

The Incidence of Postpartum Depression in Trabzon Province and the Risk Factors During Gestation

Sibel AYVAZ, Çiçek HOCAOĞLU, Ahmet TİRYAKİ, İsmail AK

SUMMARY

Objective: The risk of depression increases during some periods of a woman's life, one of which is the postpartum period. Women in the risk group should be followed-up, both prenatally and postnatally. The aim of this study was to investigate the incidence and risk factors of postpartum depression in Trabzon province.

Method: All pregnant women in the third trimester of gestation that presented to 6 primary health care centers in Trabzon province and the Hospital of Obstetrics and Children were informed about the study. The 316 women who agreed to participate in the study were administered a sociodemographic questionnaire, the General Health Inventory, Beck Anxiety Inventory, and Beck Depression Inventory. Among these women, 192 (75%) were contacted during their first visit. Between the sixth and eighth postpartum weeks, the above-mentioned inventories (excluding the sociodemographic questionnaire) and additionally, the Edinburgh Postnatal Depression Scale, were administered to 152 of the women (79%). All scales were re-administered to 132 women (68.7%) during their sixth postpartum month.

Results: The incidence of PPD according to the Edinburgh Postnatal Depression Scale was 28.1%. History of depression following previous pregnancies, General Health Inventory score ≥ 5 during pregnancy, and a high score on the Beck Anxiety Inventory were found to be predictors of postpartum depression in the study population.

Conclusion: To the best of our knowledge, this is first follow-up study to investigate the incidence of postpartum depression with a scale prepared for use in this area and as such, these findings serve as an important guide to further studies of postpartum depression.

Key Words: Postpartum depression, incidence, Edinburgh Postnatal Depression Scale

INTRODUCTION

Pregnancy is an important period during which physiological, psychological, and social changes are experienced, and adaptation to these changes is vital. Diverse changes before and after delivery may result in problems and poor health. It is known that pregnancy can irreversibly affect women and result in persistent psychological changes. Following the delivery various problems may occur due to changes in the dynamics of the marriage relationship, new responsibilities, social and economic problems, and birth and care of the infant. These problems can result in severe stress (Okanlı et al., 2003). Depression, mild or severe, is the most frequently seen psychiatric disorder during pregnancy (Yıldız and Ünal, 1996). The common opinion that the incidence of depression increases immediately after delivery has been supported by research findings, especially during the last 20 years. During the first 3 months following uncomplicated births and, for some researchers, during the first 2 years, there is a marked increase in admissions of women for psychiatric treatment (Kısa and Yıldırım, 2004). The presented psychiatric conditions range from frequently seen maternity blues to rapid onset psychotic depression (Kırpınar and Özer, 1995). An especially important period for the appearance of psychiatric problems is between birth and the end of the first postpartum year (Yıldırım et al., 2004). Retrospective epidemiological studies show that postnatal period is 3 or 4 times more risky than the pregnancy period in terms of the appearance

of psychiatric disorders (Deveci, 2003). Although the birth of an infant is generally a positive and satisfactory experience, emotional problems may arise in some new mothers. The most frequent and compelling of these problems is depression. Postnatal depression may appear in a variety of different forms. One of these are the maternity blues, which appears in the early postpartum period and resolves in a short time; the other is postpartum depression, which appears later than maternity blues and is a more serious condition.

The prevalence of postpartum depression was reported to be 10%-15% in the related literature (Danacı et al., 2000). Postpartum depression is placed among the mood disorders in DSM-IV and defined with "postnatal onset identifier" (American Psychological Association, 1994). The appearance of depressive symptoms later than those of other psychiatric conditions and the fact that many women hide depressive symptoms due to the guilt associated with a depressive mood during a period in which happiness is expected, may cause postpartum depression to easily elude observation. Postpartum depression may result in various difficulties, both by the mother and the infant, and has a negative impact on the mother-infant relationship and development of the mother role (Sünter et al., 2002; Danacı et al., 2002). Detecting postpartum depression is of particular importance in helping to prevent its negative effects on child development (Çeber et al., 2002). This study aimed to detect the prevalence of depression and risk factors of postpartum depression in the Trabzon city center.

METHODS and MATERIALS

Trabzon is located in northeast Anatolia on the shores of a natural harbor of the Black Sea, and is the beginning of the Asia-Middle East transit. According to Turkish Statistics Institute data for the year 2000, the population in Trabzon city center was 214,949, 38% lived in villages, and 62% in the city center. Among the 81 cities in Turkey, Trabzon is 62nd in terms of land area, 5th according to population density, and with a population increase rate of 2.44%, it is ranked 59th in growth. Due to immigration from Trabzon, the population increase rate is very low (DİE, 1997). According to data provided by the Trabzon Health Ministry, the total number of annual births in 2004 was 8,618.

Duration of the study and preliminary arrangements:

The Trabzon Ministry of Health granted permission for the 50 midwife-nurses we selected to participate as study interviewers. They were trained by the researchers (S. Ayvaz and İ. Ak) on how to administer the scales and educated about postnatal depression one week before initiation of the study. One of the aims of the training was to ensure that the interviewers administered the tests uniformly. Exclusion criteria were defined. Interviewers practiced by administering the scales to each other. Possible problems were addressed and solutions were discussed. Data were collected between October 2003 and October 2004.

Regions included in the study

Village Clinic No. 3, Village Clinic No. 5, Dr. Hakan Yıldırım Village Clinic, Erdoğan Village Clinic, Bahçecik Village Clinic, and Boztepe Village Clinic in the Trabzon city center and Trabzon Delivery and Children's Hospital were included in study.

Sampling

A total of 316 women who were between 15 and 49 years of age and completed the first 2 months of their pregnancies were included in the study, of which 192 (75%) completed the first phase, 152 (48.1%) completed the second phase, and 132 (41.8%) completed the third phase of the study.

Data collection tools

A socio-demographic data form was used in order to learn the demographic characteristics of the participants. The first page of this form included an informed consent form. In addition to the questions regarding descriptive and demographic characteristics, the form also included questions regarding the biological condition (number of pregnancies, premenstrual symptoms, history of physical illness), current pregnancy (hyperemesis, whether the pregnancy was planned, the history of pregnancy and last delivery, mental and physical illnesses during previous pregnancies), children (sex, illnesses, birth weight), and mothers satisfaction with their babies' genders.

Diagnostic questionnaires used in the study are summarized below:

1. General Health Questionnaire (GHQ)

The General Health Questionnaire (GHQ), developed by Goldberg and Hillier (1979), is a short, easy to administer questionnaire used in communi-

Table I. The Relationships Between Socio-Demographic Variables and PPD.

	PPD		No PPD		P
	Number	%	Number	%	
Marital Status	54	28.1	138	71.8	0.315
Married					
Professional Status					
Housewife	50	29.9	117	70.1	0.473
Civil servant	3	20	12	80	
Worker	1	12.5	7	87.5	
Other	0	0	2	100	
Level of education					
No education	15	26.3	42	73.7	0.281
Primary school	25	26.3	70	73.7	
High school	10	45.5	12	54.5	
University	4	22.2	14	77.8	
Location					
Central district	53	28.2	135	71.8	1.000
Rural area	1	25	3	75	
House					
Pays rent	29	26.9	79	73.1	0.656
Owner	25	29.8	59	70.2	

ty screenings and different clinical environments. There are 12-item and 28-item versions of GHQ. The 28-item form was used in this study. The cut-off score of GHQ is 4/5. The reliability and validity study of the Turkish version of GHQ was conducted by Kılıç (1996).

2. Beck Anxiety Inventory (BAI)

BAI is a reliable and a valid questionnaire developed by Beck et al. (1988). BAI includes 21 items and the score range is 0-63. The reliability and validity study of the Turkish version of BAI was conducted by Ulusoy et al. (1996).

3. Beck Depression Inventory (BDI)

This questionnaire was developed by Beck (1961) and is used to determine the risk of depression, and the level and severity of depression symptoms. It is a 21-item self-rating scale with a score range of 0-63. The reliability and validity study of the Turkish form was conducted by Hisli (1989).

4. Edinburgh Postnatal Depression Scale (EPNDS)

This questionnaire was developed by Cox and Holden (1987), and is used in determine the risk of postnatal depression and the level and severity of

depression symptoms. It is a self-rating scale with 10 items. The reliability and validity study of the Turkish form was conducted by Engindeniz et al. (1996) and the cut-off score is 12/13.

Application

Thirty-nine midwife-nurses who were working in village clinics in Trabzon were used as the interviewers for this study. Each interviewer identified all pregnant women in their districts. Women who had completed the 6th month of pregnancy were included in the study, which took place between October 2003 and March 2004. The study included 266 women who agreed to participate. Eleven nurses who were working in Trabzon Delivery and Children's Hospital explained the study to all women that presented to the pregnancy outpatient clinic between December 2003 and March 2004, of which 50 agreed to participate. All women in the sample were placed in the same group. All participants signed the informed consent form and were administered the following questionnaires: the socio-demographic questionnaire, GHQ, BAI, EPNDS, and BDI. Participants were told how to complete the questionnaires and the interviewers collected the forms after checking each form separately. Of the 316 women (266 women from village clinics and 50 from Trabzon Delivery and

Table II. The Frequency of PPD in the Study Group (Trabzon, October 2003-October 2004).

	PPD Number %		No PPD Number %		Total
6-8 weeks after delivery	45	29.6	107	70.4	152
6 months after delivery	15	11.4	117	88.6	132
Total	54	28.1	138	71.9	192

Children's Hospital), 192 (75%) completed the first part of the study. One hundred and twenty-four women who did not meet the inclusion requirements of the study, who declined to participate, or who could not adapt to the study were excluded from the study.

In the second phase of the study, women who had completed the assessment instruments during the study's first phase and had since given birth were reevaluated with the GHQ, BAI, BDI, and EPNDS 6-8 weeks after giving birth. The women from Trabzon Delivery and Children's Hospital were contacted by phone and were invited to Farabi Hospital where the interviewers administered the forms. A total of 152 participants, 147 from the village clinics and 5 from Trabzon Delivery and Children's Hospital agreed to participate in the follow-up phase of the study.

A total of 132 participants participated in the third phase (92 from the village clinics and 3 from Trabzon Delivery and Children's Hospital), in which the same procedure used in the second phase was repeated 6 months after the women gave birth. Thirty-seven participants who participated in the third phase from the Village Clinics participated only in the first phase.

Statistical Analysis

The adequacy of the data to the normal population was evaluated with Kolmogorov-Smirnov test for each group. In the comparisons between the women with and without PPD, the data that fit to the normal population were compared using the Student's t-test and data that did not fit to the normal population were compared with the Mann Whitney U test. The comparative analyses of the data gathered with counting were done with the Chi-square test. Logistic regression analysis was carried out in order to detect the factors that af-

fected PPD. In this analysis, having or not having PPD was considered the dependent variable, whereas GHQ, BDI, and BAI scores, history of depression following delivery, family history of depression, level of education, monthly income, number of pregnancies, and fear of delivery were considered independent variables. Data gathered with measurement are presented as mean $\pm$ standard deviation, data gathered from analyses (%) and the results of logistic regression are presented with odds ratio (OR) and 95% confidence interval (CI). The level of statistical significance was accepted as $P < 0.05$.

FINDINGS

A total of 192 pregnant women participated in the first phase of the study. The mean age of the study group was 27.3 years, participants in the study group had lived in the same district for 12 years, had a monthly income of 490 YTL (Turkish Lira) and the mean number of children that each participant had was 2.03. All the participants in the study group were married, the majority were housewives (87%), 49.5% were primary school graduates, 97.9% lived in the central district, and 56.3% rented their homes. There was no significant relationship between marital status, employment status, location of home, whether the home was owned or rented, and PPD in the study group. Although the relationship between level of education and PPD was not significant, the percentage of high school graduates with PPD was the highest (45.5%) (Table 1).

Results related to the GHQ, BAI, BDI, and EPNDS.

Of 192 participants, 85 had a psychiatric disorder according to GHQ (score ≥ 5), and 43.5% ($n = 37$) of them were diagnosed with PPD. This finding was statistically significant ($P < 0.0005$). Ac-

Table III. The Relationship Between the Frequency of PPD and Risk Factors During Pregnancy.

Variables in the model	PPD Number %		No PPD Number %		P
Planned pregnancy					
Yes	37	26.6	102	73.4	0.567
No	17	32.0	36	68.0	
Hyperemesis					
Yes	20	33.3	40	66.7	0.363
No	34	26.2	98	73.8	
Fear of delivery					
Yes	44	28.8	109	71.2	0.672
No	9	23.7	29	76.3	
Gender of the baby					
Female	26	32.5	54	67.5	1.000
Male	23	32.9	47	67.1	
Satisfaction with the gender of the baby					
Yes	46	31.9	98	68.1	0.393
No	3	50.0	3	50.0	

cording to this, the prevalence of PPD was higher in participants who had a psychiatric disorder according to GHQ score.

Among the participants, 35 had a BDI score ≥ 17 , of which 15 were diagnosed with PPD (42.9%); however, this result was not statistically significant. Accordingly, while the difference between PPD diagnosis (based on BDI score) of those who displayed depressive symptoms and those who did not was not statistically significant, it was found that PPD occurred significantly more frequently in participants with a BDI score ≥ 17 during the postnatal period in comparison to participants who had BDI scores < 17 . Of 192 participants, 152 were followed-up 6-8 weeks after delivery and were screened for PPD with EPNDS, revealing that 45 women had PPD (29.6%) (score > 12). In the sixth month after delivery, 132 women (68.8%), some who were not followed-up 6-8 weeks after delivery, were evaluated. In this phase, 15 participants (11.4%) were diagnosed as PPD according to EPNDS. A total of 54 (28.1%) participants from both phases were diagnosed with PPD. In this study, the frequency of PPD was 28.1% and is presented in Table 2.

The BAI anxiety scores of 54 participants with PPD during pregnancy, 50 participants 6-8 weeks after giving birth, and 36 participants in the sixth

postnatal month were found to be statistically significant. Mean BAI scores during the pregnancy and postnatal periods were statistically higher in women with PPD when compared to women without PPD.

Risk Factors for PPD

There was no relationship between fear of pregnancy, gender of the baby, satisfaction with the gender of the baby, or illnesses during pregnancy, and the frequency of PPD; however, the frequency of PPD was significantly higher (33.3%) in participants who had hyperemesis complaints during pregnancy in comparison to participants who did not (?%). The relationship between the frequency of PPD and risk factors are presented in Table 3. There was a significant relationship between history of depression during the previous pregnancy and PPD frequency ($P = 0.003$). This relationship can be examined in Table 4, which presents the risk factors for PPD according to logistic regression analysis. According to the results of logistic regression, the risk of developing PPD in participants who scored ≥ 5 on GHQ increased 3.7 times ($OR = 3.7847$, $GA = 1.6348-8.5018$, $P = 0.0013$), and in participants who had a history of depression during pregnancy it increased 5.7 times ($OR = 5.7100$, $GA = 1.7806-18.3113$, $P = 0.0034$).

Table IV. Risk Factors for PPD According to Logistic Regression Results.

Name of the Variable	OR	95% CI	P
Depression in the previous birth			
No	1		
Yes	5.71	1.78-18.31	0.003
GHQ			
< 5	1		
≥ 5	3.79	1.64-8.50	0.001
BDI			
< 17	1		
≥ 17	1.18	0.45-3.05	0.738
History of depression in the family			
No	1		
Yes	0.64	0.24-1.65	0.352
Fear of delivery			
No	1		
Yes	1.03	0.41-2.58	0.951
Level of education			
No education	1		
Primary school	0.90	0.38-2.10	0.804
High school	2.78	0.88-8.81	0.083
University	0.57	0.12-2.70	0.481
Monthly income	1.43	0.48-4.28	0.522
Number of pregnancies	1.03	0.78-1.37	0.817
BAI	1.01	0.98-1.04	0.517

DISCUSSION

According to our findings, the frequency of PPD in the Trabzon sample was 28.1%. In a study conducted with 280 participants in Israel, the frequency of PPD was reported to be 22.6% (Glasser et al., 1998). In a study conducted with 1584 women in Sweden after the 8th and 12th weeks following birth using EPNDS, the prevalence of PPD was found to be 12.5% and 8.3%, respectively (Wickberg and Hwang, 1997). In Turkey, the prevalence

of PPD was reported to be 23.1% in the Samsun city center, 29% in İzmir, Bornova, and 36.9% in a semi-urban area of Manisa (Sünter et al., 2002; Çeber et al., 2002; Erbay, 2002). The difference in these prevalence rates might be due to the particular characteristics of each chosen population, and the sampling and depression criteria used. The numbers found in our study are closer to the findings reported from other Middle Eastern countries. Trabzon is located in northeastern Turkey and is socioculturally a moderately developed city. Rural

side and city center are telescopic. This shows that patriarchal family formation is still dominant in the area. This explains the similarity of our 28.1% PPD prevalence rate to other previously reported PPD prevalence rates from rural areas. In the present study, psychiatric morbidity based on GHQ increased PPD risk 3.7 times. Having a psychiatric diagnosis, such as anxiety or depression, during the prenatal period increases the risk of PPD (Robertson et al., 2004; Pfoest et al., 1990). Our study revealed a significant relationship between PPD and BAI scores during pregnancy (score range: 0-63); the mean BAI score of 54 women with PPD during pregnancy was 20.61 ± 13.05 , which was significantly higher than the mean score of women without PPD. The related literature clearly states that anxiety experienced during the prenatal period increases the risk of PPD (Beck, 1996; Robertson et al. 2004).

There was no significant relationship between physical health during pregnancy and PPD. The vast majority (164 women) reported no significant illnesses. In a study, which used a two-part general physiological health evaluation, it was reported that 78% of the participants with PPD had physiological morbidity during the prenatal period (Patel, 2002). We did not use a device to measure the general health status of the participants; therefore, information regarding this issue should be considered cautiously.

In our study, there was no significant relationship between gender of the baby, mother's satisfaction with the gender of the baby, and PPD: 80 girls and 70 boys were born by the participants. The rate of mothers with and without PPD was balanced. In one study it was found that the prevalence of PPD increased by a factor of 3 with dissatisfaction with the baby's gender poverty, and partner violence (Patel, 2002). Another study reports that the risk of PPD increases up to 2.6 times when the babies

are female (Chandran et al., 2002). There was no relationship between the gender of the baby and PPD in studies conducted in the West, whereas studies conducted in China and India reported a relationship between PPD and the gender of the baby (Robertson et al., 2004).

In our study, we found that a history of postnatal depression increased PPD risk by a factor of 5.7. The literature highlights that a history of postnatal depression is generally accepted among the factors that increase PPD risk (O'Hara and Swain, 1996; Johnstone et al., 2001; Beck, 2001). A study conducted in Portugal found that a history of depression in the mother was the most important risk factor for PPD (Areias et al., 1996). Also, other studies reported that a history of depression in the mother was among the major risk factors for PPD (Kumar and Robson, 1984; Schaper et al., 1994). Another study reported a history of depression and a history of PPD were the most important risk factors for PPD (Untermann et al., 1990). In a study conducted in Manisa, Turkey, the following factors related to mothers were significantly related with EPNDS scores: a history of psychiatric morbidity and a history of psychiatric morbidity during a previous pregnancy (Danacı et al., 2002).

There are some limitations to this study. The study was conducted in only one city, in the city center, used a chosen group of women, and the size of the sample limits the generalization of the results. The use of self-rating questionnaires is another limitation of our study; however, to the best of our knowledge, this study is the first follow-up study that evaluated PPD prevalence with a specified questionnaire, and we therefore believe that the results will be a valuable source for future studies on postnatal depression. Therefore, in our country there is a need for epidemiological field studies from various residential areas.

REFERENCES

- American Psychiatric Association (1994) DSM-IV-Diagnostic and Statistical Manual of Mental Disorders-4th Ed. American Psychiatric Association, Washington DC.
- Areias ME, Kumar R, Calheiros JM et al. (1996) Postnatal depression in an urban area of Portugal: comparison of childbearing women and matched controls. *Psychol Med*, 26: 135-141.
- Beck AT (1961) An inventory for measuring depression. *Arch Gen Psychiatry*, 4:561-571.
- Beck CT (1996) A meta analysis of predictors of postpartum depression. *Nurs Res*, 45: 297-303.
- Beck AT, Epstein N, Brown G (1998) An inventory for measuring clinical anxiety: Psychometric properties. *J Consult Clin Psychol*, 56: 893-897.
- Beck CT (2001) Predictors of postpartum depression: an update. *Nurs Res*, 50: 275-285.
- Chandran M, Tharyan P, Mulyil J (2002): Postpartum depression in a cohort of women from a rural area of Tamil Nadu, India. *Br J Psychiatry*, 181: 499-504.
- Cox JL, Holden JM (1987) Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale (EPDS). *Br J Psychiatry*, 150: 782-786.

Çeber TE, Pektaş İ, Dikici İ (2002) İzmir ili Bornova ilçesinde doğum yapmış kadınların doğum sonrası depresyon durumları ve bu durumu etkileyen etmenlerin incelenmesi. VIII. National Public Health Congress, p.858-861.

Danacı AE, Dinç G, Deveci A et al. (2000) Manisa il merkezinde doğum sonrası depresyon yaygınlığı ve etkileyen etmenler. Turkish Journal of Psychiatry, 11:204-211.

Danacı AE, Dinç G, Deveci A et al. (2002) Postnatal depression in Turkey: epidemiological and cultural aspects. Soc Psychiatr Epidemiol, 37:125-129.

Deveci A (2003) Postpartum psikiyatrik bozukluklar. Psychiatry for the first round, 2: 42-46.

DİE (Government Statistics Institute) (1998) 1997 Genel Nüfus Tespiti, il ve ilçelerin şehir ve köy nüfusları kesin sonuçları: Ankara, DİE matbaası. s. 17-123.

Engindeniz AN, Küey L, Kültür S (1996) Edinburgh doğum sonrası depresyon ölçeği Türkçe formu geçerlilik ve güvenilirlik çalışması. Bahar Sempozyumları 1 Kitabı, Psikiyatri Derneği Yayınları, Ankara, s:51-52.

Erbay DP (2002) Yarı kentsel bir bölgede postpartum depresyon prevalansı ve risk faktörleri. VIII. Ulusal Halk Sağlığı Kongre Kitabı, 8: 862-865.

Glasser S, Barell V, Shoham A et al. (1998) Prospective study of postpartum depression in an Israeli cohort: prevalence, incidence and demographic risk factors. J Psychosom Obstet Gynaecol, 19: 155-164.

Goldberg DP, Hillier VF (1979) A scaled version of the General Health Questionnaire. Psychol Med, 9: 139-145.

Hisli N (1989) Beck Depresyon Envanterinin üniversite öğrencileri için geçerliliği ve güvenilirliği. psychology Journal, 7: 3-13.

Johnstone SJ, Boyce PM, Hickey AR et al. (2001) obstetric risk factors for postnatal depression in urban and rural community samples. Aust N Z J Psychiatry, 35:69-74.

Kılıç C (1996) Genel Sağlık Anketi: Güvenilirlik ve geçerlilik çalışması. Turkish Journal of Psychiatry, 7: 3-9.

Kısa C, Yıldırım SG (2004) Gebelik postpartum dönem ve ruhsal bozukluklar. Psikiyatri Psikoloji Psikofarmakoloji (3P) Dergisi, 12 (Ek 4):0-0.

Kırpınar İ, Özer H (1995) Postpartum psikiyatrik bozukluklar (I). Psycho Med, 1: 55-59.

Kumar R, Robson KM (1984) A perspective study of emotional disorders in childbearing women. Br J Psychiatry, 144: 35-47.

O'Hara MW, Swain AM (1996) Rates and risks of postpartum depression: a meta analysis. Int Rev Psychiatry, 8: 37-54.

Okanlı A, Tortumluoğlu G, Kırpınar İ (2003) Gebe kadınların ailelerinden algıladıkları sosyal destek ile problem çözme becerileri arasındaki ilişki. Anatolian Journal of Psychiatry, 4: 98-105.

Patel W, Rodrigues M, De Souza N (2002) Gender, poverty, and postnatal depression: a study of mothers in Goa, India. Am J Psychiatry, 159: 43-47.

Pfost KS, Stevens MJ, Lum CU (1990) The relationship of demographic Variables, antepartum depression, and stress to postpartum depression. J Clin Psychol, 46: 588-592.

Robertson E, Grace S, Wallington T, Stewart DE (2004) Antenatal risk factors for postpartum depression: a synthesis of recent literature. Gen Hosp Psychiatry, 26: 289-295.

Schaper AM, Rooney BL, Kay NR et al. (1994) Use of the Edinburgh Postnatal Depression Scale to identify postpartum depression in a clinical setting. J Reprod Med, 38: 620-624.

Sünter AT, Güz H, Ordulu F et al. (2002) Samsun il merkezinde doğum sonrası depresyonu prevalansı ve risk faktörleri. VIII. Ulusal halk sağlığı kongresi kitabı, 855-858.

Trabzon Yıllığı 97: Trabzon Belediye Başkanlığı yayınları, no 52: 9-79, 1997.

Unterman RR, Posner NA, Williams KN et al. (1990) Postpartum depressive disorders: changing trends. Birth, 17: 131-137.

Ulusoy M, Şahin N, Erkmén H (1996) Turkish version of The Beck Anxiety Inventory: psychometric properties. J Cogn Psychoterapy.

Wickberg B, Hwang CP (1997) Screening for postnatal depression in a population based Swedish sample. Acta Psychiatr Scand, 95: 62-66.

Yıldırım SG, Kısa C, Aydemir Ç (2004) Postpartum Depresyon. Psikiyatri Psikoloji Psikofarmakoloji (3P) Dergisi, 12(Ek 4):0-0

Yıldız M, Ünal S (1996) Gebelik ve psikiyatrik sorunlar. Psycho Med, 2: 141-146.