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Mood disorders in postpartum patients at the University Hospital in Zielona Góra according to the Edinburgh Postnatal Depression Scale (EPDS)

Abstract

Introduction. Childbirth and its course have a significant impact on a woman's mental functioning during the postpartum period and motherhood. The mother's mental state affects not only her child's life and health, but also the functioning of the entire family. The literature distinguishes several types of mental disorders that occur in the postpartum period, including postpartum depression.

Aim. This study aims to determine the incidence of mood disorders in women up to 6 months postpartum.

Material and methods. The research was carried out using a standardized questionnaire – the Edinburgh Postnatal Depression Scale (EPDS) – designed to determine the severity of mood disorders in the postpartum period in women at the University Hospital in Zielona Góra. The survey was conducted among 100 women aged from 17 to 43.

Results. The results of the analysis showed that in women who noticed mood disorders during pregnancy (n=11, i.e. 11% of the total and n=10, i.e. 10% of the total), there is a possibility of postpartum depressive disorders (score ≥ 12 points on the ESDP scale) (p=0.0006). Respondents who answered "Definitely yes", accounted for 42.31% of women who scored ≥ 12 points on the ESDP scale, and those who answered "Rather yes", accounted for 38.46%.

Conclusion. Respondents, whose pregnancy ended in a physiological delivery (forces of nature), feel more satisfied with childbirth than the other respondents (n=29 – definitely yes; n=24 – rather yes). In women whose pregnancy ended in caesarean section, the level of dissatisfaction with childbirth (n=9 – rather not) or less satisfaction (n=3 – definitely not) was higher than in the other women (p=0.0124).

Keywords: depression, childbirth, depression scale.

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INTRODUCTION

Pregnancy, childbirth and the arrival of a child are major changes in every woman's life [1]. These stressors may contribute to the development or recurrence of psychopathological symptoms in women [2]. Childbirth and its course have a significant impact on a woman's mental functioning during the postpartum period and motherhood. The mother's mental state affects not only her child's life and health, but also the functioning of the entire family [3].

During pregnancy, a woman should be assured of peace, emotional support from her loved ones, and as little exposure to stressors as possible. A healthy lifestyle also plays a big role in maintaining mental balance. Between the 3rd and 6th week of pregnancy, the concentration of sex hormones reaches its highest level and the likelihood of a depressive episode increases [4]. Elevated levels of progesterone during pregnancy have a calming and euphoric effect and increase the

level of tolerance [5]. Morisson (2016) determined that in the perinatal period, an episode of mania, hypomania, depression, or a short-term psychotic disorder is possible [6]. However, other authors report that the possibility of psychiatric symptoms, committing suicide or psychiatric hospitalization during pregnancy is lower than in other periods of a woman's life. Nearly 70% of pregnant women may experience symptoms such as anxiety, mood swings, hypersensitivity or depression, especially in the first and third trimesters of pregnancy. About 10% are diagnosed with symptoms of depression [5].

The literature distinguishes three types of mental disorders that occur in the postpartum period. They are distinguished by the type and severity of symptoms [3]: "postpartum blues (also called the "baby blues"), postpartum depression, postpartum psychosis".

Symptoms of depression during pregnancy are much less common than after childbirth. The first and third trimesters of pregnancy are the periods when the symptoms of depression

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are most often noticed, which are confused with the psychophysiological symptoms of pregnancy, such as easy fatigue, attention deficit disorder, sleep problems, excessive or poorer appetite, changes in body weight [7], mood swings and irritability [5].

Postpartum depression is a major depressive episode that occurs in the period from the 4th to the 6th week after delivery, lasting up to 6 months, rarely up to a year [3]. Jaeschke et al. (2021) report that the official time frame for the onset of postpartum depression is too narrow according to the latest research [8].

This disease occurs in 10-20% of women after childbirth and may occur if a given woman suffered from depression before pregnancy or is genetically predisposed (depression in history) [3], in the case of exposure to chronic stress factors, depression in the partner, inadequate social support and lower socio-economic status [7].

Postpartum psychosis (psychotic postpartum depression) is an exacerbation of the symptoms of postpartum depression, and its characteristic symptoms include agitation, insomnia, loss of appetite, irritability, depressed mood, and lack of involvement in caring for the child [9]. In addition to mood disorders, there are also delusions and hallucinations about the child. Delusions present the child as a “demon, the incarnation of evil”, which affects the mother’s irrational, dangerous behavior toward the newborn or infant [10]. Its etiology is unknown. It is noted that genetic background and character traits (e.g. difficulties in coping with stressful situations) may contribute to the occurrence of postpartum psychosis. This condition may occur in the early postpartum period, about 3 days, and may be confused with postpartum depression [3]. Its development is described as rapid. Postpartum psychosis affects only about 0.1-0.2% of postpartum women [9] and absolutely requires psychiatric hospitalization and antipsychotic treatment [7].

Screening tests are used in the initial diagnosis of mental disorders in pregnant and postpartum women. The tools used for screening are specific scales (e.g. Edinburgh Postpartum Depression Scale, Postpartum Depression Risk Assessment Questionnaire) and generic scales (e.g. Beck Depression Inventory, Zung Depression Self-Rating Scale) [11]. In screening for depression during pregnancy and postpartum depression, the most commonly used tool is the Edinburgh Postnatal Depression Scale (EPDS) form [12].

The examination using the ESDP form is carried out in a pregnant woman between the 11th and 14th and between the 33rd and 37th weeks of pregnancy [11], as well as in the 6th week after delivery during a patronage visit [9]. It is recommended that the examination be performed by a community midwife or physician [11].

The ESDP form consists of ten single-choice questions, with four possible answers to choose from. A pregnant woman, who later gives birth, chooses the answer that best characterizes her feelings in the last seven days [9]. A maximum of 30 points can be obtained, and obtaining a score of 12 or more points or confirmation of thoughts of self-harm is an indication for a diagnosis by a specialist and may indicate the occurrence of depressive disorders of varying severity [13]. According to ACOG, the sensitivity of this scale is 59-100%, and the specificity is 49-100% [11].

A pregnant woman diagnosed with depression should be cared for by a multidisciplinary team. Its members include

a family doctor, a midwife, a gynecologist, a psychiatrist and a psychologist. The treatment of a patient’s mental health disorder depends on several factors. It is important to determine the disease entity that has occurred, the severity of the symptoms, the duration of the disorder, and the patient’s motivation to treat herself. Forms of pharmacological and non-pharmacological treatment are distinguished [3].

AIM

This study aims to determine the incidence of mood disorders in women up to 6 months postpartum. It is also important to show the factors that may influence the occurrence of depressive disorders in postpartum women and the impact of childbirth and aspects related to motherhood on the mental state.

MATERIAL AND METHODS

The method of diagnostic survey was used in the study. A research tool, a questionnaire consisting of two parts, was used to collect information. The first part was a self-developed survey, consisting of 12 questions – open and closed. The questions concerned sociodemographic factors and issues related to mood disorders during pregnancy. The second part is a standardized survey, the Edinburgh Postnatal Depression Scale (EPDS), designed to measure the severity of mood disorders in the postpartum period. The EPDS questionnaire contained 10 single-choice questions with 4 possible answers. The answers were scored from 0 to 3 points. The maximum number of points was 30. Receiving 12 points and more is an indication for a diagnosis by a specialist and may indicate the occurrence of depressive disorders of varying severity [13].

Statistical Calculation Software – PQStat and Microsoft Office Excel 2010 – were used for the statistical analysis of the obtained research results. The significance level used in the analysis was $\alpha=0.05$. Contingency tables (cross tables) were used to show the distribution of variables. The analysis also used chi-square tests of independence – to determine whether the given variables are independent of each other – degrees of freedom and p values. Symbols used in the work: n – sample size, df – number of degrees of freedom, χ^2 – chi-square test, p – test probability, % – percentage of responses.

The surveys were conducted between September and December 2022. The research area was the University Hospital in Zielona Góra. The questionnaire was addressed to women who had given birth to a child in the previous 6 months. The research sample consisted of patients of the Obstetrics and Gynecology Department and women who decided to complete an anonymous electronic form of the questionnaire.

The survey was conducted among 100 women aged from 17 to 43. Half of the respondents were women between aged between 21 and 30, followed by women between the age of 31 and 40 – 42%. When it comes to 6% of respondents, they were women over the age of 40, while 2% were under the age of 20. The average age of the respondents was 31, the median age was 30, and the dominant age was 29. With regard to the place of residence, it is noted that almost $\frac{3}{4}$ (74%) of the respondents were women living in cities, while more than $\frac{1}{4}$ (26%) were women from rural areas. The vast majority of the respondents had higher education (68%), a smaller part were women with secondary education (26%), while lower

secondary and vocational education was reported by 3% of the respondents. Nobody described their education as primary. Most of the respondents (59%) were married, 35% of women were in a permanent relationship, while a total of 6% of the respondents described themselves as divorced and single. Caesarean section was performed in the majority of respondents (59%), 38% of women gave birth naturally (physiological childbirth), while 3% required the use of forceps or vacuum. Half of the women surveyed (50%) have one child, almost 1/3 (33%) have two children, 13% have three children, and 4% have four children.

RESULTS

The criterion for higher probability of postpartum mood/depressive disorder in the study group was a score of 12 or more points on the Edinburgh Postnatal Depression Scale (EPDS). This result was obtained by 26 out of 100 respondents, or 26% of all respondents. The score below 12 points (11 points or less) was found in 74 respondents, or 74% of the total. Another criterion for urgent contact with a specialist was an affirmative answer to the statement “I thought about hurting myself”. Among the respondents, 8% (n=8) “Sometimes” and 1% (n=1) “Very often” thought about hurting themselves.

According to the statistical analysis based on the obtained research results (p=0.3603), there is no relationship between the place of residence of the respondents and a higher EPDS score (≥12 points) indicating the possibility of postpartum depressive disorders. Also, the statistical analysis based on the obtained research results (p=0.8465) does not show any relationship between the education of the respondents and the method of termination of pregnancy in the surveyed women and a higher EPDS score (≥12 points) indicating the possibility of postpartum depressive disorders.

According to the results of the study (Table 1), it can be stated that women who have noticed mood disorders during pregnancy (n=11, i.e. 11% of the total and n=10, i.e. 10% of the total) may experience postpartum depressive disorder (EPDS score ≥12) (p=0.0006). The respondents who answered “Definitely yes” accounted for 42.31% of women who scored ≥12 points on the ESDP scale, and those who answered “Rather yes” accounted for 38.46%.

TABLE 1. Mood disorders during pregnancy and the possibility of postpartum depressive disorders.

Mood disorders in pregnancy	Mood disorders during pregnancy and the possibility of postpartum depressive disorders	
	Score ≥ 12 – mood disorders n (%)	Score ≤ 12 points – no mood disorders n (%)
Definitely yes	11 (61.11%)	7 (38.89%)
Rather yes	10 (32.26%)	21 (67.74%)
Definitely not	0 (0.00%)	7 (100.00%)
Rather not	4 (10.26%)	35 (89.74%)
I don't know	1 (20.00%)	4 (80.00%)

χ² Pearson's: 19.7416; df=4; p=0.0006

According to the statistical analysis based on the obtained research results (p=0.1403), there is no relationship between respondents' age and higher ESDP score (≥12 points) indicating the possibility of postpartum depressive disorders.

According to the obtained research results and the data presented in Table 2, it can be concluded that the respondents whose pregnancy ended in a physiological delivery (forces of nature) feel more satisfied with childbirth than other respondents (n=29 – definitely yes; n =24 – rather yes). In women whose pregnancy ended in caesarean section, the level of dissatisfaction with childbirth (n=9 – rather not) or less satisfaction (n=3 – definitely not) was higher than in other women (p=0.0124).

TABLE 2. Method of delivery and female respondents' answers to the question “Do you feel satisfied with the delivery and the method of delivery?”

Method of termination of pregnancy	The feeling of satisfaction with the birth			
	Definitely yes	Rather yes	Definitely not	Rather not
Using forceps/vacuum	0 (0.00%)	1 (33.33%)	1 (33.33%)	1 (33.33%)
Physiological childbirth (forces of nature)	29 (50.00%)	24 (41.38%)	2 (3.45%)	3 (5.17%)
Caesarean section	13 (36.11%)	11 (30.56%)	3 (8.33%)	9 (25.00%)

χ² Pearson's: 16.2581; df=6; p=0.0124

DISCUSSION

In the population, postpartum depression, or baby blues, has been reported to occur in 40-85% of postpartum women within 2 weeks of delivery [9,14,15]. Postpartum depression is diagnosed in about 10-20% of mothers, and its duration is estimated to be about 3-20 weeks after childbirth, and up to one year in about 40% of women [16]. Postpartum psychosis may occur in 0.1-0.2% of women, and the next delivery may cause a recurrence in about 30% of them. The development of psychosis is attributed to a period of up to 3 months after delivery [17].

The aim of the study was to determine the incidence of mood disorders in women up to 6 months postpartum. Because the diagnosis of postpartum depression (or any affective disorder) rests with the doctor, the study drew attention to the possibility of mood/depressive disorders predisposing the respondents to the above diseases.

In our own research study based on a sample of 100 women 26% of respondents were found to be at risk of developing depressive disorders up to 6 months after childbirth. The qualifying criterion was a score of ≥12 points out of 30 on the Edinburgh Postnatal Depression Scale. When the time period was narrowed down to the first month after childbirth, the possibility of a mood disorder was found in 7% of all respondents, but in the period from a month to 3 months in 7% of all respondents, and in the period from 3 to 6 months it was found in 12% of all respondents. Our own results do not differ from the results in the literature and scientific articles.

In the study by Gebuza et al. (2015) 28% of women were found to have a depressed mood up to 6 months after giving birth. The research sample consisted of 50 postpartum women. The research tool used was the MGI Questionnaire (Questionnaire Mother-Generated Index) designed to assess the quality of life of women after childbirth [18].

In the study by Maliszewska et al. (2016) on the postpartum “baby blues” among 101 postpartum women, 16.8% were found to be at risk of developing these disorders [19]. In the study conducted by Kaźmierczak et al. (2020) on 285 women, 2% of postpartum women were found to be at risk of developing these disorders in the first week after delivery [20]. More recent studies from 2020 showed that the risk of developing depressive symptoms occurs in 18.6% of postpartum women. The study also used the Edinburgh Postnatal Depression Scale questionnaire for women who were on average in the 4th week of the postpartum period. A total number of 80 pregnant women participated in the study and were asked to be contacted again after giving birth [20].

In the study by Kosińska-Kaczyńska et al. (2008) 38.4% of the respondents scored ≥ 10 points on the ESDP scale (which, according to the authors, is a criterion for determining the occurrence of postpartum depression symptoms) in the first week after delivery. The study also covered pregnant women – 350 of whom were re-examined after giving birth [21].

In the study by Mojs et al. (2013) using the Beck Depression Inventory (BDI) as a research tool, 22% of the respondents had a medium or high BDI score in the early postpartum period, which may suggest moderate and severe depression. The research sample consisted of 46 respondents [22]. In the study by Niegowska and Kobos (2019), a high depression index (≥ 12 points on the EPDS scale) occurred in every third (35%) of the respondents within 7 days after delivery. A total number of 300 postpartum women participated in the study [23]. The study by Petrozzi and Gigliardi (2013) conducted in Italy among 594 mothers showed that the result of >9 points on the ESDP scale on the 2nd day after delivery occurred in 15.7% of postpartum women, while in 7.6% of women 3 months after delivery [24]. In their study, Sylvén et al. (2016) showed that in a group of 653 primiparous women, 10.3% of the ESDP scores were ≥ 12 on the 5th day and 6th week after delivery, of which 6.4% reported depressive symptoms [25].

According to Kossakowska’s research (2012), among 197 postpartum women in the study, 43% had an increased index of postpartum depression (≥ 12 points on the ESDP scale), and the period from delivery was from 4 to 12 weeks [26]. Other studies by Kossakowska (2018), in which the Postpartum Depression Screening Scale (PDSS) was used on a sample of 144 mothers, showed high severity of depression in nearly 20% of the respondents [27].

The study by Maliszewska et al. (2017) on a sample of 387 postpartum women found that 12.4% of them were at risk for postpartum depression between the 4th and 8th week after delivery. The EPDS scale was used in the study [28].

The research conducted by Fejfer-Szpytko et al. (2016) shows that one in three (29.92%) out of 244 respondents was diagnosed or suspected of having depression after childbirth. More than half of them (56.41%) observed behaviors that may be considered indicators of depression, and therefore had a suspected or diagnosed depression, which means that they sought help because they found their behavior disturbing enough. On the other hand, 41.03% of the respondents did not take into account the diagnosis or suspicion of depressive disorders [15].

In the study by Niegowska and Kobos (2019), a factor that significantly increased the risk of postpartum depression was a history of mental health disorders [23]. This is also supported by the studies by Golec et al. (2016), which show that previous episodes of depression, as well as the presence of resignation or suicidal thoughts in the past, are factors predisposing to

the occurrence of postpartum depressive disorders. The study was carried out among 184 postpartum women. Other factors identified by the authors include unplanned pregnancy, health problems during pregnancy, and hospitalization due to high-risk pregnancy. The research tools used included the Beck Depression Scale, and the Edinburgh Postnatal Depression Scale [29].

Dudek et al. (2002), referring to research carried out over the years, state that approximately 30% of primiparous women, who were diagnosed with depression prior to pregnancy, are at risk for postpartum depression, and 30-55% of women with a history of postpartum depression are at risk for recurrence of a depressive episode after another pregnancy [9].

In our own research, in the part concerning the correlation between the occurrence of postpartum mood disorders and the manner of delivery, the possibility of mood disorders was found in 14% of women after physiological delivery, in 11% of respondents after cesarean section, and in 1% after delivery with the use of forceps/vacuum. In conclusion, this risk is slightly higher in women who give birth naturally.

The studies by Kowalska et al. (2014) showed that postpartum women after caesarean section were more likely to experience mood disorders and lower well-being [30], which was also confirmed in the studies by Fórmaniak et al. (2014) [31]. Other studies on a research sample of 161 nulliparous women also showed that women who had a caesarean section delivery were more likely to be diagnosed with postpartum depression compared to those who had a natural delivery [32]. The studies showed an association between postpartum depression and women’s age, prenatal problems, prenatal level of attachment of the pregnant woman to the child, or clinical difficulties during childbirth.

There are also research results in the literature showing no relationship between the method of termination of pregnancy and the risk of postpartum depression [20,25,33].

Our own research has also addressed the issue of feeling satisfaction with childbirth in relation to the method of delivery. Respondents after a physiological childbirth feel more satisfied with childbirth – 49% of all respondents, after caesarean section – 24%, and after childbirth using forceps/vacuum – 1%. On the other hand, in our own research, female respondents with a score of ≥ 12 on the ESDP scale and higher education accounted for 19% of all respondents, while among the surveyed women who scored ≥ 12 on the ESDP scale, they accounted for nearly 75%. This allows us to conclude that higher education is correlated with the occurrence of postpartum mood disorders.

The study by Kosińska-Kaczyńska et al. (2008) showed that lower education and a history of depressive disorders are associated with a depressed mood after childbirth and a score of ≥ 10 on the ESDP scale. Place of residence has not been found to influence the risk of postpartum mood disorders [21].

According to Reroń et al. (2004), depressive disorders were confirmed to be much more common among urban dwellers with secondary education [33]. On the other hand, research from 2019 in Tanzania showed that women with lower education were predisposed to postpartum depression [34].

CONCLUSIONS

The possibility of mood disorders in the period of up to 6 months after childbirth has been demonstrated in 26% of the research sample. The method of termination of pregnancy has

a slight impact on the likelihood of postpartum depressive disorders – women after physiological childbirth feel slightly more satisfied with childbirth. Women, who diagnosed themselves with a mood disorder during pregnancy, are much more likely to develop postpartum depression. Therefore, in studies of pregnant women, it seems important to determine the possibility of postpartum depression using screening tests that are easy to interpret.

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