

Perceived social support, newborn temperament and socioeconomic status in postpartum depression: report from southwest Serbia

Anida Vrcić Amar, Hana Sejfović

Abstract

Recognizing the factors that cause mood disorders after childbirth is an important part of the diagnosis and prevention of postpartum depression. Postpartum depression is a non-psychotic postpartum mood disorder that can last up to 12 months postpartum. The etiological disorder is still not differentiated because it is differentiated through a bio-psycho-social basis. With this research, we wanted to check the relationships between postpartum depression and perceived social support, newborn temperament, and some sociodemographic variables. The sample consisted of 145 mothers, with an average age of 27, mostly married. The following instruments were used in the research: Questionnaire on sociodemographic characteristics, Neonatal temperament scale, Edinburgh scale of postpartum depression – EPDS and Scale of perceived social support. The results showed that reduced social support from partners, friends, and family, difficult newborn temperament, and low socioeconomic status correlated with postpartum depression. The practical implications of the research are reflected in the understanding of social support as a significant predictor of depression in the postpartum period and the implementation of the social component in the system of support and assistance to pregnant women and mothers.

postpartum depression; social support; child temperament; socioeconomic status

BACKGROUND

Postpartum depression is a nonpsychotic mood disorder characteristic of the first 12 months of postpartum [1]. The World Health Organization states that in underdeveloped countries the prevalence for the development of this disorder is 20-40%, while in developed countries it is 10-15% [2]. This mood disorder has a complex etiology, so it cannot be said with certainty what

causes it. The most common reasons reported by scientists around the world are: hormonal imbalance [3], psychological constructs such as low self-esteem [4,5], predisposition to depressive disorders [6-8] obstructive factors such as the type of childbirth, where women with vaginal childbirth also reported less depressive symptoms at risk for up to six months [9,10], and many others. Social constructs most often include low or unavailable social support [11], low socioeconomic status [12,13] but also consistency in the presence of postpartum depression in primiparous women [14,15]. Research does not show an association between postpartum depression and levels of education, employment, and pregnancy planning [16,17].

Anida Vrcić Amar¹, Hana Sejfović²: ¹State University of Novi Pazar, Department of Philosophical Sciences, Pazar, Serbia; ²State University of Novi Pazar, Department of Philosophical Sciences, Novi Pazar, Serbia

Correspondence address: hana.sejfovic@gmail.com

Michel Odent [18] believes that in the XX century we managed to discover the needs of the newborn, and that in the XXI century we should discover the needs of the mother. The scope of a woman's responsibilities increases after childbirth, because in addition to caring for the child, they also include the psychological pressure of the environment due to the expectation of success in the role of a mother. In order to cope more effectively with the role of the mother, Winnicott [19] argues that the mother needs a supportive environment. According to this author, a supportive environment is an environment in which the mother can feel valued, encouraged and supported. The importance of connecting with other mothers was also pointed out by Stern [20]. This author describes how first-time mothers, but also other mothers, show increased interest in other mothers and seek their company.

Their primary goal is not to receive practical support, but to be part of a group whose members have shared experiences and share the same needs and interests. Only in a supportive environment can the mother feel safe enough to explore and develop maternal behavior. The same author suggests that Western culture in general values the role of the mother, but the family, society, and culture in a broader sense do not give firstborns enough experience and training or adequate support to manage their motherly role. One study particularly emphasized the importance of marital and family relationships in both cultures (Western and non-Western), where it was observed that a lack of emotional and practical support affects unhappiness and postpartum depression [21]. The presence of social support has been identified as a buffer zone against depression, in the part in which it affects coping with stress [22].

A systematic review of several relevant scientific databases until 2021 (CINAHL, MEDLINE, PSYCHOINFO, ERIC) led the authors to the conclusion that the role of psychosocial factors for the development of depression is great, and that prevention of these factors is more effective when combined with acceptable nonpharmacological interventions [23]. Researchers also focus on the effects that postpartum depression has on the development of the newborn, as well as on the consistently negative effects that this mood

disorder has on the mother and child [24]. Lack of social support, more precisely lack of instrumental or emotional support [25], is one of the most common non-biological risk factors for developing postpartum depression. Social support means emotional and practical support related to the care of the child by the partner, the family of the mother and the spouse's family, and by friends and significant others [26].

Creating a safe environment that is ready to understand the needs of the mother, fears and worries related to getting used to the role of the mother can reduce the risks of developing postpartum depression. Contrary to traditional expectations that the period of motherhood is a period of happiness and well-being for mother and family, some mothers due to mismatch of roles they perform in life are more likely to feel helpless in this period, have negative self-evaluation which causes pessimistic anticipation of future events decreased freedom, daily fluctuations, limiting time to the needs of the child, developmental difficulties are characteristic of women after the first birth, while for some this experience continues with each subsequent birth [27].

The discrepancy between prenatal and postpartum social support, expectations and perceptions of later support in relation to postpartum support were also examined. In one study [28], low-risk pregnant women were surveyed one month before delivery and one month after delivery, and the results showed that lack of social support leads to possible postpartum depression, even in women who were not at risk for development disorders. Based on a review of a number of studies, Beck [29] concludes that lack of partner support is the most common and one of the most significant risk factors for the development of postpartum depression.

The child's temperament can have a direct and indirect impact on the mother's postpartum depression. The temperament of the newborn can be defined as the behavior of the newborn during the first four months through regular sleep and feeding, energy of movement, crying and anxiety, reaction to new people and stimuli [30]. Thus, usually the behavior of the newborn changes in accordance with the changes he experienced intrauterinely, during childbirth and stimulation after birth, and it is expected that the temperament could stabilize after the fourth month. The

child's temperament can have a direct impact on the mother's postpartum depression through the mother's perceived self-efficacy.

Green [31] pointed out that it is important to direct the professional public to recognize indicators of negative mood as a continuous measure of an individual's emotional well-being that can provide important information in relation to the simple binary division depressed/non-depressed. More precisely, the term depression is used in cases when the disorder is diagnosed by means of a clinical interview and according to one of the classification systems. The term depression is used when depressive symptoms are assessed on one of the self-assessment scales such as the Edinburgh scale of postpartum depression – EPDS [32].

PARTICIPANTS AND PROCEDURE

The research problem relates to the identification of factors that potentially cause nonpsychotic depression in the postpartum period of child-birth. 145 respondents participated in the research (N = 145). The average age of the sample is 27 years (AS = 26.94). According to marital status, 99.3% of respondents are married and 0.7% are divorced. The majority of respondents are first-born 44.8%, then second-born 29.7%, while 15.2% are women who give birth to a third child, 8.3% who give birth to a fourth child, and 2.1% of them who give birth to a fifth child. In 87.6% of women, the pregnancy is planned, while in 12.4% the pregnancy is unplanned.

The research was conducted in three cities in southwestern Serbia, namely Novi Pazar, Sjenica and Prijepolje, where the largest number of births is recorded at the national level. Respondents were first informed about the research, and after consent, they started filling out a battery of tests. The researchers selected only a sample of respondents who were in the first trimester of postpartum, because research suggests that in that period, the risk for the development of PD is the highest.

The Newborn Temperament Scale was used to investigate the child's temperament [33]. The scale consists of six items, which assess the mother's perception of the newborn's temperament on a five-point Likert-type scale where

1 means no at all and 5 means complete. The scale measures difficulty with putting the newborn to sleep, difficulty with feeding, calming down, frequent crying and irritability of the newborn.

The Edinburgh Postpartum Depression Scale – EPDS [34] is one of the most commonly used scales for assessing depressive symptoms in mothers. Midwives estimate their severity for ten different symptoms of depression in the past seven days on a rating scale of 0 to 3. The possible range of results is from 0 to 30, where higher scores indicate more severe symptoms. Items on the scale refer to the assessment of the possibility of rejoicing, experiences of anxiety, guilt, sadness, then the assessment of self-harm and the like.

The authors found that with a critical score of 12/13, the sensitivity of the scale is 86%, the specificity is 78%, and the overall positive predictive validity is 73%. The authors state that the reliability of the scale is $\alpha = .87$.

The scale of perceived social support was constructed for the purposes of this research, and consists of three subscales. The perceived partner support subscale consists of five particles that assess overall partner relationship satisfaction, emotional support and trust in the partner, instrumental support, and trust in the partner. The scale is five-point where 1 is (I am not satisfied at all) while it is 5 (I am completely satisfied), which means that the total range on the scale is from 5 to 25. The scale was applied in the second measurement during the first three months postpartum. The perceived family support subscale consists of two particles that measure support from the mother's family and the partner's family. The scale is five-point where 1 is (not at all satisfied) while 5 is (completely satisfied), bringing the total range on a scale of 2 to 10. The perceived friend support subscale consists of two particles that measure support from friends and colleagues with business. The scale is five-point where 1 is (I am not satisfied at all) while it is 5 (I am completely satisfied), which gives the total range on a scale from 2 to 10.

RESULTS

Data were processed using the SPSS statistical package, version 20. Descriptive statistical meth-

ods, Pearson correlation coefficient, t test for independent samples, chi-square test and multivariate regression analysis were used for data processing. Table 1 shows the descriptive statistics for the variables in the research.

Table 1. Descriptive statistics for dependent and independent variables

	AS	SD	Min	Max
Postpartum depression	9.28	6.23	0	29
Level of social support	34.20	7.32	13	45
Partner support	19.95	4.53	5	25
Family support	8.37	1.56	4	10
Friend support	5.88	2.59	2	10
Newborn temperament	9.54	3.73	4	20

Based on the average values of measurements on our sample and by positioning the entire sample within the range of results, we can say that the largest number of our respondents have moderate depression after childbirth (AS = 9.28). The level of perceived social support is quite high (AS = 34.20), the average value of our cause (AS = 9.54) shows that most mothers think that their children do not have a difficult temperament.

Table 2 presents a statistical analysis for the variables total level of perceived social support, perceived partner support, perceived family support, and perceived friend support, and postpartum depression.

Table 2. Pearson correlation coefficient

	Postpartum depression
	r
Perceived social support	-.570**
Perceived partner support	-.590**
Perceived family support	-.384**
Perceived support from friends	-.397**
Temperament	.438**

**p< .01, *p< .05

The results show that there is a moderate, negative and statistically significant correlation between the variables postpartum depression and perceived social support and ($r = -.570$; $p < .01$), perceived partner support ($r = -.590$; $p < .01$), perceived family support ($r = -.384$; $p < .01$) and perceived support from friends ($r = -.397$; $p < .01$). The results also show that there is a mod-

erate, positive and statistically significant relationship between neonatal temperament and postpartum depression ($r = .438$; $p < .01$).

The results of an analysis for the perceived social support variables the one-factor analysis of variance shown in Table 3.

Table 3. One-factor analysis of variance

	df	F
Perceived social support	2	27,618
Perceived partner support	2	27,293
Perceived family support	2	10,501
Perceived support from friends	2	14,853

p< .01

One-factor analysis of variance shows statistical significance for the scale perceived social support ($F = 27.618$, $df = 2$), perceived partner support ($F = 27.293$, $df = 2$), perceived family support ($F = 10.501$, $df = 2$), perceived friend support ($F = 14.853$, $df = 2$).

The subjects were divided into three groups according to the achieved score on the scale (group 1 – score on the scale of 0-6 – no depression; group 2 – score on the scale of 6-12 – moderate depression; group 3 – score on the scale above 12 – severe depression). The results are shown in Table 3. Observing the average values on the Scale of Perceived Social Support and on all subscales, they show that respondents with severe depression have the lowest average scores compared to respondents without depressive symptoms or moderate depression.

To check whether there are differences in the level of perceived temperament of the newborn with respect to the level of depression, we used a one-factor analysis of variance.

Table 4. One-factor analysis of variance

	df	F
Perceived newborn temperament	2	10.552

p< .01

The influence of perceived newborn temperament on postpartum depression was investigated by one – factor analysis of variance. The subjects were divided into three groups according to the achieved score on the scale (group 1 – score on the scale of 0-6 – no depression; group 2 – score on the scale of 6-12 – moderate depression; group 3 – score on the scale above 12 – severe

depression). A statistically significant difference ($p < .01$) was found in three groups of respondents ($F = 10,552$; $df = 2$). According to statistical significance, the real difference between the mean values of the groups is high.

The magnitude of this difference, expressed using the Tukey HSD test, shows that the mean value of group 1 ($AS = 7.98$; $SD = 3.11$) differs significantly from the mean value of group 3 ($AS = 11.45$; $SD = 4.25$), and that the mean values of group 2 significantly different from the mean values of group 3 ($AS = 9.36$; $SD = 3.28$).

Respondents with a score above 12 (pronounced depression) perceive the temperament of their newborn as very difficult.

In order to check whether the prevalence of postpartum depression differs in relation to the categories of socioeconomic status (low – up to 30,000 dinars; average – 30,000-60,000 dinars; high – 60,000+ dinars), we conducted a χ^2 analysis and obtained the following results shown in Tables 5 and 6.

Table 5. Prevalence of postpartum depression according to socioeconomic status

Postpartum depression	Socioeconomic status			In total (n=145)
	Low (n=36)	Average (n=66)	High (n=43)	
Not present (0-6)	7 (19.4%)	16 (24.2%)	16 (37.2%)	39 (26.9%)
Moderate (6-12)	16 (44.4%)	31 (47%)	18 (41.9%)	65 (44.8%)
Expressed (12+)	13 (36.1%)	19 (28.8%)	9 (20.9%)	41 (28.3%)

In all three categories of socio-economic status, most are those with moderate postpartum depression, where they occupy almost half of the entire sample (44.8%). The highest percentage of pronounced postpartum depression is in the group of mothers with low socioeconomic status ($n = 13/36$ (36.1%)), but this prevalence does not differ significantly from other categories of SES, as indicated by the value of the chi-square test and its statistical significance ($\chi^2 = 4.378$, $p > .05$) is shown in Table 6.

Table 6. Values of χ^2 and its statistical significance

Postpartum depression / Socio-economic status	χ^2	Significance (p)
	4.378	.357

To determine how well a child's temperament, socioeconomic status, and perceived social support predict the onset of postpartum depression, we conducted a multivariate regression analysis. Based on the data shown in Table 7, we can conclude that of the proposed variables only the level of perceived social support has a predictive value for the occurrence of postpartum depression and that he himself explains as much as 32.5% of the variance of postpartum depression in the sample ($R^2 = .325$, $F = 68.815$, $p = .000$). Any increase in the value of the score of perceived social support by 1 is associated with a decrease in the score of postpartum depression by .570 ($p = .000$).

Table 7. Results of standard multiple regression analysis for prediction of postpartum depression

Variables	Postpartum depr.			Model Summary
	β	t	p	
Level of perceived social support	-.570	-8.295	.000	R = .570 R ² = .325 F = 68.815 p = .000*
The child's temperament	.157	1.861	.065	
Socio-economic status	-.037	-.516	.606	

* $p < 0.05$

DISCUSSION AND CONCLUSION

In this study, mothers who perceive a higher level of available social support scored significantly lower on the Edinburgh Scale of Postpartum Depression – EPDS. This result is consistent with previous research showing that a sense of a strong social network and the ability to count on others are fundamental protective elements of social support [35-42].

As partial assessment of social support is often a limitation of many studies, a unique Social Support Scale was constructed in this study which it also includes subscales of perceived support from partners, family, and friends. Similar to other studies, in the presented research, social support was viewed as a one-dimensional construct, i.e. as a risk factor. Namely, there is a general distinction of support with regard to the form of support where support can be divided into emotional, instrumental and informative [43]. However, the difference in the type of support directly implies the level of depressive symptoms, because the perception of available support and actual support may differ. Available support refers to expectations of future events, while actual support received is a retrospective estimate of support already received [44]. Research on supportive interventions provided by professionals and peers has shown the effectiveness of early postpartum social support in reducing the risk of postpartum depression [45].

On the other hand, one of the problems of research in the field of social support refers to the self-assessment of the respondents because there is often a problem of possible individual tendency to overestimate or underestimate someone's availability in providing support. Social support has been associated with self-efficacy in some studies [46]. It is possible that a greater need for support reflects a higher degree of insecurity or a sense of helplessness, which may represent a vulnerability to postpartum depression. Most often, emotional and practical support from partners are perceived as crucial [47], where dominant satisfaction with partnerships was essential for the well-being of women in early pregnancy, which affected lower scores on EPDS. In addition, family members play an important role, especially in providing instrumental support.

According to the results of this research, the perceived temperament of the newborn is correlated with the depressed mood of the mother. The results of this study are consistent with the results of other studies where newborn temperament appears as a moderate predictor of postpartum depression [48-50]. Research shows that neonatal temperament, which is characterized by excessive crying and the inability to predict newborn behavior, is often the cause of postpartum depression in mothers [51]. Both family functioning and family atmosphere are often cited as potential factors influencing a child's temperament. The child's temperament is a very sensitive measurement variable, since it is based on the respondent's self-assessment, which we cannot say is objective, and therefore the results must be taken with a grain of salt for several reasons. It is possible that depressed mothers also estimate that their children have a more severe temperament because they are hypersensitive, helpless and uninterested due to mood disorders. On the other hand, children whose mothers estimate that they may have a severe newborn temperament can make it difficult for the mother to transition to the role of mother and thus prolong depressive symptoms. Therefore, future research could include additional assessment of neonatal temperament by midwives (health workers in the maternity hospital) as an objective category for assessing the severity of temperament. In some studies, the assessment of health workers has yielded more complete and objective results [52]. It was assumed that the difficult temperament of the child will be associated with mothers who achieve high scores on the scale of postpartum depression.

Earlier research shows that financial difficulties are associated with postpartum depression [53], more recent research shows this trend [54], but also recent research into the economic constraints present during a pandemic that reflect on the mood of a vulnerable group of mothers of low economic status [55]. In general, this relationship was examined through various indicators such as financial situation, low income or concerns about lack of money. In one U.S. study conducted, earnings of less than \$ 20,000 per year were found to be a significant risk factor for developing postpartum depression in the women covered by this study [56].

A similar study [57], which looked at predictors of postpartum depression, found that women with lower incomes also had more pronounced scores on the depression scale. A study examining the association of socioeconomic status with elevated scores on the depression scale at different measurement periods [58] showed that depressive symptoms were associated with lower socioeconomic status in late pregnancy and during the second and third months postpartum, while this connection is smaller during the first month.

Women who had four significant different factors (low monthly income, low level of education, divorced, and poor) were up to 11 times more likely to develop postpartum depression. The quality of life of a pregnant woman of low socioeconomic status differs significantly from the quality of life of a pregnant woman with high socioeconomic status in each segment (quality of nutrition, availability of medical care, availability of education), which can condition social causality that predisposes to postpartum depression. Thus, low socioeconomic status conditions bad mood during pregnancy, intensifies depressive mood and symptoms that are manifested in the postpartum period, and intensifies the mother's reduced competence in the postpartum.

CONCLUSION

The post-post period is a very inspiring area for researchers of different areas of interest. Postpartum depression offers a wide range of variables that can help describe this specific phenomenon of a bio-psychosocial nature. In our work, we dealt with the social context of depression by examining how perceived social support of partners, friends and family can influence the development of postpartum depression, whether a child's temperament can be correlated with postpartum depression and whether socioeconomic status is associated with depression. postpartum.

It seems that perceived social support, ie the perception of the mother (usually the first-born), is a significant predictor of postpartum depression, while the child's temperament and socioeconomic status are not significant predictors

of this mood disorder. The child's temperament is significantly correlated with postpartum depression, while socioeconomic status does not correlate with postpartum depression. One of the limitations of our study may be that we did not include midwives and other support staff in the assessment of newborn temperament, since first-borns have no experience with newborns, so their assessments can be taken with a grain of salt. But you should definitely pay attention to the temperament of the newborn, especially in premature babies, because the emotionally affective bond between mother and child is built from the first day, and a significant number of studies cite this relationship as a potential risk factor for maintaining depressive symptoms.

By discovering the needs of the mother and possible risk factors for the development of postpartum depression, we expand the criteria for understanding postpartum depressive disorders. It is important to direct the professional public to recognize indicators of negative mood as a continuous measure of an individual's emotional well-being that can provide important information in relation to the simple binary division of depressed / non-depressed.

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