

Adolescent pregnancy and depression: is there an association?

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Summary

Objective: The impact of being an adolescent and socio-demographic parameters on depression development during pregnancy were evaluated in this study. **Materials and Methods:** Between September 2010 and September 2011, 105 consecutive adolescent women ≤ 17 years of age were defined as the study group and 105 consecutive pregnant women over 18 years of age and matched for gestational age, were defined as the control group. Groups were compared according to depression development. The predictors of depression were analyzed by regression analysis. **Results:** Median Beck Depression Inventory-II (BDI-II) scores in adolescent and control groups were 16 and 6, respectively. The difference was statistically significant. In the adolescent group, 39.0% of patients had mild depression, 37.1% moderate, and 10.5% had severe depression. Only 4.8% of patients in the control group had mild depression while none of the control cases had moderate or severe depression. Multivariate analysis showed that most important factor that was associated with depression development during pregnancy was being an adolescent. **Conclusion:** Depression risk was increased 18.2-fold in adolescent patients with pregnancy. Therefore psychiatric evaluation should be considered for these patients.

Key words: Adolescent pregnancy; Depression; Socio-demographic factors.

Introduction

About 11 million adolescent girls give birth each year which corresponds to approximately 11% of all births worldwide. Almost 95% of these births occur in developing countries and 90% of them occur within marriage [1]. Adolescent childbearing has negative impacts on health of mother and baby and has negative socio-economic effects. It might cause psychological problems during pregnancy, since adolescent women are not prepared for pregnancy, both physically and psychologically.

The prevalence of depression in women increases during the childbearing period and approximately 8-12% of women may meet diagnostic criteria for depression during pregnancy [2]. Previous studies have shown that low socio-economic level, poor family communication, and some obstetric complications are related to depression development in pregnancy [3, 4]. These are also risk factors for formation of adolescent pregnancy since most of them are seen in developing or underdeveloped countries.

The relationship between adolescent pregnancy and depression has been evaluated previously, but there is no study about adolescent depression during pregnancy in Turkish population. The aim of the present study was to investigate the possible association between depression development and being adolescent during pregnancy in Turkish women. The impact of socio-demographic characteristics of patients on development of depression were also evaluated.

Materials and Methods

Between September 2010 and September 2011, pregnant women at 36-40 weeks who were admitted to Afşin Public Hospital and Fatih University Faculty of Medicine, Department of Obstetrics and Gynecology, were evaluated after obtaining approval of the Fatih University Hospital Ethics Committee and complied with the principles of the Helsinki Declaration. One hundred and five consecutive healthy adolescent pregnant women were defined as the study group and 105 consecutive healthy pregnant women over 18 years of age who admitted for routine antenatal follow up and matched for parity and gestational age were defined as the control group. The patients were chosen as adolescent pregnant with no complication as preterm delivery, preeclampsia, and decolman placenta. The study was approved by the local ethics committee and an informed consent form was obtained from all participants. Patients with known thyroid disease, multiple gestations, gestational trophoblastic disease, and psychological and gastrointestinal disorders were excluded.

The Beck Depression Inventory-II (BDI-II) questionnaire and socio-demographic questionnaire evaluating lifestyle, educational level, occupation, sanitation, economic status, and obstetric history were given to all participants for self-completion. The forms were collected and checked for completeness. A further request was made for the forms to be completed if they were incomplete. BDI-II is a 21-item self-rating scale for assessing the experience of depressive symptoms in the preceding seven days. The item-response scales range from 0 to 3, with higher scores indicating more severe depressive symptoms. The sum score can range from 0 to 63 points. A score ≤ 9 indicates no depression, 10-16 mild, 17-23 moderate, and ≥ 24 severe depression.

Data were analyzed with the SPSS software version 15.0. Data was transferred to computer media. Error control and necessary

Table 1. — Demographic risk factors for development of depression in adolescent women (n=210).

	Adolescent		Control		p value
Age (range) (years)	17±1		25±9		<0.001
Age at marriage (years)	16±1		18±2		<0.001
Age at first pregnancy (range) (years)	16±1		19±3.5		<0.001
Gestational age (range) (weeks)	39±1		39±0		0.068
Gravidity (range)	1±0		2±2		<0.001
Parity (range)	0±0		1±2		<0.001
Previous miscarriage	0±0		0±0		0.303
Occupation					
Housewife	104	99.0	105	100.0	0.500
Working	1	1.0	0	0.0	
Husband's occupation					
Employee	100	95.2	28	26.7	<0.001
Officer	5	4.8	77	73.7	
Income					
Lower than minimum wage	96	91.4	105	100.0	0.002
More than minimum wage	9	8.6	0	0.0	
Education level					
Only literate	41	39.0	0	0.0	<0.001
Primary school	64	61.0	105	100.0	
Family relationship					
Good	80	76.2	105	100.0	<0.001
Poor	25	23.8	0	0.0	
Social relationship					
Good	78	74.3	105	100.0	<0.001
Poor	27	25.7	0	0.0	
Fetal gender					
Female	49	46.7	47	44.8	0.782
Male	56	53.3	48	55.2	

$p < 0.05$: statistically significant.

corrections were done. Groups were controlled in terms of conformity to normal distribution by graphical check and Shapiro-Wilk test. Median IQR was used for groups that were not distributed normally. Categorical variables are expressed as number and percentage. Chi-square tests were conducted to test the distribution between categorical variables. The Mann-Whitney test was used to compare groups. Logistic regression analysis was used to evaluate the value of parameters to predict depression. Depression was taken as dependent factor and socio-demographic features as independent parameters. Thirteen step Backward method was used for regression analysis. Odds ratio and CI 95% values of each parameter for depression development were calculated. A p -value of ≤ 0.05 was taken as significant. Power analysis of the study showed that 200 patients were needed to gain 80% power when alpha error was set at 0.05, beta error at 0.20, and effect size at 0.40.

Results

The number of patients recruited to the study was 210; 105 adolescent pregnant women and 105 controls. The median age was 25 ± 9 years, median gravida and parity were

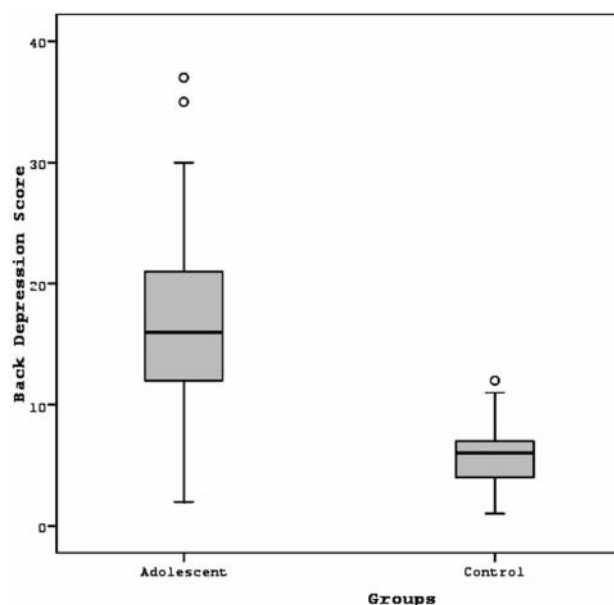


Figure 1. — Median BDI-II scores in adolescent and control groups.

1 ± 1 and 0 ± 1 , respectively. Comparison of groups in terms of demographic variables revealed significantly lower age, age at marriage, and age at first pregnancy in adolescent group $p < 0.05$. Also significant difference was observed between groups in terms of gravida and parity $p < 0.05$. There was no difference between groups in terms of gestational age and number of abortuses $p > 0.05$. Demographic characteristics of patients are shown in Table 1.

Median BDI-II scores in adolescent and control groups were 16 and 6, respectively (Figure 1). The difference was statistically significant $p < 0.001$. In the adolescent group, 39.0% of patients had mild depression, 37.1% moderate, and 10.5% had severe depression. On the other hand, only 4.8% of patients in the control group had mild depression while none of the control cases had moderate or severe depression ($p < 0.001$)(Figure 2).

Socio-demographic and obstetric parameters that may effect depression development in the adolescent cases are presented in Table 1. Median gestational age of the study and the control group was 39 ± 1 and 39 ± 0 weeks, respectively. The difference was not statistically significant ($p = 0.068$). Poor social and family interaction was found to be significantly higher in adolescent group than control group ($p < 0.001$). Nearly all of the women in both groups were housewives ($p = 0.500$). All of the women in control group graduated from primary school, but in adolescent group 61.0% graduated and 39.0% were illiterate ($p < 0.001$). Husbands' occupation was worker in 95.2% and 26.7% of adolescent and control groups, respectively ($p < 0.001$). Evaluation of economic status revealed that in all of the control cases and in 91.4% of adolescent

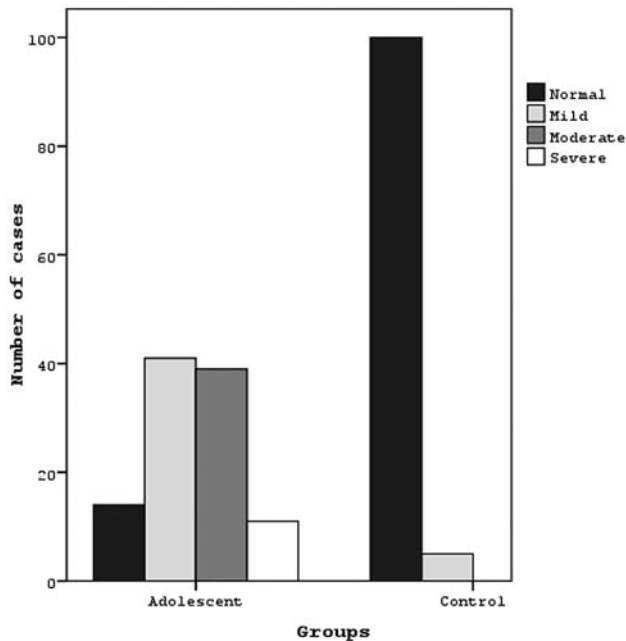


Figure 2. — Distribution of mild, moderate or severe depression among adolescent and control groups.

group, salary was below minimum wage ($p = 0.002$). There was no difference between groups in terms of fetal gender ($p = 0.782$).

Multivariate analysis showed that most important factor associated with depression development during pregnancy was being an adolescent. Depression risk was increased 18.2-fold in adolescent patients with pregnancy (OR = 18.200; 95% CI: 7.712-42.953, $p = 0.005$).

Discussion

Depression is one of the most common health problems in women. During pregnancy, women experience some physiological and psychological changes; therefore risk of developing a depressive disorder increases during the prenatal and postpartum period. Depression affects 8-12% of women during pregnancy [5]. The likelihood of psychological changes and emotional disturbances can increase in adolescent pregnant women because they are unprepared for pregnancy, both physically and emotionally.

Depression during pregnancy is usually mild and does not require pharmacological treatment [6]. It can be diagnosed if emotional disturbances last longer than two weeks. Disturbances in memory and concentration, weight loss, loss of appetite, general loss of interest and energy, generalised guilt and hopelessness, and thoughts of self-harm are some symptoms of depression [7]. Some somatic symptoms of pregnancy may be confused with symptoms of depression, and this may lead to underdiagnosis of depression during pregnancy. For this reason, pregnant

women must be questioned for history of length and seriousness of somatic complaints [8]. Untreated depression during pregnancy can increase complications of pregnancy due to inadequate nutrition, inadequate prenatal care, substance use, and harm to self or the fetus [9,10].

Previous studies revealed that socio-demographic factors may have an effect on depression development during pregnancy. From this point of view, the authors analysed socio-demographic and obstetric parameters that may affect the present results. The authors found that most important factor associated with depression during pregnancy was being an adolescent. Low education level and poor social and family relationships were also related to depression development; however, low socio-economic level was not related to depression during pregnancy. In a study conducted by Nasreen *et al.*, 720 women at the third trimester were included in the study and they concluded that illiteracy, intimate partner violence, poor relationships with husbands, a lack of practical support, and previous depressive symptoms were found to be related to depression during pregnancy [4]. In 2011, a large study conducted in more than 5,000 pregnant women reported a relationship between education level, income, marital status, employment, number of miscarriages and stillbirths, and depression during pregnancy [11]. Another study conducted by Rich-Edward *et al.* assessed depressive symptoms mid-pregnancy and again at six months postpartum in over 1,600 women [12]. The results suggested younger maternal age, lack of a partner, lower income, and financial hardship were factors associated with both prenatal and postpartum depressive symptoms.

In this study moderate or severe depression was observed in none of the cases in control group, whereas a ratio of 37.1% and 10.5% in adolescent group was detected, respectively. It was found that most important factor associated with development of depression during pregnancy was being an adolescent.

In this study the authors found that poor social and family interaction were significantly higher and education level significantly lower in adolescent group. These are important risk factors for development of depression. Adolescent women are not prepared both physically and psychologically to pregnancy; these negatively affect progression of pregnancy in terms of both mental and physical health. Prevention of adolescent pregnancy would decrease both pregnancy complications related to adolescence and depression during this period.

A strength of the present study was that adolescent pregnancy and socio-demographic parameters were analyzed together in multivariate analysis for Turkish population. To the best of the authors' knowledge, this is the first study evaluating the impact of adolescence on depression development in the Turkish literature.

There are some limitations of the present study. The research sample was not randomised and the data is from limited geographic region. The depression status was determined

by the BDI-II, not a structured psychiatric interview, thus limiting the generalizability of the present findings. Research data related to depression, anxiety, and perceived social support were collected with self-report, data-collection tools. The findings are dependent on the reliability and sensitivity of the data-collection instruments. Moreover, depression status of patients before pregnancy were not evaluated by an objective test but, patients with known psychological disorder were not included in the study. Also in both adolescent and control groups, there were no pregnancy complications as preterm delivery, pre-eclampsia, and decolman placenta. However, this study contains important data about depression in adolescent pregnancy. These data can be used for planning of antenatal care of pregnant adolescent women. The results showed that being an adolescent during pregnancy is the most important risk factor for depression development during pregnancy. To improve health quality, psychiatric consultation in addition to medical treatment may be considered in the management of adolescent pregnant patients.

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