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Analysis of the Current Status and Influencing Factors of Postpartum Depression in Hospitalized Parturient Women Under the Three-Child Policy

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Abstract

[Objective] To investigate the current status of postpartum depression (PPD) among women during their hospital stay under the three-child policy and to analyze its influencing factors. [Methods] Women who gave birth in the obstetrics department of a tertiary hospital between December 2024 and March 2025 were selected as research participants. Data were collected using a general information questionnaire, the Edinburgh Postnatal Depression Scale (EPDS), and the Social Support Rating Scale (SSRS). The incidence of PPD during hospitalization was analyzed, and its influencing factors were explored. [Results] A total of 252 women were included in the study, with 37 cases (14.7%) in the PPD group and 215 cases (85.3%) in the non-PPD group. Univariate analysis showed no significant differences between the two groups in mode of delivery, age, parity, marital status, annual family income, presence of a nanny, postpartum care center attendance, or employment status ($P > 0.05$). Significant differences were observed in planned pregnancy, feeding method, history of previous PPD, educational level, sleep quality, and social support ($P < 0.05$). Binary logistic regression analysis identified feeding method, history of previous PPD, educational level, sleep quality, and social support as independent risk factors for PPD ($P < 0.05$). [Conclusion] Under the three-child policy, the occurrence of PPD is influenced by multiple factors. Targeted interventions should be implemented during hospitalization based on these independent factors. Personalized education for high-risk individuals and continuous nursing services are essential to reduce the risk of PPD and ensure the well-being of both mother and child.

Keywords Postpartum Depression; Pregnant Women; Social Support; Risk Factors
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Postpartum depression (PPD) is a common psychological disorder that occurs after childbirth, typically manifesting within six weeks postpartum. It is primarily characterized by persistent low mood, decreased self-esteem, sleep disturbances, anxiety, and even suicidal or infanticidal thoughts[1]. The global incidence of PPD is currently 17.22%, while the incidence in China is as high as 21.4%[2-3].

With the full implementation of the "three-child" policy, postpartum women are facing increased psychological pressure and child-rearing burdens, which in turn have led to a higher incidence of PPD.

Studies have shown that there is a significant negative correlation between PPD and social support, meaning that the higher the level of social support, the lower the risk of PPD[4].

This study investigates the incidence of PPD among postpartum women during their hospital stay at a tertiary hospital and explores the relationship between PPD-related influencing factors and social support, aiming to provide feasible nursing interventions for the early identification and treatment of PPD in postpartum women.

1 Data and Methods

1.1 General Information

A convenience sampling method was used to select pregnant women who gave birth in the obstetrics department of a tertiary hospital from December 2024 to March 2025 as the research subjects.

Inclusion criteria include pregnant women with singleton pregnancies and full-term deliveries, those hospitalized for 2 to 5 days postpartum, individuals with normal comprehension abilities, no communication barriers, who voluntarily participated in the study and were able to cooperate with the survey.

Exclusion criteria include women with mental illness, those with multiple pregnancies, those with pregnancy complications, and those with adverse neonatal outcomes.

1.2 Survey Instruments

1.2.1 General Information Questionnaire

A self-developed questionnaire from the hospital was used, which included 13 items: maternal age, mode of delivery, parity, marital status, annual family income, whether the pregnancy was planned, feeding method, whether a nanny was employed, whether the mother attended a postpartum care center, history of previous postpartum depression, employment status, educational level, and sleep quality.

1.2.2 Edinburgh Postnatal Depression Scale (EPDS)

The EPDS was developed by Cox et al.[5] and translated and revised into a Chinese version by Lee et al.[6]. It is used to assess symptoms of postpartum depression. The scale consists of 10 items, each scored on a 4-point scale ranging from 0 to 3, with a total score ranging from 0 to 30. An EPDS score of $\geq$13 indicates a high risk of postpartum depression, suggesting that the participant may be experiencing postpartum depression and requires further clinical assessment and diagnosis.

1.2.3 Social Support Rating Scale (SSRS)

The SSRS was revised by Xiao Shuiyuan in 1994[7]. It includes 10 items across three dimensions: subjective support, objective support, and utilization of support. The total score is calculated by summing the scores of all items. Generally, a total score of less than 20 indicates low social support; a score of 20 to 30 indicates average social support; and a score of 31 to 40 indicates a satisfactory level of social support.

1.3 Data Collection Methods

The WeChat Questionnaire Star platform survey system was used. A questionnaire was custom-designed within the system, including three sections: the General Information Questionnaire, the Edinburgh Postnatal Depression Scale (EPDS), and the Social Support Rating Scale (SSRS). A QR code was generated for the questionnaire. The responsible nurse guided postpartum women who were hospitalized 2 to 5 days after delivery to scan the QR code on-site and complete the questionnaire on their mobile phones based

on their actual situations. The researchers were able to directly view the survey results of each participant in the WeChat environment.

1.4 Statistical Methods

Statistical analysis was performed using SPSS 23.0 software. For continuous data, the mean and standard deviation ($\overline{x} \pm s$) were used for description, and comparisons between groups were conducted using t-tests or analysis of variance (ANOVA). For categorical data, frequency and percentage (n, %) were used for description, and chi-square tests were applied. Multivariate analysis was conducted using binary logistic regression. A p-value less than 0.05 was considered statistically significant.

2 Results

2.1 General Information Questionnaire for Hospitalized Postpartum Women

The WeChat Questionnaire Star platform survey system collected questionnaires from 252 postpartum women who were hospitalized for childbirth. The age of the participants ranged from 20 to 33 years, with an average age of (33.05 ± 5.59) years.

2.2 Postpartum Depression Status and Social Support Levels of Hospitalized Postpartum Women

During the hospital stay, the EPDS scores of postpartum women ranged from 2 to 19, with an average score of (10.00 ± 2.42). A total of 37 cases (14.7%) were identified with postpartum depression. The social support scores ranged from 9 to 40, with an average score of (27.14 ± 6.37). Among the participants, 54 (21.40%) had mild social support, 77 (30.60%) had average social support, and 121 (48.00%) had relatively satisfactory social support.

2.3 Univariate Analysis of Postpartum Depression in Hospitalized Pregnant Women

A total of 252 pregnant women were included in the study, with 37 cases (14.7%) in the PPD group and 215 cases (85.3%) in the non-PPD group. There were no significant differences between the two groups in terms of mode of delivery, age, parity, marital status, annual family income, presence of a nanny, postpartum care center attendance, and employment status ($P > 0.05$).

Significant differences were found between the two groups in planned pregnancy, feeding method, history of previous postpartum depression, educational level, sleep quality, and social support ($P < 0.05$). See Table 1.

2.4 Multivariate Logistic Regression Analysis of Risk Factors for Postpartum Depression in Hospitalized Pregnant Women

To identify independent risk factors for postpartum depression (PPD), a multivariate logistic regression analysis was performed. The model used the occurrence of PPD as the dependent variable and included all variables that were statistically significant in the univariate analysis as independent variables. The analysis revealed that feeding method, a previous history of PPD, educational level, sleep quality, and the level of social support were significant independent predictors of PPD among hospitalized pregnant women (P<0.05). Detailed results are presented in Table 2.

Table 1 Univariate Analysis of Postpartum Depression in Pregnant Women [n(%), $\bar{x}\pm s$]

Variable	PPD Group (n=37)	Non-PPD Group (n=215)	χ^2/t	P
Mode of Delivery			3.771	0.152
Vaginal Delivery	29（78.4）	138（64.2）		
Cesarean Section	7（18.9）	52（24.2）		
Vaginal Delivery to Cesarean Section	1（2.7）	25（11.6）		
Age	34.27±5.853	32.84±5.527	1.444	0.150
Age				
20 to 25 years old	3（8.1）	17（7.9）	0.203	0.904
26 to 34 years old	18（48.6）	113（52.6）		
≥35 years old	16（43.2）	85（39.5）		
Parity				
First Child	21（56.8）	107（49.8）	1.071	0.784
Second Child	9（24.3）	53（24.7）		
Third Child	5（12.8）	34（15.8）		
More than Three Children	2（8.7）	21（9.8）		
Marital Status				
Unmarried	4（10.8）	19（8.8）	1.823	0.572
Married	29（78.4）	181（84.2）		
Divorced	2（5.4）	9（4.2）		
Widowed	2（5.4）	6（2.8）		
Family Annual Income				
Less than 50,000 yuan	8（21.6）	43（20.0）	1.960	0.581
50,000 - 100,000 yuan	12（32.4）	85（39.5）		
100,000 - 200,000 yuan	9（24.3）	58（27.0）		
200,000 - 500,000 yuan	8（21.6）	29（13.5）		
More than 500,000 yuan	0	0		
Planned Pregnancy				
Yes	16（43.2）	128（59.5）	3.421	0.064
No	21（56.8）	87（40.5）		
Feeding Method				
Breastfeeding	29（78.4）	82（38.1）	21.162	0.000
Bottle Feeding	6（16.2）	76（35.3）		
Mixed Feeding	2（5.4）	57（26.5）		
Presence of a Nanny			0.093	0.761
Yes	20（54.1）	122（56.7）		
No	17（45.9）	93（43.3）		
Attendance at a Postpartum Care Center				
Yes	25（67.6）	139（64.7）	0.118	0.731
No	12（32.4）	76（35.3）		
History of Previous Postpartum Depression			29.000	0.000
Yes	6（16.2）	1（0.5）		
No	31（83.8）	214（99.5）		
Employment Status				
Employed	14（37.8）	91（42.3）	2.686	0.612
Unemployed	5（13.5）	28（13.0）		
Self-employed	5（13.5）	43（20.0）		
Freelancer	10（21.7）	36（16.7）		
Other	3（8.1）	17（7.9）		
Educational Level			19.337	0.000
Primary School	4（10.8）	27（12.6）		
Junior High School	5（13.5）	58（27.0）		
Senior High School/Vocational School	7（18.9）	82（38.1）		
College and Above	21（56.8）	48（22.3）		
Sleep Quality			70.591	0.000
Average	4（10.8）	101（47.0）		
Good	16（43.2）	107（49.8）		
Insomnia	17（45.9）	7（3.3）		
Social Support			23.232	0.000
High	10（17.8）	111（51.6）		
Medium	8（11.3）	69（32.1）		
Low	19（7.9）	35（16.3）		

Table 2 Multivariate Analysis of Risk Factors for Postpartum Depression in Pregnant Women (n=252)

Independent Variables	B	SE	Wald	P	OR	95% CI
Planned Pregnancy	-0.446	0.465	0.923	0.337	0.640	0.257~1.591
Feeding Method	1.052	0.378	7.742	0.005	2.864	1.365~6.010
History of Previous Postpartum Depression	2.704	1.296	4.356	0.037	14.947	1.179~189.442
Educational Level	-0.703	0.256	7.542	0.006	0.495	0.300~0.818
Sleep Quality	-1.611	0.399	16.306	0.000	0.200	0.091~0.437
Social Support	-0.648	0.287	5.097	0.024	0.523	0.298~0.918
Constant	1.886	2.867	0.433	0.511	6.595	

3 Discussion

3.1 Feeding Method

Different feeding methods are associated with postpartum depression to some extent. Breastfeeding is generally considered a protective factor against postpartum depression. Successful breastfeeding can enhance a mother's sense of achievement and self-confidence, thereby reducing depressive symptoms[8]. However, difficulties encountered during breastfeeding, such as nipple pain, mastitis, infant latching problems, and insufficient milk supply, can increase the risk of postpartum depression[9]. Mixed feeding and formula feeding may impose psychological stress on mothers, thereby increasing the risk of postpartum depression. Therefore, providing good social support and breastfeeding guidance to postpartum women can help reduce the incidence of postpartum depression.

3.2 History of Previous Postpartum Depression

A history of previous postpartum depression is one of the important factors affecting the risk of developing postpartum depression. Studies have shown that women with a history of depression or other mental illnesses have a significantly increased risk of developing postpartum depression[10]. In addition, women who experienced depression or anxiety during pregnancy, or those with a family history of mental illness, are also at a higher risk of postpartum depression. These factors may be related to the long-term effects on brain neurofunction, making women more susceptible to emotional problems when facing both physical and psychological stress after childbirth. Therefore, for women with a history of previous mental health issues, more attention and psychological support should be provided to facilitate early identification and intervention of postpartum depression, thereby reducing the risk of its occurrence.

3.3 Educational Level

There is a significant association between educational level and postpartum depression. This study indicates that the higher the educational level, the greater the risk of postpartum depression among hospitalized women. Other research has shown that lower educational level is one of the independent risk factors for postpartum depression. Women with lower educational levels often have limited knowledge of postpartum care and child-rearing, which may lead to feelings of helplessness and anxiety when facing physical and psychological changes after childbirth, thereby increasing the risk of postpartum depression[11]. On the other hand, some studies have pointed out that individuals with higher educational levels may experience more complex emotions due to greater social and psychological pressures, which can also increase the risk of postpartum depression[12]. Therefore, it cannot be simply concluded that higher educational level always leads to a higher risk of postpartum depression. A comprehensive consideration of multiple factors is necessary.

3.4 Sleep Quality

There is a close relationship between sleep quality and postpartum depression. This study shows that poor sleep quality is one of the important risk factors for postpartum depression. Another study has shown that primiparous women with sleep disorders in the mid-to-late stages of pregnancy are 2.504 times more likely to develop postpartum depression[13]. Postpartum depression not only affects the physical and mental health of the mother but can also have a negative impact on the psychological health and growth and development of the infant. Therefore, improving the sleep quality of postpartum women is of great significance for the prevention of postpartum depression. It is recommended that targeted sleep interventions, such as sleep hygiene education and psychological support, be provided to postpartum women to reduce the incidence of postpartum depression.

3.5 Social Support

Social support refers to the emotional, informational, and material assistance that an individual receives from others during social interactions. It is an important resource for coping with life stress. This study shows that there is a significant negative correlation between social support levels and the severity of postpartum depression, meaning that higher levels of social support can significantly reduce the incidence of postpartum depression. This finding is consistent with the research by Hahyeon Cho et al., which showed that women with inadequate social support have a higher risk of postpartum depression. Women with low social support levels are 4.63 times more likely to develop postpartum depression than those with high levels of social support[14]. Therefore, enhancing social support levels is of great significance for the prevention of postpartum depression. Effective improvement of the psychological health of postpartum women can be achieved through support from multiple aspects, including family, community, and healthcare systems.

4 Conclusion

Postpartum depression is a common psychological disorder during the perinatal period, and its occurrence is associated with a variety of factors, such as breastfeeding, history of previous postpartum depression, low educational level, poor sleep quality, and low levels of social support. Prevention of postpartum depression should begin during pregnancy. Community health workers should actively pay attention to high-risk groups from the early stages of pregnancy to the pre-labor period, and disseminate knowledge about physiological and psychological health during pregnancy, childbirth, and the postpartum period to pregnant women and their families through lectures and prenatal examinations, thereby improving their ability to recognize psychological states. At the same time, health education should be provided to family members, informing them to pay attention to the emotional changes of pregnant and postpartum women and to provide good social support. During the pre-labor period, medical staff should create a quiet and comfortable sleep environment for pregnant women to alleviate their nervousness. In addition, medical staff should also take on the important responsibility of educating pregnant women about postpartum knowledge and guiding them in feeding newborns. They should use simple and understandable language to explain based on the women's educational level and comprehension ability. The prevention of postpartum depression also requires the joint participation of families and society. Family members should provide pregnant women with full understanding, care, and support, and help them share the burden of household chores and newborn care. At the social level, support groups for postpartum depression and professional psychological counseling services can be established to provide more support and help for postpartum women. Pregnant women themselves should also actively adjust their mindsets and maintain good living habits, such as a balanced diet and appropriate exercise. Moreover, doctors can conduct depression risk assessments for pregnant women during pregnancy and provide psychological intervention or medication

when necessary. After childbirth, timely follow-up by doctors can help detect and manage postpartum depression early. Through these multidimensional interventions, the incidence of postpartum depression can be effectively reduced, and the health outcomes for both mother and baby can be improved.

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