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BIRTH SATISFACTION AS A RISK FACTOR OF POSTPARTUM DEPRESSION: A CROSS SECTIONAL STUDY

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Abstract

Introduction. Postpartum depression (hereinafter referred to as "PD") is a psychological condition characterized by the depth and duration of symptoms. More than 3-19% of women suffer from postpartum depression up to a year after childbirth.

Purpose of the work: to assess the relationship between the level of satisfaction with childbirth and postpartum depression, taking into account the influence of socio-demographic and clinical factors, among women during the year after childbirth.

Materials and methods: a cross-sectional study was conducted in five primary health care centers located in Semey city: No. 3,7,8, Adil-em and Khakim. The centers were selected by their geographical distribution. The sample for the study consisted of 251 women within a year after giving birth. Data collection was conducted from June 15 to September 30, 2021, using paper and electronic questionnaires by researchers and patronage nurses at primary health care centers.

All analyses were performed using the IBM SPSS Statistics 25 program. The main variables in the study were: the level of PD (based on EPDS scores); the satisfaction rate with childbirth (on the BSS-RI scale); and socio-demographic data.

The Chi-Square Goodness-of-Fit Test and binary logistic regression were used to assess the relationship between postpartum depression (≥ 10), socio-demographic data and satisfaction with childbirth. Fisher's exact test was used when more than 20% of cells had expected frequencies below 5 (< 5). A p-value of less than 0.05 was considered significant.

Results: the results of the study showed a relationship between the level of satisfaction with childbirth and postpartum depression. Low birth satisfaction (AOR = 4991, 95% CI 1.541-6167) was associated with higher rates of postpartum depression among women during the year following childbirth.

Conclusions: Our study found an association between women's satisfaction with childbirth and postpartum depression. Low birth satisfaction is a predictor of postpartum depression. It points to the need to improve the quality of medical services and individual professional support during childbirth.

Keywords: *postpartum depression, postnatal depression, puerperal depression, birth satisfaction, risk factors.*

Резюме

УДОВЛЕТВОРЕННОСТЬ РОДАМИ КАК ФАКТОР РИСКА ПОСЛЕРОДОВОЙ ДЕПРЕССИИ: КРОСС-СЕКЦИОННОЕ ИССЛЕДОВАНИЕ

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Введение. Послеродовая депрессия (далее - «ПД») – психологическое состояние, которое отличается глубиной и продолжительностью симптомов. Более 3-19% женщин страдают послеродовой депрессией до года после родов.

Цель работы: оценить взаимосвязь между уровнем удовлетворенности родами и послеродовой депрессией, с учетом влияния социально-демографических и клинических факторов, среди женщин в течении года после родов.

Материалы и методы: кросс-секционное исследование проводилось в пяти центрах первичной медико-санитарной помощи, которые расположены в городе Семей: №3,7,8, Адил-ем и Хаким. Центры были выбраны по их географическому распределению. Выборка для исследования состояла из 251 женщин в течении года после родов. Сбор данных проводился с 15 июня по 30 сентября 2021 года, с помощью бумажных и электронных анкет исследователями и патронажными медсестрами в центрах первичной медико-санитарной помощи.

Все анализы были выполнены с использованием программы IBM SPSS Statistics 25. Основными переменными в исследовании были: уровень ПД (на основе баллов EPDS); показатель удовлетворенности родами (по шкале BSS-RI); и социально-демографические данные.

Критерий согласия χ^2 и бинарная логистическая регрессия использовались для оценки взаимосвязи между послеродовой депрессией (≥ 10), социально-демографических данных с удовлетворённостью родами. Точный тест Фишера использовался, когда более 20% клеток имели ожидаемые частоты ниже 5 (< 5). Значение p менее 0,05 считалось значимым.

Результаты: Результаты исследования показали на взаимосвязь между уровнем удовлетворенностью родами и послеродовой депрессией. Низкое удовлетворенность родами (AOR = 4991, 95% ДИ 1,541-6167) были связаны с более высоким уровнем послеродовой депрессии среди женщин в течение года после родов.

Выводы: Результаты нашего исследования подтвердили наличие связи между удовлетворенностью женщинами родами и послеродовой депрессией. Низкий уровень удовлетворенности родами является предиктором развития послеродовой депрессии. Это указывает на необходимость повышения качества оказываемых медицинских услуг и индивидуальной профессиональной поддержки во время родов.

Ключевые слова: *postpartum depression, postnatal depression, puerperal depression, birth satisfaction, risk factors.*

Түйіндеме

БОСАНУҒА ҚАНАҒАТТАНУЛЫҚ ДЕҢГЕЙІ БОСАНҒАННАН КЕЙІНГІ ДЕПРЕССИЯНЫҢ ТӘУЕКЕЛ ФАКТОРТЫ РЕТІНДЕ: КРОСС-СЕКЦИОНДЫ ЗЕРТТЕУ

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Кіріспе. Босанғаннан кейінгі депрессия (бұдан әрі – «ПД») – симптомдардың тереңдігі мен ұзақтығымен ерекшеленетін психологиялық жағдай. Әйелдердің 3-19% -дан астамы босанғаннан кейінгі бір жылға дейін босанғаннан кейінгі депрессиядан зардап шегеді.

Жұмыстың мақсаты: босанғаннан кейінгі бір жыл ішінде әйелдер арасында әлеуметтік-демографиялық және клиникалық факторлардың әсерін ескере отырып, босануға қанағаттану деңгейі мен босанғаннан кейінгі депрессия арасындағы байланысты бағалау.

Материалдар және әдістері: Семей қаласында орналасқан № 3, 7, 8, Әділ-ем және Хакім атты бес алғашқы медициналық-санитарлық көмек көрсету орталықтарында көлденең зерттеу жүргізілді. Орталықтар географиялық таралуы бойынша таңдалды. Зерттеу үлгісі босанғаннан кейін бір жыл ішінде 251 әйелден тұрды. Деректерді жинау 2021 жылдың 15 маусымы мен 30 қыркүйегі аралығында зерттеушілер мен алғашқы медициналық-санитарлық көмек көрсету орталықтарына баратын медбикелердің қағаз және электронды сауалнамасын қолдану арқылы жүргізілді.

Барлық талдаулар IBM SPSS Statistics 25 бағдарламасын қолдану арқылы жасалды. Зерттеудегі негізгі айнымалылар: ПД деңгейі (EPDS ұпайлары негізінде); босануға қанағаттану көрсеткіші (BSS-RI шкаласы бойынша); және әлеуметтік-демографиялық мәліметтер.

χ^2 келісім критерийі және екілік логистикалық регрессия босанғаннан кейінгі депрессия (≥ 10), әлеуметтік-демографиялық деректердің босануға қанағаттанушылығын бағалау үшін қолданылды. Фишердің тесті таблицаның 20% - нан астамында күтілетін жиіліктер 5-тен (< 5) төмен болған кезде қолданылды. 0,05-тен аз p мәні маңызды болып саналды.

Нәтижелер: Зерттеу нәтижелері босануға қанағаттану деңгейі мен босанғаннан кейінгі депрессия арасындағы байланысты көрсетті. Туудың төмен қанағаттануы (AOR = 4991, 95% CI 1,541-6167) босанғаннан кейінгі бір жыл ішінде әйелдер арасында босанғаннан кейінгі депрессияның жоғары көрсеткіштерімен байланысты болды.

Қорытынды: Біздің зерттеу әйелдердің босануға қанағаттануы мен босанғаннан кейінгі депрессия арасындағы байланысты анықтады. Туудың төмен қанағаттануы босанғаннан кейінгі депрессияның болжамы болып табылады. Бұл босану кезінде медициналық қызмет көрсетудің және жеке кәсіби қолдаудың сапасын арттыру қажеттілігін көрсетеді.

Түйінді сөздер: *postpartum depression, postnatal depression, puerperal depression, birth satisfaction, risk factors.*

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Introduction.

According to Beck S.T. et al., there are three types of depressive states after childbirth. Postpartum melancholy (baby blues) affects up to 80% of women after giving birth 1-3 weeks after giving birth. At this stage, the woman does not require any interventions and specialized care. A sharp decrease in hormones after childbirth, a violation of the regime and a new role of the mother may be the cause of this condition [1, 16].

Postpartum depression (hereinafter referred to as "PD") is a psychological condition that differs in the depth and duration of symptoms. According to Teri Pearlstein et al., 3-19% of women suffer from postpartum depression up to a year after giving birth. The main symptoms of PD are loss of appetite, insomnia, anxiety, irritability, tearfulness, guilt, shame and fatigue [8]. Various factors influence the development and course of PD: biological, social, previous experience of depression, multiple pregnancies, premature birth and others [5].

Postpartum psychosis is a mental illness that has a more severe course and character. The main signs of postpartum psychosis are: disorder of thoughts, hallucinations, disturbed behavior. A woman with signs of postpartum psychosis needs specialized help, as the symptoms may threaten the life of the mother and/or child [9].

A woman's satisfaction with childbirth plays an important role in the health of the mother and the well-being of her child. High satisfaction with childbirth can improve the relationship of mother to child [14]. A low level of satisfaction with childbirth, in turn, can involve PD, fear of giving birth, a higher level of future abortions, preference for future cesarean section and negative feelings towards the baby and refusal to breastfeed [13, 14].

Increasing maternal satisfaction with childbirth is important for the prevention of psychological postpartum trauma of mothers and for providing effective feedback to eliminate gaps in the medical care provided to a woman during childbirth and after.

The aim of this study is to assess the relationship between the level of satisfaction with childbirth and postpartum depression, taking into account the influence of socio-demographic and clinical factors, among women during the year after childbirth.

Research methodology.

Design and sampling of the study

The cross-sectional study was conducted in five primary health care centers located in Semey: 3,7,8, Adil-em and Hakim. The centers were selected according to their geographical distribution. The sample for the study consisted of 251 women within a year after giving birth. An Open api online calculator was used to calculate the sample size Open Epi (<https://www.openepi.com/SampleSize/SSPropor.htm>).

Inclusion criteria: birth of a live child, willingness to cooperate and informed consent to participate in the study.

Exclusion criteria: women who had problems with speech communication, complete hearing loss, mental illness or fetal death.

Data collection was carried out from June 15 to September 30, 2021, using paper and electronic questionnaires by researchers and visiting nurses in primary health care centers. The women were informed about the objectives of the study, and each of them signed an informed consent form before completing the questionnaire. The share of responses to the questionnaires was 85.7%.

Two validated questionnaires were used to collect data: the Edinburgh Postpartum Depression Scale (EPDS) [3] and a short version of the Birth Satisfaction Scale (BSS-RI) [14].

The Edinburgh Postpartum Depression Scale (EPDS) is a widely used questionnaire that consists of 10 questions, rated on a 4-point Likert scale ranging from 0 to 3. A score of 10 or higher indicates the presence of symptoms of postpartum depression [2].

The short version of the birth satisfaction scale (BSS-RI) consists of 6 questions, evaluated on a 2-point Likert scale in the range from 0 to 2. The total cumulative score for each participant was calculated. Data were also collected on the socio-demographic characteristics of the participants, such as the number of children, the type of delivery, the gestational age of the child, the weight of the child at birth, pregnancy planning, complications after childbirth.

Statistical data analysis

All analyses were performed using the IBM SPSS Statistics 25 program. The main variables in the study were: the level of PD (based on EPDS scores); the satisfaction rate with childbirth (on the BSS-RI scale); and socio-demographic data.

The Chi-Square Goodness-of-Fit Test and binary logistic regression were used to assess the relationship between postpartum depression (≥ 10), socio-demographic data and satisfaction with childbirth. Fisher's exact test was used when more than 20% of cells had expected frequencies below 5 (< 5). A p-value of less than 0,05 was considered significant.

Ethical expertise

The study was approved by the Ethics Committee of Semey Medical University (Semey, Kazakhstan (Protocol No. 1 of February 18, 2021).

Results

The results of the study indicate that only one fourth of women indicated high satisfaction with childbirth ($n=66$ (26,0%)). The data ranged from 0 to 12. The total number of women with primary symptoms of depression was 149 (59,4%) (Diagram 1).

According to the primary data of the analysis (criterion χ^2), two variables were significant for the development of postpartum depression among women up to a year after childbirth: the number of children ($p=0,036$) and the level of satisfaction with childbirth ($p=0,001$). However, when conducting a similar study, variables such as "number of children" ($p=0,001$), "type of delivery" ($p=0,022$) and "complications after childbirth" ($p=0,001$) were significant for the level of satisfaction with childbirth (BSS-RI) (Table 1).

Diagram 1. The prevalence of postpartum depression and the level of satisfaction with childbirth by women in Semey.

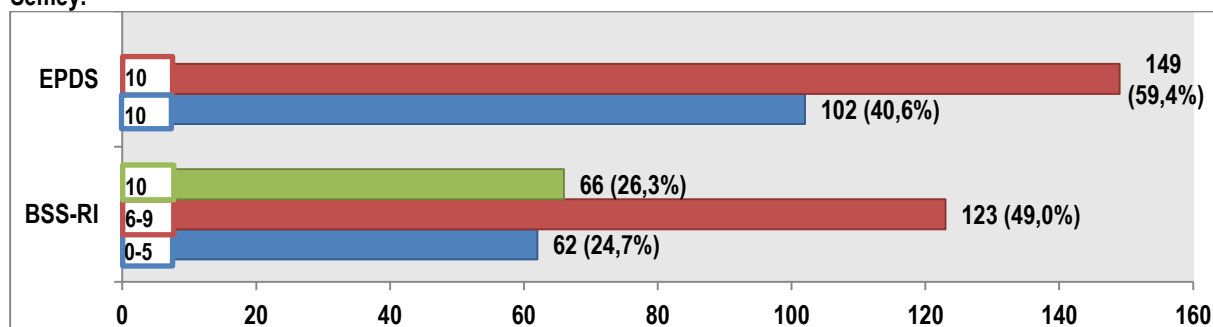


Table 1. The results of the analysis according to the Chi-Square Test.

	Variables	Total	BSS-RI			p-value
			0-5	6-9	≥10	
1	Number of children					0,001
	1	106 (42,2%)	40 (37,7%)	44 (41,5%)	22 (20,8%)	
	2	81 (32,3%)	13 (16,0%)	42 (51,9%)	26 (32,1%)	
	3	40 (15,9%)	3 (7,5%)	28 (70,0%)	9 (22,5%)	
	4 and more	24 (9,6%)	6 (25,0%)	9 (37,5%)	9 (6,3%)	
2	Pregnancy planning					0,52
	Yes	170 (67,7%)	19 (23,5%)	37 (45,7%)	25 (30,9%)	
	No	81 (32,3%)	43 (25,3%)	86 (50,6%)	41 (24,1%)	
3	Type of delivery					0,022
	Vaginal	194 (77,3%)	40 (20,6%)	100 (51,5%)	54 (27,8%)	
	Caesarean section	57 (22,7%)	22 (38,6%)	23 (40,4%)	12 (21,1%)	
4	Complications after childbirth					0,001
	No	200 (79,7%)	38 (19,0%)	104 (52,0%)	58 (29,0%)	
	Yes	51 (20,3%)	24 (47,1%)	19 (37,3%)	8 (15,7%)	
5	Birth weight *					0,92
	<2,500 g	10 (4,0%)	2 (20,0%)	5 (50,0%)	3 (30,0%)	
	≥2,500g	241 (96,0%)	60 (24,9%)	118 (49,0%)	63 (26,1%)	
6	Gestational age					0,52
	<37weeks	18 (7,2%)	6 (33,3%)	9 (50,0%)	3 (16,7%)	
	≥37 weeks	233 (92,8%)	56 (24,0%)	114 (48,9%)	63 (27,0%)	

* Fisher's exact test was used when more than 20% of cells had expected frequencies below 5 (<5).

For binary logistic regression, only significant variables were taken: the number of children and the BSS-RI indicator. According to the results of the analysis, only the level of satisfaction with childbirth (BSS-RI) showed a relationship to the development of postpartum depression

among women ($p=0.007$). The adjusted prevalence of depression was almost 5 times higher in women who were not satisfied with childbirth (the BSS-RI index ranged from 0 to 5) (AOR = 4991, 95% CI 1.541-6167) (Table 2).

Table 2. Results of binary logistic regression.

	Variables	Answers	COR [95% CI]	p-value	AOR [95% CI]	p-value
1	Number of children	1	3.529 (1.404-8.870)	0.007*	1.751 (0.463-6.627)	0,409
		2	2.190 (0.859-5.585)	0.101	1.587 (0.398-6.335)	0.513
		3	2.037 (0.724-5.734)	0.178	1.411 (0.34-5.961)	0.640
		4 and more	1 (reference group)		1 (reference group)	
2	BSS-RI	0-5	8.612 (3.546-20.919)	0.001*	4.991 (1.541-6.167)	0,007*
		6-9	1.477 (0.809-2.696)	0.204	1.206 (0.547-2.659)	0.643
		10-11	1 (reference group)		1 (reference group)	

* COR odds ratio, OR adjusted odds ratio, CI confidence interval

Discussion. The results of the study showed the relationship between the level of satisfaction with childbirth and postpartum depression. Low satisfaction with childbirth was associated with a higher level of postpartum depression among women during the year after childbirth. We have not found similar works in Kazakhstan. But the results of our study confirm the results of studies conducted

in Russia [14], Slovakia [13], Taiwan [12] and a systematic review and meta-analysis by scientists from the School of Medical Sciences of the University of London [7].

Variables such as "number of children", "type of delivery", "gestational age of the child", "weight of the child at birth", "complications after childbirth", "pregnancy planning" did not become statistically significant for the

occurrence of postpartum depression among women during the year after childbirth. However, in the work of *Zohreh Sadat et al.* It is indicated that the quality of life associated with the physical health of women was higher in women 2 months after natural childbirth, and mental health 4 months later, compared with women after cesarean section [11, 15]. *Sharon Baker et al.* a study was conducted on 605 women before giving birth and 3 months after giving birth in the USA. These studies indicate that the mother's well-being, including the psychological state after childbirth, is directly related to the type of obstetric care. Women who had an unplanned cesarean section had a higher level of postpartum stress symptoms [10].

M. Dauletyarova et al. a study was conducted to identify the level of satisfaction of mothers with the quality of care provided by maternity hospitals in East Kazakhstan. The average satisfaction score was 2.48, which indicates a low level of satisfaction with the quality of medical care in all maternity facilities [4].

The results of this study show that satisfaction among women, during the year after, varied depending on several factors, including the number of children ($p=0.001$), the type of delivery ($p=0.022$) and complications after childbirth. In a study by *Ma Belén Conesa Ferrer et al.* it is indicated that the duration of labor can also be a decisive factor for the level of satisfaction with childbirth in a woman [6].

Thus, the results of our study indicate the importance of professional assistance provided to women during childbirth, which in turn affects the development of symptoms of postpartum depression among women after childbirth.

Conclusion. The results of our study confirmed the existence of a link between women's satisfaction with childbirth and postpartum depression. A low level of satisfaction with childbirth is a predictor of the development of postpartum depression. This indicates the need to improve the quality of medical services provided and individual professional support during childbirth. Further longitudinal studies are needed to identify causal relationships and other predictors of the development of postpartum depression.

Limitations of the study:

Since our study is cross-sectional and not cohort, the results of the study cannot indicate a causal relationship. However, the results of the study indicate the relationship of variables among themselves.

Conflict of interest. The authors declare that there is no conflict of interest.

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