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ORIGINAL ARTICLE

Social support and postpartum depression in low-socioeconomic level postpartum women in Eastern Turkey

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Abstract
Objectives The aim of this article was to determine risk factors for postpartum depression in low-socioeconomic level women during the first postpartum year and to determine the relationship between postpartum depression symptoms and social support.
Methods This is a cross-sectional study. Data were collected through administration of a questionnaire, the Edinburgh Postnatal Depression Scale (EPDS) and the Multidimensional Scale of Perceived Social Support (MSPSS). Data were analyzed utilizing unpaired t test, one-way analysis of variance, and logistic regression analysis.
Results The prevalence of perceived symptoms of postpartum depression was 21.0% (scores of $\geq$13) and there was a correlation ($r = -0.36$, $p = 0.000$) between MSPSS and EPDS scores. The mean EPDS score was 8.36 ± 5.6 while the mean MSPSS score was 64.49 ± 15.2.
Conclusion Postpartum depression symptoms are common among Turkish women. These findings provide important information about the role of social support related to postpartum depressive symptoms among Turkish women. Informing health professionals about these issues is an important step towards improving maternal and child health care services.

Keywords Low socioeconomic level · Postpartum depression · Social support · Risk factors

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Introduction

Postpartum depression (PPD) is a major unipolar depressive disorder occurring within 4–6 weeks after childbirth that lasts for at least two consecutive weeks (American Psychiatric Association 2000). Even though giving birth to a new baby is generally a pleasurable and satisfactory experience, some mothers experience some emotional difficulties in this period. The most frequent and distressing psychiatric problem for these women is postpartum depression (Danaci et al. 2002). Sociodemographic, social, biological, obstetrical, and personal risk factors may play a role in the PPD development (Jomeen 2004). Approximately 1 in 4 women may experience depression during the perinatal period (Flyyn et al. 2006), yet about half of all PPD cases go unrecognized in routine practice (Thio et al. 2006).

Social support is defined as the interpersonal resources that are accessed and mobilized when individuals attempt to deal with the everyday stresses and strains of life (Chen et al. 1994). Investigators have reported that high perceived stress and lack of social support are associated with PPD (Leathers et al. 1997). Similarly, the presence of social support has been linked to decreased stress levels and better overall health status (Hung and Chung 2001). This support after childbirth is usually provided by husbands, other family members, health care personnel, insurance company representatives and social service workers (Bahadoran et al. 2009).

The aim of this article was to determine risk factors for postpartum depression in low-socioeconomic level women during the first postpartum year and to determine the relationship between postpartum depression symptoms and social support.

Methods

A cross-sectional design was used for this population-based study. The study population included all women referred to the health centers of Malatya, a city in Eastern Turkey, during first postpartum year. A sample size of 785 mothers (95% CI and using the prevalence of 5–25% for PPD, $n = 730$) was selected from five health centers in Malatya. Health care centers selection was randomly stratified based on the city catchment areas and equally distributed from the 27 existing health centers. After obtaining the approval of the Regional Health Directorate and the administrators of the health centers, data were collected during health center visits from women within the first postpartum year, between February and July 2009. Following health centers selection, the researchers and three interviewers collected data 2 days per week (Monday and Friday) and selected the samples from among women who were referred to these centers (Women came to let routine vaccinate for their healthy children) and met the inclusion criteria. All study subjects gave verbal informed consent to participate in the study.

Test instruments included a questionnaire developed by the authors, the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al. 1987) and the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al. 1988). A questionnaire was used to determine the socio-demographic and obstetric characteristics of study participants. Collected data were age, subjects' and husbands' education, occupation, economic status, health insurance status, family type, parity, previous loss of baby, baby's health problems, planned pregnancy, method of delivery, gender of the baby, length of time since childbirth, social support in the postpartum period, and relationship problems with husband and/or other family members.

The EPDS is designed to detect depressive symptoms among women in the postpartum period (in the previous 7 days). Based on this 10-item scale, a score from 0 to 30 is given to each respondent, the higher scores implying greater psychological distress. The queries focus on cognitive and affective features of depression. The internal consistency of this instrument was alpha of 0.87. The Turkish version was adapted by Engindeniz et al. 2000 and has internal consistency of the Turkish instrument had an alpha of 0.79. A cut-off score of ≥ 13 is considered indicative of postnatal depression. The internal consistency of our study had an acceptable alpha of 0.82.

The MSPSS is used to measure perceived social support from family, friends and significant others. Based on this 12-item scale, the possible score ranges from 12 to 84, the higher scores implying greater social support. The internal consistency of this instrument had an alpha of 0.91. The Turkish version was adapted by Eker and Arkar (1995) and has internal consistency of the Turkish instrument had an alpha of 0.89 (Eker and Arkar 1995). The internal consistency of our study had an alpha of 0.88.

Data were analyzed using SPSS for Windows (version 11.5 SPSS). Categorical data are expressed as frequencies and percent, mean and standard deviation (SD). Statistical tests included the unpaired t test and one-way ANOVA for continuous data. To further explore the significant correlates that were associated with depressive symptoms and to identify their predictive level, regression analysis was performed. In addition, Pearson correlation analysis was calculated for MSPSS and EPDS results. Significance was set at $p < 0.05$ for all statistical tests.

Results

The mean age of study subjects was 28.9 ± 5.4 (16–43 years), all were married; 32.6% of the women completed primary school education or less while 20.6% were employed. Fifty-eight percent had low incomes, 35.3% were primiparae and 74.8% stated that the previous pregnancy was planned. Of the study subjects, 45.9% had only spontaneous vaginal deliveries. 26.6% of the women were at 2 months postpartum, 16.2% at 4 months, 35.0% at 6 months, and 22.2% at 12 months postpartum.

EPDS scores correlated with the subjects' and husbands' education, occupation, economic status, health insurance status, family type, parity, previous loss of baby, baby's health problems, planned pregnancy, social support in the postpartum period, and relationship problems with husband and/or other family members ($p < 0.05$) (Tables 1, 2, 3). EPDS scores were not associated with subjects' age, method of delivery, length of time since childbirth or the gender of the baby ($p > 0.05$) (Tables 1, 2).

The mean scores on the MSPSS correlated with the subjects' and spouses' education, occupation, economic status, health insurance status, family living situation (i.e., live with mothers or father's extended family), parity, whether the pregnancy was planned, social support in the postpartum period, and relationship problems with husband and/or other family members ($p < 0.05$) (Tables 1, 2, 3). The mean scores on the MSPSS were not associated women's age, previous loss of a baby, baby's health problems, method of delivery, postpartum interval or the gender of the baby ($p > 0.05$) (Tables 1, 2).

The perceived prevalence of postpartum depression symptoms in study subjects was 21.0% (scores of ≥ 13). A correlation ($r = -0.36$, $p = 0.000$) was noted between MSPSS and EPDS scores. The mean EPDS score was 8.36 ± 5.6, with a range of 0–30 while the mean MSPSS score was 64.49 ± 15.2 with a range of 12–84 (Table 4).

Table 1 Multidimensional Scale of Perceived Social Support (MSPSS) and Edinburgh Postnatal Depression Scale (EPDS) scores by socio-demographic factors in low-socioeconomic level women during the first postpartum year ($n = 785$)

Factors	*n* (%)	EPDS [mean (SD)]	Significance	MSPSS [mean (SD)]	Significance
Age groups					
Up to 20	33 (4.2)	8.33 (5.3)		62.03 (15.5)	
21–30	472 (60.1)	8.28 (5.4)	0.137	64.75 (15.4)	0.512
31 or more	280 (35.7)	8.50 (5.6)	$p = 0.872$[a]	64.35 (14.8)	$p = 0.599$[a]
Education					
Primary/lower	256 (32.6)	9.42 (5.6)		61.09 (15.4)	
Secondary	134 (17.1)	8.62 (5.7)		62.28 (14.8)	
High school	251 (32.0)	8.40 (5.5)	11.291	64.87 (14.2)	17.858
College	144 (18.3)	6.15 (4.7)	$p = 0.000$[a]	71.92 (14.1)	$p = 0.000$[a]
Husbands' education					
Primary/lower	140 (17.8)	10.86 (6.0)		60.69 (16.2)	
Secondary	126 (16.1)	9.14 (5.8)		61.75 (14.2)	
High school	325 (41.4)	7.98 (5.3)	17.756	64.18 (14.8)	11.898
College	194 (24.7)	6.69 (4.7)	$p = 0.000$[a]	69.48 (14.4)	$p = 0.000$[a]
Occupation					
Employed	162 (20.6)	6.60 (5.0)	−4.596	71.88 (12.3)	7.181
Unemployed	623 (79.4)	8.82 (5.6)	$p = 0.000$[b]	62.57 (15.3)	$p = 0.000$[b]
Economic status					
Low	455 (58.0)	9.30 (5.8)		61.36 (15.1)	
Middle	225 (28.7)	7.51 (4.7)	18.638	66.77 (14.8)	31.616
High	105 (13.4)	6.10 (5.2)	$p = 0.000$[a]	73.15 (11.7)	$p = 0.000$[a]
Health insurance					
Yes	713 (90.8)	8.04 (5.3)	−5.097	65.25 (14.7)	4.488
No	72 (9.2)	11.49 (6.7)	$p = 0.000$[b]	56.93 (17.7)	$p = 0.000$[b]
Family type					
Nuclear	636 (81.0)	7.94 (5.3)	−4.373	65.19 (15.0)	2.697
Large	149 (19.0)	10.13 (6.1)	$p = 0.000$[b]	61.48 (15.4)	$p = 0.007$[b]

[a] ANOVA test

[b] Unpaired *t* test

When logistic regression analysis was conducted for the 14 variables, 5 risk factors were determined to be predictive, each of which was independent of the time elapsed since childbirth. Factors found to be associated with PPD were: low level of husband's education [odds ratio (OR) 1.61; 95% confidence interval (CI), 1.07–2.43]; unplanned pregnancy (OR 1.78; 95% CI 1.15–2.75); baby with health problems (OR 1.93; 95% CI 1.05–3.57); relationship problems with husband (OR 2.41; 95% CI 1.10–5.27); and relationship problems with husband's family (OR 3.79; 95% CI 2.82–6.29) (Table 5).

Discussion

Variable results have been reported regarding the prevalence of PPD in relation to cultural differences, sample size, time of diagnosis, and EPDS cut-off scores. In the present study, the perceived prevalence of postpartum depression symptoms was 21.0% for women (scored ≥13), while other studies conducted in Turkey show a range of 14.0–34.6% for PPD symptoms (Danaci et al. 2002; Aydın and Inandı 2005; Dindar and Erdogan 2007; Ege et al. 2008; Inandı et al. 2002). Women may be functioning only minimally in their role as mothers due to their symptoms of PPD. Contrary to our expectations, age, method of delivery, postpartum interval, and baby's gender were not significant as risk factors for PPD.

Women who were more susceptible to depression included those with a low level of education, whose husband had a low level of education, or women who were unemployed, had low income, no health insurance, or were from a large family. Similar results have been reported for the relation of PPD to low levels of education in mothers (Inandı et al. 2002; Gao et al. 2009; Mayberry et al. 2007; Segre et al. 2007) or fathers (Sünter et al. 2006), unemployed mothers (Ege et al. 2008; Inandı et al. 2002; Mayberry et al. 2007), low income level families (Dindar and Erdogan 2007; Ege et al. 2008; Gao et al. 2009; Inandı et al. 2002; Mayberry et al. 2007; Segre et al. 2007; Sterling et al. 2009), those with no health insurance coverage (Sünter et al. 2006), and those from large families

Table 2 Multidimensional Scale of Perceived Social Support (MSPSS) and Edinburgh Postnatal Depression Scale (EPDS) scores by selected obstetric factors in low-socioeconomic level women during the first postpartum year ($n = 785$)

Factors	*n* (%)	EPDS [mean (SD)]	Significance	MSPSS [mean (SD)]	Significance
Parity					
1	277 (35.3)	7.51 (5.2)		67.39 (14.3)	
2	255 (32.5)	8.20 (5.5)	8.257	64.74 (16.5)	11.860
3 or more	253 (32.2)	9.44 (5.9)	$p = 0.000$[a]	61.06 (16.1)	$p = 0.000$[a]
Previous loss of baby					
Yes	220 (28.0)	9.40 (5.8)	3.303	62.99 (15.5)	−1.733
No	565 (72.0)	7.95 (5.4)	$p = 0.001$[b]	65.07 (15.0)	$p = 0.83$[b]
Baby's health problem					
Yes	70 (8.9)	10.37 (5.8)	3.199	67.20 (12.7)	1.567
No	715 (91.1)	8.16 (5.5)	$p = 0.001$	64.22 (15.4)	$p = 0.117$
Planned pregnancy					
Yes	587 (74.8)	7.65 (5.1)	−6.344	65.63 (14.5)	3.667
No	198 (25.2)	10.47 (6.4)	$p = 0.000$[b]	61.10 (16.5)	$p = 0.000$[b]
Method of delivery					
Vaginal delivery	360 (45.9)	8.30 (5.3)		63.42 (15.2)	
Forceps/vacuum	20 (2.5)	10.00 (7.2)	0.899	64.05 (13.0)	0.311
Cesarean	405 (51.6)	8.33 (5.7)	$p = 0.407$[a]	65.46 (15.2)	$p = 0.818$[a]
Baby's gender					
Girl	390 (49.7)	8.35 (5.8)	−0.021	64.59 (15.8)	0.184
Boy	395 (50.3)	8.36 (5.2)	$p = 0.984$[b]	64.39 (14.5)	$p = 0.854$[b]
Postpartum interval (months)					
2	209 (26.6)	8.36 (5.7)		64.01 (16.3)	
4	127 (16.2)	8.09 (5.8)		63.60 (14.3)	
6	275 (35.0)	8.59 (5.1)	0.311	65.87 (14.8)	1.205
12	174 (22.2)	8.18 (5.9)	$p = 0.818$[a]	63.53 (15.1)	$p = 0.307$[a]

[a] ANOVA test

[b] Unpaired *t* test

Table 3 Multidimensional Scale of Perceived Social Support (MSPSS) and Edinburgh Postnatal Depression Scale (EPDS) scores by relationship factors in low-socioeconomic level women during the first postpartum year ($n = 785$)

Factors	*n* (%)	EPDS [mean (SD)]	Significance	MSPSS [mean (SD)]	Significance
Support individual in postpartum					
Husband	129 (16.4)	7.29 (4.6)		63.61 (16.0)	
Family, friends	602 (76.7)	8.33 (5.5)	9.914	65.35 (14.6)	8.006
No support	54 (6.9)	11.24 (6.7)	$p = 0.000$[a]	56.94 (17.4)	$p = 0.000$[a]
Problems with husband					
Yes	44 (5.6)	14.93 (7.7)	8.440	54.95 (19.6)	−4.338
No	741 (94.4)	7.97 (5.1)	$p = 0.000$[b]	65.06 (14.7)	$p = 0.000$[b]
Problems with wife's family					
Yes	35 (4.5)	13.86 (7.7)	6.135	55.23 (17.3)	−3.723
No	750 (95.5)	8.10 (5.3)	$p = 0.000$[b]	64.92 (14.9)	$p = 0.000$[b]
Problems with husbands' family					
Yes	108 (13.8)	12.97 (6.7)	9.857	59.12 (16.1)	−3.996
No	677 (86.2)	7.62 (5.0)	$p = 0.000$[b]	65.35 (14.9)	$p = 0.000$[b]

[a] ANOVA test

[b] Unpaired *t* test

(Martinez-Schallmoser et al. 2003). Those with limited socioeconomic resources are at greater risk for depressive symptoms. In general, these factors are encountered together and affect EPDS scores of the mothers just given a birth. Families with lower income levels are more deeply affected by increased expenses that occur during the pregnancy, childbirth and postpartum periods. In literature, it is suggested that mothers' financial situation, leisure and employment situation have been showed a predominantly negative view, after the birth of their child (Beyersdorf

Table 4 Correlation of Edinburgh Postnatal Depression Scale (EPDS) and Multidimensional Scale of Perceived Social Support score (MSPSS) in low-socioeconomic level women during the first postpartum year ($n = 785$)

Scales	Mean (SD)	Correlation	Depressed (scored $\geq$ 13) *n* (%)	Not depressed (scored $<$ 13) *n* (%)
EPDS	8.36 (5.6)	$r = -0.36$		
MSPSS	64.49 (15.2)	$p = 0.000$	165 (21.0)	620 (79.0)

Table 5 Prediction of postpartum depression in low-socioeconomic level women during the first postpartum year ($n = 785$)

Variables	EPDS $<$ 13 (*n* %)		EPDS $\geq$ 13 (*n* %)		OR (95% Cl)	*p* value
Husbands' education						
High school and ↑	268	43.2	57	34.5	Reference	
Primary school and ↓	352	56.8	108	65.5	1.61 (1.07–2.43).	0.021
Planned pregnancy						
Yes	487	78.5	100	60.6	Reference	
No	133	21.5	65	39.4	1.78 (1.15–2.75)	0.009
Baby's health problem						
No	576	92.9	139	84.2	Reference	
Yes	44	7.1	26	15.8	1.93 (1.05–3.57)	0.035
Problems with husband						
No	602	97.1	139	84.2	Reference	
Yes	18	2.9	26	15.8	2.41 (1.10–5.27)	0.028
Problems with husband' family						
No	569	91.8	108	65.5	Reference	
Yes	51	8.2	57	34.5	3.79 (2.82–6.29)	0.000

EPDS Edinburg Postpartum Depression Scale, *OR* odds ratio, *CI* confidence interval

et al. 2008). Further, a lack of health insurance coverage indicates that the parents are not regularly employed and so may not have access to quality health care. This lack of health insurance seems to increase depression risk for postpartum women, and may prevent depressed women from seeking medical assistance for their depressive symptoms. Economic problems in Turkey frequently compel married couples to live together with their parents, as well. Living in crowded conditions with large families can negatively affect familial communication, and be a hindrance to recognizing and addressing the needs of the new mother. This lifestyle is very common in traditional Turkish culture. In literature, it is suggested that such close familial contacts may be a source of stress for new mothers (Bahadoran et al. 2009).

The present study suggests an association between symptoms of postpartum depression and variables that include parity, previous loss of a baby, health problem of the baby, unplanned pregnancy, lack of emotional sufficient support for the mother, and relationship problems with the husband and/or family in postpartum period. Previous studies similarly reported correlation between postpartum depression and parity (Dindar and Erdogan 2007; Ege et al. 2008; Mayberry et al. 2007), health problems of the baby (Danaci et al. 2002; Inandı et al. 2002), previous loss of a baby (Dindar and Erdogan 2007), unplanned pregnancy (Dindar and Erdogan 2007; Ege et al. 2008; Inandı et al. 2002; Gao et al. 2009; Sünter et al. 2006; Cooper et al. 1999), lack of emotional sufficient support for the mother (Bielinski-Blattmann et al. 2009) and relationship problems with the husband (Danaci et al. 2002), woman's family (Lau and Wong 2008), or husband' family (Danaci et al. 2002; Dindar and Erdogan 2007; Mayberry et al. 2007; Lau and Wong 2008). These findings may indicate the additional stressors experienced by mother with more numerous role demands. One study suggested that lack of adequate support from the husband had a greater impact on psychological health of mothers than the physical health of the mother (Bahadoran et al. 2009).

Traditional family relationships in the eastern Turkey are very close and strong to the extent that parents of the couples may play an active interfering role. The negative impact of bad relationships between a mother and the rest of the family on postpartum depression seems to be a distinguishing aspect of Turkish culture. Moreover, the present results indicate that relationship problems experienced with the husband's family increase postpartum depression scores of the women higher, compared to those with relationship difficulties with the husband. A key intervention should therefore be mobilization of social support, particularly from the baby's father. The mother's

social support needs should be addressed and interventions should be aimed at reducing conflicts between the mother and other family members.

A need for high levels of support during the postpartum period is a risk factor that increases the woman's vulnerability to postpartum depression. Data showed a significant correlation between EPDS and MSPSS scores ($r = -0.36$, $p = 0.000$) (Table 4). Social support was negatively correlated with the EPDS score for mothers, a result similar to those reported by other investigators (Leathers et al. 1997; Ege et al. 2008; Inandı et al. 2002; Gao et al. 2009). The social networks of family members are an important aspect of social support in the postpartum period. In general, social support has been found to increase a mother's self-assurance and confidence in her role as a mother (Chen et al. 2007). Following childbirth, it is the cultural norm in Turkey to provide help (from family members and friends) with baby care and household jobs.

Another significant finding in the current study is that approximately half the study subjects had given birth via cesarean section. The figures provided by WHO suggest that cesarean delivery rates should range from about 5 to 15% in most facilities (Chalmers et al. 2001). The reason for high rate of cesarean delivery is not definitively known and may stem from the fact that these women wish to avoid the pain of vaginal delivery, and that health professionals determine for various reasons (possibly including avoidance of pain) that such a procedure is necessary.

Our study has some limitations. Research data related to depression and perceived social supports were collected with self-report, data-collection tools. Since EPDS is a screening test, results may not accurately reflect the prevalence of PPD. Further diagnostic confirmation may be needed and we acknowledge that diagnostic status was not confirmed by other methods.

In conclusion, we find that postpartum depression symptoms are common among women in the postpartum period in Eastern Turkey. These findings provide important information about the importance of social support as it relates to postpartum depressive symptoms among Turkish women. Health professionals should be educated about these issues with the goal of improving maternal and child health. They need to recognize that women with little social support may be at higher risk for postpartum depression. Helping women in disadvantaged socioeconomic position to achieve the good health that women in more advantaged socioeconomic position have attained would help to reduce the need and prevent the widening of health inequalities.

Conflict of interest None.

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