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Prevalence of depression and its relation to risky behaviors in students of Kurdistan University of Medical Sciences, Iran, 2014

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Original Article

Abstract

BACKGROUND: Students, particularly medical students, due to the special circumstances, are susceptible to loss their mental health. The aim of this study was to investigate the prevalence of depression and its relation to risky behaviors among students of Kurdistan University of Medical Sciences, Sanandaj, Iran, in 2014.

METHODS: This was a cross-sectional study conducted among 323 medical/paramedical students in Kurdistan University of Medical Sciences. Data were collected through Beck Depression Inventory (BDI) and a checklist including demographic information. Chi-square or Fisher's exact tests and logistic regression method were used to determine the relationship between depression and investigated variables.

RESULTS: A total of 323 students, including 161 men (49.8%) and 162 women (50.2%) with mean age of 22.09 ± 1.67 years were investigated. From our series, 147 students (45.5%) had the symptoms of depression. Although several variables including degree satisfaction, experiencing educational failure, alcohol consumption, smoking, and having family problems increased the chance of depression in univariate analysis, degree dissatisfaction was the only significant factor for depression occurrence in multivariate analysis by logistic regression.

CONCLUSION: Given the results, degree dissatisfaction was the most important factor related to the occurrence of depression. This variable should be considered before entering to the university by students and their parents.

KEYWORDS: Depression, Risky Behavior, Students

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Introduction

Depression is one of the most important causes of morbidity and disability throughout the world.[1] This disease is also among the most common mental disorders and is prevalent as a major health problem in all nations and cultures.[2] Lifetime prevalence estimates of major depression in general population vary among all countries in the world and range from 1.0% (Czech) to 16.9% (USA). The prevalence per year also range from 0.3% (Czech) to 10.0% (USA).[3] Depression among students is an important issue, because it reduces their success and academic achievements.[4] Based on the existing evidence, long-time depression can lead to risky behaviors such as suicide and decline to the substance abuse.[5]

Students due to the special circumstances, including being away from family, entering into a new community, peer pressure, lack of sufficient income, long educational courses, and existence of educational competition are

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susceptible to loss of their mental health.[5] It seems that medical and paramedical students have higher risk for depression occurrence than other students due to existence of several specific problems in their environment such as the close relationship with patients in different situations, sleep deprivation, long working hours, night working, challenging period in a professional medical students life, and responsibility for saving the life of patients.[6-8] In a cross-sectional study conducted by Al-Busaidi et al. in Oman, the prevalence of depressive symptoms among university students has been reported 27.7%.[9] In another study done in Kenya, the overall prevalence of moderate and severe depressive symptoms has been reported 35.7% (33.5% men and 39.0% women) and 5.6% (5.3% men and 5.1% women), respectively.[10]

Alcohol consumption, tobacco use, and also using different psychotropic drugs are dominant among young individuals as the most serious health problems in recent years, that have been correlated with demonstration of depression symptoms.[6] In fact, drug abuse and its dependence is a chronic and recurrent phenomenon with serious physical, financial, familial, and social costs.[4,8] In Iran, due to the legal and cultural constraints, there is not comprehensive and reliable information about alcohol and drug consumption in younger adults.[11] A study on male medical students of two medical universities of Iran, in Isfahan and Kermanshah cities, showed that 19.4%, 3.9%, and 10.1% of the participants had history of cigarette smoking, drug use, and alcohol drinking, respectively, during the past three months.[12]

As mentioned earlier, there is strong evidence regarding simultaneous multi-drug dependence, depression, and personality disorders.[13] Depression and mood disorders can be effective factors in tendency to addiction.[14] Moreover, addiction can be related to the antisocial personality traits, depression, anxiety, irrational and pessimistic thoughts, emotional vulnerability, isolation and restlessness, and dependent personality.[15] Given the importance of depression and its consequences in medical students, the aim of this study was to investigate the prevalence of depression and its relation to drugs, psychotropic substances, alcohol, and sexual risky behaviors among the students of Kurdistan University of Medical Sciences, Sanandaj, Iran, in 2014.

Materials and Methods

The population of this cross-sectional study included students of Kurdistan University of Medical Sciences in the academic year of 2013-2014. The sample size based on the prevalence of depression in the previous surveys (0.3), 95% confidence interval (CI), and significance level of 5% using the formula of ratio estimation was obtained 323 individuals.

$$n = \frac{(1.96)^2 * 0.3 * 0.7}{(0.05)^2} \cong 323$$

Subjects were randomly selected after stratifying the statistical community with respect to sex ratio and the share of each faculty, so that 32% of medicine, 26% of paramedical, 24% of nursing and midwifery, and 18% of health faculty were obtained.

Data were collected through Beck Depression Inventory (BDI) and a checklist including demographic information such as age, sex, faculty, educational level, marital status, location, father's occupation, income, and data related to the risky behaviors history such as risky sexual behavior, smoking, drug use, and alcohol consumption, without obtaining privacy personal details. BDI is an instrument that contains 21 questions and can be self-scored. Subjects with scores less than 20 and above 21 were considered normal and moderately/severely depressed, respectively.

After completing the questionnaire and check lists, the data were entered in the SPSS software (version 20, IBM Corporation, Armonk, NY, USA). Descriptive statistics including absolute and relative frequency, mean, and standard

deviation (SD) were used to describe the data. Chi-square or Fisher's exact test were used to determine the relationship between depression and independent variables. Logistic regression was used to obtain the strength of the relationship between depression and each of the independent variables among students with the aim of controlling potential confounders. Odds ratio (OR), corresponding CI, and significant value for each of the remaining variables in the final model were calculated. All relations were judged at level of statistical significance of 0.05.

Results

Demographic characteristics and information related to the history of risky behaviors as well as the relation between these factors and depression were detailed in table 1.

Table 1. Association between depression and independent variables in studied students (Univariate analysis)

Variable		Depression		P
		Yes	No	
		n (%)	n (%)	
Gender	Male	130 (80.7)	31 (19.3)	0.300
	Female	136 (84.0)	26 (16.0)	
Age (year)	18-21	25 (13.3)	163 (86.7)	0.050
	21-24	28 (23.5)	91 (76.5)	
	≥ 25	4 (25.0)	12 (75.0)	
Faculty	Medicine	21 (20.2)	83 (79.8)	0.600
	Paramedical	15 (17.9)	69 (82.1)	
	Nursing and midwifery	10 (13.0)	67 (87.0)	
	Health	11(19.0)	47 (81.0)	
Educational degree	Doctorate	21 (20.2)	83 (79.8)	0.600
	Bachelor	32 (16.1)	167 (83.9)	
	Associate	4 (20.0)	16 (80.0)	
Marital status	Married	8 (34.8)	15 (65.2)	0.040
	Single	49 (16.3)	251 (83.7)	
Student's parents place of life	Kurdistan province	21 (13.5)	135 (86.5)	0.300
	Other provinces of Iran	11 (20.4)	43 (79.6)	
Student's residence situation	Resident of dormitory	45 (18.4)	200 (81.6)	0.300
	With her/his family	9 (13.2)	59 (86.8)	
	Using rented home	3 (30.0)	7 (70.0)	
Degree satisfaction	Yes	37 (14.6)	216 (85.4)	0.010
	No	20 (28.6)	50 (71.4)	
Educational failure	Yes	26 (23.0)	87 (77.0)	0.060
	No	31 (14.8)	179 (85.2)	
Average household income per month (United States Dollar)	< 125	14 (18.2)	63 (81.8)	0.200
	125-250	26 (14.9)	149 (85.1)	
	251-500	11 (23.4)	36 (76.6)	
	> 500	6 (31.6)	13 (68.4)	
Having a family problem	Yes	21 (30.9)	47 (69.1)	0.002
	No	36 (14.1)	219 (85.9)	
History of a specific disease	Yes	9 (40.9)	13 (59.1)	0.007
	No	48 (15.9)	253 (84.1)	
Sexual risky behaviors	Yes	6 (30.0)	14 (70.0)	0.100
	No	51 (16.8)	252 (83.2)	
Smoking	Yes	21 (27.3)	56 (72.7)	0.010
	No	36 (14.6)	210 (85.4)	
Alcohol consumption	Yes	14 (30.4)	32 (69.6)	0.020
	No	43 (15.5)	234 (84.5)	

Table2. Association between depression and independent variables in studied students (Multivariate analysis)

Variables		OR*	SE	P	CI 95%	
					Lower limit	Upper limit
Age (year)		1.16	0.09	0.110	0.97	1.39
Gender	Male	1.00	-	-	-	-
	Female	1.16	0.36	0.680	0.57	2.34
Marital status	Married	1.00	-	-	-	-
	Single	0.45	0.50	0.110	0.17	1.20
Degree satisfaction	Yes	1.00	-	-	-	-
	No	2.39	0.34	0.010	1.22	4.68
Educational failure	No	1.00	-	-	-	-
	Yes	1.07	0.34	0.840	0.55	2.06
Having a family problem	No	1.00	-	-	-	-
	Yes	1.96	0.35	0.050	0.98	3.91
History of a specific disease	No	1.00	-	-	-	-
	Yes	2.77	0.52	0.050	0.98	7.68
Sexual risky behaviors	No	1.00	-	-	-	-
	Yes	0.48	0.70	0.340	0.12	1.91
Smoking	No	1.00	-	-	-	
	Yes	1.35	0.45	0.500	0.56	3.27
Alcohol consumption	No	1.00	-	-	-	
	Yes	2.07	0.53	0.120	0.73	5.90

OR: Odds ratio; SE: Standard error; CI: Confidence interval
* OR: Adjusted odds ratios in logistic regression
Hosmer-Lemeshow (HL) test (P = 0.2)
Nagelkerke R-squared = 0.14

A total of 323 students, including 161 (49.8%) men and 162 (50.2%) women were entered in the study. The mean age and SD of study participants was 22.09 ± 1.67 years. From our series, 147 (45.5%) students at the time of the study had the symptoms of depression, 90 cases (27.9%) had mild depression, 42 (13.0%) had moderate depression, and 15 (4.6%) cases had severe depression.

As shown in table 1, there was significant relationship between depression and marital status (P = 0.040), degree satisfaction (P = 0.010), having a family problem (P = 0.002), history of a specific disease (P = 0.007), smoking (P = 0.010), and alcohol consumption (P = 0.020). To assess the relationship between depression and main significant factors shown in table 1, with aim of controlling potential confounders, multivariate logistic regression was performed, that is summarized in table 2.

As seen in table 2, chance of depression occurrence in students who had no degree satisfaction was significantly 2.39 times more than students who had degree satisfaction (P = 0.010). Although in univariate analysis (Table 1), several variables such as degree satisfaction, experiencing educational failure, smoking, alcohol consumption, having family problems, and history of a particular disease had statistically significant association with depression, multivariate logistic regression analysis revealed that the dissatisfaction of degree/course was the most important factor related to the occurrence of depression among medical students. According to the modeling results, although not significant, having a family problem (OR = 1.96) and having a specific disease (OR = 2.77) were two other main factors that increased the chance of depression.

Discussion

The results of the present study showed that the prevalence of moderate and severe forms of depression among medical students of

Kurdistan University of Medical Sciences was 19.2%. This result is inconsistent with other studies conducted in Iran. Although, like our results, Karami at the Kashan University of Medical Sciences, Iran, showed that 19.23% of medical students had depression,[16] Aghakhani et al. in a study conducted among medical students of Urmia University of Medical Sciences, Iran, showed that 52.6% of the participants were depressed at different degrees.[17] The prevalence of depression among medical students had various ranges in different studies in the world, so that the prevalence of depressive symptoms among medical students in studies of Dahlin et al. at the Karolinska Institute Medical University, Stockholm, Sweden,[18] and Iqbal et al. at Bhubaneswar, Odisha, India,[5] have been reported 12.9% and 51.3%, respectively. In a systematic review conducted in 2016 on 62728 medical students, the global prevalence of depression amongst medical students was reported 28.0% (95% CI: 24.2–32.1).[19]

According to the results, depression in students increased with increasing the age, so that prevalence of depression among medical students in final educational semesters was partly higher than others.

Although not significant, we observed gender difference in regard to depression; so that, frequency of depression in female students was four percent higher than male students. Some previous studies also reported gender difference regarding depression such as Dahlin et al.[18], Peterlini et al.,[20] and Schwenk et al.[21]

The data showed that the students of medicine and public health faculties had higher frequency of depression compared to the students of paramedical and nursing and midwifery faculties. It seems that concerns of public health students regarding future work and long duration of educational courses, and also burnout resulted from hospital work in students of medicine faculty can influence their depression.

As less is known about the income variable that might affect the depression, although our data showed that students with average household income per month more than 250$ had higher depression, the difference was not statistically significant. Inam et al. in a study conducted among medical students of private university also did not found any significant income difference for presence of depression.[22] However, some studies revealed that parental income[23] and social support[24] as main variables may influence the mental status of medical students and their academic performance.

According to the results, the most important factor related to the occurrence of depression was the degree satisfaction. In our study, 21.7% of the students were not satisfied with their educational degree. Our result is similar to the findings of Becker et al. who reported a significant relationship between career satisfaction and depression in obstetrics and gynecology residents.[25] In the present study, multivariate analysis also showed that the chance of depression in students who had no degree satisfaction was 2.4 times higher than others.

Having a family problem, history of a specific disease, smoking, and alcohol consumption were other significant variables which influence the frequency of depression in univariate analysis. These factors although increase the chance of depression in multivariate analyses, statistically are not significant.

This study has some advantages including estimation of depression prevalence by selecting adequate sample size randomly from medical students of Kurdistan University of Medical Sciences for the first time, and also quantifying the relationship between depression and different variables using logistic regression model. The potential weakness of the study was the methodological issue, so that the cross-sectional design that we used, could not demonstrate the real relation between outcomes and independent factors as

other analytical designs such as case-control or cohort studies could.

Conclusion

Based on the study results, degree dissatisfaction was the most important factor related to the occurrence of depression in studied students. This variable should be considered before entering to the university by students and their parents.

Conflict of Interests

Authors have no conflict of interests.

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