The Relationship between psychosocial health status and risk of depression among pregnant women in Turkey

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ARTICLE INFO	ABSTRACT
	Background & aim: Pregnancy involves physiological, psychological, and social changes, in which women are expected to adapt to the biopsychosocial changes. Failure to make such an adaptation would be accompanied by an increased risk of prenatal depression in pregnant women. This study was conducted to determine the relationship between psychosocial health status and the risk of depression in pregnant women. ***Methods:*** This descriptive-analytic study was carried out on 792 pregnant women (i.e., 73, 369, and 350 cases in the first, second, and third trimesters, respectively) referring to the Outpatient Clinic of the Meram Medical Faculty Hospital, Necmettin Erbakan University, Turkey, from 22 March to 30 June 2016. The pregnant women who attended the outpatient clinic and met the inclusion criteria were selected using haphazard sampling, as a non-probability sampling method. The data were collected through a researcher-made questionnaire, the Pregnancy Psychosocial Health Assessment Scale (PPHAS), and the Edinburgh Postnatal Depression Scale (EPDS). Data analysis was performed in SPSS software (version 22) using descriptive statistics, Mann-Whitney U test, and Kruskal Wallis test. ***Results:*** The pregnant women had the depression risk of 28.2% and mean depression score of 9.41±4.8. The total mean score of PPHAS was obtained as 4.05±0.45. The risk of depression showed a statistically negative relationship with the total and sub-dimension mean scores of PPHAS, as well as the mean EPDS score (P<0.001). ***Conclusion:*** Pregnant women with lower psychosocial health status were more likely to have the risk of depression. In other words, the risk of depression in pregnant women was influenced by factors that determine their psychosocial health.

Introduction

Pregnancy, as a period of developmental crisis, is accompanied by physiological, psychological, and social changes that begins with fertilization and ends with childbirth (1). The biopsychosocial changes experienced by women during pregnancy increase the susceptibility to depression. Some psychological factors, such as anxiety during pregnancy, a previous history of depression, and other psychiatric illness and conflicting feelings towards pregnancy, can affect prenatal depression (2, 3). Lack of a partner, marital problems, living alone, divorce, poverty, absence or inadequacy of social support, social isolation, domestic violence, prior physical, emotional, and sexual violence, and use of cigarettes, alcohol, and substances are among the factors that prepare the ground for prenatal depression (3-8).

According to the World Health Organization, one per five females in developing countries and one per ten females in developed countries experience severe depressive symptoms during pregnancy or postpartum period (9). In a systematic review, the prevalence of prenatal depression in high-income countries was reported to be 7-20%, whereas it was reported

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to be ≥ 20% in low- and middle-income countries (10). Based on the evidence, prenatal depression has the prevalence rates of 21.2%, 39.0%, 23.0%, and 24.5% in Brazil (4), South Africa (11), Ethiopia (12), and Nigeria (13), respectively. The prevalence of prenatal depression in Turkey has been reported to be between 27.3% and 75.0% (6, 14-16).

Maternal mortality, morbidity, and suicide rates are increasing in women who are diagnosed with depression in the prenatal period and receive no treatment (17). In addition, many studies have indicated that prenatal depression is an important risk factor for postpartum depression. Furthermore, 50.0% of the women suffering from depression during pregnancy also suffer from depression in the postpartum period (3, 17, 18). It has been determined that pregnant women who are diagnosed with depression also have problems in their social relationships and have fears about being a parent (17). Regarding this, the lack of precautions during pregnancy and continuation of depression can increase the risk to the fetus. This negatively affects the mother-child relationship, thereby causing problems in the development of motor skills and language development in the neonate, as well as increasing gastrointestinal and respiratory tract infections. These children are also reported to experience affective and cognitive problems in the following years (17, 18).

Early diagnosis and prevention of psychosocial reactions during pregnancy is very important for maternal and fetal health. Based on the literature review, no study has addressed the evaluation of the psychosocial health of pregnant women at the risk of depression in the prenatal period in each trimester. Regarding this, the present study was an attempt to provide data about psychosocial health and risk of depression in each trimester of pregnancy and contribute to the literature. With this background in mind, the current study was conducted to determine the relationship between psychosocial health status and risk of depression in pregnant women in Turkey.

Materials and Methods

This descriptive-analytic study was carried out on 792 pregnant women referring to the Outpatient Clinic of the Meram Medical Faculty,

Necmettin Erbakan University, Turkey, from 22 March to 30 June 2016. This hospital was chosen as it admits a high number of pregnant women with different sociodemographic characteristics. The data were collected by the researcher using the face-to-face interview method during March 22 to June 30 in 2016.   It took 15-20 min for each subject to collect the data.

No study in Turkey has separately evaluated the frequency of the symptoms of depression and psychosocial health in each trimester during pregnancy. One study evaluated the prevalence of depression during pregnancy. The sample size was calculated based on a study reporting the rates of depression as 7.1%, 59.3%, and 33.6% in the first, second, and third trimesters, respectively (5). Sample size was determined using 95% confidence level and a relative precision of 5% using a table titled "Estimating the Proportion in a Society with Specific Accuracy" presented in a book (19). According to the mentioned study, depression had the risk rates of approximately 5%, 60%, 35% in the first, second, and third trimesters, and the sample sizes were 73, 369, and 350, respectively. The pregnant women who attended the outpatient clinic and met the inclusion criteria were selected using haphazard sampling, as a non-probability sampling method. The inclusion criteria were: 1) willingness to participate in the study, 2) literacy, 3) age of ≥ 18 years, 4) posession of a healthy single fetus, 5) pregnancy without treatment, and 6) married status and living with the spouse. On the other hand, the exclusion criteria were: 1) current psychiatric illness and treatment history (based on subjects' statements), 2) a chronic disease, 3) pregnancy-related systemic problems, 4) preterm labor and premature rupture of membranes (based on subjects' statements and clinical diagnostic status).

All procedures in the study were performed in accordance with the ethical standards of the institutional committee, the 1964 Helsinki Declaration and its later amendments, or comparable ethical standards. The project was approved by the Ethics Committee of Necmettin Erbakan University of Medical Sciences, Konya, Turkey (Code: 2016/466). Written informed consent was obtained from all the participants. In addition, the participants were informed

about the possibility of leaving the project at any stage.

The data were collected using a researcher-made questionnaire designed based on the literature (4, 8, 20-24), Pregnancy Psychosocial Health Assessment Scale (PPHAS) (25), and Edinburgh Postnatal Depression Scale (EPDS) (26). The sociodemographic characteristic questionnaire included questions about age, educational status, employment status, age at marriage, monthly income, family type, and spousal age, educational status, and employment status. In terms of obstetric characteristics, the questionnaire inquired about the current gestational week, abortion and curettage history, gender of the baby, desired gender of the baby, status of regular gestational control, and received prenatal care.

The PPHAS was developed by Yildiz (25) and validated to evaluate psychosocial health as a whole in pregnancy. This scale consists of 46 items and 6 sub-dimensions. The subgroups (factors) indicate the presence of problems in terms of situations affecting psychosocial health. The scale is a five-point Likert-type measurement tool (ranging from 1 to 5) with the minimum and maximum scores of 46 and 230, respectively. In this questionnaire, 29 items are scored inversely. The six sub-dimensions of this instrument cover pregnancy and partner-related characteristics (13 items), characteristics of anxiety and stress (8 items), characteristics of domestic violence (7 items), psychosocial support needs (4 items), family characteristics (4 items), and features belonging to physical and psychosocial changes related to pregnancy (6 items).

In this instrument, the total score is divided by the number of items, the mean item score is determined, and the obtained result is between 1 and 5. The reduction of total score from 5 to 1 indicates the presence of a problem at that level in psychosocial health during pregnancy; accordingly, point 1 means that psychosocial wellbeing is very bad. The assessment is the same for all sub-dimensions. The Cronbach's alpha coefficient of the scale has been reported as 0.93 (25). In the present study, the Cronbach's alpha coefficient of the scale was found to be 0.90.

The EPDS was developed by Cox et al. (1987) to measure the risk of depression in pregnant and postpartum women and measure the level and change of depressive symptom intensity (27). This scale has been reported to have good validity and reliability in pregnancy and postpartum depression studies; accordingly, it has been used in many countries to date. The validity and reliability of the Turkish version of the EPDS was evaluated by Engindeniz et al. (2000). The internal consistency coefficient (Cronbach's alpha) of the EPDS was 0.79 with a cut-off score of 12/13.

The EPDS is a scale that focuses on cognitive and emotional symptoms rather than the somatic symptoms of depression. It contains a total of 10 items and provides a four-point Likert-type measurement. Each item is scored across a range of 0-3. The total score of the scale is obtained by adding the item scores. In this instrument, a score of ≤ 12 is indicative of a risk-free group, whereas a score of ≥ 13 is representative of the risk group (26). The Cronbach's alpha coefficient of the EPDS in this study was found to be 0.81.

To analyze the data, descriptive statistics, Mann-Whitney U test, and Kruskal Wallis test were run using in SPSS software, version 22. In addition, descriptive statistics were evaluated using number, percentage, mean, and standard deviation. The Kolmogorov-Smirnov test was also used for the normality test. A p-value less than 0.05 was considered statistically significant.

Results

The sociodemographic and fertility characteristics of the pregnant women are presented in Table 1.

Table 2 presents the mean EPDS scores in the pregnant women according to trimesters, as well as the frequency of depression symptoms. The risk of depression in pregnant women (EPDS≥13) was found to be 28.2%, and the mean score was 9.41±4.81. In addition, the mean total score of the PPHAS was estimated at 4.05±0.45.

When the mean EPDS scores of the pregnant women were analyzed according to their sociodemographic and fertility characteristics, it was found that the mean EPDS scores did not differ with respect to educational level, employment status, family type, spousal employment status, history of abortion, history

of curettage, gestational week, neonatal gender, and status of regular gestational control (P>0.05).

Table 1: Distribution of demographic and fertility characteristics of pregnant women

Variable	Mean (SD)
Age	27.01±5.50
Duration of marriage (years)	6.24±5.36
Age of spouse	30.48±5.75
Gravidity	2.40±1.42
Demographic and fertility characteristics	**Frequency (%)**
Educational level	
Literate, elementary education	467 (59.0)
High school	209 (26.4)
Academic education	116 (14.6)
Educational level of spouse	
Literate, elementary education	384 (48.5)
High school	256 (32.3)
Academic education	152 (19.2)
Employment status	
Employed	92 (11.6)
Unemployed	700 (88.4)
Employment status of spouse	
Employed	739 (93.3)
Unemployed	53 (6.7)
Family type	
Nuclear family	569 (71.8)
Extended family	223 (28.2)
Perception of income level	
Good	218 (27.5)
Moderate/poor	574 (72.5)
History of giving birth	
Yes	511 (64.5)
No	281 (35.5)
History of abortion	
Yes	162 (20.5)
No	630 (79.5)
History of curettage	
Yes	84 (10.6)
No	708 (89.4)
Neonatal gender	
Female	255 (33.2)
Male	279 (35.2)
Unknown	258 (32.6)
Desired neonatal gender	
Female	122 (15.4)
Male	78 (9.8)
No preference	592 (74.7)
Status of regular gestational control	
Yes	710 (89.6)
No	82 (10.4)
Receiving support during pregnancy	
Present	774 (97.7)
Absent	18 (2.3)
Total	792 (100)

Table 2: Mean Edinburgh postnatal depression scale score of pregnant women according to trimesters and frequency of depression symptoms

Groups	EPDS≤12 N (%)	EPDS≥13 N (%)	EPDS Mean (SD)	PPHAS Mean (SD)
First trimester (n=73)	50 (68.5)	23 (31.5)	10.16±5.89	3.99±0.50
Second trimester (n=369)	270 (73.2)	99 (26.8)	9.46±4.96	4.09±0.41
Third trimester (n=350)	249 (71.1)	101 (28.9)	9.20±4.80	4.03±0.48
Total (n=792)	569 (71.8)	223 (28.2)	9.41±4.81	4.05±0.45

EPDS: Edinburgh postnatal depression scale, PPHAS: pregnancy psychosocial health assessment scale

When the mean EPDS scores of the pregnant women were analyzed according to their sociodemographic and fertility characteristics, it was found that the mean EPDS scores did not differ with respect to educational level, employment status, family type, spousal employment status, history of abortion, history of curettage, gestational week, neonatal gender, and status of regular gestational control (P>0.05). Table 3 shows a statistically significant difference in the mean EPDS scores depending on spouse's educational level, perception of income level, history of giving birth, desired neonatal gender, and support received in pregnancy (P<0.05). The pregnant women whose spouses had academic education had a lower mean EPDS score (P=0.003). With regard to the desired neonatal gender, the mean EPDS score of pregnant women who wanted a boy was higher than that of the pregnant women who had no preference about the neonatal gender (P=0.045).

Table 4 presents a comparison of the mean scores of PPHAS and its sub-dimensions among pregnant women with and without a risk of depression.

Table 3: Distribution of mean Edinburgh postnatal depression scale scores in pregnant women according to some descriptive and fertility characteristics (n=792)

Characteristics	EPDS Mean (SD)	P-value
Educational status of spouse		
Literate, elementary school	9.83±5.26	
High school	9.55±4.81	0.003a
Academic education**	8.11±4.31	
Perception of income level		
Good	8.06±4.85	
Moderate/poor	9.92±4.94	<0.001b
History of giving birth		
Yes	9.69±5.18	0.048b
No	9.82±4.55	
Desired neonatal gender		
Female	9.79±5.02	
Male*	10.38±4.80	0.045a
No preference**	9.20±4.98	
Receiving support during pregnancy		
Present	9.32±4.96	<0.001b
Absent	13.39±4.10	

EPDS: Edinburgh postnatal depression scale **a**KW: Kruskal-Wallis analysis of variance **b**z: Mann-Whitney U test
: The group that created the difference is marked ***: Groups that differ

According to the EPDS cut-off value, it was determined that pregnant women at the risk of depression (EPDS≥13) had significantly lower mean of PPHAS and its sub-dimensions (i.e.,

pregnancy and spousal relationship, anxiety and stress, domestic violence, need for psychosocial support, marital features, physical and psychosocial changes due to pregnancy) (P<0.001).

Table 4: Comparison of mean pregnancy psychosocial health assessment scale scores and mean scores of its sub-dimensions in pregnant women with and without a risk of depression (n=792)

PPHAS total and sub-dimension score averages	EPDS Mean (SD) ≤12	EPDS Mean (SD) ≥13	Z	P-value
Pregnancy and spousal relationship	4.28±0.52	3.82±0.69	-9.013	<0.001
Anxiety and stress	3.56±0.73	2.98±0.72	-9.650	<0.001
Domestic violence	4.80±2.25	4.55±0.51	-6.965	<0.001
Psychosocial support need	4.05±0.57	3.41±0.72	-11.100	<0.001
Family properties	4.28±0.61	3.89±0.71	-7.157	<0.001
Physical-psychosocial changes due to pregnancy	4.11±0.62	3.51±0.79	-9.921	<0.001
PPHAS total	4.19±0.36	3.71±0.48	-12.681	<0.001

PPHAS: pregnancy psychosocial health assessment scale, EPDS: Edinburgh postnatal depression scale
z: Mann-Whitney U Test

Discussion

The prevalence of depression symptoms in the study was found to be 28.2%, and the mean score of EPDS was 9.41±4.8. In a number of studies conducted to evaluate the frequency of prenatal depression symptoms around the world, a frequency range of 21.2-39.0% has been reported (4, 12, 13, 28). The prevalence of depression symptoms in pregnancy in Turkey has been reported to vary from 13.9% to 75.0% (6, 14-16). The reasons for the difference in the rates of depression risk in pregnancy in Turkey can be related to the use of different scales measuring the risk of depression in pregnancy.

In the present study, the mean EPDS score varied depending on having a prior delivery. In the same vein, in a study conducted in Korea, there was a relationship between the history of childbirth and the risk of depression (5). Unlike the findings of the present study, the results of another study revealed that depressive symptoms were less frequent in the women experiencing their first pregnancy (20). The fact that the mean depression score was higher in pregnant women without a history of childbirth can be explained by the lack of adequate information about pregnancy and postnatal period or negative stories about pregnancy.

Our results also revealed a higher mean depression score in the pregnant women who wanted a male neonate, and the difference was statistically significant. Similar to these findings,

a study conducted in India indicated that pregnant women who desired a male neonate were at the risk of antenatal depression (29). Furthermore, the results of another study demonstarted that a change in the attitudes of the spouse and/or spousal family after the determination of the gender of the neonate increases the probability of depression in the pregnant women to a significant extent (30). Unlike the findings of the present study, other studies have reported no significant difference in the mean depression depending on the desired neonatal gender (7, 20, 31).

In Turkish society, the number of parents wanting a male baby is higher than those desiring a female child. Accordingly, in a study, 65.7% of parents in Turkish society were reported to desire a male baby (32). The results of this study support the idea that there is a higher risk of depression risk in the pregnant women who want a male neonate. In patriarchal societies, boys are more valued than girls. In Turkish society, boys are regarded as the agents continuing their ancestors' bloodline and protecting the family and meeting all its needs. As a result, when the fetal gender is identified as female, pregnant women are exposed to a high degree of social pressure.

In the current study, the total mean score of the PPHAS was 4.05±0.45, indicating a good level of psychosocial health in the pregnant women investigated. Similar to these findings, other studies have revealed a good level of

psychosocial health in the pregnant women (25, 33). As our results indicated, the subjects with a low mean score of PPHAS had a higher risk of depression symptoms. This underscores the need for monitoring and assessing the psychosocial health status of pregnant women during pregnancy.

Furthermore, in the present study, the groups with a low mean score in the spousal relationship sub-dimensions had a higher risk of depression. Similarly, one study indicated that the women who were satisfied with marital life, had planned pregnancy, and were happy during their pregnancy were less likely to develop antenatal depression (24). Based on the evidence, when the family is supportive the pregnant women feel more positive towards pregnancy. In addition, the support received from the spouse and family during pregnancy makes this period happier and more comfortable for the pregnant woman.

In our study, the risk of depression was higher in groups with a low score in the sub-dimension of anxiety and stress. According to the literature, there is a relationship between antenatal depression and anxiety levels in pregnant women (2, 23, 34). In a study conducted in New Zealand, a relationship was reported between perceived stress in pregnancy and antenatal depression. In addition, a study conducted in Iran showed that pregnant women who could not cope with a high level of stress during pregnancy had more traumatic birth experiences (35). The biopsychosocial changes that women experience during their pregnancy increase the level of anxiety and complicates the coping process. This can be considered as a factor affecting the incidence of depression symptoms in pregnancy.

Based on our findings, the group with a low score in the sub-dimension of domestic violence was exposed to a higher risk of depression. In the same vein, in another study, the rate of depression was higher in those who had experienced domestic physical and psychological violence (16). This finding is in line with those of other studies in the literature (11, 36, 37). Therefore, it is important for the health personnel to evaluate pregnant women with regard to domestic violence during the prenatal care follow-up.

In the present study, the risk of depression was higher in the group with a low score in the sub-dimension of need for psychosocial support. The most important factors in pregnancy are the attitudes of the spouse, partners, and other people in the family, as well as the psychosocial environment. These directly affect the mood of the pregnant woman. One study found that inadequate social support and unpleasant partner relationships increased the rates of depression, anxiety, and stress during pregnancy (38). This finding is consistent with those presented in the literature (7, 13, 21). The social support provided by spouses, family, or friends during pregnancy enhances the sense of relief in the pregnant women, thereby facilitating coping with stress and anxiety, as well as transition to motherhood.

As our results indicated, the pregnant women with a low score in the sub-dimension of family characteristics had a higher risk of depression. Accordingly, the results of another study were indicative of a relationship between antenatal depression and antenatal support from the mother or mother-in-law (39). These results show that women who have strong family ties and receive adequate support from their spouse, families, or spousal families are more comfortable during their pregnancy period.

Furthermore, our results revealed that the risk of depression was higher in the group with a low score in the sub-dimension of physical and psychosocial changes due to pregnancy. Other studies in the literature show that body image affects psychosocial health during pregnancy and increases susceptibility to prenatal depression, thereby leading to poor mother-infant attachment (40-42). In a systematic review, the authors reported a relationship between body image and antenatal depression (42). In another study, pregnant women who were not satisfied with the body image during the third trimester of pregnancy were reported to be at a risk for postpartum depression (43). Women need to accept the physical and psychosocial changes occurring as a result of pregnancy. If they develop a positive perception toward these changes, they will have a more comfortable and easier pregnancy experience.

Conclusion

As the findings of the present study indicated,

the risk of prenatal depression increased with the reduction of psychosocial health scores. For this reason, physical assessment, as well as psychosocial evaluation, during prenatal follow-up is important to maintain a holistic approach. Consequently, it is suggested to perform an early assessment of the existing risks with regard to psychosocial health during follow-ups and provide professional support for at-risk pregnant women (e.g., by directing them to the relevant health centers).

In addition, it is recommended to plan further interventional, descriptive, and case-control studies for the at-risk groups to examine the psychosocial health of pregnant women and factors affecting the risk of depression.

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Conflicts of interest

Authors declared no conflicts of interest.

References

1. Das Z. Psychosocial and cultural aspects of pregnancy. Maternity and women's health nursing. 12th ed. Ankara: Akademisyen Medicine Bookstore; 2014. P. 217-225.
2. Lancaster CA, Gold KJ, Flynn HA, Yoo H, Marcus SM, Davis MM. Risk factors for depressive symptoms during pregnancy: a systematic review. American Journal of Obstetrics and Gynecology. 2010; 202(1):5-14.
3. Lefkovics E, Baji I, Rigò J. Impact of maternal depressıon on pregnancıes and on early attachment. Infant Mental Health Journal. 2014; 35(4):354-65.
4. Silva RA, Jansen K, Souza LD, Moraes IG, Tomasi E, Silva GD, et al. Depression during pregnancy in the Brazilian public health caresystem. Brazilian Journal of Psychiatry. 2010; 32(2):139-144.
5. Jeong HG, Lim JS, Lee MS, Lim M, Kim SH, Jung IK, et al. The association of psychosocial factors and obstetric history with depression in pregnant women: focus on the role of emotional support. General Hospital Psychiatry. 2013; 35(4):354-358.
6. Buyukkayaci DN. Socio-demographic and obstetric factors associated with depression during pregnancy in Turkey. American International Journal of Contemporary Research. 2012; 2(11):17-26.
7. Daglar G, Nur N. The relationship between anxiety and depression level and coping styles with stress of pregnant women. Cumhuriyet Medical Journal. 2014; 36:429-441.
8. Ratcliff BG, Sharapova A, Suardi F, Borel F. Factors associated with antenatal depression and obstetric complications immigrant women in Geneva Betty. Midwifery. 2015; 31(9):871-878.
9. World Health Organization. Thinking healthy. A manual for psychosocial management of perinatal depression. Geneva: World Health Organization; 2015.
10. Biaggi A, Conroy S, Pawlby S, Pariante CM. Identifying the women at risk of antenatal anxiety and depression: a systematic review. Journal of Affective Disorders. 2016; 191:62-77.
11. Hartley M, Tomlinson M, Greco E, Comulada WS, Stewart J, Le Roux I et al. Depressed mood in pregnancy: prevalence and correlates in two Cape Town peri urban settlements. Reproductive Health. 2011; 8(1):9.
12. Ayele TA, Azale T, Alemu K, Abdissa Z, Mulat H, Fekadu A. Prevalence and associated factors of antenatal depression among women attending antenatal care service at Gondar University Hospital, Northwest Ethiopia. PLoS One. 2016; 11(5):e0155125.
13. Thompson O, Ajayi I. Prevalence of antenatal depression and associated risk factors among pregnant women attending antenatal clinics in Abeokuta North Local Government Area, Nigeria. Depression Research and Treatment. 2016; 4518979:1-15.
14. Caliskan D, Oncu B, Kose K, Ocaktan ME, Ozdemir O. Depression scores and associated factors in pregnant and non-pregnant women: a community-based study in Turkey. Journal of Psychosomatic Obstetrics & Gynecology. 2007; 28(4):195-200.
15. Arslan B, Arslan A, Kara S, Öngel K, Mungan MT. Risk factors for pregnancy anxiety and depression: assessment in 452 cases. The Journal of Tepecik Education and Research Hospital. 2011; 21(2):79-84.
16. Aktas S, Yesilcicek CK. Factors affecting depression during pregnancy and the correlation between social support and pregnancy depression. Iranian Red Crescent Medical Journal. 2015; 17(9):e16640.
17. Yılmaz EA, Gülümser Ç. The risk factors, consequences, treatment, and importance of gestational depression. Turkish Journal of

Obstetrics and Gynecology. 2015; 12(2):102-113.

18. McFarland J, Salisbury AL, Battle CL, Hawes K, Halloran K, Lester BM. Major depressive disorder during pregnancy and emotional attachment to the fetus. Archives of Women's Mental Health. 2011; 14(5):425-434.

19. Lemeshow S, Hosmer DW, Klar J, Lwanga SK. Sufficiency of sample size in health researchs. New Jersey: Wiley; 2000. P. 143.

20. Akbas A, Virit O, Kalenderoglu A, Savas H, Sertbas G. Association between the level of depression and anxiety with social support in pregnancy. Archives of Neuropsychiatry. 2008; 45:9-13.

21. Dereli YS, Kizilkaya BN. Levels of coping with stres, depression and prenatal attachment and affecting factors of pregnant women. General Medicine Journal. 2010; 20(3):99-108.

22. Waldie KE, Peterson E, D'Souza S, Underwood LE, Pryor JE, Carr PA et al. Depression symptoms during pregnancy: evidence from growing up in New Zealand. Journal of Affective Disorders. 2015; 186:66-73.

23. Rwakarema M, Premjis S, Nyanza EC, Riziki P, Palacios-Derflingher L. Antenatal depression is associated with pregnancy-related anxiety, partner relations, andwealth in women in Northern Tanzania: a cross-sectional study. BMC Women's Health. 2015; 15:68.

24. Mohamad Yusuff AS, Tang L, Binns CW, Lee AH. Prevalence of antenatal depressive symptoms among women in Sabah, Malaysia. The Journal of Maternal-Fetal & Neonatal Medicine. 2016; 29(7):1170-1174.

25. Yildiz H. Development study of the pregnancy psychosocial health assessment scale. Maltepe University Journal of Nursing Science and Art. 2011; 4(1):64-74.

26. Engindeniz AN, Küey L, Kültür S. The Turkish version of Edinburgh postnatal depression scale; a study of validity and reliability. Spring Symposium First Book. Ankara: Psychiatry Association Press; 2000. P. 51-52.

27. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: development of the 10 item Edinburgh Postnatal Depression Scale (EPDS). The British Journal of Psychiatry. 1987; 150(6):782-786.

28. Biratu A, Haile D. Prevalence of antenatal depression and associated factors among pregnant women in Addis Ababa, Ethiopia: a cross-sectional study. Reproductive Health. 2015; 12(1):99.

29. Hegde SS, Pai KK, Keshava K, Abhishekh HA, Sandeep KR. Prevalence of antenatal depression and gender preference: a cross sectional study among Mangalore population, Karnataka, India. Journal of Pharmaceutical and Biomedical

Sciences. 2013; 30(30):1011-1014.

30. Ozdemir S, Marakoglu K, Civi S. Risk of postpartum depression and affecting factors in Konya Center. TAF-Preventive Medicine Bulletin. 2008; 7(5):391-398.

31. Kapan M, Yanikkerem E. Partner violence, depression and loneliness in pregnant women living in rural and urban areas. TAF-Preventive Medicine Bulletin. 2016; 15(5):431-439.

32. Koyun A, Demir S. The effect of the sex of the fetus on the role of motherhood and the ideas concerning pregnancy. Gumushane University Journal of Health Sciences. 2013; 2(4):460-469.

33. Gumusdas M, Apay SE, Ozorhan EY. Comparison of psycho-social health in pregnant women with and without risk. Journal of Health Sciences of Professions. 2014; 1(2):32-42.

34. Erdem O, Bucaktepe GE, Ozen S, Kara IH. Evaluation of anxiety and depression levels of mothers during prepartum and postpartum periods. Düzce Medical Journal. 2010; 12(3):24-31.

35. Abdollahpour S, Mousavi SA, Esmaily H, Khosravi A. Perceived psychological traumatic childbirth in Iranian mothers: diagnostic value of coping strategies. Osong Public Health and Research Perspectives. 2019; 10(2):72-77.

36. Nasreen HE, Kabir ZN, Forsell Y, Edhborg M. Prevalence and associated factors of depressive and anxiety symptoms during pregnancy: a population based study in rural Bangladesh. BMC Womens Health. 2011; 11:22.

37. de Moraes EV, Campos RN, Avelino MM. Depressive symptoms in pregnancy: the influence of social, psychological and obstetric aspects. RBGO Gynecology and Obstetrics. 2016; 38(6):293-300.

38. Carolan-Olah M, Barry M. Antenatal stress: an Irish case study. Midwifery. 2013; 30(3):310-316.

39. Senturk V, Abas M, Berksun O, Stewart R. Social support and antenatal depression in extended and nuclear family environments in Turkey: a cross-sectional survey. BMC Psychiatry. 2011; 11(1):48.

40. Haedt A, Keel P. Maternal attachment, depression, and body dissatisfaction in pregnant women. Journal of Reproductive and Infant Psychology. 2007; 25(4):285-295.

41. Rauff EL, Downs DS. Mediating effects of body image satisfaction on exercise behavior, depressive symptoms, and gestational weight gain in pregnancy. Annals of Behavioral Medicine. 2011; 42(3):381-390.

42. Silveira ML, Ertel KA, Dole N, Chasan-Taber L. The role of body image in prenatal and postpartum depression: A critical review of the literatüre. Archives of Women's Mental Health. 2015; 18(3):409-421.

43. Sweeney AC, Fingerhut R. Examining relationships between body dissatisfaction, maladaptive perfectionism, and postpartum depression symptoms. Journal of Obstetric, Gynecologic & Neonatal Nursing. 2013; 42(5):551-561.