

## **Incidence of postpartum depression and couple relationship quality**

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### **Summary**

**Aim.** The childbirth constitutes a significant event in a woman's life and in the marital/couple dyad. The changes which follow childbirth require re-organization of previous coping styles and development of new methods of adaptation, which proves difficult. The current study evaluated to what extent the development of postpartum depression symptoms in new mothers was associated with their level of satisfaction in marital relationship.

**Material and methods.** The study included 100 women in their first month after delivery. The women completed questionnaires regarding postpartum depression (Postpartum Depression Screening Scale) and marital relationship quality (Marital Compatibility Questionnaire).

**Results.** There was a significant correlation between the level of postpartum depression and relationship quality. A greater severity of postpartum depression symptoms (sleeping/eating disturbances, anxiety/insecurity, emotional lability, mental confusion, loss of self, guilt/shame, suicidal thoughts) occurred in women who were less satisfied with their relationship, i.e., those who experienced a decreased level of intimacy, self-fulfillment and partner similarity, as well as a deeper sense of disillusionment. Women who declared deeper satisfaction with their relationship displayed a greater sense of mental well-being. No correlation was found between the occurrence of postpartum depression and socio-demographic factors (age, education level, place of residence) and factors associated with the subjects' childbearing history (number of children, number of pregnancies, history of miscarriage, family planning, prior diagnosis of depression, type of delivery, newborn's condition following birth, infant feeding method).

**Conclusions.** Patients dissatisfied with the quality of their marital relationship experienced an increased severity of postpartum depression symptoms. Greater satisfaction with relationship quality was expressed by women in formalized relationships.

**Key words:** postpartum depression, couple relationship

## Introduction

Pregnancy, childbirth and the postpartum period are times in which very dynamic changes occur in a woman's body, her functioning and mental well-being. The birth of a baby also constitutes a challenge for the marital dyad which, faced with the arrival of a new family member, has to recast itself as an emotionally balanced triad with appropriately distributed competencies. New tasks, demands and limitations unfold. The process of transformation and adaptation to the new situation can sometimes prove difficult. Approximately 10–15% of women develop postpartum depression (PPD) [1].

PPD is a mood disorder which can affect women after childbirth. According to DSM-IV-TR and ICD-10, PPD occurs within six weeks of delivery [2]. However, a number of clinicians and researchers investigating the issue assert that a postpartum depression episode may appear within the first year of childbirth [3]. Despite the fact that PPD is characterized by symptoms typical of other depressive episodes (lowered mood, loss of interest, reduced energy, low self-esteem, feelings of guilt, cognitive dysfunction, sleep and appetite disturbances, thoughts of death or suicide), it is recognized as a condition specifically associated with childbirth [2]. Since some symptoms of a typical depressive episode occur naturally during the puerperium, such as insomnia (frequently associated with breastfeeding), weight loss (associated with uterine involution and return to the pre-pregnancy body size) or loss of libido, the process of diagnosing PPD takes into account signs indicating an impairment in the mother-child relationship such as a weakening of the bond between them, an excessive anxiety related to the child's health condition, which is not a cause for concern [4]. The International Classification of Mental and Behavioral Disorders (ICD-10) has assigned to PPD code F53.0 Mild mental and behavioral disorders associated with the puerperium, not elsewhere classified: postnatal depression, postpartum depression [2]. The consequences of PPD can be profound and far-reaching. Postpartum depression diminishes a woman's quality of life, impacts on her social relationships, impairs her ability to establish and maintain a bond with her baby, which may thereby lead to disturbances in the baby's proper cognitive, behavioral, emotional, social and motor development [5].

Analyses of PPD risk factors point to the significance of biological, socioeconomic and psychological factors [6, 7]. It has been demonstrated that women who experienced a previous episode of depression are at greater risk of developing PPD [8]. In women who were previously diagnosed with postnatal depression the risk of its recurrence increases to 25% [6]. It has been observed that a decreased prenatal serum concentration of vitamin D may have an impact on the development of PPD [9]. It has also been indicated that factors related to the course of pregnancy (a high-risk pregnancy, considerable stress during pregnancy) and factors concerning the baby (preterm birth, low birth weight, the newborn's impaired functioning and development) may contribute to the development of PPD [10]. It has been indicated that from among socioeconomic

factors, low income is associated with a greater incidence of PPD [11]. It has been observed that professionally active mothers expressed a greater interest and were more attentive towards their offspring [12]. According to some reports, PPD occurs more frequently in women with a lower level of education and those originating from ethnic minorities [13]. Psychological factors include: personality and anxiety disorders, the woman's negative reaction to conception and her negative attitude towards the pregnancy, the partner's negative reaction to the pregnancy and his lack of support [14].

### **Aim**

The aim of this study was to investigate a relationship between the severity of PPD symptoms and the quality of a marital relationship/partnership.

### **Material**

The study group comprised of 100 women in the first month after delivery. The research was conducted on postnatal wards and in the surveyed women's homes during health visitors' visits within the first month after childbirth. Participation in the study was voluntary, anonymous and unremunerated. The study group selection was determined by PPD diagnostic criteria (occurrence of depressive symptoms within the first weeks of delivery) [2]. Women whose deliveries were complicated and those whose newborn babies required specialized intensive treatment in neonatal units were excluded from the study. The exclusion criteria were based on research results reported in the literature. The reports indicate a greater incidence of postpartum depression symptoms in mothers of premature children or those whose condition was poor due to genetic disorders, congenital malformations or complications of labor and delivery. Studies have demonstrated that the mood of those mothers is naturally lower, which is due to elevated stress levels resulting from their justifiable anxiety concerning their child's unstable condition [10, 15, 16].

### **Method**

The Postpartum Depression Screening Scale by Beck and Gable [17] adapted to Polish by Kossakowska [18] was used to assess the severity of postpartum depression. It is a tool aimed at measuring depressive symptoms in postnatal women which is characterized by greater sensitivity and specificity parameters than tests typically utilized in the measurement of depressive symptoms [19]. The PDSS consists of 35 items, 5 items for each of 7 subscales, i.e.: sleeping/eating disturbances, anxiety/insecurity, emotional lability, mental confusion, loss of self, guilt/shame, and suicidal thoughts. Responses to the test are provided on a 5-point scale. Women taking the test can score from 35 to 175 points. The higher the number of points, the worse the woman's mental well-being. The reliability of the original Postpartum Depression

Screening Scale was estimated as Cronbach's alpha coefficient = 0.97 based on the group of 525 people [20]. The result was confirmed by the Polish adaptation of the scale [18] and by the current study.

Marital relationship quality was evaluated using the Marital Compatibility Questionnaire by Plopa [21]. The test consists of 4 domains: intimacy, self-fulfillment, partner similarity, disillusionment. It contains 32 items, each requiring a response on a 5-point scale. The respondent can obtain a score from 32 to 160 points. The higher the number of points, the more satisfied the respondent is with the quality of the marital relationship. Test reliability was estimated by the author as Cronbach's alpha coefficient = 0.85 based on the group of 2,589 people [21]. The value of this coefficient in this study was 0.75.

### Statistical analysis

Normality distribution of the analyzed properties was established with the use of the Shapiro-Wilk test while the differences between the subgroups were determined with the Student's t-test (parametric test). Also, a parametric test (Pearson's r test) was used to evaluate the dependencies between the variables while a non-parametric test ( $\chi^2$  test) for the education variable. In the case of the analysis of rank variables (the number of children, the number of pregnancies), Spearman's rho test was applied. Test outcomes were considered significant at  $p < 0.05$ .

## Results

The study group was composed of 100 women in their first month after childbirth. The group's detailed description including the percentage distribution of the analyzed variables can be found in Table 1. Table 2 and 3 show the scores obtained by the respondents in tests concerning the severity of postpartum depression symptoms (PPDS) and marital relationship quality (MDM). Tables 4 and 5 present the correlations observed between the analyzed variables.

Table 1. Study group description

Age	Min. = 15, Max. = 43, Mean = 28.57, SD = 6.12
Education	primary 4%
	vocational 5%
	secondary 44%
	higher 47%
Education of spouse	primary 10%
	vocational 15%
	secondary 37%
	higher 38%

*table continued on the next page*

Place of residence	urban areas 74%
	rural areas 26%
Marital status	single 15%
	married 79%
	widowed 2%
	divorced 4%
Number of children	one 54%
	two 36%
	three 9%
	four 1%
Number of pregnancies	one 47%
	two 38%
	three 9%
	four 5%
	five 1%
Miscarriages	yes 17%
	no 83%
Pregnancy planning	yes 72%
	no 28%
Previous episode of depression	yes 15%
	no 85%
Delivery	natural delivery 54%
	Caesarean section 46%
Apgar score	10 points 74%
	9 points 12%
	8 points 7%
	7 points 3%
	6 points 4%
	1-5 points 0%
Feeding method	breastfeeding 80%
	non breastfeeding 5%
	partly breastfeeding 15%

Table 2. Level of postpartum depression symptoms (PDSS) in the study group

	Minimal score	Maximal score	Mean	Standard deviation
PDSS (total score)	35	172	65.28	25.48
Sleeping/eating disturbances	5	23	10.84	4.24
Anxiety/insecurity	5	24	10.99	3.86
Emotional lability	5	25	10.71	4.74
Mental confusion	5	25	10.84	4.07
Loss of self	5	25	8.25	3.89
Guilt/shame	5	25	8.26	4.01
Suicidal thoughts	5	25	7.07	3.67

Table 3. Marital relation quality according to the MCQ

	Minimal score	Maximal score	Mean	Standard deviation
MCQ (total score)	46	154	124.5	22.37
intimacy	11	40	31.42	6.69
self-fulfillment	11	35	28.14	5.50
partner similarity	10	35	28.67	5.48
disillusionment	9	41	17.73	6.93

Table 4. Correlations between the level of postpartum depression symptoms (PDSS) and marital relation quality (MCQ), and sociodemographic variables and variables associated with labor/delivery history

	PDSS	MCQ
Age	$r = -0.156, p = 0.121$	$r = -0.077, p = 0.448$
Age of spouse		$r = -0.123, p = 0.222$
Age difference		$r = -0.027, p = 0.792$
Education	$\chi^2 = 3.625, p = 0.163$	$\chi^2 = 1.737, p = 0.420$
Education of spouse		$\chi^2 = 1.080, p = 0.583$
Place of residence	$t = -0.698, p = 0.487$	$t = -1.727, p = 0.089$
Marital status	$t = 2.369^*, p = 0.020$	$t = 2.671^*, p = 0.017$
Number of children	$\rho = 0.029, p = 0.776$	
Number of pregnancies	$\rho = -0.007, p = 0.947$	
Miscarriages	$t = -0.239, p = 0.813$	$t = 0.429, p = 0.671$
Pregnancy planning		$t = 1.322, p = 0.190$
Previous episode of depression	$t = -0.341, p = 0.672$	
Delivery method	$t = -0.534, p = 0.594$	

*table continued on the next page*

Child's condition	$r = 0.052, p = 0.610$	$r = -0.076, p = 0.449$
Feeding method	$t = 0.562, p = 0.761$	$t = 0.473, p = 0.681$

\*  $p \leq 0.05$ ;  $r$  – the Pearson's correlation ;  $\rho$  – the Spearman's correlation;  $t$  – result of the Student's t-test;  $\chi^2$  – result of the  $\chi^2$  test

Table 5. Correlations between the level of postpartum depression symptoms (PDSS) and marital relation quality (MCQ) measured using Pearson's  $r$  correlation

		MCQ			
		Intimacy	Self-fulfillment	Partner similarity	Disillusionment
-0.42***					
PDSS	Sleeping/eating disturbances	-0.46***	-0.49***	-0.55***	0.55***
	Anxiety/insecurity	-0.44***	-0.45***	-0.53***	0.53***
	Emotional lability	-0.44***	-0.47***	-0.53***	0.51***
	Mental confusion	-0.44***	-0.49***	-0.51***	0.55***
	Loss of self	-0.44***	-0.39***	-0.49***	0.52***
	Guilt/shame	-0.47***	-0.42***	-0.51***	0.54***
	Suicidal thoughts	-0.45***	-0.36***	-0.47***	0.53***

\*\*\*  $p \leq 0.001$

## Discussion

The majority of sociodemographic variables were not related to marital relationship quality and severity of postpartum depression symptoms, although the respondents' marital status was an exception. Married women, in comparison to cohabiting females, experienced greater satisfaction from being in a relationship and displayed fewer symptoms of postpartum depression. This appears to be associated with the Polish cultural tradition. Poland is a conservative country where religious values and tradition remain powerful. Cohabiting couples do not enjoy as many rights as married couples. Additionally, formalized relationships are more positively perceived by society. In formalized relationships there is a greater legal and financial co-responsibility for a newborn baby and it can be presumed that a greater emotional co-responsibility also exists. It may be hypothesized that women in formalized relationships felt a deeper sense of stability and certainty due to the legal recognition of the permanence of their relationships. It must be emphasized, however, that the observed relationship is not very strong and that the analyzed groups were not equal in size (married women predominated).

Interestingly, our research – in contrast to other studies – found that the severity of postpartum depression did not relate to the variables regarding pregnancy, labor and delivery. Postpartum depression symptoms did not relate to the occurrence of miscarriage. Stowe et al. reported that previous miscarriages predisposed women to postpartum depression [22]. Neither did the type of delivery (natural or Caesarean

section) impact on the studied women's psychological state. Other researchers have observed a greater severity of postpartum depression symptoms in women who delivered by Caesarean section [23].

There was no significant relationship between the severity of postpartum depression symptoms and the overall number of children in the family. It could be presumed that women who have given birth to a consecutive child suffer more physical and psychological strain as they need to combine the demands placed on them by a newborn baby with the care of the remaining children. On the other hand, first-time mothers encounter a great number of problems concerning the infant's care as they lack the experience of mothers of a few children.

Some researchers have highlighted the significance of an inherited predisposition to depression and the occurrence of previous depressive episodes in the development of postpartum depression [24, 25]. The current study did not find a relationship between self-reported occurrence of previous depressive episodes and the severity of postpartum depression symptoms experienced by the respondents at the time of assessment.

There are reports indicating the significance of hormonal changes in the puerperium, for example those related to breastfeeding, and their impact on a woman's psychological condition [26]. This study did not find a relationship between a feeding method (breastfeeding, formula feeding, a combination of methods) and the severity of postpartum depression.

This study suggests that – as in the case of other mood disorders – in the development of postpartum depression an important role is played not only by biological factors but also by contextual and reactive factors. A social support network and close personal relations, such as the marital relationship investigated in this study, are essential. A statistically significant relationship of moderate intensity was found between the severity of postpartum depression and relationship quality. The correlation was related to the overall result (postpartum depression and relationship quality) and the scores achieved in all the domains of both tests. A greater severity of postpartum depression symptoms (sleeping/eating disturbances, anxiety/insecurity, emotional lability, mental confusion, loss of self, guilt/shame, and suicidal thoughts) was observed in women less satisfied with their relationship, i.e., those who were experiencing a decreased sense of intimacy, self-fulfillment and partner similarity and a greater sense of disillusionment. Women who declared deeper satisfaction with their relationship displayed a greater sense of mental well-being after childbirth. Their subjective perception was that their spouses' reactions were more consistent with their own, their partners showed a greater understanding and intimacy, and were more sensitive to their needs in contrast to women who were dissatisfied with their relationships.

The observed correlations confirm the significance of the support network (the marital relationship) in the occurrence and development of postpartum depression. A sense of closeness and intimacy, a feeling of partner compatibility and opportunities for self-fulfillment in the relationship were associated with a better mood and more effective coping with the difficulties of labor, puerperium, and care of a newborn baby.

The relationship between the severity of postpartum depression and relationship quality has been documented in other studies [27]. Gremigni in her two-stage study (evaluation in the third trimester of pregnancy and three months after the birth) demonstrated that the severity of postpartum depression symptoms was related to a disparity concerning women's expectations about their partners which they formed while pregnant. Women who evaluated their partners' support as inconsistent with their expectations experienced a greater severity of postpartum depression symptoms measured using the Edinburgh Depression Scale [28]. Similarly, Page and Wilhelm demonstrated a relationship between the severity of postpartum depression symptoms, measured using CES-D (Center for Epidemiological Studies Depression Scale), and the support received in the marital relationship. They also documented an association between the severity of postpartum depression symptoms and the depth of the marital relationship, defined as the perception of the relationship as positive, important and secure [27]. By contrast, Burke showed a relationship between disharmony, incompatibility and marital conflicts, and depressive symptoms [29]. The relationship between depressive symptoms and marital relationship quality has a circular character, i.e., the character of correlation: a woman's lowered mood and psychological ill-being has a negative impact on her perception of the relationship – a weak, dissatisfying relationship impacts on a woman's mental state. An increasing number of findings reported in the literature concern the impact of a baby's arrival on the father's mental state and many studies have documented the exacerbation of depressive symptoms in men [30–33]. Faced with the arrival of a baby (particularly the first one) the marital dyad has to recast itself as a family triad. Remaining in a relationship with a depressive partner depletes the family's resources and significantly hinders this transformation [34].

This study was a fragmentary evaluation. The obtained results do not justify the formulation of hypotheses concerning the direction of the correlation, i.e., whether women who were dissatisfied with their relationship with their partner and his lack of support experienced negative feelings following childbirth or, while experiencing a lower mood after childbirth, they negatively perceived the existing reality including the marital relationship. An answer to this question may be provided by longitudinal studies which would compare relationship quality and partners' mood at different stages of their lives: pre-pregnancy, during pregnancy and post-pregnancy.

The current study was limited to the measurement of women's mental well-being and their perspective on the marital relationship in the context of the arrival of a new baby. The objectification of these assessments was not pursued with an evaluation of the husbands' perspective or through observation. A subjective evaluation of the relationship allows for a negative perception of the partner's behavior, considering him as unsupportive and insensitive while, in fact, the partner is actively involved and deeply committed to the relationship or idealizing the partner and denying his flaws while, in fact, the husband's attitude is negative. It was established that it is not the objective view of the relationship but its subjective (often distorted) perception that impacts on the woman's mental state.

The study included women in the first month after childbirth, which is the period of the most dynamic changes in adapting to the new situation of a child's arrival. However, it did not take into consideration the consecutive stages of adaptation and the possibility of PPD subsequent occurrence. It is feasible that the relationship between the severity of postpartum depression symptoms and marital relationship/partnership quality may alter in the following months of parenthood.

### Conclusions

There is a relationship between the severity of postpartum depression and marital relationship/partnership quality. A greater severity of postpartum depression symptoms occurs in individuals less satisfied with the quality of their relationship with the partner.

The severity of postpartum depression symptoms is not related to sociodemographic variables and variables associated with the labor, delivery and childbearing history.

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