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**PREVALENCE OF DEPRESSION AND ITS RELATIONSHIP WITH
SOME OF THE DEMOGRAPHIC AND EDUCATIONAL
VARIABLES AMONG THE STUDENTS OF EAST
AZERBAIJAN PROVINCE OF IRAN**

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ABSTRACT

Introduction/Objective: Depression is a serious illness that causes great suffering and poor performance in the workplace, school and family. Depression is the main cause of disability in the world. The aim of this study was determination of prevalence of depression and its demographic and educational related factors among the students of East Azerbaijan province of Iran.

Method: This was a descriptive-analytic study of 4422 people. The data were collected using a self-administered questionnaire. The Kutcher's teens' test have been used to measuring the level of depression and, also, the SPSS v.21 software was used to analyze its results. We used paired K tests to survey the relationship between depression and the variables of the test, and after checking the normality of the data, the Mann-Whitney test was used. The significance level of 0.05 was considered.

Results: 55 % of the participants were male and the mean age of them was 15.81 years, with the standard deviation of 1.13 years. 52.3 % of the students were resident in the city and 16.1 % of them were engaged in work while they were studying. 22 % of these students (22.9 % of boys and 23 % of girls) were depressed. The depression grade showed a statistically significant

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the relationship with following variables: with the field of study, that was higher in the technical students ($p=.0001$), with the average score, that was lower in depressed students compared with others ($p=.0001$), also, there was a significant relationship with lesson ($p=.0001$), employment ($p=.0001$) and the way they spend leisure time ($p=.0001$). In this study, depression did not show any significant relationship with their age, sex, educational background, and residency conditions.

Conclusion: The prevalence of depression in the students was significant and remarkable, and according to that, school-based prevention and treatment programs is recommended, specially, in the case of technical schools.

INTRODUCTION

Depression is a serious illness that causes great suffering and poor performance in the workplace, school and family. According to the World Health Organization report, this disease is one of the priority conditions, as the topic of the World Health Day 2017 is dedicated to that¹.

Depression is the main cause of disability in the world. More than 80 % of people who have this problem are living in low and middle-income countries².

The World health organization's 2014 demonstrated that depression is the first cause of illness and disability in the age group of 10 to 19 and suicide is the third cause that leads to death among the all causes of death. Some studies show that half of people who experience mental disorders have their first symptoms until the age of 14. If teens with mental health problems get the care as they need, they can prevent death and avoid from suffering in their life³.

According to World Health Organization estimation, 4.4 % of the world's population was depressed in 2015 (5.1 % of women and 3.6 % of men) and this amount in the Eastern Mediterranean region was 5.1 % for women and 3.9 % for men. According to this estimation, the prevalence of depression in Iran is 4.9%. However, the prevalence of depression in the Eastern Mediterranean region (2015) for the age group of 15 to 19, was 4.5 % for girls and 3.9 % for boys⁴.

The prevalence of depression among Ugandan students is 21 %⁵, among Indian medical and engineering students is 64.9 %⁶ and 60.8 % of Egyptian students are depressed⁷. 14.1% of high school students in Shiraz (Iran)⁸, 10 % of students in Rasht (Iran)⁹ and 50 % of Shaheed Sadoughi University of Yazd (Iran), showed different degrees of depression¹⁰.

In a review article including some studies on depression in Iran, five articles were reviewed in relation to the prevalence of depression in students that showed that, the rate of depression was between 7.6 % and 73 %¹¹.

Depression comes from complex interactions of social, psychological and biological factors. The unpleasant events of life such as unemployment, mourning and psychological harm are most likely to cause depression. There is a reciprocal relationship between depression and physical health. For example, cardiovascular disease can lead to depression and reversal. Other factors are associated with depression symptoms too. For example, Sex is one of the factors that is associated with depression. In general, the prevalence of depression among women is more than men¹. This proportion of sex also applies to student's case^{7,12}. Additionally, other factors such as educational background⁸, increasing in the age of students⁷, the type of school in the viewpoint of being public or non-governmental, family history of depression are also associated with depression. Father's occupation ,employment during education ,score average^{6,8,12}, worries about the future¹³, parents' loss ,alcohol consumption ,smoking and lower standard of life are associated with depression⁵⁻⁷. On the other hand, those people who practice their religion believe and always read the Quran, have had fewer depression amounts¹³. In a study on Filipino students, it was found that six factors are statistically significant with the more severe levels of depression symptoms as follows: The high frequency of smoking and drinking, not living with real parents, dissatisfaction with the financial situation, close proximity to parents, and close proximity to peers¹⁴.

In this study, prevalence of depression and its association with some of the demographic and educational variables has been studied; may be with this study, the parallelism of the World Health organization's motto, leads to attract the attention of some relevant practitioners and help to provide effective programs for depression in adolescents, especially according to that the number of samples in this study was considerable.

METHODS

This study was a descriptive-analytic and sectional study of high school's students in East Azerbaijan (Iran). Sampling was a census of all high school and technical learning center's students of Ajabshir and Malekan cities; about 4422 students participated in the study. The number of schools in these

two cities was 29 schools (14 boy's schools with 2,431 students and 15 girl's schools with a 1991 student).

Students that have enrolled in one the first to fourth grade of both public and non-governmental high schools (from the first grade to the pre-university level) were included in the study. Students who did not attend school for any reason (for example, someone who was absent because of illness), or entered into high school in a new educational period after the sixth grade and were studying in the seventh grade, were excluded from the study.

Data were collected using questionnaire. After approval of the proposal in the research council of the National Research Center Of Health Services Management and confirmation of the Ethics Committee of Tabriz University of Medical Sciences and After coordination with the provincial education department and negotiation with the relevant authorities, the questionnaire was distributed among students; The goals of the study and the confidentiality of information were explained to them and a testimonial was prepared and sent to parents by students. Finally, the number of 4422 students who were in their classrooms at the days of data collection, complete the questionnaire.

The related questions were in accordance with the Intended goals, including demographic information and other relevant variables. To assess depression, depression Kutcher's adolescents' test was used, which included 6 questions that it's validity and reliability were confirmed and had been translated in Persian¹⁵. Depression test responses were rarely with score 0, sometimes with score 1, most of cases with score 2, and all times with score 3. According to this test, higher score than 6 shows depression and needs to be evaluated further compared with others.

Collected data were analyzed using SPSS ver.21 software. To describe qualitative variables, tables and charts (abundance and percent) were used and for quantitative variables, central and dispersion indices were used. For evaluating the relationship between depression and the variables with regard to the type of variables, paired-chi square test was performed and after checking the normality of the data, the Mann-Whitney test was used to measuring the relationship between

quantitative variables and depression. A significance level of 0.05 was considered.

RESULTS

In this study 4422 students have been investigated. As shown in Table 1, 55% of them were boys. The mean age was 15.81 years, with a standard deviation of 1.13 years. 52.3% lived in city and the others were lived in village. 16.1% of them were engaged in work while studying.

According to the Kutcher's teens' depression scale, 22% of these students (22.9% of boys and 23.0% of girls) were depressed. Table 2 shows the relationship between the depression score and the following variables:

The rate of depression was related to the field of study and it was more common in technical students ($p = 0.0001$). The average score in those who were depressed was lower compared with other students and there was a significant relationship between depression and the average score ($p = 0.0001$). On the other hand, depression was associated with a history of failure ($p = 0.002$), with the highest prevalence of depression in those who had a history of failure. Depression was also associated with the level of commitment to the course ($p = 0.0001$) and it was obviously higher among students who had little or no commitment to the duties of their course.

There was a higher level of depression among students who were working while studying and there was a significant relationship between depression and employment ($p = 0.0001$). We asked them how they spend their leisure time and their answers included loneliness, with other family members and in where is other family members' interest, with friends in some cultural places, or with friends in recreational and sport places that showed a significant relationship with depression ($p = 0.0001$) and in the first group, the highest rate of depression was observed (41.2%). In our study, depression did not show any significant relationship with variables such as age, sex, educational background and residence condition.

Table 1. Demographic Variables Of The Studied Subjects.

Variable	Abundance (percent)	
Age Group	13-16	3099 (70%)
	19-20	1243 (30%)
	Boy	2431 (55%)

Variable		Abundance (percent)
Field of Study	Girl	1991 (45%)
	Mathematical Sciences	498 (17.5%)
	Experimental Sciences	1245 (43.9%)
	Humanities	357 (12.6%)
	Conservatory and Technical science	738 (26%)
Grade	First year of Highschool	1399 (33%)
	Second year of Highschool	1184 (27.9%)
	Third year of Highschool	1199 (28.3%)
	Fourth year of Highschool	457 (10.8%)
Location of Residence	Village	1984 (47.7%)
	City	2213 (52.3%)
Average Score	Low	860 (19.4%)
	Moderate	931 (21%)
	Good	2062 (46.6%)
Failure History	Unknown	575 (13%)
	No	3582 (89.5%)
Commitment to studying	Yes	421 (10.5%)
	High	3391 (76.6%)
Employment while studying	Moderate	654 (14.8%)
	Low	231 (5.2%)
	No	3547 (83.9%)
How to spend leisure time	Yes	681 (16.1%)
	Alone	554 (13.6%)
	With family according to their favorite	2215 (54.4%)
	With friends in sports, recreational and cultural places	760 (18.7%)
	I did not have a program	546 (13.4%)

Table 2. Frequency distribution of depression and its relation with the variables of the subjects.

Variable		Prevalence of depression	P value
Sex	Boy	22.9%	0.9
	Girl	23%	
Field of Study	Mathematical Sciences	19.5%	0.0001
	Experimental Sciences	16.9%	
	Humanities	19%	
	Conservatory and Technical science	35%	
Grade	First year of Highschool	24.3%	0.3
	Second year of Highschool	21.5%	
	Third year of Highschool	23.2%	
	Fourth year of Highschool	22.1%	
Location of Residence	Village	24.1%	0.07

Variable		Prevalence of depression	P value
Average Score	City	21.8%	0.0001
	Low	27.3%	
	Moderate	26.4%	
	Good	18.7%	
Failure History	No	22.2%	0.002
	Yes	29%	
Commitment to studying	High	19.4%	0.0001
	Moderate	34.8%	
	Low	42.8%	
Employment while studying	No	21.8%	0.0001
	Yes	29.2%	
	Alone	41.2%	
How to spend leisure time	With family according to their favorite	18.2%	0.01
	With friends in sports, recreational and cultural places	20.9%	
	I did not have a program	27.8%	

DISCUSSION AND CONCLUSION

The prevalence of depression in our study was 22% (22.9% in boys and 23.0% in girls). This rate in Thai teens was 12.3%¹⁵, in Finnish girls and boys 18.4% and 11.1% respectively¹⁶, and in the Eastern Mediterranean region 4.5% for girls and 3.1% for boys⁴. The prevalence of depression varies from one study to another; these differences can be related to cultural differences, presence or absence of screening and identification of patients, different tests of depression assessment, or methodological issues of studies. However, the prevalence of depression in our students is high and requires effective attention and thought. According to the easy access to students in schools, school-based programs may be effective in preventing or identifying depressed students and providing counseling for them. Among the participants, there was no difference in depression in different ages and school grade (which is a function of age). However, our study group was all adolescents with no major difference in their ages, but in some other studies in students (older age group) it was found that the prevalence of depression increased with age⁷. Also, in Malaysian students aged 20 or older, the score for depression was more than students with 19 years old and below¹⁷. Similarly about sex, in some studies^{4,16,18}, female depression is more common; some other studies' results are similar to those of our study^{7,17,19}. However, various studies have shown different patterns in relation to sex,

but some new studies have announced emergency situation about the increasing in prevalence of depression among teenagers, especially, they warned about the increasing trend of prevalence of depression among girls^{20,21}.

Residency condition has not played a role in depression situation, in our study, just like Kaur¹⁹ and Nasiri Oskoue's studies²². But in some studies, the birth in the village¹⁷ and rural background²³ showed a positive relationship with depression. Here is a remarkable point that our samples were selected from relatively small cities, and, therefore, perhaps we could say that there were not so much social interaction and culture differences compared with the village. There was a significant relationship between depression and field of study ($p = 0.0001$). The highest rates of depression were in those who were studying technical majors. The study of Modabernia has already shown the same result in Iran²⁴. The important point in Iran is that, students with lower scores usually continue their educational process by studying in technical field. Also, in society, it seems that people from lower-economic and lower-social class families choose this field of study, and perhaps in reality, a set of social and economic status and other background factors may be the reason for their depression, however, in various studies, the significant relationship between low socioeconomic status and depression has been proven^{7,25}. Withal, in our study, no causal relationship can be mention between depressions with any of the variables.

Our results, just like all other studies, indicate a weak relationship between academic performance and depression, and the average score in those who were depressed was lower compared with others ($p = 0.0001$). In Bolivian students, depression was associated with poor academic performance²⁶, and depressed American students had a lower score than non-depressed students²⁷, even the increased risk of educational problems for college students with low depression scores is predicted²⁸. This relationship may be due to the lack of concentration of senses, low motivation, or other problems, such as inappropriate cognitive function or sleeplessness in people with depression problem, who requires counseling and treatment to improve their academic performance. There is, of course, a two-way relationship, and it is not clear that depression has caused poor performance in students, or poor academic achievement has led to depression.

In this study, depression among students with a history of failure in school was higher than those who did not have this background ($p = 0.002$), and the rate of depression among students who had little or no commitment about their school duties, were much higher compared with other students ($p = 0.0001$). It can be concluded that, in general, depressed people have weaker academic performance; however, surveying students with lower score or little commitment to the lesson and school are needed to decrease in their pressure and tendency to depression through special programs and private counseling. In addition, a sense of low commitment may be due to the lack of interest in or fear from school duties and the feelings of pressure from it, as it published in an article in the journal of adolescence¹⁶, there is a relationship between depression and students' duties and their heavy school exercises.

The rate of depression among employed students was higher compared with others and there was a significant relationship between depression and employment ($p = 0.0001$). Labour children are always exposed to various dangers such as anxiety and depression²⁹, and workplaces' stress and problems can be a main cause.

Depression was lower among those who spent their free time with friends in cultural, recreational and sports places, and there was a significant statistical relationship between depression and leisure time ($p = 0.0001$). This shows that spending leisure time with friends is more appealing for teenagers, especially being in recreational and sports places would be such a great help to improve their morale. This point reminds parents that they must to be less limiter about the leisure time of their children and encourage them to spend more time

with their families and friends in order to prevent them from spending their leisure time alone. Other studies also show the positive effects of physical activities in leisure time on reducing depression process^{30,31}.

Due to our type of study, causal Conclusion was not possible. Also, the completion of the questionnaires by the participants spontaneously is a limitation. Our sample was selected from relatively small cities that make the generalizability of data to large cities impossible.

The prevalence of depression in the students was significant and remarkable, and according to that, school-based prevention and treatment programs is recommended, specially, in the case of technical schools. According to the high prevalence of depression in students who participated in our study, provision of prevention and treatment programs is recommended for them, especially in technical schools. In general, the design and implementation of integrated mental health programs in all Iranian schools seems necessary. According to the results of reviews (2014) in countries with low and middle income³² and high income³³ are showing that schools are places to promote the prospects of mental health by using a holistic approach; and integrating educational programs and mental health can promote children's health.

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