Risk Factors For Postpartum Depression In A Well-Child Clinic: Maternal And Infant Characteristics

Bir Sağlıklı Çocuk Polikliniğinde Doğum Sonrası Depresyonda Risk Faktörleri: Anneye ve Bebeğe Ait Özellikler

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Aim: The aim of this study was to identify possible risk factors for postpartum depression development in mothers of infants who were brought to first-month well-child visits.

Material and methods: Self-reports were obtained from 103 mothers. The interviews collected data on mothers' sociodemographic and health characteristics, and infants' characteristics. The Edinburgh Postpartum Depression Scale (EPDS) was used to assess maternal depressive symptoms.

Results: In this high socioeconomic population, twenty-eight mothers (27.1%) scored in the clinical range of the EPDS. Mothers' unemployment, maternal health problems during present pregnancy, depression history during previous and present pregnancies, delivery complications, infant health problems, and infant cry/fuss problems were associated with postpartum depression.

Conclusion: Postpartum depression was common at one-month well-baby visits. Nonworking mothers, those with health problems during pregnancy and with a problematic infant were often depressed. Well-child visits provide a convenient setting for evaluating postpartum depression and related risk factors.

Key Words: ***postpartum depression, risk factors, infant characteristics, well-child visit***

Amaç: Bu çalışmanın amacı; birinci ayda yapılan sağlıklı çocuk vizitlerine getirilen bebeklerin annelerinde doğum sonrası depresyon gelişimi için olası risk etmenlerini belirlemektir.

Materyal ve metod: Çalışmaya 103 anne alınmıştır. Annelerin sosyoekonomik özellikleri, sağlık durumları ve bebeklerin özellikleri ile ilgili veriler toplanmıştır. Anneye ait depresif belirtileri saptamak üzere Edinburgh Doğum Sonrası Depresyon Ölçeği (EDSDÖ) kullanılmıştır.

Sonuçlar: Populasyonumuzun sosyoekonomik düzeyi orta-yüksek olarak değerlendirilmiş ve 28 annede (%27.2) EDSDÖ'ne göre yüksek skorlar saptanmıştır. Annelerin işsiz olması, gebelik sırasında sağlık sorunu öyküsü, son gebelikte veya önceki gebeliklerde depresyon öyküsünün varlığı, doğum komplikasyonları, bebeğe ait sağlık sorunları ve bebekte gaz sorununun varlığı doğum sonrası depresyonla ilişkili saptanmıştır.

Tartışma: Annelerde doğum sonrası depresyon bebeklerin birinci ay vizitlerinde sık saptanmaktadır. İşsiz, gebelikte sağlık sorunu olan ve sorunlu bir bebeğe sahip olan anneler daha sıklıkla depresif belirtiler gösterebilmektedir. Sağlıklı çocuk vizitleri doğum sonrası depresyonun ve onunla ilişkili risk etmenlerinin değerlendirilmesi için uygun ortamlar olabilir.

Anahtar Kelimeler: ***doğum sonrası depresyon, risk etmenleri, bebek özellikleri, sağlıklı çocuk viziti***

Postpartum depression is a serious mental health problem and affects 10 to 20% of new mothers. Its consequences have important implications for the health of both the mother and child.[1,3] Identifying the risk factors for postpartum depression could contribute to the understanding of its etiology and facilitate planning for prevention and intervention measures.[4] Although the etiology and pathogenesis of postpartum depression remains unclear, numerous biological and psychosocial risk factors for this disorder have been

Received: 21.01.2008 • *Accepted:* 25.04.2008

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identified.[5,6] Previous studies from developed countries show that the risk factors for postpartum depression are generally related to psychiatric or sociodemographic factors, such as a past history of psychiatric disorders, psychiatric disorder during pregnancy, complicated delivery, poor marital relationship, ethnicity, and poverty.[3,4,6,7] In developing countries, where low incomes are common, many of the same characteristics such as poverty, low education, unemployment, stressful life events and lack of social support are related to depression.[8,9] In addition to these known risk factors, infant problems such as infant difficulty, health problems, prematurity, and feeding problems have been associated with postpartum depression in previous studies from different countries.[9-11]

In Turkey, previous studies on postpartum depression have generally been conducted in populations with low or moderate socioeconomic characteristics. These studies show that postpartum depressive symptoms were associated with sociodemographic factors such as poverty, lack of medical services, lower education levels, being an immigrant, unemployment, living in a rented house, the family's preference for a male infant and poor family relations; and also maternal factors such as low marital age, high parity, the number of living children and any stressful life event during pregnancy.[12-16]

The aim of this study, therefore, was to identify possible risk factors regarding maternal and infant characteristics, for postpartum depression development in mothers of infants who were brought to first-month well-child visits.

Subjects and Methods

This study was conducted at the Department of Social Paediatrics of the School of Medicine, Ankara University. Ethics approval was obtained from the Ethics Committee of the Institute of Health Sciences. The study population consisted of mothers of one-month old infants (n=120) who attended well-baby visits. Mothers of preterm infants, of infants with congenital abnormality, and mothers having chronic diseases were excluded from the study. Before infants were examined, the study was explained to their mothers. One hundred and three mothers (85.8%) gave written consent to participate to the study. Seventeen mothers refused the participation: 10 mothers cited time constraints and 7 did not state any reason.

The mothers' interviews and infant examinations were conducted by the first author. After the participants' approval, the mothers were interviewed to gather information on specific characteristics and were then asked to fill a self-report scale, prior to infant examinations. Following this procedure, the infants were fully examined and their anthropometric measurements were carried out. The following information was collected:

(1) Demographic questions assessing the parents' detailed sociodemographic and health characteristics, a comprehensive description of the pregnancy and delivery, and a history of psychiatric disorders.

(2) Infant questions assessing birth weight, infant health problems, infants' hospitalization status, infant feeding patterns and maternal report of infant cry/fuss problems.

(3) Scale on assessment of postpartum depression: Edinburgh Postnatal Depression Scale (EPDS) is a self-rated measure specifically designed for use in primary care settings.[17] Maternal depressive symptoms were measured using the Turkish version of the EPDS. This version has a sensitivity of 84% and a specificity of 88% for post-

Table 1. Characteristics of the parents and infants.

	%
Maternal age (years)	
20-30	60.2
31-35	31.1
36-45	8.7
Paternal age	
20-30	29.2
31-35	46.5
36-45	24.3
Maternal educational degree	
Primary school	11.6
High school	31.1
University/postsecondary	57.3
Paternal educational degree	
Primary school	4.8
High school	35.9
University/postsecondary	59.3
Maternal employment status	
Housewife	35.0
Employed	65.0
Paternal employment status	
Unemployed	0.0
Employed	100.0
Maternal health insurance	
Available	96.1
Unavailable	3.9
Paternal health insurance	
Available	94.2
Unavailable	5.8
Number of pregnancies	
1	47.6
2-3	46.5
4-5	5.9
Number of living children	
1	62.1
2-3	37.9
Delivery type	
Vaginal	36.9
Caesarean	63.1
Delivery complication	
Present	15.5
Absent	84.5
Infant gender	
Male	62.1
Female	37.9

Table 2. EPDS categories and various characteristics of the mothers and their infants.

	By EPDS Category				X^2	*P* #	Odds ratio (OR)	95% confidence interval (CI)
	<12 (n=75)		≥12 (n=28)					
	N	%# #	N	%# #				
Mother's employment status					4.03	*0.049*	2.5	1.0-6.1
Housewife	22	61.1	14	38.9				
Employed	53	79.1	14	20.9				
Maternal health problem history during present pregnancy					3.97	*0.046*	2.7	1.0-7.0
Absent	62	77.5	18	22.5				
Present	13	56.5	10	43.5				
Maternal depression history in previous pregnancy# # #					5.65	*0.017*		
Absent	38	76.0	12	24.0				
Present	0	0	2	100.0				
Maternal depression history during present pregnancy					7.43	*0.006*	7.9	1.4-43.7
Absent	73	76.0	23	24.0				
Present	2	28.6	5	71.4				
Delivery complication					4.98	*0.026*	3.4	1.1-10.1
Absent	67	77.0	20	23.0				
Present	8	50.0	8	50.0				
Infant health problem					5.57	*0.018*	3.0	1.2-7.4
Absent	58	79.5	15	20.5				
Present	17	56.7	13	43.3				
Cry/fuss problem								
Absent	30	85.7	5	14.3	4.82	*0.035*	3.2	1.1-9.4
Present	45	66.2	23	33.8				

Chi-square
#Percent values of data on line
#Among 52 mothers with history of multiple pregnancies.

partum depression with a cut-off score of 12/13.[18] The final scores on the scale ranged from 0 to 30. A score of 12 or higher was used to indicate the presence of substantial depressive symptoms.

Statistical analysis:

Data are presented using descriptive statistics. Univariate analyses (Pearson chi-square analyses) were conducted to examine the associations between the postpartum depression and sociodemographic characteristics, the parent and infant health status, and infant characteristics. Odds ratios and 95% confidence intervals were computed accordingly. Two sample t tests were used to test the differences in means of continuous parametric variables such as birth weight and infant weight gain. All data analysis was performed using SPSS 11.5 and a two-tailed significance level of 0.05.

Results

Demographic characteristics of the parents and their infants

Table I shows the sociodemographic and pregnancy characteristics. The mean age of 103 mothers was 29.5±4.3 years with a range from 21 to 40 years, whereas that of the fathers was 33.1±4.1 years (24 to 45 years). The mean number of pregnancies and the mean gestational duration of mothers were 1.8±0.9 and 38.7±1.2 weeks (38–42 weeks), respectively. The majority of mothers (84.5%) were high school or university graduates, and the percentage of housewives was 35%.

Health characteristics of the mothers and their infants:

Twenty-two mothers (21.4%) reported transient non-significant health problems during pregnancy and sixteen (15.5%) reported a delivery problem such as foetal

distress, abnormal presentation and prolonged labour. Two mothers (3.8%) reported depression during their previous pregnancies. From their histories, these two mothers were followed up without any medication by a psychiatrist. Seven mothers (6.8%) reported depressive symptoms during their present pregnancies. Their histories showed that only five of them applied for psychiatric consultation: among these five mothers, two received a 2-month antidepressant drug therapy, and three were followed up without any medication during their pregnancy period.

Of the infants, 29.1% (n=30) had a health problem and 15.5% (n=16) were hospitalized after birth. The causes of hospitalization were small for gestational age, feeding problems, indirect hyperbilirubinemia, polystemia, septal hypertrophy and wet lung.

EPDS outcomes of the mother

The mean EPDS score of mothers was 7.9 (median: 7, SD: 5.4, range: 0-26). 72.8% of mothers were found free of depressive symptoms (n=75) (EPDS scores <12); while the remaining 27.2% were determined to have depressive symptoms (n=28) (EPDS scores ≥12).

Maternal factors associated with postpartum depression

As shown in Table II, the patients who have more depressive symptoms were more likely to be a housewife, have maternal health problem during present pregnancy, maternal depression history during previous pregnancy, maternal depression history during present pregnancy and delivery complication (p=0.049, p=0.046, p=0.017, p=0.006, and p=0.026, respectively). Suffering from depression during present pregnancy and during a previous pregnancy enhances the postpartum depression risk as does being a housewife, health problems during pregnancy, delivery complications and infant health problems.

The patients who have more depressive symptoms were not likely to educational status, age, health insurance, planning of pregnancy, the number of pregnancy, maternal health status before pregnancy, maternal drug use during pregnancy, maternal smoking during present pregnancy, maternal smoking during postpartum period and type of delivery.

Infant characteristics associated with postpartum depression

As shown in Table II, the patients who have more depressive symptoms were more likely to infant health problems and maternal reports of infant cry/fuss problems (p=0.018 and p=0.035, respectively). Gender of infants, mean birth weight, hospitalization of infants and infants' daily weight gains were not associated with elevated depressive symptoms. The infants of mothers without depressive symptoms gained a mean of 32.3±13.0 grams of weight per day, and those with depressive symptoms gained mean 36.3±13.5 grams of weight per day.

It was found that breastfeeding was initiated with all infants and all were still breastfed at the one-month interview. Additional food such as water, formula or tea was administrated at least once to 27 infants (26%) but not associated with elevated symptoms of depression.

Discussion

Comparing to the general population of Turkey, the characteristics such as education, profession, and health insurance availability of mothers under our study point to relatively higher socioeconomic characteristics.[19] Previous studies on postpartum depression, however, have been conducted in low or middle socioeconomic populations of Turkey. These studies show that the percentage of mothers with depressive symptoms varied from 14 to 40.4%.[12-16] Similarly, our study shows that 27.2% of mothers exhibited depressive symptoms, as a high incidence of postpartum depression at one-month well-baby visits in this population.

In this study, mainly, potential risk factors for developing postpartum depression were examined. Woman's personal psychiatric history during pregnancy was obtained the most important risk factor for postpartum depression, as expected, consistent with the findings from many developed countries.[20-22] Similarly, two previous studies from Turkey showed that former psychiatric history was found as risk factors in postpartum depression in populations with a majority of young housewives with limited education.[12,13] On the other hand, our study also shows that maternal health problems and delivery complications were associated with postpartum depression. Yet, the findings on association between depression and such complications are conflicting in literature. Several studies showed that pregnancy-related or delivery complications have not been consistently shown to predict the occurrence of postpartum depression.[4,22,23] However, in contrast to these studies, Burger et al showed that women with severe compli-

cation of pregnancy were significantly more likely to report postpartum depression as compared to those without complication.[24] Despite the pregnancy or delivery problems were less serious in our study population; we suggest that such health problems may lead to an increase in motherly concerns for their own health and care-giving.

Whereas many socioeconomic characteristics such as education, maternal age and health insurance were not associated with postpartum depression in this more economically advantaged population, maternal unemployment was associated with postpartum depression. This finding is consistent with previous studies from developed countries, wherein higher depression scores were established in nonworking mothers.[4,25] Although there was no serious socioeconomic stressor for these non-working mothers, we suggest that their first childbirth or health problem experiences may lead increased concerns in matters of infant-care after birth.

An important implication of our study is that various infant characteristics related with development of postpartum depression were identified. Two previous studies from Turkey show that babies' health problem was correlated to postpartum depression for low socioeconomic populations.[12,16] Further, a recent study from Turkey revealed that the mean EPDS of mothers whose infants with infantile colic was significantly higher.[26] As for our study, consistently, infant health problems and crying/fussing problems were found as potential risk factors for postpartum depression. However, we also suggest that mothers with elevated depressive symptoms may perceive their infants as more colicky and problematic as well. As new findings for our country, infant breastfeeding status, given an additional food and weight gain were not associated with elevated depressive symptoms in this high socioeconomic population. However, previous studies from developed and developing countries demonstrate that postpartum depression is associated with breastfeeding discontinuation, feeding problems and growth faltering.[27-29] We suggest that the strong advice on exclusive breastfeeding in our well-child clinic may result in satisfactory breastfeeding initiation and continuation, and also appropriate growth for the infants.

This study had some limitations. First, our sample size was relatively small. Second, psychiatric morbidity was only assessed in line with the scores on the EPDS. Third, we have not studied the possible impacts of many factors, such as biological parameters including blood TSH level, anaemia, B12 or folate deficiency, or family interactions. Fourth, objective indicators of sleeping/crying/fussiness of infants were not determined.

In conclusion, postpartum depression was found common at one-month well-child visits. Previous mood disorder experiences, delivery complications, mothers' unemployment, maternal health problems, infant health problems and infant crying/fussing problems were found associated with postpartum depression in this socioeconomically advantageous population. Therefore, unemployed mothers with histories of depression and with health problems during pregnancy and delivery, and with a problematic infant must be followed up more closely with respect to postpartum depression. For this purpose, well-child visits could provide a convenient setting for evaluating postpartum depression and related risk factors. However, new prospective studies with a larger population are needed on the associations between maternal and infant detailed characteristics and postpartum depression in different socioeconomic populations.

Acknowledgement

The authors are grateful to Dr. Sarah McCue Horwitz for the invaluable comments and suggestions in writing this manuscript.

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