Araştırma Makalesi
Research Article

Frequency of Postpartum Depression and Investigation of Related Factors

POSTPARTUM DEPRESYON GÖRÜLME SIKLIĞI İLE İLİŞKİLİ FAKTÖRLERİN ARAŞTIRILMASI

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ABSTRACT

Objective: This study was conducted to evaluate the rates of postpartum depression by using Edinburgh Postpartum Depression Scale among mothers who visited our clinics 6-8 weeks after giving birth, and the effects of some sociodemographic and obstetrical factors on postpartum depression.

Materials and methods: This cross-sectional study included 318 women who gave birth 6-8 weeks ago and visited obstetrical and gynecology or pediatrics clinics for routine control. Some sociodemographic and obstetrical data which were thought to be a potential risk factor for postpartum depression were recorded and Edinburgh postpartum Depression Scale was conducted for each patient.

Results: 104 patients (32.7%) were diagnosed with postpartum depression. Postpartum depression rates were significantly higher in patients with low education levels and occupations of both mothers and their partners, depression history, dissatisfaction from marriage, smoking, increased number of parity and abortion, unplanned pregnancy, nausea and emesis during pregnancy, birth before 36 week pregnancy, increase in length of hospitalization, baby care in incubator, insufficient support and lack of breastfeeding.

Conclusion: There is a significant relationship between some sociodemographic and obstetrical conditions and postpartum depression. Identification of the risk groups and early precautions can reduce the high prevalence of the disease during the pandemic.

Keywords: Postpartum depression, Edinburgh Postpartum Depression Scale, Pandemic

ÖZ

Amaç: Bu çalışma, doğumdan 6-8 hafta sonra kliniğimize başvuran annelerin Edinburgh doğum sonrası depresyon ölçeği kullanılarak doğum sonrası depresyon oranlarını ve bazı sosyodemografik ve obstetrik faktörlerin doğum sonrası depresyona etkisini değerlendirmek amacıyla yapılmıştır.

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Gereç ve Yöntem: Bu kesitsel çalışmaya 6-8 hafta önce doğum yapan ve rutin kontrol için kadın doğum veya pediatri kliniklerine başvuran 318 kadın dahil edildi. Postpartum depresyon için potansiyel bir risk faktörü olabileceği düşünülen bazı sosyodemografik ve obstetrik veriler kaydedildi ve her hastaya Edinburgh postpartum depresyon ölçeği uygulandı.

Bulgular:104 hastaya (%32,7) doğum sonrası depresyon tanısı kondu. Anne ve eşinin eğitim düzeyi ve geliri düşük olanlarda, depresyon öyküsü olanlarda, evlilikten memnuniyetsizlik yaşayanlarda, sigara içenlerde, doğum sayısı ve kürtajda artış olanlarda, planlanmamış gebeliklerde, gebelikte bulantı ve kusma olanlarda, 36 haftadan önce doğum yapanlarda ve hastanede yatış süresinin uzaması, bebeğin kuvöz ihtiyacının olması, yetersiz destek ve emzirme eksikliği durumunda postpartum depresyon oranları anlamlı olarak daha yüksekti.

Sonuç: Bazı sosyodemografik ve obstetrik durumlar ile doğum sonrası depresyon arasında anlamlı bir ilişki vardır. Risk gruplarının belirlenmesi ve erken önlemler, pandemi sırasında hastalığın yüksek prevalansını azaltabilir.

Anahtar Kelimeler: Doğum sonrası depresyon, Edinburgh Doğum Sonrası Depresyon Ölçeği, Pandemi

Postpartum depression (PPD) is a common mood disorder, affecting %15-20 of mothers in the first year of giving birth (1). Although it is a serious condition with high morbidity and mortality rates, especially in developing countries, about 50% of the cases are estimated to remain undiagnosed and untreated. In some cases; depression begins in pregnancy period and usually gets worsen after delivery. The first two months after childbirth has the highest risk for PPD; but it can develop at any time in the first year (2). There is no consensus on diagnostic criteria of the disorder; such as time of onset. According to Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria, depression only onset within 4 weeks after childbirth is evaluated as PPD (3), but there are several studies demonstrate that PPD may appear lately and major depression must be evaluated as PPD which onset within the first year of the birth (2,4).

If it is not detected early and treated properly; PPD has serious side effects on maternal and indirectly neonatal well-being. In some cases, it can turn into chronical major depression. Mothers with PPD commonly suffer from emotional, social and physical dysfunction; including sleep disorders, hopelessness, concentration and memory disturbances, sniveling, increase/decrease of appetite, fail to newborn care, and in some cases thoughts of suicide and infanticide (5). Newborns are also affected because of poor mother-infant relationship and poor baby care (6).

PPD is suggested to have a multifactorial etiology, including some psychosocial and obstetrical conditions. Some risk factors are defined, which are proven to increase the PPD incidence; just as history of depression (especially previous PPD), low socio-economic status, poor family relationships, lack of partner or social support, marriage and pregnancy at an early age, menstrual problems, unplanned pregnancy, intrauterine growth retardation, premature birth and gender of baby in some populations (7-8). Hormonal fluctuations; especially in estrogen and progesterone levels during perinatal period are also thought to aggravate the clinical status (9). But there is no conclusive evidence for any of these risk factors to hold responsible for this complex disease, and further studies are needed to reinforce assumptions.

The Edinburgh Postnatal Depression Scale (EPDS); is a self-report questionnaire, which was developed by Cox et al. in 1987 (10). It consists of 10 items; each item is scored as 1-3, with a total score of 0 to 30. Cut off value is determined as 12. EPDS is an effective screening tool for

early detection of PPD with a sensitivity of 86 % and a specificity of 78 %. It is widely used for evaluating risk of depression in the postnatal period of women in many countries (11). It was translated into 36 languages; translation in Turkish and validation of its practicality in Turkish population was made by Engin Deniz et al (12).

There are relatively limited data on mental health of mothers before and after birth in Turkey (13). Comparable investigations are very important to demonstrate the point prevalence and specific variable risk factors in different regions. The aim of the present study was to evaluate the rates of PPD among the mothers who visit our clinics in postpartum 6-8 weeks; and the role of sociodemographic and obstetrical factors on this disease by using EPDS.

MATERIALS AND METHODS

Study Design And Participants

This cross-sectional study was approved by the Institutional Review Board and Ethical Committee of Pamukkale University and it was undertaken from May 2020 to May 2021. Written informed consent was obtained from all participants included in the study. The study was conducted with 318 women; chosen randomly among volunteers who delivered singleton infant 6-8 weeks ago and visited Pamukkale University Hospital and Denizli State Hospital, obstetrical and gynecology or pediatrics clinics for routine control. The aim and method of the research were explained to participants and all of them assigned an information and volunteer approval form. Patients with diagnosis of psychotic disorders, just as bipolar personality disorder and schizophrenia were excluded from the study. Obstetrical information was obtained from hospital database and patients' files.

Sociodemographic data, including; age of mother, concomitant disease, education level of mother and her partner, occupation of mother and her partner, income, residing, family type, marital age, marital period, history of depression, depression in first-degree relatives, satisfaction from marriage, premenstrual syndrome, smoking or alcohol use were recorded from each participant. Also obstetrical data, including; first pregnancy age, gravida, parity, number of abortion, pregnancy expectancy, disease in pregnancy, nausea or emesis during pregnancy, indication of labor, birth week, labor, gender of infant, place of birth, length of hospitalization, status of newborn after birth, support in baby care and breastfeeding were recorded from hospital database of all participants. Then; the Turkish version of Edinburgh Postpartum Depression Scale Form, consisting of 10 items were filled by each participant. The cut-off point of EPDS was determined as 12. So; the participants with an EPDS score ≥ 12 were considered to be PPD patients (10-13).

Statistical Analysis

Statistical Package for the Social Sciences (SPSS) 22.0 for Windows statistical package program was used for statistical analysis of our data. Numeric variables of sociodemographic and obstetrical data were presented as mean ± standard deviation (std), and categorical variables were presented as frequency. The relationship between sociodemographic variables and obstetric variables in Edinburgh Postpartum Depression Scale was analysed by chi square test.

RESULTS

The demographic data of the participants are shown in Table 1. 62.9% of the participants were at the age of 25 or younger and 86.8% had no accompanying diseases. Majority of participants (63.5%) and also their partners (67.6%) were graduated from high school. 38.4 % of participants were housewife or unemployed, but almost all of (99.7%) their partners were unemployed. Occupation of their partners were as follows; 30.5% officer, 18,2% worker, 34,6% self-employed and 15,4% farmer. 52.8% of the families had income more than expense, 39.3% had income equal to expense and 7.9% has income less than expense. 36.2% of participants were living in town center and 39.3% of them were living in city center. 85.8% of the participants were living with a nuclear family and 14.2% of them were living with an extended family. Marital age of the most of the participants were younger than 25 years with 71.4% rates. Also most of the participants had a marital period shorter than 10 years (82.1%), had no depression history in themselves (87.4%) and first-degree relatives (88.1%), had no premenstrual syndrome (74.5%) and no smoking (74.5%).

Table 1. Relationship between Sociodemographic variables and EPDS

				Edinburgh groups		
				Normal	**PPD**	
		n	**(%)**	**n: 214** (%67,3)	**n:104** (%32,7)	**P**
Age range	<25 years	57	(17,9)	33$_a$ (15,4)	24$_a$ (23,1)	
	25-34 years	200	(62,9)	142$_a$ (66,4)	58$_a$ (55,8)	,14
	≥35 years	61	(19,2)	39$_a$ (18,2)	22$_a$ (21,2)	
Education Level	Middle school	38	(11,9)	18$_a$ (8,4)	20$_b$ (19,2)	
	High school	202	(63,5)	131$_a$ (61,2)	71$_a$ (68,3)	**,001**
	University	78	(24,5)	65$_a$ (30,4)	13$_b$ (12,5)	
Education Level of Partner	Middle school	12	(3,8)	5$_a$ (2,3)	7$_a$ (6,7)	
	High school	215	(67,6)	136$_a$ (63,6)	79$_b$ (76,0)	**,001**
	University	91	(28,6)	73$_a$ (34,1)	18$_b$ (17,3)	
Occupation	Housewife-no job	122	(38,4)	65$_a$ (30,4)	57$_b$ (54,8)	
	Officer	57	(17,9)	48$_a$ (22,4)	9$_b$ (8,7)	
	Worker	21	(6,6)	14$_a$ (6,5)	7$_a$ (6,7)	
	Employer	3	(0,9)	2$_a$ (0,9)	1$_a$ (1,0)	**,001**
	Self-employed	67	(21,1)	51$_a$ (23,8)	16$_a$ (15,4)	
	Farmer	48	(15,1)	34$_a$ (15,9)	14$_a$(13,5)	
Occupation of Partner	No job	1	(0,3)	0$_a$ (0,0)	1$_a$ (1,0)	
	Officer	97	(30,5)	75$_a$ (35,0)	22$_b$ (21,2)	
	Worker	58	(18,2)	36$_a$ (16,8)	22$_a$ (21,2)	
	Employer	3	(0,9)	1$_a$ (0,5)	2$_a$ (1,9)	,04
	Self-employed	110	(34,6)	67$_a$ (31,3)	43$_a$ (41,3)	
	Farmer	49	(15,4)	35$_a$ (16,4)	14$_a$ (13,5)	
Income	More than expense	168	(52,8)	121$_a$ (56,5)	47$_a$ (45,2)	
	Equal to expense	125	(39,3)	78$_a$ (36,4)	47$_a$ (45,2)	,15
	Less than expense	25	(7,9)	15$_a$ (7,0)	10$_a$ (9,6)	
Residing	Village countryside	36	(11,3)	25a (11,7)	11a (10,6)	
	Town countryside	42	(13,2)	27a (12,6)	15a (14,4)	
	Town center	115	(36,2)	76a (35,5)	39a (37,5)	,92
	City center	125	(39,3)	86a (40,2)	39a (37,5)	
Family Type	Nuclear family	273	(85,8)	184a (86,0)	89a (85,6)	,92
	Extended family	45	(14,2)	30a (14,0)	15a (14,4)	
Marital age	<25 years	227	(71,4)	149a (69,6)	78a (75,0)	
	25-34 years	89	(28,0)	63a (29,4)	26a (25,0)	,41
	≥35 years	2	(0,6)	2a (0,9)	0a (0,0)	
Depression history	No	278	(87,4)	201a (93,9)	77b (74,0)	**,001**
	Yes	40	(12,6)	13a (6,1)	27b (26,0)	
Satisfaction from marriage	Good	192	(60,4)	178a (83,2)	14b (13,5)	
	Moderate	105	(33,0)	36a (16,8)	69b (66,3)	**,001**
	Bad	21	(6,6)	0a (0,0)	21b (20,2)	
Smoking-alcohol use	None	237	(74,5)	168a (78,5)	69b (66,3)	**,02**
	Smoking	81	(25,5)	46a (21,5)	35b (33,7)	

EPDS: Edinburgh Postnatal Depression Scale, PPD: Postpartum depression
EPDS scores ≥ 12 women at risk for EPDS scores. test: Pearson Chi-Square , $p < .05$.

The obstetric data of the participants are shown in Table 2. The age of first pregnancy was between 25-34 in 53.8% of the participants. In most of the participants; gravida was 3 and less (81.4%), parity was 2-3 (63.8%) and there was no abortion (66.0%). 81.8% of participants had planned spontaneous pregnancy and 77.7% of them had no disease during pregnancy. Severe nausea and emesis was not prevalent with 9.1% rates, and 17.6% of the mothers did not describe any nausea. 75.5% of participants gave birth 37-40 weeks and the most frequent indication of birth was spontaneous labor (51.3%). We observed similar rates in types of labor (23.9%) spontaneous vaginal birth with episiotomy, 25.8% spontaneous vaginal birth without episiotomy, 25.5% cesarean-section with spinal anesthesia, 24,8% cesarean-section with general anesthesia. 53.8% of newborns were female, and 46,2% were male. Majority of births (71.1%) were performed in a secondary health care provider. Length of hospitalization was 36-60 hours in 42.1 %, and more than 60 hours in 27% of patients. 76.1% of newborns stayed with their mother after birth. 56,9% of mothers did not get support in baby care and 76.4% of them breastfed.

Table 2. Relationship between obstetrical variables and EPDS

				EPDS Groups		
		n	**(%)**	**Normal n:214** (%67,3)	**PPD n:104** (%32,7)	**P**
Parity	1	95	(29,9)	62$_a$ (29,0)	33$_a$ (31,7)	
	2-3	203	(63,8)	146$_a$ (68,2)	57$_b$ (54,8)	**,001**
	≥4	20	(6,3)	6$_a$ (2,8)	14$_b$ (13,5)	
Abortion	0-1	210	(66,0)	151$_a$ (70,6)	59$_b$ (56,7)	
	1-2	103	(32,4)	62$_a$ (29,0)	41$_a$ (39,4)	**,001**
	≥ 3	5	(1,6)	1$_a$ (0,5)	4$_b$ (3,8)	
Pregnancy Expectancy	Unplanned pregnancy	31	(9,7)	1$_a$ (0,5)	30$_b$ (28,8)	
	Planned spontaneous pregnancy	260	(81,8)	189$_a$ (88,3)	71$_b$ (68,3)	
	Pregnancy with sperm injection	14	(4,4)	11$_a$ (5,1)	3$_a$ (2,9)	**,001**
	Pregnancy with in vitro fertilization	13	(4,1)	13$_a$ (6,1)	0$_b$ (0,0)	
Nausea or Emesis During Pregnancy	None	56	(17,6)	49$_a$ (22,9)	7$_b$ (6,7)	
	Mild nausea	127	(39,9)	102$_a$ (47,7)	25$_b$ (24,0)	
	Moderate nausea or emesis	106	(33,3)	58$_a$ (27,1)	48$_b$ (46,2)	**,001**
	Severe nausea and emesis	29	(9,1)	5$_a$ (2,3)	24$_b$ (23,1)	
Birth Week	< 32	11	(3,5)	1$_a$ (0,5)	10$_b$ (9,6)	
	32-36	57	(17,9)	20$_a$ (9,3)	37$_b$ (35,6)	**,001**
	37-40	240	(75,5)	189$_a$ (88,3)	51$_b$ (49,0)	
	> 40	10	(3,1)	4$_a$ (1,9)	6$_a$ (5,8)	
Gender of infant	Female	171	(53,8)	116$_a$ (54,2)	55$_a$ (52,9)	,82
	Male	147	(46,2)	98$_a$ (45,8)	49$_a$ (47,1)	
Length of hospitalization	< 36 hours	98	(30,8)	83$_a$ (38,8)	15$_b$ (14,4)	
	36-60 hours	134	(42,1)	102$_a$ (47,7)	32$_b$ (30,8)	**,001**
	> 60 hours	86	(27,0)	29$_a$ (13,6)	57$_b$ (54,8)	
Status of newborn after birth	With mother	242	(76,1)	204$_a$ (95,3)	38$_b$ (36,5)	
	In incubator	76	(23,9)	10$_a$ (4,7)	66$_b$ (63,5)	**,001**

Support in baby care	No	181	(56,9)	86$_a$ (40,2)	95$_b$ (91,3)	**,001**
	Yes	137	(43,1)	128$_a$ (59,8)	9$_b$ (8,7)	
Support of partner	Sufficient	133	(41,8)	124$_a$ (57,9)	9$_b$ (8,7)	**,001**
	Moderate	146	(45,9)	86$_a$ (40,2)	60$_b$ (57,7)	
	Insufficient	39	(12,3)	4$_a$ (1,9)	35$_b$ (33,7)	
Breastfeeding	No	75	(23,6)	10$_a$ (4,7)	65$_b$ (62,5)	**,001**
	Yes	243	(76,4)	204$_a$ (95,3)	39$_b$ (37,5)	
Labor	Spontaneous vaginal birth, with episiotomy	76	(23,9)	39$_a$ (18,2)	37$_b$ (35,6)	**,001**
	Spontaneous vaginal birth, without episiotomy	82	(25,8)	72$_a$ (33,6)	10$_b$(9,6)	
	Cesarean section, spinal anesthesia	81	(25,5)	62$_a$ (29,0)	19$_b$ (18,3)	
	Cesarean section, general anesthesia	79	(24,8)	41$_a$ (19,2)	38$_b$ (36,5)	

EPDS: Edinburgh Postnatal Depression Scale; PPD: Postpartum depression
EPDS scores ≥ 12 women at risk for EPDS scores. test: Pearson Chi-Square , p < .05.

The results of chi-square test performed to demonstrate the relationship between sociodemographic variables and EPDS are shown in Table 1. There is no significant difference between age, income-expense status, residing, family type and marital age variables of the two groups (p>0,05). But education levels and occupations of both mothers and their partners, depression history, satisfaction from marriage and smoking variables were significantly different in two groups (p<0,05). Participants in normal group and their partners have higher education levels than participants in PPD group. Majority of housewives and unemployed participants are in PPD group, and PPD is less common among officers and partners of officers. Patients with depression history, patients with moderate/bad satisfaction from marriage and smokers also have higher rates of PPD.

DISCUSSION

In the present study, results of EPDS demonstrated that; 32.7% of our participants' scores were compatible with PPD. Although it is difficult to determine the exact range, PPD has an estimated prevalence of 15-20 % in the first year of giving birth (1). The prevalence studies on PPD are contradictory, because of variability of the risk factors that depend on region, culture, sociodemographic variants, sample size, different diagnostic methods, rates of undiagnosed cases etc. Holbrook et al. (1) reviewed 291 prevalence studies on PPD and reported a mean prevalence of 17.7. Leahy-Warren et al (14) reported prevalence that ranges from 4.4% to 73.2% from various studies, in their review. Another study demonstrated that prevalence of PPD is higher in developing countries (31.3%), than developed countries (21.5%) (15). Turkey is a developing country, and high rates of PPD prevalence is an expected situation, especially in rural areas. Studies conducted in various cities of Turkey demonstrated that the mean of PPD prevalence was 21.2% in developed cities, and 25% in developing cities (16). Despite variable results, overall studies highlight high prevalence rates of PPD especially in the first two months after giving birth. Our results are partially higher than the mean ranges. This may be due to our homogenous patient groups who are all in the postpartum 6-8th weeks-the most common period of PPD or other specific risk factors.

Results of the present study draws attention to some potential sociodemographic and obstetrical risk factors for PPD. Depression history, dissatisfaction from marriage, low education level, unemployment and smoking seems to be the noticeable sociodemographic risk factors. One of the common suggestions of various studies is history of depression which associated with higher risk of PPD. A population-based study conducted by Silverman et al. demonstrated that mothers with history of depression may have up to 20-folds increased risk for PPD, also modified

by other maternal characteristics; including maternal age, obstetrical complications or accompanying diseases (17). This relationship may be explained with the fact that, patients with history of psychiatric disorders are thought to be more susceptible to hormonal influences (18). In general, some social conditions are closely related with each other, and coexist in etiology of some mental health problems. Low education level and unemployment are interrelated risk factors for PPD which causes economical problems. Low economical status is one of the causes of impaired relationship with partner. Healthy relationship with family members, especially with the partner is crucial for satisfaction from marriage life. There is also a positive correlation between low socioeconomic level and smoking. So, these risk factors usually take place together in the etiology of PPD in a part of society (19).

We did not find any significant difference between age groups of mothers. Most of the studies allege that there is a correlation between maternal age and PPD. Especially young mothers between 13-19 years were shown to be more susceptible to mood disorders (20), probably due to lack of confidence to care for their babies. But in the present study, the age range of mothers were between 19-45 and there were no mothers at teenage.

All of the obstetrical factors we investigated-except gender of infant were significantly correlated with PPD. With an expanded literature review, we observed that gender of infant may affect mood of both of the parents, but this depends on regional culture and education level of parents. Results of studies from India (21), Africa (22) and Latin America (23) pointed that female gender was a significant risk factor for PPD associated with dissatisfaction. On the other hand, gender of baby was not effective on PPD risk in most of the Western countries (24). One study conducted in United Kingdom, indicated higher risk for PPD in male gender of infants, probably due to increased obstetrical complications (25).

Various studies and also present study demonstrate that unplanned pregnancy is one of the most common risk factors for PPD (16). This situation may be due to economical and social conditions, or women may not be ready for the role of motherhood. Lack of support in baby care and partner support also seem to strengthen the risk, leading the mother to feel alone with this problem.

Our results also support that increase in number of parity (4 and more) and abortion (3 and more) give rise to increased risk for PPD. There is positive correlation between multiparity/multiple abortion and PPD, probably due to increased stress related with economical or health problems. Some other health problems and/or procedures applied during pregnancy or labor; including nausea/emesis, preterm birth, hospitalization more than 60 hours, newborn's need for incubator, general anesthesia/episiotomy during labor are extra stress factors for mother and are observed to increase the risk for PPD compatible with the literature (16- 17).

The last and one of the most important risk factor we revealed is the lack of breastfeeding. The rates of PPD among non-breastfeeding mothers (62.5%) were significantly higher than breastfeeding ones (4.7%). Breastfeeding is the strongest way of emotional interaction between mother and baby.

Although we could not reveal it clearly because the planning period of the study coincided with the pre-pandemic, we believe that the anxiety and loneliness caused by the covid-19 pandemic may also be effective in the high rate of depression in our study.

CONCLUSION

PPD is a common and serious mental disorder and prevention/ treatment of PPD is very significant for both maternal and neonatal health. Therefore, determination of the risk factors is very essential for early diagnosis of PPD. Present study draws attention to risk factors for PPD in a specific region of Turkey. More population-based studies are needed for more evidence to support the data.

Conflicts of interest and funding statement

The authors report no conflicts of interest, and no specific funding was obtained for the study. The authors alone are responsible for the content and writing of this article.

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