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Use of the Postnatal Depression Screening Scale for the early detection of postpartum depression and the assessment of the psychoemotional state of women in the postpartum period

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Postpartum depression (PPD) is a common psychiatric disorder of the postpartum period that can adversely affect maternal well-being and early mother-infant interaction. Timely identification requires practical standardized screening approaches.

Aim – to evaluate the utility of the Postnatal Depression Screening Scale (PDSS) for early detection of PPD and to assess the psychoemotional status of women in the early postpartum period.

Materials and methods. A comparative study included 106 women in the early postpartum period: 35 women with clinically diagnosed PPD and 71 women with an uncomplicated physiological postpartum course and no signs of PPD. Psychoemotional status was assessed using the 35-item PDSS; a total score ≥ 65 points indicated high risk of PPD.

Results. PPD was identified in 35/106 women (33.0%). The mean PDSS score was 76.6 ± 4.52 points in the PPD group versus 43.66 ± 1.0 points in the Control group, an absolute between-group difference of 32.94 points. All 35 women with clinically diagnosed PPD had a PDSS score ≥ 65 points. The most frequent manifestations were sleep disturbances, nocturnal awakenings with panic attacks, decreased appetite, and excessive anxiety regarding the newborn's condition; insomnia, difficulty making decisions, and thoughts of self-harm occurred in 91.4%.

Conclusion. Women with clinically diagnosed PPD had markedly higher PDSS scores than the Control group, and all women in the PPD group met the PDSS high-risk threshold. These findings support the clinical utility of the PDSS for identifying women who require further psychological or psychiatric assessment in the early postpartum period.

The study was conducted in accordance with the principles of the Declaration of Helsinki. Informed consent from women was obtained for the study. The author declares no conflict of interest.

Keywords: postpartum depression; psychoemotional status; screening; Postnatal Depression Screening Scale (PDSS).

Використання шкали скринінгу післяпологової депресії для раннього виявлення післяпологової депресії та оцінки психоемоційного стану жінок у післяпологовому періоді

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Післяпологова депресія (ППД) поширений психічний розлад післяпологового періоду, який може негативно впливати на материнське благополуччя та ранню взаємодію матері та дитини. Своєчасне виявлення вимагає практичних стандартизованих підходів до скринінгу.

Мета – оцінити корисність шкали скринінгу післяпологової депресії (PDSS) для раннього виявлення ППД та оцінки психоемоційного стану жінок у ранньому післяпологовому періоді.

Матеріали та методи. У порівняльному дослідженні взяла участь 106 жінок у ранньому післяпологовому періоді: 35 жінок із клінічно діагностованою ППД та 71 жінка з неускладненим фізіологічним післяпологовим перебігом та без ознак ППД. Психоемоційний статус оцінювали за допомогою 35-пунктової шкали PDSS; загальний бал ≥ 65 балів вказував на високий ризик ППД.

Результати. ППД було виявлено у 35/106 жінок (33,0%). Середній бал за шкалою PDSS становив $76,6 \pm 4,52$ бала у групі ППД проти $43,66 \pm 1,0$ бала в контрольній групі, абсолютна різниця між групами становила 32,94 бала. Усі 35 жінок із клінічно діагностованою ППД мали бал за шкалою PDSS ≥ 65 балів. Найчастішими проявами були порушення сну, нічні пробудження з панічними атаками, зниження апетиту та надмірна тривога щодо стану новонародженого; безсоння, труднощі з прийняттям рішень та думки про самоушкодження спостерігалися у 91,4%.

Висновок. Жінки з клінічно діагностованим ППД мали значно вищі бали за шкалою PDSS, ніж контрольна група, і всі жінки у групі ППД досягли порогу високого ризику PDSS. Ці результати підтверджують клінічну корисність PDSS для виявлення жінок, які потребують подальшої психологічної або психіатричної оцінки в ранньому післяпологовому періоді.

Дослідження проведено відповідно до принципів Гельсінської декларації. Для проведення дослідження було отримано інформовану згоду жінок.

Автор заявляє про відсутність конфлікту інтересів.

Ключові слова: післяпологова депресія; психоемоційний стан; скринінг; шкала скринінгу післяпологової депресії (PDSS).

Introduction

Postpartum depression (PPD) remains one of the most significant medico-social challenges in modern obstetrics and mental health care. According to the literature, PPD affects approximately 13–19% of women following childbirth; however, only 3–4% of affected patients seek specialized psychiatric or psychological care [9].

The clinical manifestations of PPD typically develop within the first six weeks after delivery. Moreover, depressive symptoms that emerge after the 30th week of pregnancy often persist and become more pronounced during the postpartum period [2].

Current evidence indicates that PPD is a multifactorial disorder. The most important risk factors include a history of depressive or anxiety disorders, psychosocial stress, inadequate social and family support, family conflict, adverse life events, and the hormonal and neurobiological changes associated with pregnancy and the postpartum period. Early identification of women at high risk, together with the timely implementation of preventive and therapeutic interventions, is considered a key strategy for reducing the prevalence and adverse consequences of PPD [3,8].

According to the literature, the risk factors for PPD can be broadly classified into four main categories:

- genetic predisposition to affective disorders;
- physiological and biological changes associated with pregnancy and the postpartum period;
- social factors related to the woman's immediate environment;
- psychological characteristics, including difficulties in adapting to the maternal role [1,11].

In addition, the development of PPD has been associated with both external and internal risk factors. External factors include adverse family relationships, lack of social support, poor living conditions, and the loss of a close family member. Internal factors include unintended pregnancy, elevated anxiety, panic reactions, obsessive-compulsive personality traits, self-harming behavior, a family history of psychiatric disorders, and substance use. Mixed risk factors include a low educational level, unstable marital relationships, pregnancy occurring in the context of family conflict, divorce, and a history of stillbirth or the birth of a child with congenital anomalies [4,7].

Despite the available evidence, data regarding the effectiveness of early diagnosis of PPD remain limited and, in some respects, contradictory. This provided the rationale for the present study.

The aim of the study was to evaluate the effectiveness of the Postnatal Depression Screening Scale (PDSS) for the early detection of PPD and to characterize the psychoemotional status of women with PPD in the early postpartum period.

Materials and methods of the study

The study was conducted at the Department of Obstetrics and Gynecology of the First Educational-Surgical Clinic of the Azerbaijan Medical University. A total of 106 women in the postpartum period were prospectively enrolled. The mean age of the participants was 28.3 ± 1.56 years (range: 21–39 years). Among the participants, 46 (43.4%) were primiparous, and 60 (56.6%) were multiparous. Based on clinical evaluation and medical history, PPD was diagnosed in 35 women.

The retrospective component of the study included an analysis of the medical records of 22 women with PPD who had received treatment at the Department of Psychiatry of Baku City Hospital No. 3 (Baku, Azerbaijan).

The Control group consisted of 71 women with an uncomplicated physiological postpartum course and no signs of PPD.

All women enrolled in the prospective study underwent comprehensive clinical and anamnestic assessment, ultrasonographic examination, and laboratory investigations, including measurement of serum levels of estradiol (E2), thyroid-stimulating hormone (TSH), dehydroepiandrosterone sulfate (DHEA-S), prolactin, cortisol, and the catecholamines adrenaline and noradrenaline.

Psychoemotional status was assessed using the PDSS, a validated screening instrument comprising 35 items that evaluate multiple dimensions of a woman's emotional state during the early postpartum period. Each item was scored on a five-point Likert scale:

- 1 point – strongly disagree;
- 2 points – disagree;
- 3 points – neither agree nor disagree;
- 4 points – agree;
- 5 points – strongly agree.

A total PDSS score of 65 points or higher was considered indicative of a high risk of PPD.

Statistical analyses were performed using Statgraphics software. For continuous variables, the mean (M), standard deviation (SD), standard error of the mean (SE), and minimum and maximum values were calculated. Both parametric and non-

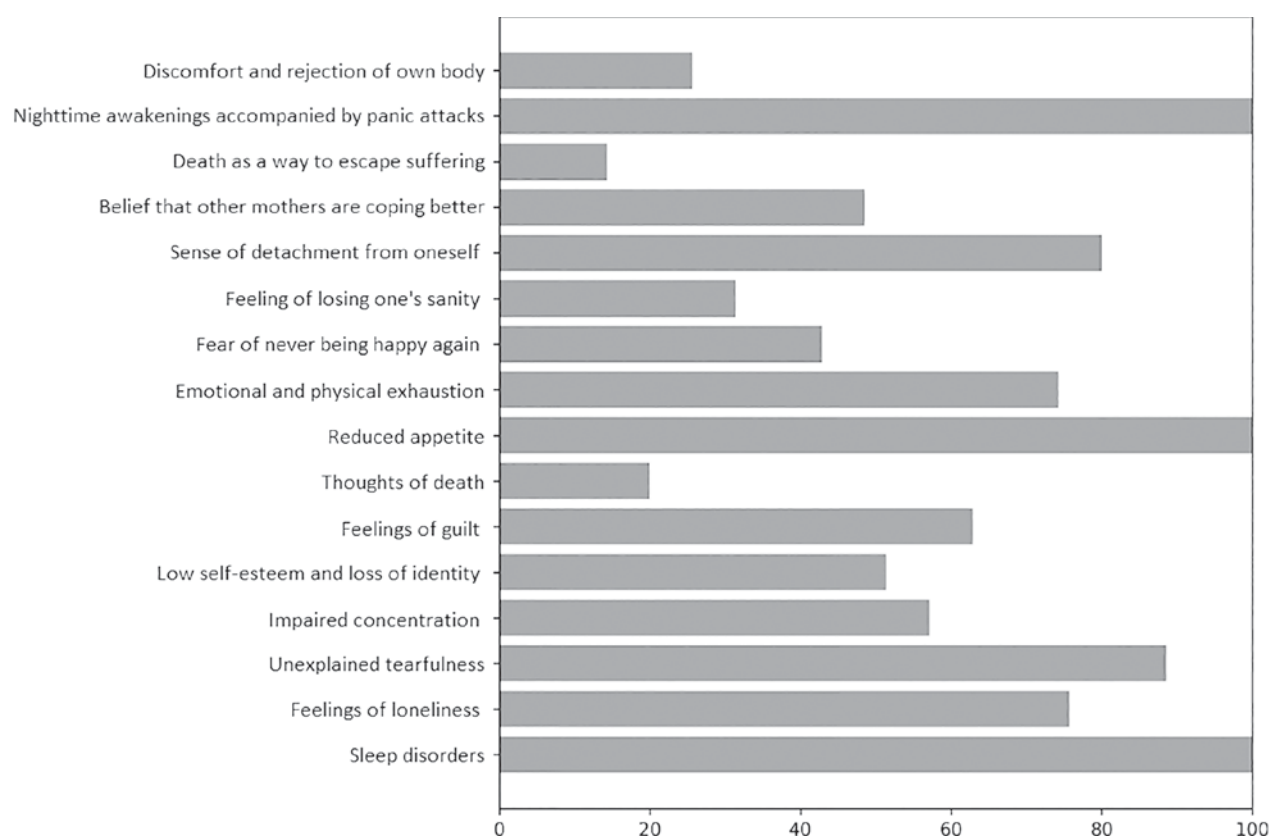


Fig. Main clinical manifestations of postpartum depression (%)

parametric statistical methods were applied for data analysis. Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and overall diagnostic accuracy were calculated based on the distribution of positive and negative PDSS screening results in the PPD and Control groups.

The study was conducted in accordance with the principles of the Declaration of Helsinki. The study protocol was approved by the Local Ethics Committee of the institution mentioned in the work. Informed consent from women was obtained for the study.

Results of the study and discussion

Analysis of the clinical and anamnestic data demonstrated a high prevalence of previous neuropsychiatric disorders among women with PPD enrolled in the prospective study. Of the 35 patients in the Study group, 24 (68.6%) had a history of neurosis or neurasthenia, 8 (22.9%) had experienced panic attacks and had received antidepressant therapy, 15 (42.9%) had various phobic disorders, and 4 (11.4%) had epilepsy and were receiving anticonvulsant treatment.

Retrospective analysis of the medical records of 22 women with PPD revealed that 6 (27.3%) had been diagnosed with schizoaffective disorder, 4 (18.2%) with schizophrenia, 4 (18.2%) with dissociative (conversion) disorder, 2 (9.1%) with somatic symptom disorder, and 4 (18.2%) with epilepsy.

These findings indicate a high prevalence of neuropsychiatric disorders both in patients' medical histories and among women with established psychiatric diagnoses, highlighting the importance of an objective assessment of psychoemotional status during the early postpartum period. To this end, all participants in the prospective study were assessed using the PDSS, which enables evaluation of the severity of depressive symptoms and identification of women at increased risk of PPD. Although the PDSS was administered to all study participants, a detailed analysis of the pattern of depressive symptoms was performed only in the Study group comprising women with clinically diagnosed PPD.

The most frequently observed clinical manifestations of PPD are presented in the Figure.

As shown in the Figure, the most prevalent clinical manifestations were sleep disturbances, nighttime awakenings accompanied by panic attacks, de-

Table 1

Additional clinical manifestations in women with postpartum depression (n=35)

Clinical manifestation	N (%)
Inability to control one's own emotions	26 (74.3)
Fear of losing one's mind	7 (20.0)
Fear of never returning to the previous emotional state	16 (45.7)
Feeling of insufficient love for one's child	4 (11.4)
Thoughts of self-harm	32 (91.4)
Severe insomnia with prolonged difficulty falling asleep at night	32 (91.4)
Excessive anxiety regarding the newborn's condition	35 (100.0)
Increased irritability	20 (57.1)
Difficulty making even minor decisions	32 (91.4)
Feeling changed compared with one's usual self	29 (82.9)
Desire to conceal feelings related to the child	7 (20.0)
Belief that the child would be better off without the mother	2 (5.7)
Difficulty eating despite feeling hungry	26 (74.3)
Persistent need to stay active and inability to relax	21 (60.0)
Marked irritability and episodes of anger	17 (48.6)
Feeling that events are unreal	3 (8.6)
Feeling inconsistent with one's own expectations of the maternal role	6 (17.1)
Thoughts of not wanting to live	4 (11.4)

creased appetite, and marked anxiety regarding the newborn's condition (100% each), as well as insomnia, difficulties with decision-making, and thoughts of self-harm (91.4% each). Other frequently observed symptoms included tearfulness (88.6%), feelings of detachment from oneself (80.0%), emotional overload (74.3%), feelings of guilt (62.9%), irritability, and impaired concentration. Suicidal ideation and the belief that the child would be better off without the mother were less frequent; however, these symptoms represented clinically significant concerns.

In addition, the following symptoms were also identified (Table 1).

For the analysis of PDSS responses, the categories «agree» and «strongly agree» were considered indicative of the presence of the corresponding symptom.

All 35 women with clinically diagnosed PPD had PDSS scores of ≥ 65 points, corresponding to a high risk of postpartum depression. The mean PDSS score in the PPD group was 76.6 ± 4.52 points (range: 65–101), compared with 43.66 ± 1.0 points in the

Control group. Among the 71 women in the Control group, 16 (22.5%) had PDSS scores ≥ 65 points, ranging from 66 to 69 points, whereas 55 (77.5%) had scores below the screening threshold.

Using a PDSS score of ≥ 65 as the threshold for a positive screening result, the scale identified all 35 clinically diagnosed cases of PPD, corresponding to a sensitivity of 100%. Specificity was 77.5%, as 55 of 71 women without clinically diagnosed PPD had scores below 65. The positive predictive value was 68.6%, the negative predictive value was 100%, and the overall classification accuracy was 84.9%.

These findings demonstrate that the PDSS showed high sensitivity for identifying women with clinically diagnosed PPD in the present study. Importantly, however, 16 (22.5%) women in the Control group also exceeded the screening threshold, although their scores were confined to a relatively narrow range of 66–69 points. Therefore, a PDSS score ≥ 65 should be interpreted as an indicator of increased risk requiring further clinical assessment rather than as an independent diagnostic criterion for PPD.

Table 2

Comparative PDSS results in women with postpartum depression and controls

Parameter	Result
PPD group, n	35
Control group, n	71
PDSS ≥ 65 in the PPD group	35/35 (100%)
PDSS ≥ 65 in the Control group	16/71 (22.5%)
PDSS < 65 in the Control group	55/71 (77.5%)
Mean PDSS score, PPD group	76.6 $\pm$ 4.52
Mean PDSS score, Control group	43.66 $\pm$ 1.0
PDSS score range, PPD group	65-101
PDSS score range among Control group women with PDSS ≥ 65	66-69
Sensitivity	100%
Specificity	77.5%
Positive predictive value (PPV)	68.6%
Negative predictive value (NPV)	100%
Overall diagnostic accuracy	84.9%

The available comparative PDSS results are summarized in Table 2.

Thus, signs of PPD were identified in one-third of the women assessed. Compared with women without depressive symptoms, women with PPD demonstrated a significantly higher frequency of sleep disturbances, pronounced anxiety, emotional instability, reduced self-esteem, difficulties with decision-making, and suicidal thoughts.

In the present study, signs of PPD were identified in 33.0% of women during the early postpartum period. This prevalence exceeds the average rates reported in the literature (13–19%); however, such differences may be explained by variations in the timing of assessment, characteristics of the study population, and the use of different screening instruments. These findings confirm that PPD is a common complication of the postpartum period and requires proactive identification.

Our findings are consistent with those of E.G. Valdés et al. (2023), who reported that despite the substantial clinical significance of peripartum depression, screening practices and healthcare professional preparedness remain insufficient. The authors emphasized the importance of implementing standardized programs for the early detection of psychoemotional disorders, which is consistent with our findings demonstrating a high prevalence of depressive symptoms [10].

The clinical presentation observed in our study was characterized by sleep disturbances, decreased appetite, anxiety, emotional exhaustion, reduced self-esteem, and impaired emotional regulation. Particular attention should be paid to the presence of self-harm thoughts and suicidal ideation in a subset of patients, highlighting the need for systematic mental health assessment during the first weeks after childbirth.

The results obtained support the clinical value of using standardized screening instruments. N.A. Lakkis and D.M. Mahmassani (2015) reported that validated questionnaires substantially improve the early detection of depressive disorders in clinical practice. In our study, the PDSS also demonstrated high practical utility as a simple and informative tool for the initial psychoemotional assessment of postpartum women [5].

The findings of M.M. Long et al. (2020) demonstrated that the effectiveness of screening programs depends not only on the frequency of screening implementation but also on timely referral of women with positive screening results for further psychological or psychiatric care. Our findings support this conclusion, as the identification of depressive symptoms in one-third of the women assessed indicates the need to incorporate standardized psychoemotional screening into routine postpartum care, followed by specialized management of women at increased risk [6].

Overall, the results of the present study are consistent with contemporary international evidence and support the implementation of systematic PPD screening within obstetric practice. The use of PDSS enables timely identification of women at high risk of psychoemotional disorders and facilitates early referral for specialized care, potentially improving maternal mental health outcomes and the quality of mother-infant interaction.

Conclusions

The findings of this study demonstrate that PPD is a common complication of the postpartum period, affecting one-third of the women assessed. The most clinically significant manifestations include sleep disturbances, emotional maladaptation, anxiety, and reduced self-esteem, all of which substantially impair the psychoemotional well-being of postpartum women.

The PDSS demonstrated high screening performance for the early identification of women at risk of postpartum depression. At the ≥ 65 -point threshold, sensitivity was 100%, specificity was 77.5%, the positive predictive value was 68.6%, and the negative predictive value was 100%. The absence of false-negative results in the present sample indicates that the PDSS may be particularly useful as an initial screening instrument for identifying women requiring further assessment. However, positive PDSS results were also observed in 22.5% of women without clinically diagnosed PPD, indicating that the scale should be used as a screening rather than a standalone diagnostic instrument.

Future research should focus on the identification of risk factors and the evaluation of the effectiveness of early preventive and therapeutic interventions.

The author declares that there is no conflict of interest.

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