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Original Article

Applying to Comparing the Levels of Coping with Postpartum Depression and Stress of Mothers of Premature Babies and Term Infants Who is the Pediatric Emergency Department

Pediatri Acil Servise Başvuran Prematur Bebek ve Term Bebek Annelerini Postpartum Depresyon ve Stresle Baş Etme Düzeyleri Açısından Karşılaştırma

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Abstract

Background: The aim is to compare the frequency of depression in mothers of premature and term infants, determine the relationship between stress coping styles, identify sources of stress and reduce the applying to the emergency department.

Material and Method: 50 mothers of premature and 50 term infants who applied to the Emergency Department of the Training and Research Hospital between August 2017 and November 2017, were included in the study. Sociodemographic data form, Structured Clinical Interview for DSM-IV Axis I Disorders, Edinburgh Postpartum Depression Scale and Stress coping styles scale were applied to these individuals.

Results: At the end of work; according to Edinburgh postpartum depression scale, 32% of the mothers of premature infants and 28% of the mothers of term infants were diagnosed with depression. When the styles of coping with stress are examined, there was no statistically significant difference between the premature and term group ($p>0.05$). As a result of the evaluation made using the Edinburgh Postpartum Depression Scale, 30 patients were diagnosed with postpartum depression. When those who were diagnosed with postpartum depression and those who did not were compared in terms of coping styles with stress, there was a statistically significant difference between only those who applied to the helpless approach and it was higher in cases with postpartum depression ($p<0.05$).

Conclusion: There was no difference in terms of postpartum depression between patients with preterm and term delivery. However, postpartum depression rates were higher than expected in both groups.

Keywords: Stress, depression, postpartum

ÖZ

Amaç: Postpartum dönemde premature bebek annelerinde ve zamanında doğan bebek annelerinde depresyon sıklığını kıyaslamak, stresle başa çıkma tarzları ile anksiyete ve depresyon düzeyi arasındaki ilişkiyi belirlemek, kişilerin stres kaynaklarını belirleyip bununla ilgili acile başvuru nedenlerini azaltmaktır.

Gereç ve Yöntem: Eğitim ve Araştırma Hastanesi pediatri acil servisine, Ağustos 2017-Kasım 2017 tarihleri arasında başvuran 50 premature ve 50 term bebek annesi çalışmaya dahil edildi. Bu kişilere Sosyodemografik veri formu, DSM-IV Eksen I Bozuklukları İçin Yapılandırılmış Klinik Görüşme ölçeği, Edinburgh Postpartum Depresyon Ölçeği ve Stresle başa çıkma tarzları ölçeği verildi.

Bulgular: Yaptığımız çalışmanın sonunda; Edinburg postpartum depresyon ölçeğine göre, premature bebek annelerinin %32'si, term bebek annelerinin %28'i pospartum depresyon tanısı aldı. Stresle başa çıkma tarzları incelendiğinde; sosyal destek arama, iyimser yaklaşım, çaresiz yaklaşım, kendine güvenli yaklaşım ve boyun eğici yaklaşıma başvuranlarda premature grup ile term grup arasında istatistiksel olarak anlamlı bir farka rastlanmadı ($p>0,05$). Edinburgh Postpartum Depresyon Ölçeği kullanılarak yapılan değerlendirme sonucunda; 30 olgu postpartum depresyon tanısı aldı. Postpartum depresyon tanısı alanlar ve almayanlar, stresle başa çıkma tarzları açısından kıyaslandığında; sadece çaresiz yaklaşıma başvuranlar arasında istatistiksel olarak anlamlı bir fark vardı ve postpartum depresyonlu olgularda daha yüksekti ($p<0,05$).

Sonuç: Preterm ve term doğum yapan hastalar arasında postpartum depresyon açısından fark yoktu. Ancak doğum sonrası depresyon oranları her iki grupta da beklenenden yüksekti.

Anahtar kelimeler: Stres, depresyon, postpartum

INTRODUCTION

The postpartum period is a difficult period for mothers and it has been observed that women are depressed 2 times more than other life periods (1). In the psychiatric approach, postpartum depression (PPD) is considered as a major depressive disorder that develops within 1 month after birth (2). Some studies define PPD more broadly as depressive episodes occurring up to 12 months after birth (3). Patients may develop postpartum blues, which usually consists of mild depressive symptoms that resolve spontaneously, as well as more severe signs and symptoms of minor or major depression may also occur. While the approximate prevalence of depression is 6-12% during pregnancy, it rises to 20% in the postpartum period. (4). Depression during pregnancy: associated with an increased risk of preterm birth, low birth weight, abnormal fetal heart rate and delayed intrauterine growth, while postpartum depression similarly for both mothers and infants can lead to serious consequences ranging from sleep difficulties to delayed/impaired development of cognitive, emotional, verbal and social skills in children (5). Mothers of newborns who have a medical illness, born prematurely or whose care is difficult are also at higher risk for PPD (6, 7). In previous studies, mothers of premature newborns, especially in the early postpartum period, have almost twice the rates of PPD compared to term births (8).

The mother's inability to adapt to new roles, physical and emotional changes may predispose the mother to be anxious and stressed. With this; low levels of optimism and inability to cope with stress may also increase the frequency and intensity of somatic complaints of the mother and make the mother more prone to depression (9). Coping is defined as the cognitive and behavioral processes that a person uses to cope with stressful situations that are judged to be challenging, threatening and/or have the potential for harm or loss (10). Patients use different ways to cope with the stress that accompanies or triggers depression, albeit involuntarily.

Stressful life experiences and ways of coping with them can predispose to mood disorders, and depression itself can be the cause of severe stress and underdeveloped techniques to counter it. Therefore, variables related to the onset and course of depression remain in significant association with coping strategies (11). Adopting an adaptive or appropriate coping style during pregnancy can minimize or even prevent the negative effects of stressors. The research objective is to compare the frequency of depression in mothers of premature and term infants in the postpartum period, determine the relationship between stress coping styles and the level of anxiety and depression, identify sources of stress and reduce the frequency of applying to the emergency department.

Materials and Methods

Our research is a case-control study conducted between August 2017 and December 2017. The cases were selected from volunteers who applied to the pediatric emergency department of a training and research hospital. The data of the research were collected between August 2017 and November 2017, and the data were evaluated for 2 months. The data were processed with the SPSS statistical program using statistical tests that were compatible with the data. Fifty mothers of preterm infants and 50 mothers of term infants who applied to the pediatric emergency department of Training and Research Hospital and were informed about the study were included in the study. Sociodemographic data form, Structured Clinical Interview for DSM-IV Axis I Disorders, depression and anxiety sections, Edinburgh Postpartum Depression Scale and Stress coping styles scale were given to these individuals. All of the patients to be included in the study were found from a training and research hospital pediatric emergency service.

While defining the population to be examined, the acceptance criteria for the study were determined as follows: 1) Giving birth in the last 3 months, 2) Applying to the pediatric emergency department, 3) At least primary school graduate, 4) Signing the informed consent form. The exclusion criteria are as listed: 1) Being illiterate 2) Mental retardation and cognitive deficit at an understandable level upon interview 3) Presence of a severe general medical condition-related illness at an understandable level upon interview 4) Diagnosis of schizophrenia and other psychotic disorders.

Because there was no similar previous study a pilot study was performed with 10 subjects from each group. The effect size was determined using Edinburgh Postpartum Depression Scale. According to the results 34 subjects from each group was found to be the required number to reach an alpha value of 0.05 and 1-beta value of 0,20 (Table 1). We reached 50 subjects from each group

Necessary permissions for the study were obtained from the Ministry of Health Istanbul Ümraniye Training and Research Hospital Clinical Research Ethics Committee with the decision number 108 on 20.07.2017.

Tools

Structured Clinical Interview for DSM-IV Axis I Disorders: is a semi-structured clinical interview scale developed for the diagnosis of DSM-IV axis-I including clinical psychopathological conditions (12). Turkish adaptation and clinical studies have been carried out by Özkürkçigil et al. (13).

Edinburgh Postpartum Depression Scale: The validity and reliability study of the scale developed by Cox et al. was carried out by Engindeniz (14). It was prepared for screening purposes in order to determine the level of depression risk and measure the change in severity in women in the postpartum period. It is not a scale for diagnosing depression. The scale is a 4-point Likert-type, self-report scale consisting of 10 items. The cut-off point of the scale is calculated as 13, and women with a score of 13 or more are considered as the risk group.

The scale of coping styles with stress: The Turkish validity and reliability study of the scale developed as "Coping Ways Inventory" by Lazarus and Folkman was developed by Şahin and Durak (15). The scale, which was created by doing three studies, consists of 30 items and includes 5 sub-dimensions. Sub-dimensions of the scale; self-confident approach, helpless approach, submissive approach, optimistic approach and seeking social support approach. The measurement tool is in 4-point Likert type, scored between 1 and 4, and the highest 120 and the lowest 30 points are obtained from the scale.

Statistical Analysis

The data were analyzed using IBM SPSS V23. Conformity to normal distribution was evaluated with the Kolmogorov-Smirnov test. Chi-square and Fisher's Exact tests were used to compare categorical variables according to groups. Independent two-sample t-test was used to compare the normally distributed quantitative data according to the groups, and the Mann-Whitney U test was used to compare the non-normally distributed data. Analysis results are given as mean± standard deviation and median (minimum-maximum) for quantitative data and as frequency (percentage) for categorical data. The level of significance was taken as $p<0.050$.

Results

The study was conducted on a total of 100 cases who applied to the pediatric emergency department of a training and research hospital between August 2017 and December 2017.

Of the term cases included in the study, 96% were formally married and 4% were religiously married; all of the preterm cases were officially married. Considering the distributions according to educational status, 8% of preterm pregnants were literate, 36% primary school graduates, 26% secondary school graduates, and 24% higher education graduates; in term cases, 10% were literate, 44% primary school graduates, 28% secondary school graduates, and 14% higher education graduates. (Table: 1).

Table 1. Examination of the cases included in the study

	Preterm N (%)	Term N (%)	Test statistic	P
School situation				
Primary school	18 (36)	22 (44)		
Highschool	13 (26)	14 (28)		
Literate	4 (8)	5 (10)	χ^2=2.064	0.724
University	12 (24)	7 (14)		
No	3 (6)	2 (4)		
Marital status				
Married	49 (100)	48 (96)		0.495[F]
Informal wedding	0 (0)	2 (4)		
Place of residence				
Town	1 (2)	1 (2)		
City	46 (92)	46 (92)	χ^2=0.000	1.000
Suburb	3 (6)	3 (6)		
Social Support				
Yes	18 (36)	19 (38)		
Insufficient	2 (4)	0 (0)	χ^2=2.043	0.360
No	30 (60)	31 (62)		
History of previous psychiatric disease				
Yes	18 (36)	21 (42)	χ^2=0.378	0.539
No	32 (64)	29 (58)		

χ^2: Chi-square test statistic, F: Fisher's Exact test statistic

When marital satisfaction was questioned, 2% of cases from both groups were bad; 24% of preterm cases were moderate, 74% were good; they stated that they were moderately satisfied in 10%, and well satisfied in 88% in term cases. Satisfaction between spouses was poor in 2% of both groups; 24% of preterm cases were moderate, 74% were good; they stated that they were moderately satisfied in 10%, and well satisfied in 88% in term cases. (Table: 2).

Table 2. Distribution of descriptive features of the cases included in the study

	PretermN(%)	TermN(%)	Test statistic	P
Spouse communication				
Good	37 (74)	44 (88)		
Bad	1 (2)	1 (2)	χ^2=3.487	0.175
Medium	12 (24)	5 (10)		
Marriage satisfaction				
Good	37 (74)	44 (88)		
Bad	1 (2)	1 (2)	χ^2=3.487	0.175
Medium	12 (24)	5 (10)		

χ^2: Chi-square test statistic, F: Fisher's Exact test statistic

Planned pregnancy was 76% of the cases in the preterm group and 82% of the cases were planned pregnancy in the term group. While 92% of the preterm cases were followed up, all of the term cases were followed-up pregnancy. The rate of chronic disease in the preterm cases was 8%, and the rate of chronic disease in the term group was 4%. There was a statistically significant difference between the distributions of smoking during pregnancy according to the groups (p=0.006). While 16% of the preterm group was smoking, none of the term group was smoking. 8% of preterm cases and 6% of term cases were conceived by assisted reproductive technique. There was a statistically significant difference between the distributions of maternal health status at birth according to the groups (p=0.002). While 64% of the preterm group did not have a health problem, 92% of the term group did not have a health problem. There was a statistically significant difference between the distributions of maternal health status at birth according to the groups (p=0.002). While 64% of the preterm group did not have a health problem, 92% of the term group did not have a health problem. There was a difference between the distributions of infant birth weights according to the groups (p<0.001). While 44% of the preterm group was over 2500 g, 92% of the term group had an infant birth weight over 2500 g. There is a statistically significant difference between the distribution of breastfeeding status according to the groups (p=0.014). While 80% of the preterm group is breastfeeding, 96% of the term group is breastfeeding (Table: 3).

Table 3. Distribution of cases according to pregnancy characteristics

	Preterm n, (%)	Term n, (%)	Test statistic	P
How is pregnancy				
Planned	38 (76)	41 (82)	χ^2=0.542	0.461
Unplanned	12 (24)	9 (18)		
Assisted Reproductive Techniques				
Yes	4 (8)	3 (6)		1.000[F]
No	46 (92)	47 (94)		
Delivery Method				
C/s	30 (60)	25 (50)	χ^2=1.010	0.315
Normal	20 (40)	25 (50)		
Health problem in mother at birth				
Serious	5 (10)	0 (0)		
Mild	7 (14)	4 (8)	χ^2=14.331	0.002
Medium	6 (12)	0 (0)		

No	32 (64)	46 (92)		
Health problem in baby at birth				
Yes	21 (42)	6 (12)	χ^2=11.416	0.001
No	29 (58)	44 (88)		
Baby birth weight				
under 1500	10 (20)	0 (0)		
1500-2500	18 (36)	4 (8)	χ^2=27.380	<0.001
over 2500	22 (44)	46 (92)		
Smoking during pregnancy				
Yes	8 (16)	0 (0)		0.006[F]
No	42 (84)	50 (100)		

χ^2: Chi-square test statistic, F: Fisher's Exact test statistic, C/s: cesarean section

In the past, SCID diagnoses of the cases were 19% for depressive episode, 8% for generalized anxiety disorder, social phobia 2%, bipolar disorder 2%, dysthymia 4%, obsessive compulsive disorder 3%, panic disorder 3%; When we compared the mothers of preterm and term infants, the current SCID diagnoses of the cases were found to have an anxiety rate of 14% in preterms, while the rate of PPD was 24%, the rate of anxiety in term babies was 20%, and ppd was 14% (Table: 4).

Table 4. Past and present SCID diagnoses and postpartum depression rates of the cases

	PRETERM n (%)	TERM n,(%)	Test statistic	P
Current diagnosis of SCID				
Mild anxiety	1 (2)	0 (0)		
PPD	12 (24)	7 (14.3)		
PPD and social phobia	1 (2)	0 (0)	χ^2=8.462	0.206
PPD and generalized anxiety	0 (0)	4 (8,2)		
General Anxiety	5 (10)	6 (12.2)		
None	30 (60)	32 (65.3)		
Past SCİD diagnosis				
No	30 (60)	29 (58)	χ^2=6.438	0.929
Depression	8 (16)	11 (22)		
Generalized anxiety disorder,	4 (8)	4 (8)		
Adjustment Disorder	4 (8)	2 (4)		
Dysthymic disorder	1 (2)	3 (6)		
Panic disorder	1 (2)	2 (4)		
Obsessive Compulsive Disorder	1 (2)	2 (4)		
Social Phobia	1 (2)	1 (2)		

Conversion disorder	1 (2)	1 (2)	
PTSB	0 (0)	1 (2)	
Bipolar affective disorder-2	0 (0)	1 (2)	
Bipolar affective disorder-1	1 (2)	0 (0)	
Edinburgh postpartum depression			
Postpartum depression	16(32)	14(28)	0.234

χ^2: Chi-square test statistic, F: Fisher's Exact test statistic, SCID: Structured Clinical Interview for DSM-IV Axis I Disorders, PPD: postpartum depression, PTSB: posttravmatic stress disorder

In our study, 30 cases were diagnosed with PPD. When patients with and without PPD diagnosis were compared; social support recipients in the PPD group were 2.80±0.62, and 2.69±0.65 in cases without PPD, and there was no statistically significant difference (p>0.05). In the optimistic approach group in the PPD group it was 3.20±1.06, 3.73±1.31 in cases without PPD, and there was no statistically significant difference (p>0.05). In cases with a diagnosis of PPD helpless approach was 4.10±1.83, 64±1.60 in cases without PPD diagnosis, and there was a statistically significant relationship between helpless approach and PPD. Submissive approach was 3.30±1.34 in cases with PPD, 3.19±1.32 in cases without PPD, and there was no statistically significant difference. In the self-confidence group, it was 5.67±1.72 in cases with PPD diagnosis, while it was 5.91±1.81 in cases without PPD, and there was no statistically significant difference (Table 5).

Table 5. Comparison Styles of Coping with Stress Scale in PPD case

	PPD	Mean ± SD	P
Social Support	AVAILABLE	2.80±0.62	0.365
	NONE	2.69±0.65	
Optimistic Approach	AVAILABLE	3.20±1.06	0.215
	NONE	3.73±1.31	
Helpless Approach	AVAILABLE	4.10±1.83	0.001
	NONE	2.64±1.60	
Submissive Approach	AVAILABLE	3.30±1.34	0.236
	NONE	3.19±1.32	
Self-confident Approach	AVAILABLE	5.67±1.72	0.853
	NONE	5.91±1.81	

Discussion

Maternal depression is a common but often underdiagnosed condition. Maternal depression adversely affects children's behaviour, development and mental health. Increased maternal depressive symptoms have been associated with missed pediatric outpatient visits, delayed immunization rates, decreased use of child safety measures, and increased use of emergency services. Women, whose babies are seen in the emergency department or who have problem-focused visits in primary care in the first few months of their lives, are more likely to have depressive symptoms (16). Screening for PPD in the pediatric setting may also be important as an opportunity to detect PPD, as mothers with severe depressive symptoms may neglect their self-care and infant care and may not be able to seek help from their obstetrician or primary care physician. Postpartum depression is defined in DSM-V as a major depression episode that begins within 4 weeks after birth (17). Other studies have defined PPD more broadly as depressive episodes occurring up to 12 months after birth (3). In our current study, we limited PPD to cover 3 months postpartum.

The estimated prevalence of postpartum unipolar major depression is not yet certain (18). Estimates vary widely among different studies, depending on which country the study is conducted in, the period during which postpartum prevalence is to be defined,

whether depression is determined based on self-report or clinical interviews, patients with minor depression are included, and whether the assessment is performed in clinical settings (18,19). However, the prevalence of PPD is estimated to be approximately 9% in studies conducted in Europe (18). In studies conducted under clinical conditions, the prevalence of depression in postpartum women varies between 10-16%. In our study, when mothers of preterm infants and term infants were evaluated together, we found that postpartum depression was higher with a frequency of 30% compared to the literature, since the patient population consisted only of mothers who applied to the pediatric emergency service (20). Although some studies showing the relationship between preterm birth and postpartum depression stated that preterm birth is a risk factor for postpartum depression (21, 22), no significant difference was found in a few studies (23, 24), similar to our results. Since depression in the mother before birth may also cause preterm birth, determining whether preterm birth causes depression or depression causes preterm birth may enable to take precautions for etiology and prevent premature births and postpartum depression

In a study conducted on patients with postpartum unipolar major depression, relatively more severe episodes were determined according to the presence of onset of depressive symptoms during pregnancy, mean score of 20 on EPDS, symptoms of anxiety and suicidal ideation, and obstetric complications (e.g. fetal stress, postpartum hemorrhage and low birth weight) In our study, low birth weight, health problems in the baby at birth and health problems in the mother were found to be higher in the preterm group compared to the term group. However, larger-scale studies are needed to obtain more comprehensive results on whether health problems trigger depression or whether depression triggers health problems. Patients use different ways to cope with the stress that accompanies or triggers depression, albeit involuntarily. There are few studies on coping strategies during pregnancy or during the transition to parenthood (25). In our study, the Stress Coping Styles Scale, previously defined by Folkman and Lazarus, was used for all patients who had preterm and term births. The 30-item study form of this scale was prepared by Şahin NH and Durak A., which was revealed through a Turkish validity and reliability study (14). Ways of coping with stress according to this form are options such as the helpless approach, the submissive approach, the optimistic approach, the self-confident approach, and the seeking of social support. Considering the patient groups in our study, there was no statistically significant difference between the patients who had preterm and term births in terms of coping styles with stress. But when all patient groups are considered, while there was no statistically significant difference in the other four parameters in terms of coping styles with stress between patients with and without PPD, there was a statistically significant difference in terms of resorting to the helpless approach, and it was higher in patients with PPD. Our study suggests that the use of certain coping strategies predisposes women to develop depressive symptoms in response to adverse events. It is also an expected result that people who use the helpless approach to cope with stress are depressed. The helpless approach is an inadequate approach to problem solving, and unresolved problems are likely to cause depression.

Changing coping strategies through various psycho-educational programs is one of the most effective preventive approaches that can be applied to women who are vulnerable to postpartum stress and therefore at high risk of depression.

Limitation

The limitation of our study was that the medical problems in the babies of the mothers who applied to the emergency service were obtained with the statements of the mothers and could not be medically confirmed Although no such bias has been reported before, it is possible that mothers with depressive symptoms were biased in their recall of health care use. Other measures of child health use, such as immunizations, hospitalizations, and healthy child appointments, were not collected in this study. Future studies should examine the impact of maternal depression on these broader child health care use outcomes.

Conclusion

We could not determine increased risk of postpartum depression in mothers of premature children although depression and anxiety scores of the mothers of premature children were higher. Studies with larger samples or meta-analysis of several studies may yield more significant results, which may enable allocation of limited mental health resources to mothers of premature children.

Ethical Approval: The institutional ethics committee of Umraniye Research and Education Hospital (decision date 20-07-2017; no: 108) approved the study.

Author Contributions:
Concept: *E.E. B.*
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Writing manuscript: *S.B.Ç.*
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