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HEALTH RELATED QUALITY OF LIFE AND ASSOCIATED FACTORS AMONG POSTPARTUM WOMEN IN SEMEY, KAZAKHSTAN

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Abstract

Introduction. The study of the quality of life of the population adjusted for health is one of the priority areas of public health for research. The research results make it possible to identify vulnerabilities and make decisions to strengthen them. Health-adjusted quality of life has two components for research: physical and mental health. The study on global AGEing and adult health (SAGE) male older adults reported a better quality of life than female older adults across all of the countries in low- and middle-income countries.

Purpose of the work: to assess health-related quality of life and related factors among women in the postpartum period.

Search strategy: Two validated questionnaires were used for collection in five primary health care centers located in Semey city: the Edinburgh Postpartum Depression Scale (EPDS) and the short version of SF-36 (SF-12). The sample for the study consisted of 251 women within a year after giving birth. All analyzes were performed using IBM SPSS Statistics 25 and PRO CoRE software. The social-demographic characteristics and obstetric factors of women were assessed by using parametric methods between women with and without postpartum depression. Correlation between EPDS score and scores of QoL dimensions (PHRQoL, MHRQoL) were evaluated by Pearson and Spearman Correlation Coefficient. A p-value less than 0.05 were considered significant.

Results: The quality of life assessment using SF-12 ranged from 17 to 47 points (33.1 ± 0.3 / point). The average level of quality of life was mainly observed - in 57% of cases. According to basic characteristics to health related quality of life, age of mothers ($t = -2.97$, $df = 249$, $p = 0.003$) and satisfaction with living conditions ($t = -5.77$, $df = 249$, $p = 0.001$) showed a significant difference.

Conclusions: The results of our study confirmed the existence of a relationship between the quality of life of socio-demographic and obstetric factors. It indicates the need for an integrated approach to providing medical services and individual professional support to women in the postpartum period.

Keywords: health related quality of life, postpartum period, postnatal depression, puerperal depression, risk factors.

Резюме

КАЧЕСТВО ЖИЗНИ, СВЯЗАННОЕ СО ЗДОРОВЬЕМ, И СОПУТСТВУЮЩИЕ ФАКТОРЫ СРЕДИ ЖЕНЩИН В ПОСЛЕРОДОВОМ ПЕРИОДЕ В СЕМЕЕ, КАЗАХСТАН

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Введение. Изучение качества жизни населения с поправкой на здоровье является одним из приоритетных направлений научных исследований общественного здравоохранения. Результаты исследований позволяют выявлять уязвимые места и принимать решения по их усилению. Качество жизни с поправкой на здоровье имеет два

компонента для исследования: физическое и психическое здоровье. Исследование глобального старения и здоровья взрослых (SAGE) показало, что мужчины имеют лучшее качество жизни, чем женщины, во всех странах с низким и средним уровнем дохода.

Цель работы: оценить качество жизни женщин в послеродовом периоде, связанное со здоровьем и с сопутствующими факторами.

Стратегия поиска: Для сбора данных в пяти центрах первичной медико-санитарной помощи, расположенных в городе Семей, были использованы два валидированных вопросника: Эдинбургская шкала послеродовой депрессии (EPDS) и краткая версия опросника SF-36 (SF-12). Выборка для исследования состояла из 251 женщины в течение года после родов. Все анализы проводились с использованием программного обеспечения IBM SPSS Statistics 25 и PRO Core. Социально-демографические характеристики и акушерские факторы оценивались с использованием параметрических методов у женщин с симптомами послеродовой депрессии и без. Корреляция между показателями EPDS и показателями качества жизни (PHRQoL, MHRQoL) оценивалась с помощью коэффициента корреляции Пирсона и Спирмена. Значение p менее 0,05 считалось значимым.

Результаты: Оценка качества жизни с использованием SF-12 варьировалась от 17 до 47 баллов ($33,1 \pm 0,3$ /балла). В основном наблюдался средний уровень качества жизни - в 57% случаев. По основным характеристикам качества жизни, связанным со здоровьем, возраст матерей ($t = -2,97$, $df = 249$, $p = 0,003$) и удовлетворенность условиями жизни ($t = -5,77$, $df = 249$, $p = 0,001$) показали статистическую значимость.

Выводы: Результаты нашего исследования подтвердили наличие взаимосвязи между качеством жизни социально-демографическими и акушерскими факторами. Это указывает на необходимость комплексного подхода к предоставлению медицинских услуг и индивидуальной профессиональной поддержки женщин в послеродовом периоде.

Ключевые слова: качество жизни, послеродовой период, послеродовая депрессия, перинатальная депрессия, факторы риска.

Түйіндеме

БОСАНҒАННАН КЕЙІНГІ КЕЗЕҢДЕГІ ӘЙЕЛДЕР АРАСЫНДАҒЫ ДЕНСАУЛЫҚҚА БАЙЛАНЫСТЫ ӨМІР САПАСЫ ЖӘНЕ ОНЫМЕН БАЙЛАНЫСТЫ ТӘУЕКЕЛ ФАКТОРЛАРЫ (СЕМЕЙ, ҚАЗАҚСТАН)

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Кіріспе. Денсаулыққа бейімделген халықтың өмір сүру сапасын зерттеу қоғамдық денсаулықты зерттеудің басым бағыттарының бірі болып табылады. Зерттеу нәтижелері осалдықтарды анықтауға және оларды күшейту бойынша шешімдер қабылдауға мүмкіндік береді. Денсаулыққа бейімделген өмір сапасының екі компоненті бар: физикалық және психикалық денсаулық. Ғаламдық қартаю және ересектер денсаулығы зерттеуі (SAGE) барлық төмен және орташа табысы бар елдерде ерлердің әйелдерге қарағанда өмір сүру сапасы жақсырақ екенін көрсетті.

Жұмыстың мақсаты: босанғаннан кейінгі кезеңдегі әйелдердің денсаулығына және оған байланысты факторларға байланысты өмір сүру сапасын бағалау.

Іздеу стратегиясы: Екі расталған сауалнама, Эдинбург босанғаннан кейінгі депрессия шкаласы (EPDS) және SF-36 (SF-12) сауалнамасының қысқа нұсқасы Семей қаласында орналасқан бес алғашқы медициналық-санитарлық көмек орталығынан деректерді жинау үшін пайдаланылды. Зерттеу үлгісі бір жыл ішінде босанғаннан 251 әйелден тұрды. Барлық талдаулар IBM SPSS Statistics 25 және PRO Core бағдарламалық құралы арқылы орындалды. Босанғаннан кейінгі депрессия симптомдары бар және жоқ әйелдерде параметрлік әдістерді қолдану арқылы әлеуметтік-демографиялық мен акушерлік факторлары бағаланды. EPDS ұпайлары мен өмір сапасы ұпайлары (PHRQoL, MHRQoL) арасындағы корреляция Пирсон және Спирман корреляция коэффициенті арқылы бағаланды. p шамасы 0,05-тен төмен мәні маңызды деп саналды.

Нәтижелер: SF-12 сауалнамасы негізінде өмір сапасы 17-ден 47 баллға дейінгі ауытқуын көрсетті ($33,1 \pm 0,3$ /ұпай). Өмір сапасының орташа деңгейі байқалды – 57% жағдайда. Денсаулыққа байланысты өмір сапасының

негізгі сипаттамалары бойынша аналардың жасы ($t = -2,97$, $df = 249$, $p = 0,003$) және өмір сүру жағдайына қанағаттанушылық ($t = -5,77$, $df = 249$, $p = 0,001$) статистикалық маңыздылығын көрсетті.

Қорытынды: Біздің зерттеуіміздің нәтижелері әлеуметтік-демографиялық және акушерлік факторлардың өмір сапасы арасындағы байланысты растады. Бұл босанғаннан кейінгі кезеңде әйелдерге медициналық қызмет көрсетуге және жеке кәсіби қолдау көрсетуге кешенді көзқарастың қажеттілігін көрсетеді.

Түйінді сөздер: өмір сүру сапасы, босанғаннан кейінгі кезең, постнаталды депрессия, периталды депрессия, тәуекел факторлары.

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Introduction

According to the definition of the World Health Organization, Quality of life is individual's perception of their life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns [12]. The study of the quality of life of the population adjusted for health is one of the priority areas of public health for research. The research results make it possible to identify vulnerabilities and make decisions to strengthen them [4].

Health-adjusted quality of life has two components for research: physical and mental health [3]. There are various questionnaires and indexes for assessing the quality of life. Such as EuroQoL-5D (EQ-5D), Health Utilities Index Mark 2 and Mark 3 (HUI2, HUI3), Quality of Well-Being Index Self-Administered Version (QWB-SA), and the SF-36. There are also short versions of these them [4]. In our study, a short version of the SF-36 (SF-12) questionnaire was used.

Due to results from the Study on global AGEing and adult health (SAGE) male older adults reported a better quality of life than female older adults across all of the countries in low- and middle-income countries. However, the factors of influence differ across countries depending on the characteristics of the country [5]. According to WHO data, women are more prone to depression (5.1%) than men (3.6%). The reproductive age is considered one of the most vulnerable to the occurrence of psychological disorders [1].

The period of pregnancy and postpartum periods requires special attention to support women up to a year after childbirth. Untimely detected symptoms of diseases directly affect the health of the mother, child and family well-being in general [3].

This study is the first to identify the relationship between quality of life and primary symptoms of postpartum depression, taking into account sociodemographic and gynecological factors in our country.

The SF-36 quality assessment instruments and the Edinburgh Primary Symptoms of Postpartum Depression

Scale were also used as tools for conducting similar studies [6, 8].

Therefore, the aim of this study is to assess health-related quality of life and related factors among women in the postpartum period.

Research methodology

Study design and sampling

This study was conducted in the city of Semey, which is located in the East Kazakhstan region. The general population of Semey city is 350 000 people.

This study was conducted from June 15 to September 30, 2021 in five primary health care centers in Semey by patronage nurses. They were recruited as data collectors and were trained on information about data collection tools, procedures and interview methods.

The total sample was 251 women. The OpenEpi online calculator (<https://www.openepi.com/SampleSize/SSPropor.htm>) was used to calculate the sample. The total number of births over the past year was 8360 births. The expected frequency and design effect were 20% and 1.0 for a random sample.

All women aged 18 to 49 years were included in the study within a year after giving birth. Women who had problems with speech communication, complete hearing loss, mental illness, or intrauterine fetal death were excluded.

Dependent variable: health related quality of life (low (12-23), average (24-35), high (36-47)).

Independent variables: *socio-demographic variables* such as age, education, education, family status, number of children, occupation, infant gender, satisfaction with living conditions and *obstetrics factors*: mode of delivery, postpartum depression, planning of pregnancy, complications after giving a birth, gestational age. All independent variables have been selected due to literature review of previous written articles.

Data collection instrument

In the present study, two validated questionnaires were used: the Edinburgh Postpartum Depression Scale (EPDS)

[5] and the short version of SF-36 (SF-12) [11]. These two instruments are the most commonly used instruments in relevant studies assessing the relationship between postpartum depression and quality of life.

The Edinburgh Postpartum Depression Scale (EPDS) was developed by researchers J.L. Cox, J.M. Holden, R. Sagovsky in 1987 [2]. The questionnaire is aimed at the early diagnosis of depressive disorders in the prenatal and postpartum periods. The questionnaire itself consists of 10 questions with a 4-point Likert scale ranging from 0 to 3. A score of 10 or higher indicates the presence of symptoms of postpartum depression [5].

The present study also used a short version of the SF-36 (12-Item Short-Form Health Survey, SF-12)

questionnaire in two languages: Kazakh, Russian. This questionnaire is considered one of the most effective and reliable questionnaires with high convergent and discriminatory validity for assessing the quality of life of a person in connection with his state of health [4]. It consists of 12 items with eight subscales for assessing mental and physical health. Physical health-related domains include General Health (GH), Physical Functioning (PF), Role Physical (RP), and Body Pain (BP). Mental health-related scales include Vitality (VT), Social Functioning (SF), Role Emotional (RE), and Mental Health (MH) (Diagram 1). A score of 36-47 points refers to a low level of quality of life, 24-35 points to an average, 12-23 points to a high one.

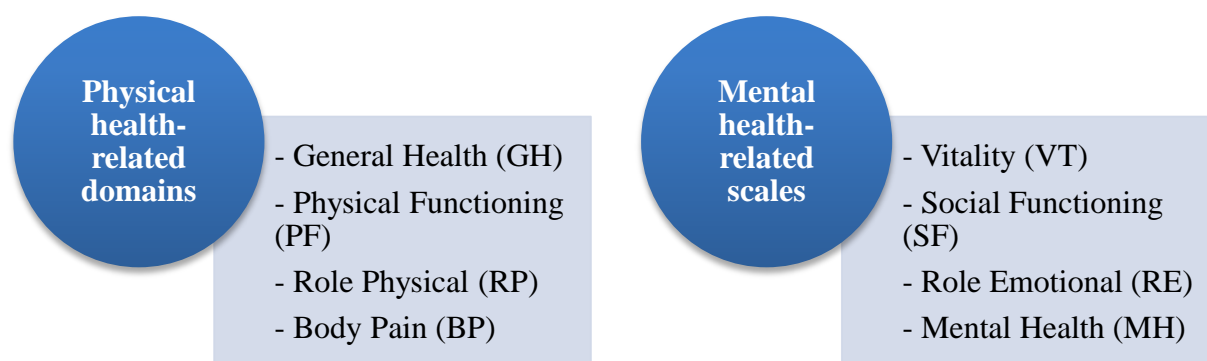


Diagram 1. Eight subscales for assessing mental and physical health.

Statistical data analysis

All analyzes were performed using IBM SPSS Statistics 25 and PRO CoRE software. The main variables in the study were: PPD level (based on EPDS scores); total score of quality of life (SF-12), physical health, mental health and socio-demographic data and obstetrics factors.

The social-demographic characteristics and obstetric factors of women were assessed by using parametric methods between women with and without postpartum depression. Normal distribution was checked by using One-Sample Kolmogorov-Smirnov Test. The mean differences between groups were analyzed using Student's t-test and ANOVA. Fisher-Freeman-Halton exact test was used when more than 20% of cells had expected frequencies below 5 (<5).

Correlation between EPDS score and scores of QOL dimensions (PHRQoL, MHRQoL) were evaluated by

Pearson and Spearman Correlation Coefficient. A p-value less than 0.05 were considered significant.

Ethical review

The study was approved by the Ethics Committee of Semey Medical University (Semey, Kazakhstan (Protocol No. 1 dated February 18, 2020).

All study participants signed an informed consent form after all study details were provided and explained to them.

Results

The quality of life assessment using SF-12 ranged from 17 to 47 points (33.1 ± 0.3 / point) (Table 1). The average level of quality of life was mainly observed - in 57% of cases (Diagram 1). Low quality of life was found in 15 women (6%), high in 93 (37.1%). The average mean score of physical HRQoL was 15.3 with range 11 (9 – 20). The average mean score of mental HRQoL was 17.8 with range 20 (7 – 27) (Table 1).

Table 1.

Indicator of PPD and HRQoL.

	Indicator	Range	Maximum	Minimum	Average	Dispersion
1	PHRQoL	11	20	9	15.3	6.22
2	MHRQoL	20	27	7	17.8	19.5
3	Total score of HRQoL	30	47	17	33.1	39.5
4	EPDS	27	27	0	12.2	37.3

Regarding to mean score of mother's age (28.3 years) participants were divided for two age groups: ≤ 28 and >28 . The cut-off point 10 used for defining postpartum depression among women giving a birth during a year.

According to basic characteristics to health related quality of life, age of mothers ($t = -2.97$, $df = 249$, $p = 0.003$) and satisfaction with living conditions ($t = -5.77$, $df = 249$, $p = 0.001$) showed a significant difference. The following

variables were not significant: education ($F=0.97$, $p = 0.02$), marital status ($t = -1.07$, $df = 249$, $p = 0.28$), occupation ($F=2.16$, $p = 0.09$), number of children ($F=2.06$, $p = 0.1$), infant gender ($t = -0.026$, $df = 249$, $p = 0.98$), planning of

pregnancy ($t = -1.625$, $df = 249$, $p = 0.1$), mode of delivery ($t = 0.844$, $df = 249$, $p = 0.4$), complications after giving a birth ($t = 1.468$, $df = 249$, $p = 0.14$), gestational age ($t = -0.336$, $df = 249$, $p = 0.73$) (Table 2).

Table 2.

Basic characteristics of 251 mothers to HRQoL.

Characteristics	%	HRQoL, Mean \pm SD	p-value
Age			0.003
≤ 28	144 (57.4%)	32.09 \pm 6.03	
> 28	107 (42.6%)	34.44 \pm 6.39	
Education			0.97 ($F=0.02$)
Primary	1 (0.4%)	34 \pm 6.13	
Secondary education	87 (34.7%)	33.17 \pm 6.75	
Tertiary education	163 (64.9%)	33.04 \pm 6.06	
Marital status			0.28
Married/ cohabiting	238 (94.8%)	32.99 \pm 6.2	
Single/divorced	13 (5.2%)	34.92 \pm 7.64	
Occupation			0.09 ($F=2.16$)
Government employee	83 (33.1%)	32.54 \pm 6.24	
Private company	58 (23.1%)	32.4 \pm 6.62	
Housewife	52 (20.7%)	32.71 \pm 6.65	
Others *	58 (23.1%)	34.91 \pm 5.41	
Number of children			0.1 ($F=2.06$)
1	106 (42.2%)	32.31 \pm 6.27	
2	81 (32.3%)	33.38 \pm 6.51	
3	40 (15.9%)	32.97 \pm 5.53	
4 and more	24 (9.6%)	35.75 \pm 6.32	
Infant gender			0.98
Male	134 (53.4%)	33.08 \pm 6.78	
Female	117 (46.6%)	33.1 \pm 5.69	
Satisfaction with living conditions			0.001
Yes	202 (80.5%)	34.15 \pm 6.12	
No	49 (19.5%)	28.71 \pm 4.95	
Planning of pregnancy			0.1
Yes	170 (67.7%)	33.54 \pm 6.28	
No	81 (32.3%)	32.16 \pm 6.23	
Mode of delivery			0.4
Vaginal	194 (77.3%)	33.27 \pm 6.33	
Caesarean section	57 (22.7%)	32.47 \pm 6.14	
Complications after giving a birth			0.14
Yes	51 (20.3%)	31.94 \pm 5.65	
No	200 (79.7%)	33.39 \pm 6.41	
Gestational age			0.73
< 37 weeks	18 (7.2%)	32.61 \pm 6.83	
≥ 37 weeks	233 (92.8%)	33.13 \pm 6.25	

* Others include businesswoman and students **P value is calculated by Pearson Chi-square test.

*** Fisher's exact test is applied as '1 cell's (20%) have expected count less than 5.

**** 238 women (not including four women who were single or divorced/parents passed away) answered.

The results of our study showed that physical health related quality of life and mental health related quality of life components scored significantly in the women with PPD

(>10) in comparison to the women without PPD (≤ 10). Depression was an important predictor both to PHQOL and MHQOL ($p=0.001$) (Table 3).

Table 3.

Quality of life dimensions according to Postpartum depression.

Dimensions	Postpartum depression, No p-value	
	>10 (n=149)	≤10 (n=102)
PHRQoL		0.001
MHRQoL		0.001

Table 4.

The correlation between EPDS score and quality of life dimensions.

Variables	1	2	3
PHRQoL	1		
MHRQoL	0,624**	1	
EPDS	-0.514**	-0.699**	1
M±SD	15,31±2,49	17,78±4,42	12,28±6,11

PHRQoL: physical health-related quality of life, MHQoL: mental health-related quality of life, M: means, SD: standard deviation; **p<0.01.

The means, standard deviations and correlation coefficients were presented in Table 4. There were negative correlations between EPDS scores and scores of all SF-12 physical and mental health components ($r = -0.514$, $r = -0.699$). The strongest correlation was found between mental health and physical health scores. They were positively correlated with each other ($r = 0.624$).

Discussion

The main purpose of the study is to investigate the relationship between physical and mental health in women in the postpartum period up to a year after childbirth. The results of our study indicated the importance of the presence of depressive symptoms among women on the quality of life. Similar studies are being conducted all over the world. However, we have not found similar works in Kazakhstan. The work of Denis Vinnikov et al. [11] evaluated the general indicators of the quality of life to association of lifetime occupations on the population of Kazakhstan as a whole. The researchers also used a short version of the SF-36 questionnaire, which makes it possible to compare and use the identified results. The results of the study showed that women had lower quality of life indicators than men. This indicates the need for comprehensive support for women's health, especially in the reproductive age. According to WHO, women are more susceptible to depressive disorders than men [12].

All study variables were selected according to the literature review. The results of our study demonstrated statistically the significance between quality of life and age, satisfaction with living conditions and the general indicator of postpartum depression, according to EPDS. Similar results were obtained by researchers Maria Papamarkou et al. The results of the study revealed that the symptoms of postpartum depression are closely interrelated with the quality of life of women after pregnancy. Significant associations were obtained between the place of residence ($p=0.008$) and symptoms of postpartum depression [6].

Possible reasons for obtaining such results may be due to early marriage and low wage rates at this age, which in turn directly affects the level of quality of life. The results of Jeremy E. Uecker study indicating that those who were married in early age reported more psychological stress compared to those who married later [9]. In a cross-sectional study of the Korean National Health and Nutrition Examination Survey, researchers

Sangshin Park and Nam-Kyong Choi pointed to a significant relationship between early childbirth and poor quality of life. Women with later age at first childbirth had the highest HRQoL scores [7].

However, the variables education, marital status, occupation, number of children, infant gender, planning of pregnancy, mode of delivery, complications after giving a birth, and gestational age showed statistically insignificant results among women in the postpartum period. However, Babbette W. Prick's study indicates the importance of obstetric factors to quality of life than social-demographic factor. Mode of delivery by cesarean section and hypertension with hypertensive disorders lead to lower HRQoL scores [8]. Researchers Lisbeth Valla et al. pointed out the significance of maternal feelings of joy of having a baby, high relationship satisfaction and having a baby with normal sleep as factors associated with higher HRQoL among mothers [10].

Thus, the results of our study indicate the importance of timely detection of primary symptoms of postpartum depression among women, which in turn negatively correlates with all domains of quality of life (PHRQoL, MHRQoL).

Conclusion

The results of our study confirmed the existence of a relationship between the quality of life of socio-demographic and obstetric factors. The presence of primary symptoms of postpartum depression, the age of the mother and satisfaction with living conditions are predictors for a low level of quality of life. These results indicate the need for an integrated approach to providing medical services and individual professional support to women in the postpartum period. Further longitudinal studies are also needed to identify cause-and-effect relationships on the level of quality of life.

Limitations:

Despite the assessed wide range of possible predictors, we cannot rule out the possibility of residual predictors by other unmeasured factors such as women birth experience, intimate partner violence, depression symptoms during pregnancy and marital relationship, which were associated with quality of life and postpartum depression.

Conflict of interest

The authors declare that there is no conflict of interest.

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Authors' contributions

AM: Data analysis and drafted the manuscript; UJ: Participated in study planning and data analysis; MB: Conducted literature review; AB: Supervised the study planning, data collection and analysis; AO: Approved and checked the final version. All authors reviewed, revised and approved the final manuscript.

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