiency	-0.001	(0.980)
6	Sleep disturbances	0.006	(0.899)
7	Use of sleep medications	0.012	(0.807)
8	Daytime dysfunction	-0.093	(0.064)

Significance level= 0.05

Table 4. relation of educational status with residence status

Index	Residence status				*P*-value*
	Dormitory		Non-dormitory		
	Average	Standard deviation	Average	Standard deviation	
Educational status	-1.23	2.16	0.22	2.18	0.000

Significance level= 0.05

Discussion

Results of this study suggest that educational status of non-dormitory students is better than the dormitory ones. There is a set of factors causing educational failure that in turn, leads to loss in human and non-human resources. Therefore, different factors including:

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motivation, objective, planning, facilities, individual and family conditions, economic and cultural status of the family and etc. must be considered in finding the causes of educational failure.[15] Residence in dormitory comes with exclusive conditions for students which can cause both educational failure and educational improvement. It can bring one into building relationship with a vast spectrum of students of different majors and grades. Comparison of job market of one's major with of the others can result in decrement of motivation and purpose and in turn, educational failure.

The researches performed, smoking by unsuccessful students is reported more than the successful ones with significant statistical difference.[15] This issue can stem from wasting time and spending spare time of students with friends in dormitories or outside smoking which naturally obstructs educational improvement. Since the dormitory students are in contact with many of their own age, they are more exposed to wasting time with playing computer games or other hobbies. According to interview of the researcher with some studied students, it was discovered that they were busy playing an online computer game or similar ones sometimes for several days and were not even present in the classes. Therefore, educational failure for dormitory students in comparison to their high school time when they were under control and support of the family is not unexpected.

Study results suggest that sleep quality mark for most of the students, dormitory or non-dormitory, was higher than 5 which means weak sleep quality. Qhoreishy et al studied sleep quality in students of Zanjan University of Medical Sciences in 1386, and come to conclusion that sleep quality which is an impactful factor for learning for them is low.[16] Study results suggest that the only dimension significantly related to educational status of the students is the subjective sleep quality. Farhady-Nasab et al concluded in a study named "study of subjective sleep quality and pattern in Medicine students of the Hamedan University of Medical Sciences and its relation with characteristic adjectives that a significant number of medicine students suffer from sleep disturbances in night time sleep; a matter which can negatively affect health and daily performance.[17] Aside from the mentioned dimension, the others do not affect the sleep quality.

Ghavvam et al concluded from a study performed in 1382-1383 named impact of occupation of dentistry students on their educational success in faculty of dentistry of the Iran University of Medical Sciences that occupation is a factor negatively affecting the educational status of the students[18] – a finding that complies with results of the present study. There is a set of factors causing educational failure including: motivation, objective, planning, facilities, individual and family conditions, economic and cultural status of the family and etc.[15] Considering that educational status is a complex category and is affected by different factors, it can be said that sleep quality can be under influence of other factors with lesser impact on educational status including the objective.

Conclusion

There is a set of factors causing educational failure including: motivation, objective, planning, facilities, individual and family conditions, economic and cultural status of the family and etc. Considering that educational status is a complex category and is affected by different factors, it can be said that sleep quality can be under influence of other factors with lesser impact on educational status including the objective.

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