

Prevalence Depression among Adolescents in North of Iran

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Received: February 21, 2018; **Published:** September 25, 2018

Abstract

Introduction: Many psychologists doubted the existence of significant depressive disorders in teenagers. However, a growing body of evidence has confirmed that adolescents not only experience the whole spectrum of mood disorders but also suffer from the significant morbidity and mortality associated with them.

Aims: This study investigated the prevalence of depression among Iranian adolescents. The study compared Depression across age, gender and location status. I review of epidemiological studies in this younger population.

Materials and Methods: A group of 783 adolescents (433 boys and 350 girls), aged 15 - 19 years were recruited to participate in this study. The data were collected using by Persian version of Beck Depression Inventory (BDI).

Results: The results show that depression was prevalent in the sample with 29.5% of boys and 17.8% of girls to be suffering from high depression. There was significant difference between girls and boys in depression score. The Sig. (2-tailed = .001) value was $t = 4.847$, $df = 781$. Output of the ANOVA analysis shows that there is a statistically significant difference in the mean of depression between ages. By using Post Hoc Tests of age in depression, a significant depression level of respondents who are 17 years old was significantly different from those who were 15, 16, 18, and 19 year. The result of statistics showed that 17 years has highest mean score for depression between teenagers. But there is no statistically significant difference between location status (Urban and Rural).

Conclusions: Mental health is one of the most neglected aspects of our society. It was concluded that there is an urgent need to pay more attention to the depression of adolescent in Iran.

Keywords: Prevalence; Depression; Adolescent; Beck Depression Inventory

Introduction

Depression is one of the under-recognized health problems in adolescents [1] and the period between childhood and adolescence is commonly regarded as a carefree time of life, many children and adolescents experience emotional problems growing up [2]. Teenagers with emotional disorders exhibit externalizing or internalizing behavior patterns that often pose substantial challenges to teachers, parents, and peers [3]. Externalizing behaviors such as verbal and physical aggression, non-compliance, delinquent acts, are often recognized by teachers as these behaviors often impede the instructional process [4] and Internalizing behaviors such as depression, anxiety, and somatic symptoms often emerge at this time. Not surprisingly, teenagers with externalizing, internalizing, or co-occurring concerns struggle in their interpersonal skills and behavioral competencies [5].

Adolescent depression may affect the teen's socialization, family relations, and performance at school, often with potentially serious long-term consequences [1]. Adolescents with depression are at risk for increased hospitalizations, recurrent depressions, psychosocial impairment, alcohol abuse, and antisocial behaviors as they grow up [6]. Of course, the most devastating outcome of concern for adolescent depression is suicide, the third leading cause of death among older adolescents and Correlational and longitudinal studies have shown that depression is associated with higher rates of smoking, alcohol abuse, unhealthy eating, and infrequent exercise [7]. Therefore, the purpose of this study was to determine the prevalence of depression in normal young population.

Prevalence of depression in the Iran

Sooky [6] and Malik [8] studied prevalence of depression in Iranian teenagers and found that teenagers especially girls have many problem with adaptation of development and their need during adolescence.

One of the most serious problems that they faced is depression. Prevalence of depression in teenagers is 40 - 70% and it is in girls twice as many as boys. This study has been carried out to evaluate prevalence of depression and its related factors in high school girls in this descriptive cross sectional study was performed to evaluate 762 high school girls who were selected randomly from the school of "Kashan" Iran and the Beck questionnaire was used for depression assessment. The frequency of mild, moderate and severe depression were (%19.4), (%24) and (%10) respectively (on the whole 53.4%). Because of high prevalence of depression in teenagers, they recommended to study more on effective factors on depression especially in teenagers [6].

There has been a very significant number of Iranians who have come into Tehran, the capital city of Iran, from various parts of the country in search of work or in the hope of finding a better life for themselves and their families. However, the cost of living in Tehran is high and as a result many of these "immigrants" have found it difficult to cope economically, thus leading to stress. For example, a study was conducted among a sample of 17 and 18-year old high school students from Tehran. Using stratified cluster sampling, a sample of third-year high school students in Tehran was selected. The findings indicated that mental health is of very significant concern among the young in Tehran and possibly among Iranian adolescents as a whole. These research results are helpful and needed for future research to identify the social factors that impact on the health of adolescents. Such data will also be of immense help to various parties like those involved in health care, and administration at both national and regional levels for the development of policies and programs on mental health care for adolescents [7,8].

In Iran to determine the prevalence of mental disorders among high school students in the city of "Rafsanjan" in the academic year 2001 - 2002, and to assess the related demographic factors. 830 students were selected through multistage cluster sampling and their mental health status was assessed by SCL-90-R and for suspicious cases of psychiatric disorders, the symptoms were recorded by a psychiatrist in a questionnaire according to DSM-IV. To determine the cut-off point, 120 students (3 clusters, 40 students each) were evaluated and interviewed by a psychiatrist. Regarding the cut-off point of 63, 176 students scored above the cut-off point; 17 were healthy according to clinical interview and 21 students dropped out regardless of several follow-ups. Thus, finally 138 students were interviewed and diagnosed by a psychiatrist. The overall prevalence of mental disorders was 16.6% (females 21.6%, males 10.6%). The most common mental disorders were anxiety and mood disorders (8.4% and 4.1%, respectively). The result shown that mental disorders were common among high school students in Rafsanjan and there was a significant correlation between the prevalence of mental disorders and some demographic variables such as gender, family history of mental disorders, family history of divorce and drug abuse and type of residence [9].

For the prevalence of depression among high school and pre university adolescents in Rasht, Northern Iran studied 4,020 randomly-selected individuals out of 41,815 high school and pre-university students. Beck's self-administered standard questionnaire and a predetermined form containing some demographic variables were applied to measure variables. Two hundred and ninety-nine subjects (due to incomplete responses) and 40 subjects (evening-school students) were excluded from our study. One thousand two hundred fifty (34%: CI 95% 32.4 - 35.4%) out of 3,681 of the students were found to be suffering from depression. There were also important differences between the incidence of depression and category of school ($P < 0.001$), field of education ($P < 0.0005$), socioeconomic status ($P = 0.0002$), and gender ($P < 0.001$). There was however little significance between the incidence of depression and location, academic grades, and participants' age. This research demonstrated that significant prevalence of depressive symptoms in the students studied which has an important relationship with the low level of the subjects' socioeconomic status. As a result of these findings, the researchers recommended psychiatric treatment and analysis to confirm the existence of depression and its association with the variables studied [10].

In a study to investigate the prevalence of depressive disorders in Rasht center-north of Iran, 4020 subjects, aged 18 - 70 were selected the 394,925 population of Rasht. Firstly, these selected subjects were put through Beck's Depression Inventory. Secondly, a semi-structured psychiatric interview (DSMIV-TR) was used to evaluate all subjects who scored more than 15. The variables evaluated included socio-demographic characteristics like age, gender, marital status, educational level, and socio-economic class. It was found that 9.5% of samples (63% female and 37% male) were diagnosed with depressive disorders. The incidence of minor depressive disorder, dysthymia, and major depressive disorder was 5%, 2.5%, and 1% respectively. These findings indicated an association between socio-economic class and both depressive symptoms based on BDI score ($p < 0.001$) and depressive disorders based on clinical interview ($p < 0.001$). This research also demonstrated that dysthymic and minor depressive disorder were more prevalent than major depressive disorder, while low socio-economic class was the most significant risk factor for depression. However, there are study limitations, researchers and policy makers should not assume our findings to be conclusive; instead the findings of this study could be used for analytical methodology to evaluate the correlation between depressive disorders and associated factors [10-12].

Rostam Zadeh and Khalili Zadeh in Urmia of Iran; on the Epidemiology of depression in Iranian adolescents (2007) chose 3023 high school girls students aged 13 - 22 who were evaluated with Beck Depression Inventory (BDI). The results of this study indicate that the overall prevalence of depression among female students in Urmia Research 68.1%, intensity and mild depression in the 19.3%, moderate depression versus 32.5%, and severe depression to 16/4% and the prevalence of depression among Student's age, discipline, status of house ownership, occupation of parents, parents' educational level, family income, and the relationship Depends on the bond between parents ($P < 0/05$) and severity of depression in children of the age, condition of house ownership, occupation of parents, the Parents' education, family income and emotional connection between parents is a statistically significant relationship ($P < 0/05$) [13].

Method

Participants and Pressure

The research design in this study was cross-sectional. Cross-sectional studies merely allow generation of initial hypotheses about potential risk factors, based on demonstrations of associations between depression and a range of potential variables, such as demographic. The target population of this study are teenagers in north of Iran (Guilan Province). Guilan is one of the provinces of Iran. It lies along the Caspian Sea. Participants in the study were a group of 783 teenagers, aged 15 - 19 years. Adolescents were school and Non-school from of north of Iran and who participate in the study by Simple random sampling. Average age of the sample was 17.93 years ($SD = 1.64$, range = 15 - 19); 44.7% ($N = 350$) were female and 55.3% ($N = 433$) male.

Inclusion criteria

1. All adolescents who lived in Northern Iran (school and non-school)
2. All were overtly healthy.

Exclusion criteria

1. All adolescents suffering from any kind of chronic disease requiring prescribed medication.
2. Any past history of diagnosed mental illness.

Measure

Beck Depression Inventory (BDI)

The Beck Depression Inventory (BDI, BDI-II), created by Dr. Aaron T Beck, is a 21-question multiple - choice self-reporting inventory, one of the most widely-used instruments for measuring the severity of depression. In its current version, the questionnaire is designed for individuals aged 13 and over, and is composed of items relating to symptoms of depression such as hopelessness and irritability, cognitions such as guilt or feelings of being punished, as well as physical symptoms such as fatigue, weight loss, and lack of interest in sex [14]. The BDI is used in Iran for many researches and it has been proven to have suitable reliability and validity [10]. The BDI was adapted for Iranian culture. According to Modabber-Nia., *et al.* (2007) and Beck., *et al.* (1988) standardized questionnaire scores are defined as follows [15]:

- Symptom-free or normal (0 - 15)
- Mild depression (16 - 30)
- Moderate depression (31 - 46)
- Severe depression (47 - 63)

Score of 16 and above is taken as Depression.

Hypothesis

1. There is a significant difference between Girls and Boys in depression.
2. There is a significant difference between age groups in depression.
3. There is a significant difference between locations in depression.

Results

The sample comprised a total of 783 participants. The age ranged from 15 to 19 years 44.7% ($n = 350$) were female and 55.3% ($n = 433$) male. The location of the sampling in the study shows that 495 (63.2%) lived in urban and 288 (36.8%) lived in rural. The educational of the sampling in the study shows that 509 (64%) were school students and 274 (36%) were Non-school (see Table 2).

Characteristics		Boys		Girls		Total	
		N	%	N	%	N	%
Age	15	96	(22.2)	95	(27.1)	191	(24.4)
	16	96	(22.2)	97	(27.7)	193	(24.6)
	17	82	(18.9)	120	(34.3)	202	(25.8)
	18	78	(18)	25	(7.1)	103	(13.2)
	19	81	(18.8)	13	(3.7)	94	(12)
Location	Urban	286	(66.1)	209	(59.7)	495	(63.2)
	Rural	147	(33.9)	141	(40.3)	288	(36.8)
Education	School	256	(59.1)	245	(70)	501	(64)
	Non-school	177	(40.9)	105	(30)	282	(36)
Total		433	(55.3)	350	(44.7)	783	(100)

Table 1: Baseline information on the study sample.

Demographic characteristics are facts about the makeup of a population. This study describes the demographic characteristics of the teenagers participating in the third research. Demographic characteristics include gender, age and location. Results in this section are based on 783 samples selected from the target population. The mean for Gender and the mean standard deviation for Females were ($M = 34.0377$, $SD = 15.33779$) and Males ($M = 28.8247$, $SD = 12.36388$). The number of participants in each gender were Females = 350, Males = 433.

Table 2 shows that there is significant difference in depression scores between Females and Males and the Sig. (2-tailed = .000) value is $F = 25.530$, $t = 4.847$, $df = 781$.

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	25.530	.001	4.847	781	.001	5.21302	1.07549

Table 2: t-test for Equality of Means in depression by gender.

One of the assumptions of the one-way ANOVA is that the variances of the groups are comparatively similar. Homogeneity of Variances shows the result of Levene's Test of Homogeneity of Variance, which tests for similar variances. If the significance value is greater than 0.05 (found in the Sig. column), then data have homogeneity of variances. In this study Levene's F Statistic has a significance value of 0.075 and, therefore, the assumption of homogeneity of variance is met.

Table 3 shows the output of the ANOVA analysis. We can see that in this table the significance level is 0.001 which is not greater than 0.05 and, therefore, there is a statistically significant difference in the mean of depression between ages. By using Post Hoc Tests of age in depression, a significant depression level of respondents who are 17 years old was significantly different from those who were 15, 16, 18 and 19 year. The result of statistics showed that 17 years has highest mean score for depression between teenagers.

The mean for Location and the mean standard deviation for Urban were ($M = 32.2156$, $SD = 14.520$) and Rural ($M = 30.0783$, $SD = 13.41990$). The number of participants in each condition Urban = 443, Rural = 340.

Table 4 shows that there is no significant difference in depression scores between teenagers who lived in Urban and Rural areas and the Sig. (2-tailed = .053) value is $F = 1.237$, $t = 1.936$, $df = 781$.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5611.727	4	935.288	4.558	.001
Within Groups	135217.168	778	205.185		
Total	140828.895	782			

Table 3: ANOVA of age in depression.

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	1.237	.267	1.936	781	.053	2.13729	1.10370

Table 4: t-tests for Equality of Means difference of location in depression.

Discussion

Compare level of depression among Iranian teenagers based on demographic characteristics (gender, age and location were shown that there was significant difference in depression scores between Females and Males and the Sig. (2-tailed = .000) value was $F = 25.530$, $t = 4.847$, $df = 781$. The finding supports the results that expect female teenagers to have higher depression levels than males. For example, Sooky, . studied the prevalence of depression in Iranian teenagers and found that teenagers, especially girls, have many problems with depression. Modabber-Nia, *et al.* as reported in the literature, indicated that there were significant differences between males and females in depression [10].

This study found that there is a statistically significant difference in the mean of depression between ages. In this study, 17-year-olds were significantly different from those who were 15, 16 18 and 19 years old. In fact 17-year-olds had the highest mean score for depression among teenagers. Momtazi, *et al.* (2006) in their study, in Zanjan of Iran, on the Epidemiology of depression in Iranian adolescents between ages 14 and 19, found that 17-year-olds had the highest mean score of depression among adolescents [9].

Kunal Kishor Jha (2017) found that the prevalence of depression was found to be 49.2%, wherein the prevalence of severe depression was 7.7%. The overall prevalence of depression was significantly ($P < 0.001$) higher among girls (55.1%) than boys (45.8%). The prevalence of depression was found to be higher among students belonging to minorities (Buddhism, Jainism, etc.) (63.3%, $P < 0.001$). Elder students were found to be more depressed than younger students. Depression was found to be statistically significantly associated with gender and religion ($P < 0.005$). Guilty feeling (69.48%) was one of the most prominent clinical factors associated with depression followed by pessimism (58.14%), sadness (56.52%), and past failure (55.81%) [1].

There was no significant difference in depression scores between teenagers who lived in Urban areas and those who lived in Rural areas and the Sig. (2-tailed = .053) value was $F = 1.237$, $t = 1.936$, $df = 781$. As explained about anxiety in the earlier part of this research, most of the teenagers in the north of Iran face the same situation. They are confused about their life. Sometimes, they say: "I am sad without reason" or "I think of suicide" or "My mind is upset" and so on. These sentiments are shared between both urban and rural teenagers.

There was no significant difference in depression scores between teenagers who were Non-School and School and the Sig. (2-tailed = .66) value was $F = .161$, $t = 1.843$, $df = 781$. The prevalence of depression is high in Iran and increasing now, as can be seen in table 1 Whether the teenagers go to school or not, there is a feeling of hopelessness about their life, future, job and so on. Unfortunately these days, when there is no clear reason for depression in Iran, treatment will be difficult [16,17].

Conclusion

The present study found that 15.2% of the adolescents had evidence of distress and 18.4% were found to be depressed and boys with 29.5% are more depressed than girls 17.8% ($df = 781$, $t = 4.847$). We tried to find the factors responsible and association of the same with the prevalent depression. Economic difficulty, physical punishment at school or home and parental fights were significantly ($P < 0.05$) associated with higher BDI scores indicating depression. Cut-off score for BDI ranges from 16 depending upon different studies. we took the cut-off score for BDI as 16 thereby increasing the specificity to 99%. In spite of the limitations, this study points towards the issue of prevalence of depression in adolescence and the purpose of the study is well served to highlight the common but ignored problem. We recommend that teachers and parents be made aware of this problem with the help of school counselors so that the depressed adolescent can be identified and helped rather than suffer silently.

Conflict of Interest

The author in this study had no potential conflict of interest including any financial, personal, or other relationships with people or organizations that could inappropriately influence or be perceived to influence this work.

Acknowledgements

I would particularly to acknowledge the contribution of psychologist coworkers in Guilan University of Medical Science for helping me with the data collection for this study. And Special thanks are also due to all the teenagers who participated in this study.

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Volume 7 Issue 10 October 2018

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