

Investigating the Relationship Between the Early Rising and Depression Studied on the Students in Rafsanjan University of Medical Sciences

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Background: One of the most important problems of depressed patients is increasing the duration of rapid eye movement sleep (REM) and dreaming too much. Accordingly, depriving the depressed patients of REM can effect on decreasing the level of depression.

Objectives: This study was done to compare the level of depression between the early rising and non-early rising students.

Patients and Methods: This descriptive-analytical study was performed on a sample including 310 students studying in Rafsanjan University of Medical Sciences. Quota sampling was the method used in this study. Data collection material included a questionnaire containing two parts such as personal features and the questions about the early rising. In the second part, to investigate the depression level, Beck 21-question test was used. The data were analyzed using SPSS and the Qui-square, t-test and ANOVA.

Results: The mean (SD) of depression level in the early rising and non-early rising students was 5.66 (5.92) and 10.5 (9.17), respectively. The independent t-test showed the significant difference between these two groups ($P = 0.0001$). Also, the results showed that 24 (7.7%) of early rising and 91 (29.4%) of non-early rising students were depressed to some degrees. At all levels, the level of depression in non-early rising students was higher than that in early rising ones.

Conclusions: In this study, the significant relationship was observed between the early rising and depression. Although the religious, cultural and scientific teachings accentuated the positive affect of early rising, most of the students were not early risers. So, this study suggests that, the situations in which the students are persuaded to get up early especially in dormitory, be provided.

Keywords: Sleep; Depression; Students, Medical

1. Background

Depression is the most common psychological disorder and the most serious disease which engaged the physicians and specialists (1-5). At the moment, depression is the fourth prevalent disease in the world. Based on the reports from WHO, almost 100 million people around the world have depression; for this reason, in most countries around the world, depression is so considerable (1, 6). The studies around the world showed that the level of depression among the men and women is 25% (1). In Iran, depression is prevalent among 7.7% of population who are more than 15 years old and about five million people have this disease (7). Based on the research done on thirty five thousand samples by the parliament regarding the psychological diseases, it was found that 25.9% of women and 14.9% of men, with mean of 24% had psychological disorder and about 15% had depression (8, 9). Also, depression is one of the prevalent problems among the teenage and young people around the world and in Iran (10). The results from some researches on the Iranian students

showed that the number of the depressed students was more than 60% in some groups (11). Other similar studies reported that 78% of the students have depression to some degree of whom 46% were severely depressed and they need the specialized service (12). This disease has many side effects such as energy reduction, impairment of concentration, sleep and appetite disorder, guilty feeling, physical pains, headache, digestive disorders and in more severe type, thinking about suicide (1, 13-15). The studies showed that 75% of depressed patients have sleep disorder (even if as sleeplessness and oversleep) and these symptoms are intensified in the morning (16). In these patients, REM (rapid eye movement) increased in the first half of sleep and in all times, and the interval between sleeping and starting the first period of REM is shortened. On the other hand, the depressed people have REM during sleep and they dream more than others. So, one of the important problems of depressed patients was duration of REM and dreaming a lot. Accordingly, depriving the depressed people from REM sleep can be effective in reduction of depression. So, the main aim of manu-

Implication for health policy/practice/research/medical education:

Based on the results of this study, it was concluded that the early rising students have lower level of depression. Regarding the high prevalence of depression, annually, a huge amount of money is spent for its treatment. Most of the therapeutic methods such as drug therapy have side effects and cause different problems. So, it is essential to do research about the methods with fewer side effects and suggest more proper ones.

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facturing the anti-depression drugs, specially the three-ring anti-depression drugs was reducing the REM. We can reduce REM by persuading the depressed patients to get up early and this can be considered as a non-pharmaceutical and safe method. Also, early rising can create happiness by secretion of cortisol. Secretion of Endorphins and Enkephalins in the morning can cause relaxation (16-18). Islam persuades the human to sleep and get up early. The sayings from Prophet Mohammad about early rising were declared: "Well done to my nation for early rising." The great people and scholars mentioned advantages for early rising; it causes the life extend, increases the mental and physical freshness, causes tranquility and calmness and increases the provision (19, 20). Regarding the high prevalence of depression, annually, billions of dollars are spent for treatment of this disease and the huge amount of this money is devoted to drug therapy (21-27). In addition to drug therapy, it is essential to study about other economical methods with low side effects. One of the non-pharmaceutical and safe methods which are rooted in Iranian religious beliefs and history is early rising. Early rising can be considered as a regulator of sleep rhythms. The sleep hygiene is considered as an important basis of mental and physical health and every factor which is effective on sleep hygiene regulation is preventive and treats most of the mental and physical diseases such as depression (28).

2. Objectives

The general aim of this study was investigating the correlation between the depression and early rising in the students of Rafsanjan University of Medical Sciences. To each this aim, we had better consider the detailed aims as follows:

Determining the level of depression in the early rising students of Rafsanjan University of Medical Sciences; Determining the level of depression in the non-early rising students of Rafsanjan University of Medical Sciences, Comparing the level of depression between the early rising and non-early rising students of Rafsanjan University of Medical Sciences.

3. Patients and Methods

This descriptive-analytical study which was performed in 2011, compared the level of depression between the early rising and non-early rising students of Rafsanjan University of Medical Sciences. The present study was done on 310 students studying in university. Quota sampling was used in this study. In this method, the samples attributed to the number of students majoring in each course (medicine, dentistry, midwifery and nursing) were selected. The samples participated in the study were the students at their second semester studying in B.A and above. The criteria of excluding from the study were having the physical diseases, history of horrible events within the last six months, using the psychotherapy drugs

within the last six months, and avoiding participating in the study. Data collection material included a questionnaire containing two parts of personal features and the questions about the early rising. According to this study, the students who get up half an hour before the sunrise and do not go to bed again were considered as early risers. To validate the materials, the content validity method and the comments of 10 faculty members in Rafsanjan University of Medical Sciences such as psychologist, psychiatrist, and psychiatric nursing expert were used. In this study, Beck 21 question test was used to investigate the depression. Depression test is one of the most common and valuable test for detecting the depression and in various studies, its validity has been approved (3, 4, 12, 29-31). The items of this questionnaire were graded from 0 to 3 which zero is regarded the least and 63 the most score. Based on the scoring system in Beck test, the scores from 0 to 9 is considered as without depression, more than 10 as depression. The scale of 10-19 is regarded as slight depression, 20-29 as moderate depression, 30-39 relatively severe and 40-63 as severe depression. After selecting the samples, the questionnaire was handed out among them and was collected after filling in. The data were analyzed using SPSS and the Qui-square, t-test and ANOVA.

4. Results

The mean (SD) age of participants was 20.57 (1.56), 214 of them were female (69%), 280 of them were single (90.3%) and 260 of participants (86.3) are residents in dormitory. The course of 91 students was nursing (29.4%), 46 midwifery (14.8%) and 57 paramedics (18.4%), 69 medicine (22.3%) and 47 dentistry (15.2%). The financial status of their family was good if it was 50%. In 94.5% of cases, the history of psychological diseases in family was not reported. Ninety nine percent of participants were Muslim and the mean (SD) of depression score in students was 8.83 (8.5). Regarding the results from depression level, it was represented that 115 students (37.1%) have depression from the level of slight to severe. Table 1 shows the levels of depression in the studied students. In this study, significant relationship between the level of depression and course was observed. The students majoring in nursing had the least mean and the students majoring in paramedics had the most mean of depression. The ANOVA test showed the significant relationship between the course and depression (Table 2).

Table 1. The Number and Percentage of Rafsanjan University of Medical Sciences Based on the Depression Level

Depression Level	No. (%)
Lack of depression	195 (62.9)
Slight depression	76 (24.5)
Moderate depression	31 (10)
Severe depression	8 (2.6)
Total	310 (100)

The results of the present study showed that 107 students (34.5%) were early risers and 203 students (65.5%) were not early risers. The mean (SD) of depression in early risers was 5.66 (5.92) and in non-early risers, it was 10.5 (9.17). The independent t- test showed the significant difference between these two groups ($t = 5.6, P = 0.001$). Also, the results showed that 24 early rising students (7.7%) and 91 non-early rising students (29.4%) were depressed to some degrees. Besides, the risk of depression in non-early rising students was 2.8 times more than that in early risers ($OD = 2.8$). In Table 3, the level of depression in early rising and non-early rising students was represented. This table suggests that the level of depression in early rising students is more than the non-early rising ones. The Qui-square test showed the significant difference between the early rising and depression level ($P = 0.001$). The results showed that there was no relationship between the early rising and the gender, financial status, and residence ($P > 0.05$), but the significant relationship exists between the university course and early rising (Table 4).The most and the least percentage of early rising belongs to the students majoring in nursing and dentistry, respectively ($P = 0.001$).

5. Discussion

The results of the present study showed that 115 students (37.1%) had slight to severe depression. Most of these students had slight depression and fortunately only eight students (2.6%) had severe depression. In some studies, the outbreak of depression among the students of different universities was reported more than the present study. For instance, the frequency of depression outbreak in the students of Zanjan University was reported to be (48.6%) (32), Bandar Abbas (44.1%) (2), Mashhad (50.8%) (33), Ardabil (57.4%) (34), Gonabad (62.5%) (35), Esfahan (80%) (36), Jahrom (45.5%) (15), and Arak (52.3%) (14). In some studies, this amount was less compared to the present study; for instance, the depression level was (35.6%) (29) in Yasooj and 28.9% (31) in what reported in the study by Karimi zarchi. Of course, the reasons of difference in depression level among the students of Universities of Medical Sciences can be based on the speculations. So, it is essential to investigate the level of depression among the students of different universities of Medical Sciences based on the systematic review and Metha-analysis. In the present study, the depression level of students majoring in various university courses was different. The students majoring in nursing had the lowest level of depression and those majoring in midwifery had the highest level. The mean of depression in the students majoring in medicine and dentistry was alike. According to the study performed by Rashidi et al. (2002) on the students of Zanjan University of Medical Sciences, it was found that 23.7% of students majoring in nursing, 43.4% students majoring in operation room, 21.4% of midwifery had depression to some degrees (32), and the results of this study was con-

sistent with the present study. The results from the study by Mashoofi et al. (2004) showed that the depression outbreak in the students majoring in midwifery was 21.4% and the most percentage belonged to the students studying operation room (34) which comparing to the present study, the students of midwifery had the highest level of depression. According to the study of Hoseini et al. (2004) in Gorgan, the depression outbreak in students of medicine was higher than that in students of paramedics (37) which were inconsistent with the results of present study. The main aim of this study was determining the correlation between the early rising and depression.

Table 2. Comparing the Mean of Depression in Students of Rafsanjan University of Medical Sciences Based on the University Course 1^a

	No.	Mean (SD)	CI (95%)	
			Lower Limit	Upper Limit
Nursing	91	7.16 (7.17)	5.67	8.65
Midwifery	46	9.73 (9.92)	6.79	12.68
Paramedics	57	13.45 (8.7)	11.14	15.76
Medicine	69	7.52 (8.62)	5.45	9.59
Dentistry	47	7.51 (7.02)	5.44	9.57
Total	310	8.83 (8.5)	7.88	9.78

^a Above scales are used in table: $F = 3.6; df = 4; P = 0.001$.

Table 3. The Frequency of Depression Level in Early Rising and Non-early Rising Students^a

	Early Rising		Non-Early Rising		Total	
	No.	%	No.	%	No.	%
Lack of depression	83	6.77	112	2.55	195	9.62
Slight	19	8.17	57	1.28	76	5.24
Moderate	5	7.4	26	8.12	31	10
Severe	0	0	8	9.3	8	6.2
Total	107	100	203	100	310	100

^a Above scales is used in table: $X^2 = 17/48 =; df = 3; P = 0.001$.

Table 4. The Frequency of Early Rising Students of Rafsanjan University of Medical Sciences Based on the University Course^a

	Early Risers		Non Early Risers		Total	
	No.	%	No.	%	No.	%
Nursing	42	3.38	50	6.24	91	4.29
Midwifery	17	9.15	29	3.14	46	8.14
Paramedics	18	8.16	39	2.19	57	4.18
Medicine	29	1.21	40	7.19	69	3.22
Dentistry	2	9.1	45	2.22	47	2.15
Total	107	100	203	100	310	100

^a Above scales is used in table: $X^2 = 25.5 =; df = 4; P = 0.001$.

The results showed that 203 students (65.5%) who get up after the sunrise are regarded as the early risers. One of the reasons of getting up early was the life style in dormitory. Most of the students under study were residents of dormitory and this showed that they stayed up late and could not get up easily. The experience of author in clinical and educational environments represented that some students were not energetic and were fatigued. The mean of depression in early risers was less than on-early risers. Although most of the students in these two groups were not depressed, the level of depression in non-early risers was more than that in the early risers and all of the students with depression were non-early risers. Also, incidence of depression in non-early risers was 2.8 times more than the early risers. In the religious and literature texts, the virtue of early rising is accentuated. In a Ravaya by Imam Ali, he said: "Sleeping before the sunrise and praying time causes depression and poverty". Imam Sadegh said: "Sleeping in the morning removes the provision, it makes the skin pale and expression ugly and this sleeping is ominous. Rightly, God distributes the provision from dawn to sunrise, beware not to sleep". From the point of view of medical science, many advantages were mentioned for early rising and one of those advantages was long life. Also, early rising causes spiritual, mental and physical freshness. In scientific texts, the physiological positive effects resulting from early rising were accentuated. For instance, it was declared that early rising can prevent from depression and help its treatment by reducing the REM (16, 38). Also, the level of cortisol (anti-depression hormone and rising the blood sugar) reaches to its highest point in the mornings (25 µg %) (18). Although the studies about the relationship between the early rising and depression have not been done, most of the studies about the relationship between the sleeping and depression were performed. For instance, in a study by Giedke and Eskosler (2002) about determining the effects of sleeplessness on depression, it was found that one night without sleep can recover the depression symptoms in 40 to 60% of people and this effect can last for several nights. The relative sleeplessness can have the similar effects in the second half of the night. Depriving of REM sleep is more effective than NON-REM. So, based on this research, the effects of sleep deprivation at the beginning (3-6 AM) and the end of the morning are alike (39). With the aim of interfering in sleep and investigating its effects in patients with bipolar depression, Riemann et al. (2002) concluded that depression results in disorders in sleeping, reduction in mild waves, and disorders in REM sleep. Also, it was found that sleep interference, either relatively or completely, is considered as the effective strategy for recovering the patients with monopolar depression (40). Wiegand et al. performed the research called the patterns of reaction to sleep deprivation. The results showed that sleep deprivation causes considerable recovery of depression (41). Looking at the above mentioned texts shows that

early rising can play a role as a natural therapy. Although the above mentioned studies emphasized the positive effects of early rising on the reduction of times of REM and regulating the sleep cycles, we cannot limit the early rising effects to this case. Regarding that the mental and spiritual positive effects of early rising is clear to everyone, it is essential to do more researches about this issue. In this study, the relationship between the early rising and university course was significant. The students majoring in nursing were early risers more than other students and the students of dentistry were the least. By looking at the results, it was found that the students majoring in nursing were less depressed. So, the students of dentistry had the least level of early rising unlike the low mean of depression. These results represent that depression can be effected by different factors and we cannot limit the depression to early rising. In the present study, there is a significant relationship between the early rising and depression. This study does not tend to report the causative relationship between the depression and early rising, but the results showed that the early risers had low depression. Although the Iranian religious and cultural teachings emphasized the early rising and the scientific texts accentuated the positive effect of early rising on the physiological processes which reduces the depression, most of the students are not early riser. This issue can deprive the students of positive advantages resulting from early rising such as depression treatment. So, this study suggests that situations be provided to persuade the students get up early especially in dormitory.

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Authors' Contribution

Fariba Mazhari contributed in writing the review literature, Ali Ravari in writing the review literature and data analysis, Ali Ansari in data analysis, Shahin Heidari in data collection, and Maryam Shahabi Nejad in data collection.

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