

# Comparing depressive symptoms in teenage boys and girls

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## ABSTRACT

**Introduction:** Symptoms of depression vary between the males and females. Depressed men show behaviors such as irritability, restlessness, difficulty in concentrating, and instead of the usual behaviors. Sleep disturbance is a common symptom in depressed men. Men are less likely to go to doctors and unconsciously show other behaviors such as anger instead of the sadness. It seems that considering depression as “feminine” is a great injustice toward male patients whom their illness will not be diagnosed nor treated. **Materials and Methods:** The sample consisted of 191 depressed adolescents, 108 males and 83 females aged 13–19 years old. Data collected for 10 years from 2005 to 2015 and their depressive symptoms were evaluated by the Beck Depression Inventory-Second Edition. **Results:** Depressed girls felt sadness, guilt, punishment, worthlessness, low energy and fatigue, or more asthenia, whereas depressed boys have symptoms such as irritability, depression, suicidal thoughts, or desires to reduce their pleasure. The results of *t*-test showed that the difference between the total scores of boys and girls with depressive disorder (16.93) is significant at 0.001. *F* values for feeling sad (58.13), hatred of self (12.38), suicidal thoughts or desires (12.97), restlessness (17.35), and irritability (46.41) were significant in the 0.001. **Conclusion:** Experiencing depression in boys and girls according to the role of gender was different. Gender can have an effective role in showing depression symptoms in adolescents.

**Keywords:** Adolescence, Beck Depression Inventory-Second Edition, depression, gender differences, symptoms

## Introduction

In early adolescence, the onset of depression has a steady climb. At the age of 6–11, the incidence of depression is 2%–3% and at the age of 11–15 with a relative increase is 3%–8%. Moreover, by the age 13–15 years, these symptoms will be twice in girls than boys and will continue until the end of adolescence.<sup>[1]</sup> The previous researches have shown that the prevalence of depression in women is twice than men,<sup>[2]</sup> and the first differences in depressive symptoms are revealed between the ages of 12 and 14.<sup>[3–6]</sup> The reasons for gender differences in depression are still not fully understood. However, cognitive theories have shown that adolescent girls and young women are more capable of showing cognitive style with negative assessment of

themselves and rumination. This may help creating a background for depression.<sup>[4–6]</sup>

Gender-based differences in cognitive symptoms in patients with depression and healthy individuals have been confirmed. For example, women generally earn higher scores than men in Beck Depression Inventory (BDI).<sup>[7]</sup> These gender differences are also have been seen even in women's brain function with a history of depression since childhood by showing changes of alpha waves in the right forehead.<sup>[8]</sup> Studies that compare individual symptoms of depressive symptoms in depressed men and women have shown that depressed women have more physical symptoms such as changes in appetite, loss or weight gain, change in sleep patterns, psychomotor slowing, psychosomatic symptoms, crying, guilt, and depression than depressed men.<sup>[9–11]</sup> However, depressed men are more concern about their health and show depressive symptoms as irritability.<sup>[12]</sup>

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10.4103/jfmpc.jfmpc\_129\_17

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**How to cite this article:** Khesht-Masjedi MF, Shokrgozar S, Abdollahi E, Golshahi M, Sharif-Ghaziani Z. Comparing depressive symptoms in teenage boys and girls. *J Family Med Prim Care* 2017;6:775-9.

However, gender differences in depressive symptoms among children and adolescents on the basis of major depression standards or dysthymia disorder has not been found.<sup>[12-14]</sup> Perhaps, the limitations of previous studies, such as the limited number of samples could affect the result of this research. Since all of them have reported differences in body image, loss of appetite and weight in girls and withdrawal and isolation, insomnia, and inability to work in boys.<sup>[15]</sup>

The researchers found that a third of men and women are in the criteria for diagnosing depression. Depression symptoms in men and women are not similar to each other. Men may be reluctant to reveal depression symptoms. Depression symptoms in men are anger, suicide, distraction, and irritability rather than sadness. The results of study on 3310 women and 2382 men showed that about 26% of men and 22% of women had depression criteria. The researchers suggested diagnosing depression in men and women; it is better to find a new standard to replace the previous criteria. In addition to reducing and quality of life, depression in men has other signs such as smoking, alcohol consumption, inactivity and sleep problems. We must accept that depression is not a feminine disease. Lack of daily activities, exercise and changes in sexual behavior in men is the most important indicators of depression in men.<sup>[16]</sup>

## Materials and Methods

The current study is cross-sectional, and the data were collected repeatedly using BDI from 2005 to 2015. The samples (adolescents diagnosed with depression) were evaluated by neurologists and psychiatrists in Shafa psychiatric center in Rasht (a city north of Iran) during 10 years by BDI. In this study, patients who had other disorders (such as serious physical or mental disease, abnormal intelligence, behavioral disorders, and addiction) in addition to depression were excluded. All the patients in this study were residents of urban or rural areas in Gilan so they can be easily reached. The final sample consisted of 191 adolescents (83 females and 106 males) between the ages of 13 and 19 years with an average age of 15.82 and a standard deviation of 1.63. According to experts' diagnosis, 54 people had major depressive disorder and 137 people had dysthymia and minor depression.

## Measurement tool

BDI is one of the most appropriate methods to reflect depressive states. BDI has 21 articles which evaluate three dimensions of depression: Physical symptoms, cognitive symptoms, and behavioral symptoms. Each article has four options scored on 0–3 and determines degrees of depression from mild to severe. The maximum score on the test is 63, and the minimum is 0. Comparing BDI Hamilton Depression Rating Scale with showed that BDI is not depends on the peoples' skill and is more concerned with assessing psychological characteristics rather than physical and physiological discomfort. The correlation between these two questionnaires is 0.75. This questionnaire has been studied by many people over the years and is known

as the best questionnaires to assess depression.<sup>[17,18]</sup> BDI-Second Edition (BDI-II) is the revised form of BDI to measure the severity of depression.<sup>[19]</sup> This questionnaire is more consistent with DSM-IV and is can be used in the population of 13 years and over. Twenty-one article of the questionnaire is classified in three groups: Affective symptoms, cognitive symptoms, and physical symptoms.<sup>[17]</sup> Demographic characteristics, age, education, location, and social class were studied using *t*-test and MANOVA.

## Results

The sample group included 191 patients aged 13–19 years with a mean age of 15.82 and a standard deviation of 1.63. One hundred and six males and 83 females were in this study. Nineteen patients (9.9%) were 13 years, 21 patients (11%) were 14 years, 46 patients (24.1%) were 15 years, 39 patients (20.4%) were 16 years, 26 patients (13.6%) were 17 years, 35 patients (18.3%) were 18 years, and five patients (2.6%) were 19 years old. Based on location, 103 patients (53.9%) living in the city and 88 patients (46.1%) lived in rural areas. According to education, five patients (2.6%) were in primary school, 32 patients (16.8%) were in high school JR, 151 (76.1%) high school, and three patients (1.6%) had university education. In terms of the economic situation, the sample was divided into three groups based on family income, parents' education and occupation. According to the sample group, twenty patients (10.5%) were in the lower class, 152 (79.6%) were average, and 19 patients (9.9%) were high [Table 1].

Table 2 shows the mean and standard deviation of the statements of depression in girls and boys. In BDI-II, average depression

**Table 1: Demographic characteristics of the sample**

Variables	n (%)
Gender	
Boy	133 (56.6)
Girl	107 (43.5)
Age	
13	31 (9.9)
14	35 (11)
15	51 (24.1)
16	46 (20.4)
17	33 (13.6)
18	42 (18.3)
19	12 (2.6)
Residence	
Urban	128 (53.9)
Rural	112 (46.1)
Education	
Primary	17 (2.6)
Secondary school	44 (16.8)
High school	164 (76.1)
Per-university	15 (1.6)
Economic situation	
low	37 (10.5)
Average	168 (79.6)
High	35 (9.9)

symptoms for boys was between 2.27 and 0.53 (the lowest score belonged to feelings of sadness or lethargic, and the highest score belonged to irritability, suicidal thoughts or desires, and reducing pleasure) and for girls was between 1.52 and 0.99 (the lowest score belonged to feelings of sadness, guilt, feeling punished, feelings of worthlessness, decreased energy, and fatigue or weakness).

T-test was used to compare the two means. The comparison between independent groups showed that score difference in both groups was significant in 0.001. Multivariate analysis of variance was used to verify that the two groups differ on which of the components of depression. The results are given in Tables 3 and 4.

Based on the results presented in Table 3, the effect of group on the linear combination of dependent variables is significant ( $P < 0.05$  and  $F = 9.548$ , Pillai's Trace = 0.543, and Wilks's Lambda = 0.457). In other words, between two groups of depressed girls and boys, at least in one of the depression components there is a significant difference.

According to Table 4, F for the following components is as follows: feeling sad (58.132), hatred of self (12.38), suicidal

thoughts or desires (12.973), restlessness (17.357), and irritability (46.414) which were significant at 0.001. F for the following components is as follows: pessimism (3.33), previous failure (5.63), decreased pleasure (0.624), guilt (0.614), feeling punished (7.41), self-criticism (0.003), crying (1.89), loss of interest (4.324), lack of decision (2.893), feelings of worthlessness (4.399), reduction of energy (5.849), changes in sleep patterns (0.043), change in appetite (2.974), difficulty concentrating (0.018), fatigue or asthenia (3.569), and decreased libido (4.738). These results indicate that there is no significant difference in these components in these two.

## Discussion

The previous studies on the prevalence of depression showed that the severity of symptoms in girls is higher than boys. However, research has shown that depression severity in both genders is equal and the fundamental differences are in depression symptoms.<sup>[12,13]</sup> Recent research findings showed that feeling of guilt and dissatisfaction in girls is higher than boys. The results obtained in this study were inconsistent with the results of studies performed by Wade *et al.* 2002 and Hankin. Research carried out about ranking depressive symptoms in both boys and girls showed that depressed girls showed symptoms such as sadness, depressed mood, hopelessness, self-blame, feelings of failure, difficulty in concentrating, fatigue, and concerns in BDI on physical health. In this study, anhedonia has the highest rate in depressive symptoms. Hence, the results can be interpreted as follows: when adolescents say that there is nothing attractive in life and they do not enjoy, these symptoms can be alarming because it is a sign of starting depression. While boys with depression showed symptoms like such as anhedonia, difficulty sleeping morning tiredness. Our findings were inconsistent with the results of studies performed by Sorensen 2005. Messi 2001 (using logistic regression) showed that anhedonia in boys (in BDI) could be referred as a strong predictor of depression. Gender differences in feelings of guilt are fairly considered throughout diagnosing depression so that Breslau and Davis 1985 stated that in their research feeling guilty is a significant predictor of depressive symptoms in women. Furthermore, in this study, feeling guilty has a significant percentage of in girls.

Feeling guilty is one of the signs of depression that can be noticed in research. Girls at an early age and lower social class are more likely to have feeling guilty.<sup>[20]</sup> Change in appetite<sup>[19-21]</sup> is referred as the main symptom of depression. Their studies had shown that the purpose of these changes in appetite (loss of appetite

**Table 2: The mean and standard deviation for statements of depression, separated for boys and girls**

Statements	Boys		Girls	
	Mean	SD	Mean	SD
Feelings of sadness	0.53	0.790	1.52	1.004
Pessimism	1.03	0.971	1.29	0.994
Previous failure	1.02	0.854	1.33	0.925
Loss of pleasure	1.86	1.026	1.45	0.845
Feel guilty	1.12	0.733	1.63	0.848
Feeling of being punished	1.06	0.846	1.43	1.026
Self-hatred	0.96	0.602	1.31	0.81
Self-criticism	1.42	0.799	1.41	0.898
Suicidal thoughts or desires	1.71	1.103	1.19	0.818
Crying	1.39	0.918	1.39	0.778
Fidget	1.5	0.942	0.99	0.69
Loss of interest	1.44	0.899	1.18	0.751
Not making decision	1.23	0.744	1.06	0.612
Feelings of worthlessness	1.03	0.618	1.23	0.704
Loss of energy	1.15	0.664	1.41	0.827
Changes in sleep patterns	1.39	0.926	1.36	0.878
Irritability	2.27	1.073	1.28	0.888
Changes in appetite	1.33	0.761	1.14	0.735
Difficulty in concentrating	1.14	0.877	1.33	0.871
Fatigue or asthenia	0.6	0.71	1.11	0.827
Decreased libido	1.63	0.953	1.33	0.964

SD: Standard deviation

**Table 3: Results of multivariate analysis of variance test for depression variable and its component between the groups**

Examination name	Amount	F	Df hypothesis	Df error	Significance level	Effect size	Statistical power
Pillai's trace	0.543	9.548	21	169	0.034	0.223	1
Wilks's lambda	0.457	9.387	21	169	0.034	0.229	1
Hotelling's trace	1.186	80476	21	169	0.034	0.235	1
Roy's largest root	1.186	9.439	21	169	0.034	0.333	1

**Table 4: The results of multivariate analysis of variance analysis on average depression and its components in two groups of boys and girls with a depressive disorder**

Statements	Sum of squares	Mean squares	F	Significant	Effect size	Statistical power
Feelings of sadness	46.025	0.792	58.132	0.001	0.235	1
Pessimism	3.206	0.963	3.33	0.17	0.017	0.443
Previous failure	4.417	0.784	5.634	0.018	0.029	0.656
Loss of pleasure	0.566	0.906	0.624	0.43	0.003	0.123
feel guilty	0.335	0.545	0.614	0.434	0.003	0.122
Feeling of being punished	6.388	0.862	7.41	0.007	0.038	0.773
Self-hatred	6.067	0.49	12.38	0.001	0.061	0.938
Self-criticism	0.002	0.711	0.003	0.955	0.001	0.05
Suicidal thoughts or desires	12.7	0.979	12.937	0.001	0.064	0.948
Crying	1.398	0.739	1.89	0.171	0.01	0.277
Fidget	12.305	0.709	17.357	0.001	0.084	0.986
Loss of interest	3.039	0.703	4.324	0.039	0.022	0.543
Not making decision	1.367	0.467	2.896	0.091	0.015	0.395
Feelings of worthlessness	1.899	0.432	4.399	0.037	0.023	0.551
Loss of energy	3.209	0.549	5.849	0.017	0.030	0.672
Changes in sleep patterns	0.035	0.819	0.043	0.839	0.001	0.055
Irritability	46.129	0.994	46.414	0.001	0.197	1
Changes in appetite	1.672	0.562	2.974	0.086	0.015	0.404
Difficulty in concentrating	0.014	0.765	0.018	0.892	0.001	0.052
Fatigue or asthenia	2.075	0.582	3.569	0.06	0.019	0.468
Decreased libido	4.347	0.917	7.748	0.031	0.024	0.581

in girls and increasing appetite in boys) were to inhibit or reduce stress, but in this study, there was no significant relationship between changes in appetite and depressive symptoms in boys and not girls.

One of the most important gender differences in depression is difficulty in concentrating. Difficulty in concentrating is one of the important signs of depression in women. Difficulty in concentrating like rumination is more common among women than men, which is consistent with the results of the current study.<sup>[22-26]</sup>

Loss of pleasure, changes in sleep patterns, irritability, and fatigue were the experiences of depressed boys, and for the first time, it was observed that depressed men may reach to higher levels in these symptoms.<sup>[27]</sup> This issue has been in accordance with the results of our survey (high fatigue among boys at least indicates part of gender differences because of the absence of pleasure). Finally, recent findings showed the importance of gender differences for some of the symptoms of depression, such as feelings of sadness, self-hatred, suicidal thoughts and desires, restlessness, and irritability in BDI symptoms. For other symptoms such as sleep problems (usually mentioned by parents of adolescents frequently) in this study, no difference was noted. As a result, the abovementioned results were different from the results of studies in Europe and North America.<sup>[28]</sup>

In summary, the evidence for gender differences among a sample of depressed adolescents showed that depressed girls are more likely to show cognitive and physical symptoms of depression

than depressed boys. Knowing this potential difference may be helpful for doctors in treatment. For example, if feeling guilty and dissatisfaction with body image of girls are higher than boys, cognitive interventions to eliminate excessive guilt and self-hatred will be effective.<sup>[29]</sup> Goodwin and Gotlib 2004 studies showed that gender differences in dealing with stress styles significantly increase the risk of major depression.<sup>[30]</sup> Neuroticism characteristics may have significant role in increasing the risk of depression in girls. Age 13 could be the beginning of depression that requires special attention of the WHO.<sup>[31]</sup>

## Conclusion

The results showed that the experience of guilt and dissatisfaction with body image in depressed girls is higher than boys. Symptoms of depression in girls include having sadness, depressed mood, hopelessness, self-blame, feelings of failure, difficulty in concentrating, fatigue, and concerns about health, whereas in boys, the symptoms are lack of fun, trouble in sleeping, fatigue, and lack of enjoyment of life. Feeling guilty can be mentioned as a strong predictor of depression in girls. Depressed boys experienced loss of pleasure, changes in sleep patterns, irritability and fatigue, and possibly increase of fatigue among boys is a symptom of anhedonia. The findings confirm the role of gender in depression.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.



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