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The Prevalence of Depression and Associated Factors among Primigravid Women

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ABSTRACT

Aims Depression during pregnancy has a significant impact on both mother and fetus. This study aimed to determine the frequency of depression and associated factors among primigravid women.

Materials & Methods This was a cross-sectional study involving 255 pregnant women attending a hospital in Tehran from October 2017 to February 2018. A demographic and clinical questionnaire, the Postpartum Depression Literacy Scale (PoDLiS) and the Edinburgh Postnatal Depression Scale (EPDS), given to a convenient sample of primigravid women attending the antenatal clinic, were completed. chi-square test, t-test and logistic regression analysis were used to analyze the data and SPSS version 22.0 was used for its analysis ($p<0.05$).

Findings The prevalence of depression during pregnancy was 17.3% (n=255). The results of the t-test and chi-square test showed that depression was significantly associated with age ($p=0.008$), marriage age ($p=0.018$), economic status ($p=0.050$), family history of depression ($p<0.001$), marital satisfaction ($p<0.001$), ability to recognize postpartum depression ($p=0.019$) and attitudes about postpartum depression ($p=0.042$). Further analysis by logistic regression analysis revealed that family history of depression [AOR=7.89, 95% CI, $p=0.002$] and less satisfaction with husband [AOR=3.24, 95% CI, $p=0.021$] was significantly associated with depression.

Conclusion The findings showed that a high percentage of women were depressed. Also, having a family history of depression and less satisfied with the husband were the strongest factors related to depression. It seems that educational interventions and counseling may need to be conducted on high-risk mothers to promote their mental health status.

Keywords Pregnancy; Depression; Edinburgh Postnatal Depression Scale; Prevalence

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Introduction

Pregnancy is an important thing in women's lives that highly impact the mother's physical, mental, and social health [1-3]. Some common physical conditions a woman may experience during pregnancy include anemia, urinary tract infection, preeclampsia, gestational diabetes, and preterm birth. Also, some women may experience depression during or after pregnancy [4]. Prenatal care is commonly focused on improving physical health but less attention to mental health during pregnancy and postpartum in developing countries [5, 6]. Although studies about pregnancy depression are few, they indicate that depression during pregnancy is as prevalent as during the postpartum period [7]. A systematic review and meta-analysis reported various prevalence rates for depression in pregnant women in Iran (10.5 to 88%) [8-13]. The woman's poor mental health during pregnancy may disrupt the fetal developmental process and increase the risk of adverse health outcomes for the mother and fetus, such as preeclampsia and preterm birth [14–17]. Depression in pregnancy may persist into the postpartum period [18] and disrupt the parenting behavior, the attachment process between the mother and baby, as well as the relationship with the partner and any other children [19].

Although antenatal depression is an important public health problem, most studies are focused on postpartum depression and its related factors. Different studies showed that multiple socioeconomic and clinical factors impact mental health during pregnancy [20]. Furthermore, it is believed that factors associated with mental health in pregnancy are related to particular cultural norms. Moreover, each culture influences the way people understand mental health and their regard for it [21]. The strongest risk factors for depression in pregnancy may be a history of anxiety and depression [22, 23], adverse life events [24], and lack of support, from the partner and others [25]. Jarahi *et al.* evaluated factors that may contribute to depression in pregnant women in Sarakhs city. In this study, depression was significantly associated with mother age (p=0.02), occupation (p=0.009), family income (p=0.04), ethnicity (p=0.03), place of living (p=0.01), number of children (p=0.001), age of marriage (p=0.001), unwanted pregnancy (p=0.001), and history of parities (p=0.001) [26]. In another study, Nury *et al.* conducted a descriptive-correlational study on 70 pregnant women referred to private clinics of Karaj (Iran) during 6 months to receive prenatal care in the last 3 months of gestation. The results showed significant correlations between depression during pregnancy with social support (r=-0.368) and marital satisfaction (r=-0.316) [27]. In a study conducted by Ryan *et al.*, risk factors for depression during pregnancy were a prior history of depression, family history of depression, young age, marital dissatisfaction, lack of social support, first pregnancy or unwanted pregnancy, and recent adverse life events such as the death of a parent [28].

Health care providers identify only about 40% of women with depression, and a major percentage of women do not obtain treatment for their depressive symptoms [29]. Also, most women usually do not seek professional help for signs and symptoms of depression during the postpartum period, even if treatment is offered and accessible [30-32]. The lack of knowledge about signs and symptoms of depression and treatment possibilities has been considered a major help-seeking barrier during the postpartum period [30, 31], indicating how significant the role of women's depression literacy is help-seeking process [33]. Thus providing the knowledge and skills are essential for women to recognize postpartum depression and obtain efficient treatment [34]. Postpartum depression literacy may be conceived as a particular type of mental health literacy, defined as the knowledge and beliefs about mental health disorders that aid their recognition, management, or prevention. According to studies in different countries, there is little awareness about the prevention and development of mental disorders, seeking help and treatments available among the general public [33]. Recto *et al.*, in a study, assessed the mental health literacy of pregnant and postpartum Hispanic adolescents using a modified mental health literacy scale (MHLS). They showed that women presented a moderate level of mental health literacy during the perinatal period. Also, they showed that more adolescents who reported feeling depressed during the perinatal period had a greater ability to recognize mental health disorders and a more positive attitude about them [35].

As there are scarce reports on this area and especially the measurement of the problem with The Edinburgh Postnatal Depression Scale (EPDS), and given that depression during pregnancy is very common in Iran and has serious effects on mother and fetus, it is important to carry out different studies that explore the magnitude of the problem and related factors [36]. Thus, to address these gaps, we investigated the prevalence of antenatal depression and associated factors among primigravid women in Tehran, Iran.

Materials & Methods

A cross-sectional study was conducted to assess depression and associated factors on a convenient sample of 255 primigravid women attending the antenatal clinic of a teaching hospital affiliated to Tehran University of Medical Sciences from October 2017 to February 2018. The Modares University ethics committee approved this study. Eligibility

criteria to participate in the study were as follows: being18 years or older [37], primigravid and in the third semester of pregnancy, without clinical and obstetric complications, with no past or present history of depression, and having the ability to read and write properly. The exclusion criteria were serious physical and mental problems such as the death of a first-degree relative past three months ago and cigarette consumption [38, 39]. Women who agreed to participate were asked to complete the sociodemographic, The Edinburgh Postnatal Depression (EPDS), and the Postpartum Depression Literacy (PoDLiS) questionnaires.

The Edinburgh Postnatal Depression Scale (EPDS): The Iranian version of the Edinburgh Postnatal Depression Scale (EPDS) was used to assess the presence of clinically significant psychopathological symptoms. The EPDS is a 10-item screening scale for antenatal and postnatal depression symptoms in which women were asked to consider how they felt over the previous 7 days and rate their emotions (e.g., sadness, tearfulness) using a 4-point Likert scale. In the Iranian validation studies, a score of 13 or higher indicated a possible depressive disorder, and the Cronbach's alpha coefficient was 0.77 and 0.86 [40].

The Postpartum Depression Literacy Scale (PoDLiS): Postpartum depression literacy was measured using the Postpartum Depression Literacy Scale (PoDLiS). This is a 31-item questionnaire developed based on Jorm's definition of mental health literacy [33]. The psychometric properties of the PoDLiS are described elsewhere [37]. The questionnaire consists of 7 subscales as follows: the ability to recognize postpartum depression, knowledge of risk factors and causes, knowledge and belief of self-care, knowledge about professional help available, beliefs about professional help available, attitudes about postpartum depression, and knowledge of how to seek information related to postpartum depression. Each item is rated on a 5-point Likert scale ranging from 1 to 5 (1=strongly disagree or not likely at all and 5=strongly agree or very likely). Reverse items score oppositely.

SPSS version 22.0 was used for data analysis. Descriptive statistics, including frequencies and percentages, and analytical statistics, comprise chi-square analysis, t-test, and multiple logistic regression to analyze the data ($p<0.05$).

Findings

In all, 255 women were entered into the study. The mean age of participants was 25.51 (SD=4.78) years. The average depression score was 7.85 (SD=4.63), and the prevalence of depression was 17.3% (n=255). The characteristics of the study participants are presented in Table 1.

Table 1) Socio-demographic and clinical characteristics of the sample

Variables	M (SD) / n (%)
Age	25.51 (4.78)
Education	13.30 (2.06)
Occupational status	
Housewife	226 (88.6)
Employed	15 (5.9)
Student	14 (5.5)
Marriage age	22.26 (4.70)
Spouse age	30.12 (4.27)
Spouse education	12.15 (2.94)
Spouse job	
Employed	247 (96.9)
Unemployed	8 (3.1)
Household economic status	
Good	86 (33.7)
Intermediate	159 (62.4)
Poor	9 (3.5)
EPDS Score	
0-9 (not depressed)	166 (61.9)
10-12 (borderline)	45 (17.6)
13-30 (depressed)	44 (17.3)
Mean (SD)	7.85 (4.63)
Postpartum depression literacy score	3.79 (0.39)

There were statistically significant differences between depression and age, marriage age, family history of depression, economic status, marital satisfaction, ability to recognize postpartum depression, and attitudes about postpartum depression. Univariate analyses showed that lower age, higher marriage age, poor economic status, less satisfaction with husband, having a family history of depression, higher ability to recognize postpartum depression, and more negative attitudes about postpartum depression were associated with EPDS ≥10 (Table 2). To detect potential confounding factors, a multivariate logistic regression analysis was conducted with EPDS≥10 as the dependent variable and age, marriage age, marital satisfaction, family history of depression, economic status, ability to recognize postpartum depression, and attitudes about postpartum depression as the independent variables. The results are presented in Table 3. As shown, having a family history of depression [AOR=8.514, 95%CI; (2.172-33.38), $p<0.001$] and less satisfied with husband [AOR=3.478, 95% CI; (1.279-9.452), $p=0.015$] were independently associated with antenatal depression (Table 3). The risk of antenatal depression increased by 8.5 and 3.4 times when women had a family history of depression and were less satisfied with their husbands.

Table 2) The relationship between characteristics of the participants and antenatal depression

Variables	EPDS Score ≤ 9 group n=166	EPDS Score > 9 group n=89	p-value
Age, M(SD)	26.58 (4.85)	24.93 (4.65)	0.008
Education, M(SD)	13.23 (1.96)	13.43 (2.23)	0.479
Marriage age, M(SD)	21.75 (4.55)	23.21 (4.86)	0.018
Spouse Education, M(SD)	12.18 (2.80)	13.43 (2.23)	0.479
Occupational status, n (%)			0.109
Housewife	151(91.0)	75 (84.2)	
Employed	15(9.0)	14 (15.8)	
Household economic status, n (%)			0.050
Good	62(37.5)	24(27.0)	
Intermediate	100(60.5)	59(66.3)	
Poor	3(2.0)	6(6.7)	
Family history of depression			p<0.001
Yes	3	14	
NO	163	75	
Marital satisfaction			p<0.001
Extremely satisfied	120(72.2)	42(47.8)	
Very satisfied	37(22.3)	34(38.6)	
Somewhat satisfied	9(5.5)	12(13.6)	
Social support (practical support from the spouse)			0.526
Always	40(24.1)	16(18.0)	
Usually	45(27.1)	24(27.0)	
Sometimes	62(37.4)	34(38.2)	
Rarely	19 (11.4)	15 (16.8)	
Postpartum depression literacy, M(SD)	3.78 (0.42)	3.82 (0.40)	0.503
Ability to recognize postpartum depression, M(SD)	3.58 (0.86)	3.83 (0.64)	0.019
Knowledge of risk factors and causes, M(SD)	3.55 (0.82)	3.73 (0.84)	0.109
Knowledge and beliefs of self-care activities, M(SD)	4.55 (0.57)	4.51 (0.57)	0.540
Knowledge about professional help available, M(SD)	4.22 (0.88)	4.16 (0.83)	0.635
Beliefs about professional help available, M(SD)	2.49 (1.06)	2.51 (1.10)	0.855
Attitudes about postpartum depression, M(SD)	3.85 (0.75)	3.64 (0.81)	0.042
Knowledge of how to seek information related to postpartum depression, M(SD)	3.73 (0.82)	3.80 (0.77)	0.548

Table 3) The results obtained from multivariate logistic regression of antenatal depression

Variable	AOR (95%CI)	p-value
Age	1.05 (0.92-1.20)	0.440
Marriage age	0.998 (0.87-1.13)	0.977
Family history of depression		
Yes	7.89 (2.07-30.03)	0.002
No	1.00 (ref.)	
Household economic status		
Good	1.00 (ref.)	
Intermediate	1.52 (0.81-2.86)	0.190
Poor	4.24 (0.86-20.75)	0.075
Marital satisfaction		
Extremely satisfied	1.00 (ref.)	
Very satisfied	2.26 (1.21-4.23)	0.011
Somewhat satisfied	3.24 (1.19-8.85)	0.021
Ability to recognize postpartum depression, M(SD	1.44 (0.98-2.12)	0.062
Attitudes about postpartum depression, M(SD)	0.72 (0.51-1.04)	0.081
Age	1.05 (0.92-1.20)	0.440
Marriage age	0.998 (0.87-1.13)	0.977
Family history of depression		
Yes	7.89 (2.07-30.03)	0.002
No	1.00 (ref.)	
Household economic status		
Good	1.00 (ref.)	
Intermediate	1.52 (0.81-2.86)	0.190
Poor	4.24 (0.86-20.75)	0.075
Marital satisfaction		
Extremely satisfied	1.00 (ref.)	
Very satisfied	2.26 (1.21-4.23)	0.011
Somewhat satisfied	3.24 (1.19-8.85)	0.021
Ability to recognize postpartum depression, M(SD)	1.44 (0.98-2.12)	0.062
Attitudes about postpartum depression, M(SD)	0.72 (0.51-1.04)	0.081

Discussion

This study assessed the prevalence of depression among several primigravid women and associated factors such as sociodemographic and clinical characteristics.

The study results showed that the prevalence of depression during pregnancy (using an EPDS cutoff score≥13) was 17.3%, which indicates a high percentage of depression among the participants and suggests its importance as a public health problem. Another study from Tehran showed an almost similar prevalence of 21% [8] whereas Moshki *et al.*, Baghi *et al.*, and Hejrati *et al.* observed much higher prevalence rates of 30% in Gonabad [10], 32.9% in Saqes [11], and 49.7% in Hamedan [12], respectively. This difference could be attributed to diversity in antenatal care quality, nutrition status during pregnancy, stressful life events such as financial difficulties, sample size, socio-cultural and methodological aspects such as choice of measurement [41, 42].

This study suggested that lower age, higher marriage age, poor economic status, having a family history of depression, less satisfaction with husband, higher ability to recognize postpartum depression, and more negative attitudes about postpartum depression were associated with antenatal depression the univariate level.

The findings revealed that young mothers (<25 years of age) to be more susceptible to antenatal depression. This might be related to depressive younger pregnant women that are not familiar with pregnant health care. Some studies showed that depression tends to occur in younger pregnant women [26, 28].

In our study, there was a significant association between socioeconomic status and the risk of depression during pregnancy, consistent with other studies [26]. It is hypothesized that low income increases the likelihood of poor living conditions, financial struggle, and effects on interpersonal relationships, leading to psychosocial stress.

Over 90% of the study participants were high school graduates, but over 80% were not working; however, there was no association of education and occupation with depression. In a study, Jarahi *et al.* showed that employed women were less depressed than homemakers [26], which might be due to their financial independence, higher social interactions, and high educational level [43].

We found a strong association between a history of depression and depressive symptoms in pregnancy. While it is well-documented that a history of mental disorders is a strong risk factor for postpartum depression, few articles have explored the association between a history of depression and depression during pregnancy [28].

In this study, our results showed that reduced relationship satisfaction with partners was reported as a risk factor for having depression symptoms that consistent with other studies [27, 28]. The risk of depression was also higher when pregnant mothers are from families that prefer males to girls in the current pregnancy. This gender preference could directly affect maternal support and, combined with a partner relationship problem, could be brought maternal distress, loneliness, and ultimately depression throughout the pregnancy [44, 21].

Study results showed that women had moderate postpartum depression literacy. Also, there was no association between postpartum depression and depression symptoms during pregnancy, whereas there was an association between two dimensions of ability to recognize postpartum depression and attitudes about them with depression. Previous studies showed that more adolescents who reported feeling depressed during the perinatal period had a greater ability to recognize mental health disorders and a more positive attitude about them [35]. However, other researchers indicated that previous mental disorders experience is not associated with better knowledge about psychopathological symptoms [45]. Taken together, these results show that some factors that put women at risk for prenatal depression, such as low socioeconomic status and a history of depression, also put women at higher risk of poor depression literacy and, subsequently, may present the women's help-seeking process [46].

Besides, multivariate logistic regression analysis showed that having a family history of depression and less satisfied with the husband were the strongest factors associated with antenatal depression. Therefore, health care professionals must implement interventions and counseling services for high-risk mothers, especially those who have a family history of depression, and improve marital relationships during pregnancy. Midwives should be trained to detect antenatal depression by using validated instruments and in the subsequent referral of high-risk women.

In most studies, depression screening tools are used, but diagnostic assessments are not performed for depression. Also, different cutoff points are used on screening tools to determine clinically significant symptoms. These limitations restrict our ability to determine the predictive validity of the risk factors in studies.

Besides, in our study, cross-sectional design was used, limiting the ability to conclude the direction of causality. There are several suggestions for future research. Diagnostic assessments should be included for depression when risk factors are examined. Finally, we need more longitudinal studies to examine causality between associated factors and depressive symptoms.

Conclusion

The results showed that a high percentage of women were depressed and having a family history of depression and less satisfied with husband were the strongest factors related to antenatal depression. Perhaps educational interventions and counseling may need to be conducted with more focusing on high-risk mothers, especially those who have a family history of depression and are less satisfied with husbands to promote their mental health status and reduce antenatal depression.

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