The Prevalence of Postpartum Depression and the Correlation of Perceived Social Support and Quality of Life with Postpartum Depression: A Longitudinal Study

Selda Yörük, PhD*; Ayla Açıkgöz, PhD†; Hülya Türkmen; PhD*; Tunay Karlıdere, MD‡

Objective: Postpartum depression (PPD) has negative effects on the mothers who experience it. The aims of the study described herein were to determine the prevalence of PPD and to determine the correlations between PPD and perceived social support, quality of life, and the risk factors for PPD.

Methods: Data were collected using a questionnaire prepared by the researchers and that included the Edinburgh Postnatal Depression Scale, the Beck Depression Scale, the Quality of Life scale, the Multidimensional Scale of Perceived Social Support, and questions regarding the sociodemographic characteristics and PPD risk factors of the mother.

Results: The prevalences of PPD were found to be 3.9% in the 4th week postpartum and 5.9% in the 6th week postpartum. Being a primary school (and no higher) graduate, being stressed in daily life, experiencing health problems during the delivery and the postpartum period, and not thinking of oneself as a good mother were all determined to be risk factors for PPD. Although the mean score for social support was higher in women with low PPD risks, this difference was not significant. According to a linear regression model, PPD negatively affected the social and psychological qualities of life of the mothers in the 4th week postpartum.

Conclusion: Along with a trend suggesting a correlation between high social support and low PPD risk in women, a correlation between low PPD risk and high quality of life was also found. [P R Health Sci J 2020;39:327-335]

Key words: Postpartum depression, Quality of life, Social support

he prevalence of depression in women in developing countries varies from 15% to 50% (1,2). For those who are parous or pregnant, the physiological, psychological, and social changes associated with their pregnancies or deliveries are usually manageable; some others, however, are prone to developing mild to severe mental illness (3). Postpartum depression (PPD) is a mental disorder that can have serious consequences for both the mother and the child (1,2,4–6). Untreated PPD can result in the occurrence of cognitive, behavioral, social, or psychological (or any combination of 2 or more of the previous) problems in the child (1,2,5,7).

In different countries, the prevalence of depression in PPD studies varies from 5.8% to 24.0%, depending on the measurement tools used in the study, the diagnostic criteria, and the week in which the postpartum measurement is performed (8–15). The PPD studies conducted in Turkey, in which studies the Edinburgh Postnatal Depression Scale (EPDS) was used, differed: Some were conducted in pregnant women, and some were conducted in parous women in different postpartum weeks (16–18). In the studies conducted in Turkey, the prevalence of PPD varied from 12.5% to 40.9% (5,17,19–29).

PPD can negatively affect the social life of the mother as well as her marital relationship, self-confidence in child care, and relationships with other children and individuals. In women with PPD, the symptoms can generally be seen within the first 12 weeks postpartum. If mothers with PPD are not treated, their depression may last for up to 1 year after they give birth (3). When PPD arises in a new mother, not only might the child or mother (or both) be affected but so might family members. Difficulties in the emotional relationship of the mother and child, in the mother's learning to care for her infant, and with the parental role are among the possible manifestations of PPD (5,6,8). Being of low socioeconomic status, being single, having

^{*}Balikesir University, School of Health, Department of Midwifery, Cagis Campus, Balikesir, Turkey; †Vocational School of Health Services, Dokuz Eylul University, Izmir, Turkey; †Faculty of Medicine, Balikesir University, Balikesir, Turkey

The authors have no conflict of interest to disclose.

Address correspondence to: Selda Yörük, PhD, Balıkesir University, School of Health, Department of Midwifery, Cagis Campus, Balıkesir, Turkey. Email: syoruk@balikesir.edu.tr

had an unplanned or undesired (or both) pregnancy, having a poor marital relationship, having low social support, the unstable mood of the mother, having low self-confidence, suffering from general stress, suffering from, childcare-related stress, and having had a high level of anxiety in the prenatal period can cause (or worsen existing) PPD in the mother (1,2,6,30).

Sometimes the particular social or physical (or both) problems of a postpartum mother make diagnosing PPD a challenge (4,30,31). Patients with PPD usually do not present at a psychiatry clinic. For this reason, primary care personnel have an important role in the diagnosis of PPD. Family physicians and family midwives and nurses are the health professionals who are most frequently visited by mothers in the postpartum period. Even if a mother does not go for herself, she usually visits the family physician 5 or 6 times a year to have her child vaccinated. The diagnosis and screening of the mother is important for community health and protection, as the mother is observed, questioned, and referred to a specialist when certain signs are recognized (4,7,10). According to the Postpartum Care Management Guide of the General Directorate of Mother and Child Care and Family Planning of the Ministry of Health in Turkey, the psychological state of the mother should be assessed in the 6th week postpartum. The guide states that in cases in which a mother has a known history of psychological disease, the mother should be referred to the relevant department, as there might be a possibility of a psychotic disorder (schizophrenia, bipolar disorder), psychotic depression, or suicide; in such cases, the EPDS should be used to measure risk (32). Paying attention to perinatal psychotic disorders in primary care settings and applying various screening and depression risk assessment tests, such as the EPDS, provides opportunities for the early treatment of depressed mothers (4,5,10).

Social support includes all kinds of material and moral support provided by the social circle of the individual. Social support in the postpartum period includes support for infant care and responsibility, support for domestic affairs, and the social and emotional support of the mother by her circle, including her husband, family, and friends (1,2,7,24). In studies on this topic, it has been observed that social support decreases the incidence of PPD by increasing maternal self-confidence (1,2,21,23,24).

PPD negatively affects the quality of life of the mother (7). Although there have been numerous studies in Turkey focusing on PPD and its risk factors (5,13,15–17,19–25,29), there are a limited number of studies examining the effect of PPD on quality of life (5). In this study, we aimed to determine the prevalence of PPD and to determine the correlations between PPD and perceived social support, quality of life, and risk factors.

Materials and Methods

In this prospective study, the 317 women who visited the obstetrics clinic of Balıkesir Atatürk State Hospital in the 3rd trimester of their pregnancies constitute the cohort group. A total of 4500 pregnant women were attended at the hospital in

2014 and were identified as the sample population. The smallest sample size for the study was calculated using the program OpenEpi, version 3 (33). In Turkey, in the study by Durukan et al. (5), the frequency of depression in women who did not have social support (spousal support) during pregnancy was 24.8%. Thus, the smallest sample size was determined to be 182 people at the level of 95% power and 95% confidence. In the 1-year period during which the study was conducted, 355 women who were at 38 weeks of gestation agreed to participate. Seventeen women with Beck depression scores above the cutoff point were excluded from the study. Nineteen pregnant women who were in the postpartum period and whose data were missing, 1 woman who had had a stillbirth, and 1 woman whose infant had died were excluded from the study. Thus, 317 women participated in the study.

Inclusion and Exclusion criteria

The study included pregnant women who were at 38 weeks of gestation and who could communicate properly, had volunteered to participate in the study, were literate, who had participated in the antenatal assessment, and who had agreed to take part in 4 follow-up assessments. Pregnant women who did not want to participate in the study; who had a Beck Depression Scale (BDS), Turkish version, score above 17; and who had experienced a stillbirth or an infant death or who suffered from mental retardation, a psychotic illness, or an organic illness were excluded from the study.

Data collection tools

Data were collected using a questionnaire intended to determine the sociodemographic characteristics of the mother and the infant and of the risk factors for PPD, the EPDS, the Multidimensional Scale of Perceived Social Support (MSPSS), the WHO-derived quality of life scale known as the WHOQOL-BREF, and the BDS. The women were evaluated 4 times: in the 38th week of gestation and in the 2nd, 4th, and 6th weeks postpartum. The data were collected using face-to-face interviews (Table 1).

Questionnaire

This questionnaire was developed by the researchers, based on the literature. The questionnaire elicited the sociodemographic characteristics of the mother and infant, information about the pregnancy and birth and any problems encountered by the mother, the mother's history of psychiatric disease (if present), the mother's perceptions and behaviors regarding infant care, and questions regarding antenatal and postnatal care services.

EPDS

This scale, developed by Cox and Holden, is used to measure the risk of depression and to measure its levels and the changes (when present) in its intensity during the postpartum period. It is a 4-point Likert-type self-assessment scale consisting of 10 items. The EPDS is not a diagnostic scale, but is used for

screening purposes (34). The cut-off point of the scale is 12 to 13 (35). The scale was translated into Turkish, and the validity and reliability tests were conducted by Engindeniz et al., and the Cronbach's alpha coefficient of the scale was found to be .79 (35). In the study, the cut-off point was considered to be 13, with women scoring 13 points or more being considered at risk of PPD.

MSPSS

This scale was developed by Zimmet et al. It subjectively assesses the adequacy of social support, that support coming from 3 different sources (36). This scale consists of 12 items divided into 3 subscales: support from family, support from friends, and support from a significant other. Each subscale has 4 items. Each item is rated using a 7-point Likert-type scale. A high score indicates that the perceived social support is high (36,37,38). Eker et al. translated the scale into Turkish and conducted validity and reliability tests on it. The Cronbach's α coefficient

of the MSPSS sub-scales ranged from .80 to .95 (37,38). WHOQOL-BREF. This scale developed by the WHO enables intercultural comparisons that assess an individual's well-being and quality of life (39). The scale was translated into Turkish (WHOQOL-BREF-TR), and a validity and reliability study was conducted by Eser et al. The Cronbach's α coefficient of the 4 dimensions, namely, physical health, psychological health, social relationships, and environmental health, were .83, .66, .53, and .73, respectively. The original version of the scale consists of 26 items, and the Turkish version consists of 27 items (40). The WHOQOL-BREF scale includes 2 general questions that measure the general perceived quality of life and perceived health status and 4 subscale scores. Scores for the physical health subscale, psychological health subscale, social relations subscale, and environmental subscale are evaluated. Responses to the questions include close-ended answers in a 5-point Likert scale. The higher the scale score obtained, the better the quality of life (39,40).

BDS

This self-reporting tool was developed by Beck et al. and is the most widely used depression-measurement tool, worldwide (41). It was developed to measure the risk of depression, the level of depressive symptoms, and the change in intensity of depression in adults. A high total score indicates a high level of depression (41). The BDS was translated into Turkish by Hisli, and the reliability coefficient of that Turkish version was reported to be .74 (42). In the Turkish validity and reliability

Table 1. Data collection tools in the research, according to the week of follow-up and Cronbach's α coefficient value

The research according to the week of follow-up	Data collection tools	Cronbach's α coefficient			
38th week of gestation	Beck Depression Scale	.72			
2nd week postpartum	Questionnaire	-			
	Multidimensional Scale of Perceived Social Support	Family support: .85 Friend support: .91 Significant-other support: .69			
4th week postpartum	Multidimensional Scale of Perceived Social Support	Family support: .89 Friend support: .92 Significant-other support: .89			
	Edinburgh Postnatal Depression Scale Quality of Life Scale	.77 Physical health: .81 Psychological health: .74 Social relationships: .86 Environmental health: .89			
6th week postpartum	Multidimensional Scale of Perceived Social Support	Family: .90 Friends: .92 Significant-other: .87			
	Edinburgh Postnatal Depression Scale	.75			
	Quality of Life Scale	Physical health: .78 Psychological health: .88 Social relationships: .85 Environmental health: .91			

study of the BDS, the cut-off point was determined to be 17, as scores of 17 or more identify depression requiring treatment with an accuracy of 90% or more (42).

Data collection

The data were collected by the researchers from pregnant women who came to the antenatal clinic for their routine follow-ups. The participants were taken to the interview room, and the purpose of the study was explained to them by the researchers. Participants were informed that they were free to participate in the research and that their names and data would be kept confidential within the scope of that research. Pregnant women who agreed to participate in the study signed the informed consent form. While the participants were under observation, the questionnaires were filled out and—together with the researchers' remarks about the process—collected, each questionnaire took approximately 10 minutes to complete. Additional data were collected in follow-up phone calls in the 2nd, 4th, and 6th weeks after birth. Nineteen participants could not be contacted by phone (3 tries); their uncollected responses were categorized as missing data.

Statistical analysis

Statistical analysis was performed using the SPSS 20.0 statistical package program. The correlations between PPD and the risk factors were assessed using the chi-square and Fisher's exact tests, and the correlation between the MSPSS and the WHOQOL-BREF-TR subscale scores was assessed using

Mann–Whitney U tests. The correlations between the EPDS score and the WHOQOL-BREF-TR and MSPSS subscales were determined using Pearson's correlation analysis. A p-level of less than 0.05 was considered statistically significant.

Ethics

Approval to conduct the study was received from the Balıkesir University Faculty of Medicine Clinical Trials Ethics Committee (reference number: 2015-07). After the approval of the Ethics Committee was received, official permission were obtained from the institution where the study was conducted.

Results

A total of 317 women participated in the study. The average age of the women was 28.27 (± 5.22) years; 78.5% were housewives and 42.3% were primary school (and no higher) graduates. When obstetric characteristics were assessed, 55% stated that they had had a vaginal delivery, 47% were nulliparous prior to their current pregnancy and birth, and 3.2% had had health-related problems during the delivery, the postpartum period, or both. In addition, 2.2% had been exposed to physical, emotional, or sexual (or a combination of any 2 or all 3) violence from their husbands (Table 2).

PPD prevalence in the 4th and 6th weeks postpartum

Antenatal-depression prevalence was found to be 5.4% (95% CI: 3.2–7.6). The prevalence of PPD was found to be 5.9% (95% CI: 3.3–8.5) in the 4th week and 3.9% (95% CI: 2.0–6.2) in the 6th week postpartum. Of the women whose score on the EPDS was 13 or more in the 4th week, 88.8% had a score under 13 by the 6th week. The percentage of women who were not determined to be at risk of PPD in the 4th week but were at risk in the 6th week was 83.3%. There was no significant difference in the PPD risk mean scores between the 4th week (mean±SD: 5.34±3.82) and 6th week (mean±SD: 5.36±3.27; p>0.05; data not shown).

There was a significant correlation between EPDS and the perception of stress in daily life at the end of the 4th week postpartum (p<0.002). In the 6th week postpartum, the women who had primary school educations, only; had experienced health problems during the birth, the postpartum period, or both; and had low self-perceived levels of parental competency had significantly higher PPD risks (p<0.05). No significant relationships were found between PPD and the gender of the infant, the delivery method, the number of deliveries, the method of infant feeding, or having a history of psychiatric disease (Table 3). Together with the variables given in Table 3, correlations between monthly salary; marital satisfaction; husband-inflicted violence (if applicable); the self-perception of familial relationships; the pregnancy's having been planned (or not); the mother's having received qualified antenatal care; the mother's having a history of chronic or acute disease; the length of time between deliveries (for multiparous women);

Table 2. Characteristics of study participants (n = 317)

Variable	n	%
Age (Mean±SD): 28.27±5.22		
Level of education		
Elementary/Primary	134	42.3
High school/Secondary	111	35.0
College/University	72	22.7
Gender of the baby		
Female	150	47.3
Male	167	52.7
Type of delivery		
Vaginal	176	55.5
Caesarean section	141	45.5
Number of deliveries		
Primaparous	149	47.0
Multiparous	168	53.0
Infant feeding method		
Breastfeeding	274	86.4
Breastfeeding supplemented with formula	43	13.6
Family history of psychiatric disease		
Yes	7	2.2
No	310	97.8
Experienced health problems during		
the birth and the postpartum period		
Yes	10	3.2
No	307	96.8
Perceived to be stressed in daily life		
Yes	93	29.3
No	224	70.7
Had mental problems during previous		
deliveries (when applicable)		
Yes	16	5.0
No	301	95.0
Had health problems during current delivery		
Yes	10	3.2
No	307	96.8
Exposed to physical/emotional/sexual/		
combination violence (husband)		
Yes	7	2.2
No	310	97.8

the presence of adequate infant care; the mother's receiving or having received psychiatric treatment; the mother's having had mental problems during previous deliveries; and whether the infant had any health problems were also considered. However, there were no significant correlations between these variables and PPD risk.

When the correlations between the EPDS score and the subscale scores of quality of life were assessed, a negative, low, and significant correlation was found between the social quality of life (r=-0.16; p=0.003) and psychological quality of life (r=-0.13; p=0.017) subscales in the 4th week postpartum. No significant correlation was found between MSPSS and the PPD risk, as measured in the 4th week postpartum. A negative, low, and significant correlation was found for the friend subscale of MSPSS and PPD in the 6th week postpartum (r=-0.15; p=0.006; data not shown).

Despite the low level of perceived social support in the group at risk for PPD, this difference was not significant (Table 4). The mean score of perceived quality of life in the group at risk

Table 3. The relationships between the risk factors and prenatal depression (EPDS) score

Variable	PF	D at 4th V	Veek					PPD at 6th Week						
	≤12		13≥				≤12 13≥		13≥					
	n	%	n	%	р	OR	95%	n	%	n	%	р	OR	95%
Level of education														
Elementary/Primary High school/Secondary	123	91.8	11	8.2	0.137	2.18	0.87-5.48	125	93.3	9	6.7	0.033	4.09	1.13-14.84
and college/University Gender of the baby	176	96.2	7	3.8				180	98.4	3	1.6			
Male	157	94.0	10	6.0	0.81	0.88	0.34-2.30	160	95.8	7	4.2	0.774	1.25	0.40-3.87
Female	142	94.7	8	5.3				145	96.7	5	3.3			
Type of delivery														
Vaginal	165	93.8	11	6.2	0.62	0.78	0.29-2.07	171	97.2	5	2.8	0.32	1.78	0.55-5.75
Caesarean section	134	95.0	7	5.0				134	95.0	7	5.0			
Number of deliveries														
Primaparous	159	95.8	7	4.2	0.23	1.78	0.67-4.72	161	97.0	5	3.0	0.44	1.56	0.48-5.04
Multiparous	140	92.7	11	7.3				144	95.4	7	4.6			
Infant feeding method														
Breastfeeding Breastfeeding supplemented with	256	93.4	18	6.6	0.147	0.93	0.90-1.00	263	96.0	11	4.0	0.59	0.56	0.72-4.52
formula	43	100.0	0	0.0				42	97.7	1	2.3			
History of psychiatric disease										_				
Yes	8	80.0	2	20.0	0.10	4.54	0.89-23.1	9	10.0	1	10.0	0.29	2.99	0.34-25.71
No	291	94.8	8	80.0				296	96.4	11	3.6			
Perceives herself to be stressed in daily life														
Yes	82	88.2	11	11.8				87	93.5	6	6.5			
No	217	96.9	7	3.1	0.002	4.15	1.55-11.09	218	97.3	6	2.7	0.10	2.50	0.78-7.98
Experienced health														
problem during birth and														
in the postpartum period														
Yes	285	94.4	17	5.6	0.38	2.39*	0.27-20.59	6	75.0	2	25.0	0.034*	9.73	1.74-54.35
No	7	87.5	1	12.5				292	96.7	10	3.3			
Thinks of herself as a good mother														
Yes	281	94.3	17	5.7	0.34	0.36	0.04-3.18	288	96.6	10	3.4	0.027*	0.08	0.015-0.503
No	6	85.7	1	14.3				5	71.4	2	28.6			

^{*}Fisher's exact test

for PPD was observed to be lower, in general. However, no significant difference was found between the WHOQOL-BREF-TR quality of life mean score and the PPD score (Table 5).

When the distribution of MSPSS subscale scores was examined across the 2nd, 4th, and 6th weeks postpartum, the MSPSS family subscale mean score was higher than those of the other subscales (25.68 in the 2nd week,

24.78 in the 4th week, and 24.81 in the 6th week; Figure 1).

Discussion

In the world, 13% of women suffer from a psychiatric disorder, especially depression, during the postpartum period. The incidence of depression in the postpartum period is 20% higher in developing countries (43). The incidences

of PPD in this study were found to be 3.9% and 5.9%, respectively, via 2 separate evaluations made in postpartum weeks 4 and 6. In this study, the prevalence of PPD was low compared to those described in the WHO data and found by other studies conducted in Turkey (5,43,44). In the study of Ogbo et al., the PPD prevalence in postpartum week 6 was

Table 4. The relationship between perceived social support (MSPSS) and prenatal depression (EPDS).

	Risk of PPD a	t 4th Week		Risk of PPD a		
Variable	<12	13≥		<12	13≥	
	Mean (SD)	Mean (SD)	p*	Mean (SD)	Mean (SD)	p *
Family support Friend support Significant other Total	24.87 (3.79) 21.91 (5.36) 20.82 (6.76) 67.60 (13.33)	23.22 (4.78) 20.05 (6.22) 20.33 (6.87) 63.61 (15.02)	0.05 0.18 0.77 0.26	24.89 (4.63) 22.14 (5.30) 21.98 (5.29) 69.09 (12.83)	22.58 (7.69) 20.63 (8.33) 21.08 (5.69) 64.63 (20.34)	0.91 0.94 0.50 0.78

^{*}Mann-Whitney U test

Table 5. The relationship between quality of life (WHOQOL-BREF) and prenatal depression (EPDS).

	Risk of PPD	at 4th Week		Risk of PPD a		
Variable	<12	13≥		<12	13≥	
	Mean (SD)	Mean (SD)	р*	Mean (SD)	Mean (SD)	p*
General health Physical health Social relationships Environmental Psychological health	7.81 (1.10) 22.08 (2.68) 11.41 (1.69) 30.52 (3.77) 22.10 (3.04)	7.88 (1.10) 20.83 (2.59) 10.88 (1.84) 29.94 (4.03) 21.55 (2.70)	0.77 0.10 0.38 0.76 0.63	7.83 (1.26) 22.62 (3.15) 11.75 (1.45) 30.91 (3.47) 23.21 (2.14)	7.83 (1.11) 22.66 (2.96) 11.50 (1.88) 30.91 (5.05) 22.16 (3.40)	0.98 0.90 0.75 0.63 0.23

^{*}Mann-Whitney U test

found to be 3.3% (45). The variances in the PPD incidences specified in the literature are caused by the study design being used, the time of the assessment (i.e., performed in different postpartum periods), the sample volume and population differences, the unwillingness of some mothers to admit to experiencing depressive symptoms to healthcare providers, and the differences in the measurement of depressive symptoms. The "baby blues," often seen in the first week, postpartum, can be confused with PPD and may lead to misleading results; the EPDS was given in the 4th postpartum week. The difference between the PPD incidence result of this study and the results of other studies conducted in Turkey may be caused by the inclusion by the other studies of the first 2 postpartum weeks (5,45,46).

Adequate spousal and family support is reported to be protective against maternal depression (45). In the present study, a high mean score in perceived social support from the family was thought to correlate with low prevalence. In the postpartum depression meta-analysis study of Karaçam et al., the lowest PPD incidence was found to be in the Marmara Region, which includes the province of Balıkesir. Population variability may be another reason for the low prevalence (44). It has been reported in the literature that a low level of social

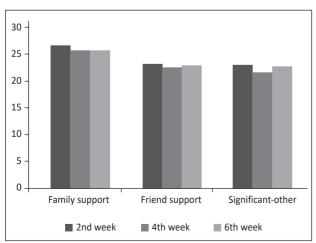


Figure 1. Distribution of Multidimensional Scale of Perceived Social Support (MSPSS) subscale mean score, according to postpartum weeks.

support during pregnancy increases the risk of antenatal depression and that a low level of social support is a PPD risk factor (5,43,46–51). There is a positive effect on the physical and psychological health of a woman when she has a social support system during her pregnancy, delivery, and postpartum period, which system deals with, supports, understands, appreciates, and trusts her. Social support protects the woman against and aids her in dealing with stress arising from, for example, her role as a mother or attending postpartum visits

(49). In this study, it was found that the social-support mean score was higher in women with low PPD risk. Even though the social-support mean score in the second week was quite low compared with that of other weeks, the social-support mean scores in the 4th and 6th weeks did not change. In general, it was seen that the perceived social support in women after delivery is high and constant. High perceived social support is thought to have a positive effect on psychological health and reduces stress such as that associated with delivery, infant care, and postpartum follow-up visits. The high perceived social-support mean scores in this study are an important finding that supports the literature.

Quality of life (physical, social, and psychological) in women is highly related to perinatal health (5). In this study, when the correlation between quality of life and PPD was examined, the social health score, physical health score, psychological health score, and environmental quality of life quality score all decreased as the mean EPDS score increased in postpartum week 4. When evaluated using a the linear regression model, PPD was determined to affect the social and psychological quality of life of the mothers in a negative way. In postpartum week 6, the score of the social health subscale and score of the psychological health subscale were low in women with high depression risk. In women with high PPD risk, no significant correlation was found in quality of life compared to in women with low PPD risk. It has been found that the quality of life of mothers suffering from PPD is significantly lower (5,50). Despite the severity of the symptoms of depression that a given individual might have, social support may serve as a protective buffer between that individual and stress, thus improving his or her perception of his or her quality of life (53). According to the findings of this study, it is thought that a high social-support score may have a correlation with a better quality of life. A given mother's being a primary school (and no higher) graduate, perceiving herself to be stressed in daily life, experiencing health problems during delivery and in the postpartum period, and not thinking herself to be a good parent were determined, in the present study, to be PPD risk factors.

Similar to what has been described in the literature, depression was found to be high in women with low educational levels. High educational levels were a protective factor, in terms

of PPD (5,48,50,51). In this study, the mothers themselves increased their PPD risk by allowing themselves to regularly experience "stressful perceptions in daily life." Having a history of traumatic delivery, experiencing stressful life events during pregnancy and the early postpartum period, having problems with breastfeeding, and suffering reproductive health and general health problems are risk factors for PPD (5,44-51). Experiencing health problems during the delivery and the postpartum period tends to increase PPD risk; that is, it is thought that health problems experienced during the delivery and postpartum period negatively affect the mother's adaptation, infant care, and breastfeeding, as well as increasing the risk of depression. Mothers with a high risk of PPD are more concerned about the health or eating habits of the infant and may see themselves as "bad," "inadequate," or "unloving" mothers (54). In this study, supporting this opinion, PPD risk is found to be high in women who perceive themselves to be bad mothers.

In this study, no significant correlations were found between PPD risk and maternal age, parity, type of delivery, breastfeeding status of the infant, psychiatric disease history, or the gender of the infant. While some studies have reported there to be no significant correlations between these variables and PPD risk, others have reported the contrary (2,43,48,49,52–54).

In our study (which took place in Turkey), a maternal mental health assessment was performed on each participant during 4 follow-up evaluations, up to 6 weeks after she gave birth. Our study has demonstrated the importance of determining the mental health of women, the risk of PPD, and risk factors (for PPD) using appropriate screening tools in antenatal and postnatal monitoring. The routine use of the BDS and EPDS in routine services in the healthcare system has been demonstrated to protect and improve maternal mental health. The study contributes to the literature by describing the relationships between social support, quality of life, and PPD in Turkey. The findings of the study may contribute to the development of hypotheses for future studies. In addition, it is thought that research on maternal mental health services will contribute to the development and improvement of monitoring, evaluation, and strategy.

The most important limitation of this study is that the presence of depressive symptoms and their cause and effect relationship with quality of life cannot be exactly assessed because the data were collected using a self-report questionnaire. However, by collecting additional data over a series of 4 assessments and by using both the DPS and the EPDS at different times, we ensured that our study had a strong direction.

As a result, the prevalence of PPD in this study was found to be low. In general, it was observed that women with low PPDs had high social-support and quality of life scores. During the antenatal period, pregnant women should be monitored for PPD symptoms and the risk factors evaluated. An examination of the formal and informal social support system of the mother—and its strengthening, if necessary—would be a beneficial and protective approach, in terms of PPD.

Based on the findings of our study, recommendations were developed. According to our study, pregnant women with PPD risk factors (being no more than primary school graduates, regularly perceiving stress in their daily lives, having health problems in the postpartum period, and not thinking that they are good mothers) should be evaluated more carefully by their attending midwives and physicians during antenatal appointments and postpartum follow-up visits. It is important that healthcare professionals determine the risk of PPD with appropriate screening tools at every follow-up and refer high-risk women for further diagnosis and treatment. In women with high social support, social support systems should be strengthened before and during the postpartum period, as these individuals' risk of PPD is low. In antenatal monitoring, the spouse, friends, or family members should take part in the follow-up during or after the birth. They should be given training on PPD and their awareness raised. In health institutions, preparing and distributing brochures about PPD and social support would be useful for informing pregnant women and their families of the disorder. We recommend planning studies on training and developing consultancy services to increase the quality of life of pregnant women, thereby reducing their PPD risk.

Resumen

Objetivo: La depresión posparto (DPP) tiene efectos negativos en la madre. Este estudio tuvo como objetivos determinar la prevalencia de DPP y determinar la relación entre el apoyo social percibido, la calidad de vida y los factores de riesgo con la depresión posparto. Método: Los datos han sido recopilados a través de un cuestionario preparado por los investigadores sobre las características sociodemográficas de la madre y los factores de riesgo de DPP, la Escala de Depresión Postnatal de Edimburgo, la Escala de depresión de Beck, la Escala de Calidad de Vida y la Escala Multidimensional de Apoyo Social Percibido. Resultados: La frecuencia de DPP ha sido determinada como 3.9% en la cuarta semana de posparto y 5.9% en la sexta semana. Han sido determinados como factores de riesgo de DPP ser un graduado de la escuela primaria, percibir el estrés en la vida diaria, tener problemas de salud durante el parto y en el período posparto y no creer que sea una buena madre. Aunque el puntaje promedio de apoyo social es más alto en mujeres con riesgo bajo de DPP, esta diferencia observada no es significativa. De acuerdo con el modelo de regresión lineal; DPP en la cuarta semana afecta negativamente la calidad de vida en las áreas sociales y psicológicas de las madres. Conclusión: Ha sido observada una relación entre el alto apoyo social con el riesgo bajo de DPP y el riesgo bajo de DPP con la alta calidad de vida en las mujeres.

Acknowledgments

We are grateful to all the people who kindly agreed to participate in our survey.

References

- Surkan PJ, Kennedy CE, Hurley KM, Black MM. Maternal depression and early childhood growth in developing countries: systematic review and meta-analysis [published correction appears in Bull World Health Organ 2011;89:631]. Bull World Health Organ 2011;89:608-615. doi:10.2471/ BLT.11.088187
- Fisher J, Cabral de Mello M, Patel V, et al. Prevalence and determinants of common perinatal mental disorders in women in low- and lowermiddle-income countries: a systematic review. Bull World Health Organ 2012;90:139G-149G. doi:10.2471/BLT.11.091850
- Postpartum depression. National Institutes of Health. 2014. Accessed: September 13, 2014. Available at: Url: http://www.nlm.nih.gov/medlin-eplus/ency/article/007215.htm
- Erdem Ö, Erten Bucaktepe PG The prevalence and screening methods of postpartum depression. Article in Turkish. Dicle Med J 2012;39:458-461. doi: 10.5798/diclemedj.0921.2012.03.0182
- Durukan E, İlhan MN, Aycan S, Bumin MA. Postpartum depression frequency and quality of life among a group of mothers having a child aged 2 weeks-18 months. Article in Turkish. Balkan Med J 2011;28:385-393. doi: 10.5174/tutfd.2010.04117.3
- Erdeve Ö, Atasay B, Arsan S. Türmen T. Effects of the hospitalization experience in the neonatal intensive care unit on the family and premature infant. Article in Turkish. J Child Health Dis 2008;51:104-109. Available at: Url: http://www.cshd.org.tr/uploads/pdf_CSH_297.pdf. Published April 2008. Accessed March 2017.]
- American Psychiatric Association. Postpartum depression. 2014. Available at: Url: https://www.apa.org/pi/women/resources/reports/postpartum-depression. Published 2008. Accessed: September, 2014.
- Mollard EK. A qualitative meta-synthesis and theory of postpartum depression. Issues Ment Health Nurs 2014;35:656-663. doi:10.3109/0161 2840.2014.893044
- Alvarado-Esquivel C, Sifuentes-Alvarez A, Salas-Martinez C. Validation of the Edinburgh postpartum depression scale in a population of adult pregnant women in Mexico. J Clin Med Res 2014;6:374-378. doi:10.14740/ jocmr1883w
- Armstrong S, Small R. Screening for postnatal depression: not a simple task. Aust N Z J Public Health 2007;31:57-61.
- Katon W, Russo J, Gavin A. Predictors of postpartum depression. J Womens Health (Larchmt) 2014;23:753-759. doi:10.1089/jwh.2014.4824
- Kim TH, Connolly JA, Tamim H. The effect of social support around pregnancy on postpartum depression among Canadian teen mothers and adult mothers in the maternity experiences survey. BMC Pregnancy Childbirth 2014;14:162. Published 2014 May 7. doi:10.1186/1471-2393-14-162
- Kubota C, Okada T, Aleksic B, et al. Factor structure of the Japanese version of the Edinburgh Postnatal Depression Scale in the postpartum period. PLoS One 2014;9:e103941. Published 2014 Aug 4. doi:10.1371/journal.pone.0103941
- Borra C, Iacovou M, Sevilla A. New evidence on breastfeeding and postpartum depression: the importance of understanding women's intentions. Matern Child Health J 2015;19:897-907. doi:10.1007/s10995-014-1591-z
- Tsao Y, Creedy DK, Gamble J. Prevalence and psychological correlates of postnatal depression in rural Taiwanese women. Health Care Women Int 2015;36:457-474. doi:10.1080/07399332.2014.946510
- Bingöl TY, Tel H. Perceived Social Support, Postpartum Depression and the Affecting Factors in Women in the Postpartum Period. Article in Turkish. J Anatol Nurs Heal Sci 2007;10:1-6.
- Ayvaz S, Hocaoğlu Ç, Tiryaki A, Ak İ. The incidence of postpartum depression in Trabzon province and the risk factors during gestation. Turk Psikiyatri Derg 2006;17:1-8.
- Ocaktan ME, Çalışkan D, Öncü B, Özdemir O, Köse K. Antepartum and postpartum depression in a primary health care center area. J Ankara Univ Facul Med 2006;59:151-157.
- Arslantaş H, Ergin F, Balkaya N A. Postpartum depression prevalence and related risk factors in Aydın province. Article in Turkish. J Adnan Menderes Univ Facul Med 2009;10:13-22.

- Battaloğlu B, Aydemir N, Hatipoğlu S. Depression screening and risk factors for depression in mothers with 0-1 year old babies who admitted to the healthy baby outpatient clinic. Article in Turkish. Med J Bakırköy 2012;8:12-21.
- Dindar I, Erdogan S. Screening of Turkish women for postpartum depression within the first postpartum year: the risk profile of a community sample. Public Health Nurs 2007;24:176-183. doi:10.1111/j.1525-1446.2007.00622.x
- Sabuncuoğlu O, Berkem M. Bağlanma Biçemi ve Doğum Sonrasi Depresyon Belirtileri Arasindaki Ilişki: Türkiye'den Bulgular [Relationship between attachment style and depressive symptoms in postpartum women: findings from Turkey]. Turk Psikiyatri Derg 2006;17:252-258.
- Hergüner S, Çiçek E, Annagür A, Hergüner A, Örs R. Association of delivery type with postpartum depression, perceived social support and maternal attachment. J Psychiatry Neurol Sci 2014;27:15-20.
- Yağmur Y, Ulukoca N. Social support and postpartum depression in lowsocioeconomic level postpartum women in Eastern Turkey. Int J Public Health 2010;55:543-549. doi:10.1007/s00038-010-0182-z
- Karaçam Z, Kitiş Y. Doğum Sonrasi Depresyon Tarama Olçeği: Türkçe'de geçerlik ve güvenirliği [The Postpartum Depression Screening Scale: its reliability and validity for the Turkish population]. Turk Psikiyatri Derg 2008;19:187-196.
- Kuscu MK, Akman I, Karabekiroglu A, et al. Early adverse emotional response to childbirth in Turkey: the impact of maternal attachment styles and family support. J Psychosom Obstet Gynaecol 2008;29:33-38. doi:10.1080/01674820701535480
- Nur N, Çetinkaya S, Bakır DA, Demirel Y. Prevalence of Postnatal Depression and Risk Factors in Women in Sivas City. Article in Turkish. J Cumhuriyet Univ Facul Med 2004;26:55-59.
- Şimşek Orhon F, Ulukol B, Soykan A. Risk factors for postpartum depression in a well-child clinic: maternal and infant characteristics. J Ankara Univ Facul Med 2008;61:7-12.
- Özdemir S, Marakoğlu K, Çivi S. Konya İl Merkezinde Doğum Sonrası Depresyon Riski ve Etkileyen Faktörler [Risk of postpartum depression and affecting factors in Konya center]. TAF Prev Med Bull 2008;7:391-398.
- O'Hara MW, McCabe JE. Postpartum Depression: Current Status and Future Directions. Annu Rev Clin Psychol 2013;9:379-407. doi: 10.1146/annurev-clinpsy-050212-185612.
- Tronick EZ, Weinberg MK. Depressed mothers and infants: failure to form dyadic states of consciousness. In Murray L, Cooper PJ, eds. Postpartum Depression and Child Development. Guilford Press; 1997:54-81.
- Ministry of Health, Republic of Turkey. Maternal and child health and family planning general directorate. Postpartum care management guide; 2009.
- 33- Dean AG, Sullivan KM, Soe MM. OpenEpi: Open Source Epidemiologic Statistics for Public Health, Version. www.OpenEpi.com, updated 2013/04/06. Accessed March 15, 2020. http://www.openepi.com/Menu/OE Menu.htm
- Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry 1987;150:782-786. doi:10.1192/bjp.150.6.782
- Engindeniz AN, Küey L, Kültür S. Turkish version of the Edinburgh Postpartum Depression Scale: Reliability and validity study. Article in Turkish. Spring Symposiums I Book. Psychiatric Organization of Turkey Press; 1996:51-52.
- Zimet G, Dahlem NW, Zimet S, Fairly GK. The multidimensional scale of perceived social support. J Pers Assess 1988;52:30-41. doi: 10.1207/ s15327752jpa5201_2
- Eker D, Arkar H. Factor structure, validity and reliability of multidimensional perceived social support scale. Article in Turkish. Turk J Psychiatr 1995;10:45-55.
- Eker D, Arkar H, Yaldız H. Factorial structure, validity, and reliability of revised form of the multidimensional scale of perceived social support. Article in Turkish. Turk J Psychiatr 2001;12:17-25.
- World Health Organization. WHOQOL-BREF Introduction, Administration, Scoring and Generic Version of the Assessment. Geneva 1996.
 Available at: Url: https://www.who.int/mental_health/media/en/76.
 pdf. Published December 1996. Accessed: September 14, 2014.

- Eser E, Fidaner H, Fidaner C, Eser SY, Elbi H, Göker E. Psychometric properties of the WHOQOL-100 and WHOQOL-BREF. Article in Turkish. J Psychopharmacol 1999;7:23-40.
- Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. Arch Gen Psychiatry 1961;4:561-571. doi:10.1001/archpsyc.1961.01710120031004
- 42. Hisli N. A study on the validity of the Beck Depression Inventory. Turkish Journal of Psychology 1988;6:118-126.
- Fisher J, Mello MC, Patel V, Rahman A, Tran T, Holton S, Holmes W. Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: a systematic review. Bull World Health Organ 2012;90:139-149H. doi: 10.2471/BLT.11.091850
- 44. Karaçam Z, Çoban A, Akbaş B, Karabulut E. Status of postpartum depression in Turkey: A meta-analysis. Health Care Women Int 2018;39:821-841. doi.org/10.1080/07399332.2018.1466144
- Ogbo FA, Eastwood J, Hendry A, et al. Determinants of antenatal depression and postnatal depression in Australia. BMC Psychiatry 2018;18:49. Published 2018 Feb 20. doi:10.1186/s12888-018-1598-x
- Webster J, Nicholas C, Velacott C, Cridland N, Fawcett L. Quality of life and depression following childbirth: impact of social support. Midwifery 2011;27:745-749. doi:10.1016/j.midw.2010.05.014
- 47. Chang SR, Chen KH, Lin MI, Lin HH, Huang LH, Lin WA. A repeated measures study of changes in health-related quality of life during pregnancy and the relationship with obstetric factors. J Adv Nurs 2014;70:2245-2256. doi:10.1111/jan.12374

- Cruise SM, Layte R, Stevenson M, O'Reilly D. Prevalence and factors associated with depression and depression-related healthcare access in mothers of 9-month-old infants in the Republic of Ireland. Epidemiol Psychiatr Sci 2018;27:468-478. doi:10.1017/S2045796017000026
- Committee on Obstetric Practice. The American College of Obstetricians and Gynecologists Committee Opinion no. 630. Screening for perinatal depression. Obstet Gynecol 2015;125:1268-1271. doi:10.1097/01. AOG.0000465192.34779.dc
- de Tychey C, Briançon S, Lighezzolo J, et al. Quality of life, postnatal depression and baby gender. J Clin Nurs 2008;17:312-322. doi:10.1111/ j.1365-2702.2006.01911.x
- Beck CT, Gable RK. Postpartum Depression Screening Scale: development and psychometric testing. Nurs Res 2000;49:272-282. doi:10.1097/00006199-200009000-00006
- Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. Psychol Bull 1985;98:310-357.
- Alhasanat-Khalil D, Fry-McComish J, Dayton C, Benkert R, Yarandi H, Giurgescu C. Acculturative stress and lack of social support predict postpartum depression among U.S. immigrant women of Arabic descent. Arch Psychiatr Nurs 2018;32:530-535. doi:10.1016/ j.apnu.2018.02.005
- Robinson GE, Stewart DE. Postpartum disorders. In: Stewart DE, Stotland NL, eds. Psychological aspects of women's health care. 2nd ed. American Psychiatric Association Publishing; 2001:117-139.