Özgün Araştırma / Original Research

Investigation of the Postpartum Depression Levels at the 6th Postpartum Week of Mothers Who Gave Birth in One of the Eastern Provinces of Türkiye

Türkiye'nin Doğu İllerinden Birinde Doğum Yapan Annelerin Doğum Sonrası 6. Haftadaki Postpartum Depresyon Düzeylerinin İncelenmesi

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ABSTRACT

Aim: The aim of this study is to investigate postpartum depression (PPD) levels in postpartum women living in rural areas.

Materials and Method: The study was carried out between 10.11.2022 and 10.11.2023 at a Training and Research Hospital in Ağrı province. The study was designed as a cross-sectional study and was conducted with 337 participants. In the study, the Data Collection Form and the Edinburgh Postpartum Depression Scale (EPDS) were used.

Results: In the study, the mean Edinburgh Postpartum Depression Scale (EPDS) score was found to be 11.51 ± 4.77 (min-max: 1-25). Age groups, place of residence, income and expense status, educational status, spouse's education status and mother's employment status, planned pregnancy status, number of pregnancies, number of stillbirths/miscarriages, postpartum weight, violence during pregnancy and presence of social support, starting work after birth. It was determined that there was a relationship between the time of birth, the time of holding the baby after birth, complications developing in the baby and the mother, and the scale score averages (p <0.05).

Conclusion: According to the results of the study, it was determined that women living in rural areas have a high risk of PPD due to various reasons such as having to do heavy work, being exposed to domestic violence, and ignoring their health problems.

Keywords: Depression, Postpartum, Eastern Province, Rural Living, Vaginal Birth, Caesarean Section

ÖZET

Amaç: Bu çalışmanın amacı kırsalda yaşayan postpartum dönem kadınlarda postpartum depresyon (PPD) düzeylerini araştırmaktır.

Gereç ve Yöntem: Çalışma 10.11.2022 ve 10.11.2023 tarihleri arasında Ağrı ilinde bulunan bir eğitim ve araştırma hastanesinde gerçekleştirildi. Çalışma, kesitsel tipte bir çalışma olarak dizayn edildi ve 337 katılımcı ile gerçekleştirildi. Çalışmada, Veri Toplama Formu ve Edinburg Postpartum Depresyon Ölçeği (EPDÖ) kullanıldı.

Bulgular: Çalışmada, Edinburg Postpartum Depresyon Ölçeği (EPDÖ) puan ortalaması 11.51 ± 4.77 (min-max: 1-25) olarak saptandı. Yaş grupları, yaşanılan yer, gelir gider durumu, eğitim durumu, eşinin eğitim durumu ve annenin çalışma durumu, planlı gebelik durumu, gebelik sayısı, ölü/düşük doğum sayısı, doğum sonrası verilen kilo, gebelikte şiddet ve sosyal destek varlığı, doğumdan sonra işe başlama zamanı, doğum sonrası bebeği kucağa alma zamanı, bebekte ve annede gelişen komplikasyonlar ile ölçek puan ortalamaları arasında ilişki olduğu saptandı (p<0.05).

Sonuç: Çalışmanın sonuçlarına göre, kırsalda yaşayan kadınların, ağır işlerde çalışmak zorunda kalması, aile içi şiddete maruz kalmaları, sağlık problemlerinin göz ardı edilmesi gibi çeşitli nedenlerden dolayı yüksek oranda PPD riski taşıdığı saptanmıştır.

Anahtar Kelimeler: Depresyon, Doğum Sonrası, Doğu İli, Kırsal Kesimde Yaşayan, Vajinal Doğum, Sezaryen

INTRODUCTION

Postpartum depression (PPD) has been described as the "thief who steals motherhood", depriving women of the joy of a new baby (Beck, 1999). PPD is defined by the World Health Organization (WHO) as "a specific mental health disorder and a variant of depression" (World Health Organization, 2018). The American Psychological Association (APA) defines PPD as "a serious mental health problem characterized by prolonged emotional disturbance that occurs at a time of major life change and increased responsibilities in caring for the newborn" (Zaidi, 2017).

It is known that depression affects women more severely due to increased postpartum stress, inability to cope with stress and the social roles assigned to women in society. Therefore, researchers have suggested the role of bio-psycho-social factors in the etiology of PPD. Biological risk factors include: Various reproductive and stress hormones, such as estradiol, progesterone, and cortisol, rise dramatically during pregnancy and then fall suddenly at birth. Thus, it can lead to system dysregulation and thus PPD (Yu et al., 2021a). Psycho-social factors include low socioeconomic status, life stressors during pregnancy, maladaptive relationship with family or partner, lack of support from family or friends, previous history of psychopathology (such as depression, anxiety), chronic postpartum stressors (including childcare issues and difficult infant temperament possible), unemployment/instability, unplanned pregnancy, indecisiveness about getting pregnant, history of sexual abuse, lack of friends, bottle feeding, etc. (Werner et al., 2015). Biological risk factors, previous psychiatric illnesses, demographic and psychosocial risk factors, and obstetric risk factors contribute to revealing the etiology of PPD.

Also, lack of social support (Howell et al., 2012), prenatal depression (Park et al., 2015), fear of childbirth (Beck, 2001), history of miscarriage or premature birth in previous pregnancy (Maghade et al., 2018), negative body image perception (Boothe et al., 2011), child care stress (Tambağ et al., 2018) history of multiple births (Desai et al., 2012; Nakamura et al., 2015) marital relationship (Azad et al., 2019) low socioeconomic status (Park et al., 2015) working status and work stress (Zaidi, 2017) reasons are cited such as.

Postpartum depression and postpartum blues represent two different dimensions of the psychological difficulties experienced by women in the postpartum period. While postpartum depression describes a deeper and more permanent emotional crisis, postpartum blues describes a temporary and milder state of blues (Zaidi, 2017; Landman et al., 2024). Postpartum blues is reported to occur in 15-85% of postpartum women in the first 10 days after delivery, with a peak incidence on the fifth day (Henshaw, 2003). Among women with postpartum blues, 27.7% experienced either early- or late-onset PPD, compared to 16.4% among women without postpartum blues (Landman et al., 2024).

Postpartum depression is reported to be a serious health problem affecting approximately 15% of the female population after childbirth (Yu et al., 2021b). The World Health Organization (WHO) reported that in 2017, more than 300 million people suffered from depression(World Health Organization 2018) PPD rates vary across countries. For example, PPD rates in Asian countries have been reported to range from 3.5% to 63.3% in studies (Klainin & Arthur, 2009). In their 2018 study, they found PPD rates to be 20% in Vietnam (Nhị et al., 2018). In Turkey, various studies on PPD rates have reported that the rates vary between 14% and 41% (Efe, Taşkin, & Eroğlu 2009; Yıldırım, Hacıhasanoğlu, & Karakurt 2011). The main cause of PPD is thought to be the rapid hormonal changes experienced during the puerperium. These changes are reported to negatively affect the mood of postpartum women (Meltzer Brody et al., 2015).

Postpartum depression can have negative consequences for both women and babies, including maternal suicide, damage to the bond between mother and baby, early termination of breastfeeding and delayed development of the newborn. These negative consequences negatively affect the health of the mother and the baby through situations such as alcohol use, unsafe sex, sexually transmitted infections, and intimate partner violence (Rotheram-Borus et al., 2015). Therefore, timely detection and treatment by clinicians is essential. Routine gynecology or healthy child checks in the postpartum period are important opportunities to detect PPD. PPD is a mood disorder that begins in the 4th week after birth and continues for up to 1 year. In our study, we conducted our study with women who came for control at the 6th postpartum week. Because it was thought that during this period, women would have the capacity to cope with the difficult process of postpartum and express themselves better. PPD

has a tendency to progress to major depression and, in underdiagnosed cases, may carry a significant risk of morbidity and mortality. It is predicted that depression could become the top three leading causes of death globally by 2030 if interventions are not developed as part of preventive measures (Mathers & Loncar, 2006). Despite this, PPD is one of the least addressed types of depression today. Conducting the study in a region with high fertility rates and low socioeconomic status predicts a higher incidence of postpartum depression. In the study where many studies were examined, low socioeconomic. It has been stated that the situation or unemployment is effective in the development of PPD (Norhayati et al., 2015). We planned this study because of the unhappiness and fatigue observed in pregnant women who came for control in the first month after birth.

In this study, we aimed to determine the prevalence of PPD at 6 weeks postpartum in one of the eastern provinces of our country with a high fertility rate and low socio-economic status.

Research Questions

1. To what extent is postpartum depression seen in women who come to the hospital for postpartum check-up?
2. Is there a difference between the scores obtained from the Edinburgh Postpartum Depression Scale (EPDS) according to socio-demographic characteristics?
3. Is there a difference between the Edinburgh Postpartum Depression Scale (EPDS) scores according to obstetric characteristics?

MATERIAL AND METHOD

Research Type

The study was a cross-sectional study to determine the prevalence of PPD in postpartum women.

Study Population and Sample

This study was carried out in the gynecology and obstetrics clinic of a training and research hospital in Ağrı province between 10.11.2022 and 10.11.2023.

The population of the study consisted of mothers who were called for gynecology control at the 6th postpartum week and who agreed to participate in the study. The sample size of the study was determined using the G*Power 3.1.

(Taşpinar et al., 2021). The power of influence was calculated as at least 301 puerperia by power analysis with 0.05 error and 0.99 confidence interval, considering W=0.3.

Between the dates of data collection, 337 women between the ages of 18 and 45 who gave birth, could read and write and agreed to participate in the study were included in the study. Women diagnosed with manic-depressive disorder, using antidepressants, those who responded incompletely to the survey, and 21 people with any psychiatric or emotional health problems or diagnoses were excluded from the study.

Data Collection Tools

Data were collected using a data collection form including socio-demographic and obstetric characteristics of the women and the Edinburg Postpartum Depression Scale.

The Personal Information Form: In line with the literature by the researchers (Demir et al., 2016; Taşpinar et al., 2021) This form consists of questions including personal information (age, educational status, employment status, etc.) and obstetric information (type of delivery, number of pregnancies, number of stillbirths/low births, etc.) and postnatal information about the mother and the baby (gender, weight, time of holding the baby after birth, etc.).

Edinburgh Postpartum Depression Scale (EPDS): It was developed by Cox et al. in 1987. The validity and reliability study in Turkey was conducted by Engindeniz et al. (Engindeniz at al.,1996). It contains a total of 10 questions and is a four-point Likert-type questionnaire. The scoring of each item is different (items 3, 5, 6, 7, 8, 9, and 10 show gradually decreasing severity and the scoring is 3, 2, 1, 0. On the other hand, items 1, 2 and 4 are scored as 0, 1, 2, 3). The scale is scored between 0-30 points. The total score is obtained by summing the scores of these items. Validity and reliability were calculated as 84% and 88%, respectively, and Cronbach's Alpha was 0.79. In our study, Cronbach's Alpha value was calculated as 0.74.

Data Collection

Informed consent was obtained from the mothers who agreed to participate in the study and it took approximately 10 minutes for the mothers to answer the questions. Data were collected when they came for control in the hospital environment. Survey forms were given to the women. They read

and answered the questions themselves.

Ethical Consideration

Ethical approval was obtained from Ağrı İbrahim Çeçen University Scientific Research Ethics Committee for the conduct of the study (Date: 08.11.2022, and Approvel Number: 236). Permission numbered E-57212153 was received from the institution for the research. Within which the work was undertaken and that it conforms to the provisions of the Declaration of Helsinki (Gürgan, 2013). The purpose of the study was explained and written informed consent was obtained from the mothers included in the study before the survey.

Data Analysis

SPSS 25.0 program was used in the analysis of the research data. Descriptive statistics arithmetic mean, standard deviation, min-max and number values were used in the study. Compliance with normal distribution was examined with Kolmogrow-Smirnov and skewness kurtosis values. One-way Anova and post hoc (Scheffe, Games-Howel) tests were used for comparisons when the normally distributed data had more than two variables, and independent t test was used for two group comparisons. The results were evaluated at 95% confidence interval and significance was considered at $p < 0.05$.

RESULTS

The socio-demographic data of the mothers who participated in the study are given in Table 1. The mean age of the mothers who participated in the study was 27.61 ± 6.13 years and 35% of them were between the ages of 23-28 years, 45.1% of the participants lived in the city center. The income and expenditure status of 68.8% of the mothers was moderate. Of the mothers, 38.6% were high school graduates and 52.5% were employed, while 35.3% of the fathers werehigh school graduates and 93.5% were employed (Table 1).

Table 1. Sociodemographic Characteristics of Participants

Variables		X ± Sd	Min-Max
Age		27.6 ± 6.13	17-46
		n	**%**
Age	17-22 years old	81	24.0
	23-28 years old	118	35.0
	29-34 years	85	25.3
	35-40 years old	47	13.9
	41-46 years	6	1.8
Place of Residence	Village	64	19.0
	District	121	35.9
	Province	152	45.1
Income-Expense Status	Less than income-expenditure	64	19.0
	Income and expenditure equal	232	68.8
	Income more than expenditure	41	12.2
Education status	Primary School	44	13.1
	Middle School	79	23.4
	High School	130	38.6
	University	84	24.9
Spouse's Education Status	Primary School	34	10.1
	Middle School	76	22.6
	High School	119	35.3
	University	108	32.0
Employment Status	Yes	160	47.5
	No	177	52.5
Spouse's employment status	Yes	315	93.5
	No	22	6.5
Total		337	100.0

X: Mean, Sd: Standard Deviation

The total score of the Edinburgh Postnatal Depression Scale used in the study is shown in Table 2. The mean total score of the Edinburgh Postnatal Depression Scale was 11.51 ± 4.77 (min-max: 1-25) (Table 2).

Table 2. Edinburgh Postpartum Depression Scale (EPDS) Mean Score

EPDS	X ± SD	Min-Max
Edinburgh Postpartum Depression Scale Total Score	11.51 ± 4.77	1-25

X: Mean, SD: Standard Deviation

The findings related to the descriptive characteristics of the mothers who participated in the study and the comparison of scale mean scores are presented in Table 3. In the study, age groups (p<0.001), place of residence (p=0.013), income and expense status (p<0.001), educational status (p<0.001), spouse's education status (p<0.001) and mother's employment status (p=0.004). It was determined that there was a difference between) and scale score averages (p <0.05). It was found that there was no difference between the spouse's employment status (p=0.318) and family history of psychiatric disease (p=0.457) and the scale score averages (p>0.05) (Table 3).

Table 3. Comparison of Participants' Descriptive Characteristics and EPDS Scores

Variables		N	X ± Sd	Test Value	P Value
Age	17-22 years (a)	81	9.69 ± 4.63	7.439**	**0.000**
	23-28 years (b)	118	11.22 ± 4.74	- a<c, a, b<d	
	29-34 years (c)	85	12.15 ± 4.57		
	35-40 years (d)	47	14.02 ± 4.14		
	41-46 years (e)	6	13.33 ± 4.80		
Place of Residence	Village (a)	64	12.68 ± 5.78	4.386**	**0.013**
	District (b)	121	11.87 ± 4.71	-- a>c	
	Province (c)	152	10.73 ± 4.21		
Income-Expense Status	Income less expenditure (a)	64	14.54 ± 4.98	17.838**	**0.000**
	Income and expense equivalent(b)	232	10.89 ± 4.44	- a>b, c	
	Income more than expenditure(c)	41	10.29 ± 4.42		
Education Status	Primary School(a)	44	15.20 ± 4.41	12.468**	**0.000**
	Middle School(b)	79	11.79 ± 5.48	-- a>b, c, d	
	High School (c)	130	10.49 ± 4.40		
	University (d)	84	10.90 ± 3.78		
Spouse's Education Status	Primary School(a)	34	14.17 ± 5.44	10.425**	**0.000**
	Middle School(b)	76	13.17 ± 5.16	-- a>c,d	
	High School (c)	119	10.47 ± 4.43	b>c, d	
	University (d)	108	10.66 ± 3.98		
Employment Status	Yes	160	10.73 ± 4.21	t (335)=	**0.004**
	No	177	12.22 ± 5.13	-2.88*	
Spouse's Employment Status	Yes	315	11.44 ± 4.72	t(335)=	0.318
	No	22	12.50 ± 5.36	-1.000*	
Family History of Psychiatric İllness	Yes	39	12.05 ± 5.52	t(335)=0.744*	0.457
	No	298	11.44 ± 4.66		

*Independent Sample T Test, **One - Way ANOVA, Post Hoc Test: -Scheffe, --Games-Howel

The findings related to the comparison of the obstetric characteristics of the mothers participating in the study and the EPDS mean scores are presented in Table 4. In the study, it wasfound that there was a difference between planned pregnancy status (p=0.038), number of pregnancies (p=0.001), number of stillbirths/abortions (p=0.034), postpartum weight loss (p=0.030), violence during pregnancy (p<0.001) and presence of social support (p<0.001) and EPDS mean score (p<0.05), while there was a difference between normal or caesarean section types (p=0.05), normal or caesarean section types (p=0.330), voluntary abortion (p=0.189), voluntary curettage (p=0.05), induced abortion (p=0.189), induced curettage (p=0.420), weight gain during pregnancy (p=0.824), smoking during pregnancy (p=0.165), stress factors affecting life during pregnancy (p=0.768) and gestational week (p=0.246) (p>0.05) (Table 4).

Table 4. Comparison of Obstetric Characteristics and EPDS Scores of Participants

Variables		N	X ± Sd	Test Value	p Value
Birth Type	Vaginal	195	11.72 ± 5.02	t (335) = 0.975*	0.330
	Caesarean section	142	11.22 ± 4.40		
Planned pregnancy	Yes	253	11.11 ± 4.69	t (335) = - 2.695*	**0.008**
	No	84	12.73 ± 4.82		
Number of Pregnancy	First pregnancy (a)	81	11.24 ± 5.12	7.262**	**0.001**
	Pregnancy between 2 and 5 (b)	174	10.84 ± 4.84	-- a, b<c	
	More than 5 pregnancies (c)	82	13.20 ± 3.79		
Number of stillbirths/miscarriages	None (a)	243	11.24 ± 4.72	3.431**	**0.034**
	Between 1-2 (b)	57	11.42 ± 4.64	-c>a	
	3 and above (c)	37	13.43 ± 4.95		
Voluntary abortion	Yes	48	12.35 ± 5.17	t (335) = 1.315*	0.189
	No	289	11.37 ± 4.69		
Voluntary curettage	Yes	31	12.35 ± 6.12	t (335) = 0.816*	0.420
	No	306	11.43 ± 4.61		
Range of weight gainduring pregnancy	I have never gained weight(a)	33	11.45 ± 3.70	0.302**	0.824
	1-10 kg (b)	127	11.24 ± 4.77		
	11-20 kg (c)	149	11.78 ± 4.96		
	21-30 kg(d)	28	11.39 ± 4.99		
Postpartum weightloss range	I've never lost weight	152	12.17 ± 4.59	t (335) = 2.178*	**0.030**
	1-10 kg	195	11.03 ± 4.85		
Smoking during pregnancy	Yes	41	12.48 ± 4.45	t (335) = 1.393*	0.165
	No	296	11.38 ± 4.80		
Problems duringpregnancy	Eclampsia (a)	31	9.77 ± 3.70	2.325**	**0.043**
	Preeclampsia (b)	50	11.92 ± 5.09	- a<f	
	Nausea and vomiting (c)	53	11.26 ± 4.19		
	Gestational diabetes(d)	59	11.35 ± 4.65		
	Threat of miscarriage (e)	65	10.86 ± 4.55		
	No problem (f)	79	12.77 ± 5.31		
Stress factors affecting your life during pregnancy	Loss of Relatives	27	11.96 ± 5.90	0.380**	0.768
	Job change	22	11.72 ± 4.24		
	Change of home	46	12.04 ± 4.78		
	No stress factor	242	11.34 ± 4.69		
Violence during pregnancy	Yes	71	16.76 ± 3.15	t (335) = 14.705*	**0.000**
	No	266	10.11 ± 4.11		
Social support duringpregnancy	Adequate (a)	154	8.16 ± 3.63	131.99**	**0.000**
	Partially (b)	126	13.65 ± 3.58	- a>b, c b>c,	
	None (c)	57	15.84 ± 4.77		
Pregnancy week	36 weeks and under	82	12.04 ± 4.78	t (335) = 1.162	0.246
	37 weeks and over	255	11.34 ±4 .76		

*Independent Sample T Test, **One - Way ANOVA, Post Hoc Test: -Scheffe, --Games -Howel

The findings related to the postpartum, infant and breastfeeding characteristics and scale scores of the mothers who participated in the study are presented in Table 5. It was determined that there was a difference between the time to start work after birth (p=0.013), the time to hold the baby after birth (p<0.001), the complications developing in the baby and the mother (p<0.001) and the EPDS scale score averages (p<0.05). The mean EPDS was found to be higher in those who did not start working immediately after birth than in those who did not start working immediately. It was found that the mean EPDS scores of those who held the baby immediately after birth were lower than those who did not hold the baby immediately (at least 1 hour, maximum 8 days and above). The mean EPDS scores of mothers whose babies had any complications were found to be higher than those whose babies did not have any complications. It was also found that those whose mothers had any complications had higher mean EPDS scores than those who did not.

It was found that there was no difference between the baby's gender (p=0.775), the baby's weight (p=0.350) and the baby's complaint of gas pain (p=0.270) and the EPDS scale score averages (p>0.05) (Table 5).

Table 5. Comparison of Participants Postpartum, Infant and Breastfeeding Characteristics and EPDS Scores

Variables		N	X ± Sd	Test Value	P Value
Baby gender	Girl	152	11.43 ± 4.69	t (335) = -0.286	0.775
	Boy	185	11.58 ± 4.84		
Baby weight	2000g and below (a)	9	13.33 ± 5.87	1.054**	0.350
	2001gr-3000gr (b)	111	11.14 ± 5.31		
	3001g and above (c)	217	11.63 ± 4.41		
Complaint of gas-pain, colic in the baby	Yes	273	11.37 ± 4.89	t (335) = -1.105	0.270
	No	64	12.10 ± 4.16		
Time to start work after childbirth	Not started (a)	173	12.21 ± 5.14	4.414**	**0.013**
	Starting after 2-6 months (b)	74	11.20 ± 4.65	--a>c	
	Starting after 7 months (c)	90	10.43 ± 3.84		
Time to hold the baby after birth	Immediately (a)	203	10.28 ± 4.31	19.601**	**0.000**
	1 hour – 7 days (b)	54	12.87 ± 5.10	-- a>b, c>b, a	
	8 days or more (c)	80	13.73 ± 4.65		
Complications in Infant	Yes	90	15.68 ± 3.98	t (335) = 11.399*	**0.000**
	No	247	9.99 ± 4.08		
Maternal Complications	Yes	102	13.72 ± 4.75	t (335) = 5.872*	**0.000**
	No	235	10.55 ± 4.45		

*Independent Sample T Test, **One - Way ANOVA, Post Hoc Test: -Scheffe, --Games-Howel

DISCUSSION

This study was conducted in one of the most socio-economically backward and least educated provinces in the eastern region of Turkey. We aimed to determine the prevalence of PPD at the 6th postnatal week in one of the eastern provinces of our country with a low socio-economic level. Some of the most important reasons for conducting the study in this province are that the study was planned based on the statements of women who came for postpartum check-ups before the study was planned (usually having to work in various heavy jobs such as animal husbandry before and after birth, ignoring the psychological states of women, women's health services, difficulties in reaching). In the study, the patients who applied to the gynecology outpatient clinic for control at the sixth postpartum week were included in the study and their psychological status was evaluated.

In this study in which PPD levels were examined, it was determined that postpartum women were at high risk for PPD because their mean EPDS score was very close to the cut-off value, that is, 12/13. Erkal et al., (2016), conducted a study in Konya to examine the effect of postpartum depression on breastfeeding and found that the mean EPDS score was 8.77 ±5 .40 (Erkal et al., 2016). Servet at al., examined the postpartum depression and maternal attachment levels of mothers whose premature babies were hospitalized in the neonatal intensive care unit (NICU) and found the mean EPD score as 8.55±4.91 (Servet & Akgün, 2021). In addition, in their study comparing adolescent and adult mothers in Aydın province, found that the mean EPDS score was 11.14±4.7 in adult mothers

(Çınaklı & Arslantaş 2021). İn their study conducted to determine the prevalence of postpartum depression in Dhaka, Bangladesh within one year after delivery, found that the level of postpartum depression was 39.4% (Azad et al., 2019).

When the results of these studies are evaluated, it is thought that the differences encountered may be due to regional and cultural differences. When the results of our study are evaluated, it is seen that the mean EPDS score is high. We think that the reasons for this are various health problems experienced by the mothers during pregnancy (preeclampsia, eclampsia, gestational diabetes, threat of preterm labor, etc.), complications that occur in the mother and baby during delivery, spousal and mother-in-law violence, and the absence of someone to help and support the care of the baby after birth.

When we examine foreign sources, we encounter similar results. In a cohort study conducted on 214 people in China, the incidence of PPD six weeks after birth was found to be 24.3% (Ding et al., 2014). In another study conducted in Nepal (2021), it was found that postpartum depressive symptoms appeared in 33.7% of mothers, especially in low-income families, depressive symptoms were high and the likelihood of having PPD increased (Singh et al., 2021). When all these studies are evaluated, it is seen that the development and economic levels of countries and differences in sociocultural structure affect depression rates. It is thought that postpartum depression rates are high in developing or underdeveloped countries due to low welfare levels and it is reported that low socio-economic status poses a strong risk for postpartum depression in mothers (Bener et al., 2012; Fisher et al., 2012). In our study, similar to the literature, we found that postpartum risk was higher in women living in villages and those with low income. In families with low income, the family may be stressed and anxious due to reasons such as taking care of the baby and financial difficulties at home.

Studies have emphasized that there is a close relationship between the educational level of parents and postpartum depression. It has been emphasized that postpartum depression rates are higher in women with low education level (Bener et al., 2012; Fisher et al., 2012; Singh et al., 2021). In our study, similar to the literature, we found that the risk of postpartum depression was higher in women with low educational level. We think that this is due to the lower ability to cope with the problem as the educational level decreases. At the same time, as the level of education decreases, it may lead to an increase in early marriages. For this reason, both sociocultural and mental problems may occur.

Again, it is seen in the literature review that there is a relationship between the employment status of mothers and PPD. In studies, it has been emphasized that postpartum depression symptoms are less common in working mothers (Bener et al., 2012; Fisher et al., 2012; Singh et al., 2021). We think that the involvement of working women in social life, being economically independent and staying away from the stress at home improves women's mood and reduces the symptoms of depression. In our study, we obtained similar results to the literature. According to the results of our study, we found that the risk of PPD was low in working women. In our study, we found that the risk of PPD was higher in mothers with unplanned pregnancies. Studies conducted in Bangladesh and Malaysia have similar results to our study (Ahmad et al., 2018; Azad et al., 2019; Singh et al., 2021). We think that the reason for this is related to the fact that the health problems of unplanned pregnancies that may adversely affect maternal health may lead to psychological problems in the mother in the long term.

Azad R et al. (2019) evaluated the prevalence and risk factors for PPD one year after birth in a study conducted in Bangladesh and found that an increase in the number of pregnancies and a history of miscarriage/mortality were risk factors for PPD (Azad et al., 2019). According to the results of our study, we found that the risk of PPD increased as the number of pregnancies and the number of miscarriages/mortal births increased. We think that this is one of the reasons why the risk of PPD is so high in this province. Because the province where we conducted this study is one of the provinces with the highest fertility rate in Turkey.

In our study, while weight gain during pregnancy did not pose a risk for PPD, postpartum weight loss did. Contrary to our study; In the study conducted by Sucu et al., they reported that there is a relationship between weight gain during pregnancy and PPD and that PPD may occur if the weight gain during pregnancy exceeds 15 kg (Sucu et al., 2024). In a study conducted in Italy to determine the prevalence of postpartum depressive symptoms, they found that weight gain

of more than 16 kg during pregnancy increased the risk of PPD (Pamela at al. 2012). We obtained similar results in our study. Considering the importance that women attach to appearance and the efforts they make to stay slim and fit; we think that the thought that weight gain during pregnancy and after delivery may be permanent may cause stress and anxiety in mothers, which may lead to an increased risk of PPD.

In our study, we found no association between smoking during pregnancy and the risk of PPD. In the study conducted by Yook et al., it was reported that those who smoked before pregnancy had a higher risk of postpartum depression (Yook et al., 2022). The reason for the different results with our study may be that it was evaluated before pregnancy and smoking during pregnancy was not evaluated in terms of PPD risk. On the other hand, we found that there was a relationship between PPD risk and pregnancy- related complications (bleeding, hypertension, pre-eclampsia, pre-eclampsia, diabetes, growth retardation...). Similar to our study, both studies reported that diseases such as preeclampsia and diabetes during pregnancy are associated with PPD and that the risk of PPD increases in these patients (Chen et al., 2019; Fischer & Morales 2023). We think that this situation may increase the risk of PPD due to fear and stress in mothers due to pregnancy complications and fear of not being able to hold their baby.

Studies have shown that there is a direct relationship between violence during pregnancy and PPD. There are many studies on this both in literature and in our country (Beydoun et al., 2012; Kabir et al., 2014; Islam et al., 2017). In the study conducted by Taşpınar et al., they found that the rate of PPD increased as domestic violence increased during pregnancy (Taşpinar et al., 2021). There are study results reporting similar studies in the literature (Erkal et al., 2016; Azad et al., 2019). In our study, similar to the literature, we found a significant relationship between violence experienced during pregnancy and PPD level.

When the results of our study are examined, it is seen that the PPD level increases significantly in women who are deprived of social support during pregnancy. Cho et al. (2022) found that PPD rates were 4.63 times higher in women with low social support in their study comparing maternity women with low social support and maternity women with high social support (Cho et al., 2022). A Chinese study concluded that lack of postnatal

family support, especially spousal support, is an important risk factor for PPD (XIE et al., 2010). Literature suggests that postpartum women need higher levels of social support to prevent PPD (XIE et al., 2010; Azad et al., 2019; Cho et al., 2022).

According to the results of our study, there was no significant correlation between PPD level and gestational week, sex of the baby, weight of the baby, complaints of gas pains in the baby, but there was a significant correlation between PPD level and time of starting work after delivery, time of holding the baby, complications in the baby and mother. In contrast to our study, Hewitt B et al. (2017) reported that the rate of postpartum depression was higher in mothers who started working immediately after delivery compared to non-working mothers (Hewitt et al., 2017). The reason for this may be that the stress of starting work early and the stress of caring for her child caused the mother's psychological health to be negatively affected.

In our study, we found that mothers who held their babies immediately after delivery had lower levels of EPISQ. In our study, we found that the time mothers held their babies immediately after delivery affected the EPISQ score and the EPISQ score increased as the time mothers held their babies increased. In addition, in our study, we found a higher risk of PPD in the parents of infants who developed complications in the infant and were hospitalized in the Neonatal Intensive Care Unit (NICU). Similar results were obtained in the study conducted (Servet & Akgün 2021). In the study, maternal attachment increased in mothers who held their babies immediately, while the EPBI score decreased because there was a negative relationship with the EPBI score. Similar to our study, they found that as the time for mothers to hold their babies increased, the EPISQ score increased. In previous studies, it has been concluded that mothers of infants hospitalized in the NICU are more susceptible to PPD because they experience more stress and helplessness than those who are not hospitalized and experience uncertainty about how to interact with their newborns during their NICU stay (Çınaklı & Arslantaş, 2021; Servet & Akgün 2021).

In our study, we found higher EPDS scores in mothers who experienced complications during pregnancy and childbirth. Demir et al. (2016) found a higher risk of postpartum depression in mothers with any chronic disease compared to

healthy mothers in their study (Demir et al., 2016). Similarly, found that women who had the disease during pregnancy had a higher PPD rate than women who did not (Do et al., 2018). The reasons why chronic diseases (gestational diabetes, chronic hypertension, preeclampsia, thyroid diseases...) increase PPD are not clear, but it is thought that complications during pregnancy and birth may increase the effect of PPD by creating emotional reasons.

We found that these women have a high risk of PPD. Rural women have a high risk of PPD due to various reasons such as having to work in heavy jobs, being exposed to domestic violence, and ignoring health problems. With this study, we think that women living in rural areas should be supported during the maternity period. We can determine the physical and emotional well-being of women after birth and help them cope with their problems.

Limitations

First, the nature of a cross-sectional study has its limitations. The second is that only a survey form is used to measure PPD and the measurement of PPD is limited to the answers given by women. Further studies are needed to produce more robust and generalizable findings, such as screening for PPD, preventing its development, or informing the public.

CONCLUSION

In conclusion, screening and treatment are critical given the negative effects of postpartum depression (PPD) on mother and child.

Today, PPD has become a major health problem worldwide. Therefore, we think that mental health services of mothers should be screened in the first month after birth and regular screening programs should be established. In addition, health professionals should be educated about the risk factors related to PPD as part of the education component, aiming to prevent PPD.

We also think that social support for postpartum women is very important in the prevention of PPD and that mothers should receive high levels of social support from family, friends and other important people with the help of health professionals to improve their health. The support of the family and the health system is very important for the mental health of young mothers.

We recommend combined mental health care with maternal care services in the postpartum period.

Maternal health care providers should be aware of psychological issues and receive appropriate guidance when providing care to laboring women. The result from our study can serve as evidence that can be used to guide future studies and health policies. Raising awareness about the importance of PPD screening may help prevent or identify and treat PPD.

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