

# Prevalence of depression and its associated factors using Beck Depression Inventory among students of School of Health and Nutrition, Tabriz, Iran in 2009

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## Original Article

### Abstract

**BACKGROUND:** Depression is a debilitating disease which is caused by social and environmental factors in addition to genetic factors. University students are among the young and vulnerable population to depression and their population is increasing with increase in universities and higher education institutions. Therefore, any disturbance in student's mental and physical health is a serious threat for the next generation. In this study, we aimed to estimate the prevalence of depression and its related factors in students of School of Health and Nutrition at Tabriz University of Medical Sciences, Iran.

**METHODS:** This was a cross-sectional survey on 175 students selected by stratified random sampling, educating in different fields at School of Health and Nutrition in 2009. The data collection tool was the short form of the standard Beck Depression Inventory (BDI) which is used for screening depression. The collected data were analyzed by software Stata Statistical Software, Release 10.0 (Stata Corporation, College Station, TX, USA).

**RESULTS:** The results showed that 62.7% of the students had depression and from these 10.9% suffered from severe depression. Significantly higher depression rates were seen in students with worrisome about the future. Married students, those interested in their field of study, those performing prayers and regularly reading the Quran had significantly lower rates of depression.

**CONCLUSIONS:** Due to the high prevalence of depression, screening strategies should be implemented to identify depressed students. Counseling services should be available and accessible to students at risk.

**KEYWORDS:** Depression, Medical Students, Iran

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### Introduction

Based on the World Health Organization (WHO) reports, mental disorders are the fourth major health problems in the world and among the mental disorders, the greatest disability and handicap in the world

is related to depression. Depression is one of the most common psychiatric disorders that some considered it as a natural reaction to tragedies and some see it as a major disease. Depression can affect everyone and in addition to its hereditary aspects, is also

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caused by social and environmental factors. Depression is associated with reduced energy and passion, feeling guilty, lack of concentration, poor appetite and thoughts of death and suicide and is accompanied with changes in activity level, cognitive abilities, speaking, sleep and other biological rhythms. Depression is not an exclusive disease, and appears in both sexes and in all age groups and races. Its prevalence is nearly double in females and has been reported to be from 10-64% among young people.<sup>1-3</sup>

University students are among the young and vulnerable population to depression and their population is increasing with increase in the number of universities and higher education institutions. Therefore, any disturbance in student's mental and physical health is a serious threat for the next generation.<sup>1</sup> The prevalence of depression among students has been reported 23.6% in Ethiopia,<sup>4</sup> 8.3% in Nigeria,<sup>5</sup> 60% in Pakistan,<sup>6</sup> and 26.2% in Turkey.<sup>7</sup> Probably because of the family's high expectations of medical sciences students and the stressful conditions of university education, high rates of depression are especially found in medical sciences students. Studies from Iran have reported a high prevalence of depression among medical students, in which it was 23.6% in Gilan,<sup>8</sup> 62% in Yasuj,<sup>2</sup> and 46% in Gorgan.<sup>9</sup>

In this study, we aimed to estimate the prevalence of depression and its related factors in the students of School of Health and Nutrition at Tabriz University of Medical Sciences, located in Tabriz, Iran.

## Methods

This was a cross-sectional study. The bachelor students of School of Health and Nutrition in Tabriz University of Medical Sciences in 2009 formed the research population.

Students were selected through stratified random sampling. Students were stratified according to their field of study and then selected randomly by student ID card number. The sample size was calculated

according to the prevalence estimation formula assuming a prevalence =58%,<sup>10</sup> error = 0.1 and 95% precision. Ninety eight subjects were calculated, but one hundred seventy four were enrolled in the study.

Data were collected through a researcher-made and validated demographic and factors questionnaire and depression was measured by the Beck Depression Inventory (BDI) short form validated in Persian.<sup>11</sup> Since BDI is used for screening purposes, so the probability of prevalence overestimation in such studies must be considered. The degrees of depression based on the questionnaire instructions were classified as: score 0 (no depression), score 1 (almost no depression), score 2-3 (poor), score 4-7 (mild), score 8-10 (more moderate than mild), score 11-14 (moderate less than severe) and score 15 and above (severe depression). Every item included 4 options and a score of 0 to 3 for each item was given. The minimum and maximum score was 0-39.

The study and the questionnaires were explained for the students in the class, and after obtaining their consent, the questionnaire was completed by them. The study was approved by the Ethical Committee of Tabriz University of Medical Sciences. The rejection rate was zero.

Students had to select one option in every item and when two options were selected, the option with the higher score was considered (according to the questionnaire instructions).<sup>11</sup> The inclusive criteria included educating in the school of the university. Having no willingness to participate or not feeling comfortable for filling the questionnaire was considered as exclusive criteria.

In the questionnaire, family dispute was defined as an action leading to challenging behaviors or stress in the family. Variables such as interest in field of study, sufficient allowance, worrisome about their future and family disputes were subjective and based on the students own belief about his/her situation. Reading the Quran or the meanings and performing prayers was measured on a

yes/no basis.

The collected data were analyzed by Chi-square and Fisher's exact test with software Stata Statistical Software, Release 10.0 (Stata Corporation, College Station, TX, USA). P-value less than 0.05 were considered as a statistically significant level.

### Results

Females and males were 66.4% and 39.4% of our research population, respectively. Among the fields of study, nutrition students made the highest proportion in our research population. The majority of students had urban and native residential status and most of them had no history of psychiatric disorders. Most (89%) of the students' parents were alive. Paternal and maternal education under diploma with 49.7% and 62.3%, respectively were the highest proportion in the educational groups.

In this study, 31% of the students were classified as minor depression, 20.7% as moderate (more than mild and less than severe), and 11% as the severe one.

As shown in table 1, we found statistical significant associations between marital status ( $P = 0.018$ ), interest in field of study ( $P < 0.015$ ), performing prayers ( $P = 0.023$ ) and reading the Quran ( $P < 0.001$ ) with depression. Therefore, depression rates were higher among those who were single, did not perform prayers, did not read the Quran and had little interest in their field of study.

Worrisome about their future career was one of the study variables that showed a significant association with depression ( $P < 0.013$ ), and 83% of the students with high levels of worrisome about their future career were categorized as a depressed individual.

Other variables including gender, field of study, age, birth order, residential status, history of psychiatric disorders, death of parents, parental divorce, reading the meanings of the Quran verses, the educational level of parents, sufficient allowance, recreation activity, cigarette

smoking and suffering from chronic disorders did not show a significant association with depression (Table 1).

### Discussion

The present study aimed to determine the prevalence of depression and some of its social, familial and personal associated factors in the students of School of Health and Nutrition in Tabriz University of Medical Sciences. The current study showed that 62.7% of the students had some degrees of depression and this prevalence was in consistent with some other studies conducted in Iran, e.g. the prevalence of depression in the Medicine and Nursing students of Hormozgan University of Medical Sciences was reported 49.5 and 60%, respectively,<sup>12</sup> in Yasuj 62%<sup>2</sup> in Ardabil University of Medical Sciences 57.6%,<sup>3</sup> in West Azarbayjan 53%,<sup>13</sup> in Iran University of Medical Sciences 58.5%,<sup>10</sup> in Jahrom University of Medical Sciences 45.5%<sup>14</sup> and in Shiraz University of Medical Sciences 59.8%.<sup>15</sup> Some other studies have reported a lower prevalence such as the studies done at Iran University of Medical Sciences which reported 41.8%<sup>16</sup> and studies from Sabzevar and Gorgan University of Medical Sciences which reported 21.3 and 10.9% of students as depressed, respectively.<sup>5,9,17,18</sup> Similar to us, all these studies used the BDI as the study tool.

Studies from other countries also using Beck Depression Questionnaire have reported lower prevalence of depression among students abroad such as studies from Pakistan and Nigeria which reported respectively 39 and 8.3 percent<sup>5,9,17,18</sup>. Despite the good comparability of studies with using similar tool, it is necessary to consider the probability of overestimation with using screening tools such as BDI.

In our study, there was a statistical significant association between marital status and depression that is in consistent with the results from the Gonabad study<sup>19</sup> and non-consistent with results from Ardabil

Table 1. Demographic characteristics of the population and the rates of depression

Variable		Number (Percent)	Number of depressed (Percent in this group)	P
Gender	Female	106 (60.6)	85 (80)	0.183
	Male	69 (39.4)	52 (75)	
Field of study	Nutrition Science	68 (38.9)	53 (78)	0.665
	Environmental, Public, Occupational and Family Health	66 (37.6)	53 (80)	
	Health Services Management	41 (23.4)	31 (75)	
Marital status	Single	163 (93.7)	129 (79)	0.018*
	Married	11 (6.3)	7 (63)	
Age group (year)	18-21	112 (65.1)	99 (89)	0.761
	22-25	53 (30.8)	41 (77)	
	26-29	7 (4.1)	5 (71)	
Birth order	1	39 (22.7)	29 (74)	0.186
	2	43 (25.0)	36 (83)	
	3	34 (19.8)	27 (79)	
	4	26 (15.1)	20 (76)	
	≥ 4	30 (17.4)	23 (76)	
Residential status	Native and urban	95 (55.2)	68 (72)	0.084
	Native and rural	18 (10.5)	15 (83)	
	Nonnative and urban	49 (28.5)	41 (85)	
	Nonnative and rural	10 (5.8)	8 (80)	
History of psychiatric disorders in family	No history	153 (87.4)	115 (75)	0.493
	Father positive	5 (2.9)	5 (100)	
	Mother positive	6 (3.4)	5 (83)	
	Brother positive	5 (2.9)	5 (100)	
	Sister positive	6 (3.4)	6 (100)	
Family disputes	No	108 (61.7)	85 (79)	0.116
	Yes	67 (38.3)	57(85)	
Death of parents **	Parents alive	153 (89.0)	121 (79)	0.614
	Father dead	17 (9.8)	12 (70)	
	Mother dead	2 (1.2)	1 (50)	
Parental divorce	Divorce	2 (1.2)	2 (100)	0.598
	No divorce	171 (98.8)	132 (77)	
Performing prayers	Yes	125 (71.8)	94 (75)	0.023*
	No	49 (28.2)	46 (93)	
Reading the Quran	No	54 (30.9)	44 (81)	< 0.001*
	Yes	121 (69.1)	93 (76)	
Reading the meanings of Quran verses	No	52 (29.7)	43 (82)	0.072
	Yes	123(70.3)	94(76)	
Father's education	Under diploma	87 (49.7)	71 (82)	0.587
	Diploma	45 (25.7)	34 (75)	
	Bachelor	34 (19.5)	24 (70)	
	Master or PhD	9 (5.1)	7 (77)	
Mothers' education	Under diploma	109 (62.3)	86 (79)	0.260
	Diploma	48 (27.4)	36 (75)	
	Bachelor	18 (10.3)	14 (77)	
	Master or PhD	0 (0.0)	0 (0)	

Table 1. Demographic characteristics of the population and the rates of depression (Continue)

Variable		Number (Percent)	Number of depressed (Percent in this group)	P
Interest in field of study	Very low	19 (10.9)	15 (78)	0.015*
	Low	20 (11.4)	19 (95)	
	Moderate	79 (45.1)	66 (84)	
	High	57 (32.6)	36 (63)	
Sufficient allowance	Very low	10 (5.7)	8 (80)	0.139
	Low	19 (10.9)	17 (89)	
	Moderate	114 (65.1)	90 (79)	
	High	32 (18.3)	21 (65)	
Worrisome about their future career	Very low	11 (6.3)	9 (81)	0.013*
	Low	27 (15.4)	20 (74)	
	Moderate	54 (30.9)	39 (72)	
	High	83 (47.4)	69 (83)	
Recreation (hour)	1	90 (52.3)	72 (80)	0.581
	2	41 (23.8)	35 (85)	
	3	22 (12.8)	16 (72)	
	≥ 4	19 (11.0)	12 (63)	
Cigarette smoking(daily)	Not smoking	162 (92.6)	125 (77)	0.115
	Less than 5	5 (2.9)	4 (80)	
	5-10	4 (2.3)	3 (75)	
	10-15	4 (2.3)	4 (100)	
Suffering from a chronic disease	No	159 (90.9)	121 (76)	0.764
	Yes	16 (9.1)	15 (93)	

\*Association is statistically significant

\*\*There was not any student with both parents dead in our subjects

University of Medical Sciences study.<sup>2</sup> In the current study, we did not find a statistical significant association between residential status and depression that is in consistent with results from the Iran University of Medical Sciences study.<sup>10</sup>

Studies conducted in Hormozgan and Zabol University of Medical Sciences, indicated a statistical significant associations between low interest in field of study and student's depression,<sup>12,20</sup> that is in consistent with our results. Because of temporality limitation in cross-sectional studies, it can not be said whether low interest in field of study led to depression or vice versa.

In the current study, we did not observe a statistical significant association between gender and depression which is in consistent with the Kashan and Gorgan studies,<sup>9,21</sup> whereas in western countries depression in women is approximately 2-fold than rate in men.<sup>22</sup> In a study that was conducted in

Jahrom University of Medical Sciences, there was no statistical significant association between parental education and depression that is consistent with the current study.<sup>14</sup>

This study also investigated other variables such as worrisome about their future career and family related variables such as family dispute that has not been considered in previous studies and some showed statistically significant associations with depression.

Among the limitations of our study, the fact is that the study population was limited to undergraduate students which are younger and may be more dependent on their families than postgraduate students. This may have made them prone to depression and overestimated the prevalence of depression among the students.

Besides, due to the limited sample size, we were not able to perform complicated multivariable statistics. More studies with



larger populations and more heterogeneous population are advised to be done on student populations in Iran. And the last limitation is that, because of temporality problems in cross-sectional studies, direction of associations is challengeable and need other designs such as case-control studies.

### Conclusion

In this study, some associated factors on depression have been identified and some of them are preventable. More attention to leading students toward their field of interest, supporting university graduates in finding relevant occupations, promoting spiritual believes and encouraging students to perform rituals such as prayers and reading the Quran, providing easier conditions for marriage and establishment of counseling centers to support students prone

to depression seems to be correlated with depression reduction among students, but more suitable designs such as case-control studies are needed to determine the direction of associations.

Given that medical sciences students will have important roles in the future society and are themselves health care providers, therefore it is necessary to conduct more research to alleviate the burden of depression in this population.

### Conflict of Interests

Authors have no conflict of interest.

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