Journal of Clinical and Nursing Research, 2025, Volume 9, Issue 9
http://ojs.bbwpublisher.com/index.php/JCNR
Online ISSN: 2208-3693
Print ISSN: 2208-3685

Study on the Current Status and Influencing Factors of Depression in Perinatal Women

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Abstract: Depression is the most common mental disorder among perinatal women, with its incidence showing an annual increasing trend. Depression poses severe harms to the health of mothers and infants, thus requiring high attention from perinatal women themselves, their families, and society. Studies have shown that there are numerous influencing factors for depression in perinatal women, the most common of which include place of residence, monthly family income, recent appetite, mother-in-law and daughter-in-law relationship, personal history of anxiety and depression, obstetric complications during pregnancy, fear of childbirth, utilization of support, positive coping, and susceptible personality. Based on empirical research, this paper conducts an in-depth study and discussion on the current status of depression and its influencing factors in perinatal women, aiming to provide a basis for formulating scientific and effective preventive and intervention measures, and to contribute modestly to effectively reducing the adverse impact of depression on the physical and mental health of mothers and infants.

Keywords: Perinatal women; Current status of depression; Influencing factors

Online publication: Oct 17, 2025

1. Introduction

The perinatal period specifically refers to the special physiological stage from the start of pregnancy to one year after childbirth. During this period, due to elevated hormone levels, women may face tremendous physical and mental changes as well as severe challenges, and their psychological state may also fluctuate significantly. Studies have shown that the incidence of mental health problems in perinatal women is significantly higher than that in ordinary women; in particular, depression not only seriously threatens the physical and mental health of perinatal women but also may have an adverse impact on the normal development of the fetus. There are various factors leading to depression in perinatal women, including social, physiological, family, and psychological aspects [1-2]. Based on this, this paper will use scientific survey tools and effective data collection methods to conduct a systematic study on the current status of depression and its related influencing factors in perinatal women.

On this basis, it will summarize and propose effective prevention and intervention strategies, aiming to further

improve the mental health status of perinatal women and make a modest contribution to safeguarding the health of perinatal mothers and infants.

2. Research instruments

2.1. General information questionnaire

Self-designed, including 27 items covering pregnant women's demographic characteristics (age, occupation, education level, medical insurance type, etc.), pregnancy status (pregnancy plan, pregnancy complications, etc.), and family support (spousal relationship, mother-in-law and daughter-in-law relationship, etc.) [3].

2.2. Edinburgh postnatal depression scale (EPDS)

This scale comprises 10 items, which are scored on a four-point scale as follows: 0 points ("Never"), 1 point ("Occasionally"), 2 points ("Frequently"), and 3 points ("Always"). Items 1 and 2 are reverse-scored, while Items 3 to 10 are positively scored. The total score ranges from 0 to 30, with higher scores indicating more severe depression. Referring to foreign literature, this study used a score of 9 as the cutoff value for depression screening. The EPDS is characterized by simplicity, ease of use, and rapid and effective identification of depression in patients. It is the preferred scale for postnatal depression (PND) assessment recommended by guidelines and has been proven to have high reliability and validity when used both antepartum and postpartum. The Cronbach's α coefficient of this scale in the antepartum period of this study was 0.82 [4].

2.3. Social support rate scale (SSRS)

Revised by Professor Xiao Shuiyuan, this scale includes 10 items divided into 3 dimensions: support utilization (Items 8, 9, 10; 12 points), subjective support (Items 1, 3, 4, 5; 20 points), and objective support (Items 2, 6, 7; 32 points). The total score is the sum of the scores of the 10 items. A higher total score indicates a higher level of social support: 45–64 points for high social support, 23–44 points for moderate social support, and ≤ 22 points for low social support. The Cronbach's α coefficients for the three dimensions range from 0.78 to 0.80 [5].

2.4. Simplified coping style questionnaire (SCSQ)

This scale comprises 20 items, divided into two dimensions: positive coping and negative coping. It uses a 4-point Likert scale, with scores assigned as 0 (never adopt), 1 (occasionally adopt), 2 (sometimes adopt), and 3 (often adopt).

The total score of Items 1-12 represents the positive coping dimension, and the total score of Items 13–20 represents the negative coping dimension [6]. In this study, the Cronbach's α coefficient of the total scale was 0.84, while those of the positive and negative coping dimensions were 0.77 and 0.87, respectively.

2.5. Vulnerable personality style questionnaire (VPSQ)

This study used the revised version by Jin Sanli et al. The scale consists of 9 items, divided into two dimensions: vulnerability and reactivity, and is used to measure the personality traits of perinatal women. Each item is scored on a 5-point scale: 1 (not at all), 2 (no), 3 (neutral), 4 (yes), and 5 (exactly). In previous studies, the Cronbach's α coefficient of this scale was 0.65 [7].

3. Results

3.1. Current status of depression in mid-to-late pregnancy and results of univariate analysis

The total score of the Edinburgh Postnatal Depression Scale (EPDS) for women in mid-to-late pregnancy was (7.97 ± 3.60). The incidence of depression in mid-to-late pregnancy was 42.7%. Univariate analysis showed that a total of 13 variables were statistically significant (all $p < 0.05$), as shown in **Table 1** (only statistically significant parameters are listed).

Table 1. Univariate analysis of depression in mid-to-late pregnancy

Item	Group	Case Number		Positive Ratio	Statistic Value	*p*-value
		EPDS < 9	EPDS ≥ 9			
Residence	Rural	21	35	62.5%	10.66²	0.005
	Town	28	24	46.1%		
	City	288	192	40.0%		
Education Level	Junior high school or below	14	25	64.1%	9.09²	0.028
	Senior high school or technical secondary school	61	50	45.0%		
	Bachelor's degree or college	222	153	40.8%		
	Postgraduate or above	40	23	36.5%		
Fixed Job	No	95	102	51.8%	10.01²	0.002
	Yes	242	149	38.1%		
Medical Insurance Type	Rural cooperative medical care	71	213	75.0%	10.66²	0.014
	Basic medical insurance for urban employees	72	125	63.5%		
	Basic medical insurance for urban residents	25	27	51.9%		
	Self-payment	28	27	49.1%		
Monthly Family Income	< 3000	9	8	47.1%	25.73²	< 0.001
	3000 - yuan	38	67	63.8%		
	5000 - yuan	139	96	40.9%		
	> 10000	151	80	34.6%		
Recent Appetite	General	69	110	61.5%	37.04²	< 0.001
	Good	268	141	34.5%		
Spousal Relationship	General	10	37	78.7%	55.383²	< 0.001
	Satisfied	123	131	51.6%		
	Very satisfied	204	83	28.9%		
Mother-in-law and Daughter-in-law Relationship	No need to deal with mother-in-law and daughter-in-law relationship	17	7	29.2%	64.63²	< 0.001
	General	35	86	71.1%		
	Satisfied	154	115	42.8%		

3.2. Correlation between social support, coping style, vulnerable personality and depression in mid-to-late pregnancy

Subjective support, objective support, support utilization, positive coping, and reactive personality were negatively correlated with EPDS (all $p < 0.01$); negative coping and vulnerable personality were positively correlated with EPDS (all $p < 0.01$). Details are shown in **Table 2**.

Table 2. Correlation analysis of depression with social support, coping style and vulnerable personality in mid-to-late pregnancy

Variable	EPDS	Subjective Support	Objective Support	Support Utilization Degree	Positive Coping	Negative Coping	Susceptible Personality	Reactive Personality
EPDS	1							
Subjective Support	-0.34**	1						
Objective Support	-0.29**	0.28**	1					
Support Utilization Degree	-0.33**	0.36**	0.40**	1				
Positive Coping	-0.39**	0.39**	0.32**	0.49**	1			
Negative Coping	0.12**	0.05	-0.01	0.07	0.31**	1		
Susceptible Personality	0.52**	-0.26**	-0.16**	-0.12**	-0.22**	0.28**	1	
Reactive Personality	-0.30**	0.30**	0.30**	0.43**	0.88**	0.23**	-0.19**	1

3.3. Multivariate analysis of depression in mid-to-late pregnancy

Variables with statistical differences in the univariate analysis were taken as independent variables, and the presence or absence of depression as the dependent variable.

A Logistic regression analysis was performed to establish a predictive regression model for depression in mid-to-late pregnancy [8].

Dummy variables were set for residence, education level, medical insurance type, marital relationship, and mother-in-law-daughter-in-law relationship in mid-to-late pregnancy. The assignment of each variable is shown in **Table 3**.

Table 3. Variable assignment for logistic regression analysis of depression in mid-to-late pregnancy

Variable	Assignment
Y: With or without depression	No depression = 0, With depression = 1
X_1: Residence	City (reference) $X_1 = 0$, $X_2 = 0$ Rural (X_1) $X_1 = 1$, $X_2 = 0$ Town (X_2) $X_1 = 0$, $X_2 = 1$
X_2: Education level	Postgraduate and above (reference) $X_1=0$, $X_2=0$ Junior high school and below (X_1) $X_1=1$, $X_2=0$ Senior high school or technical secondary school (X_2) $X_1=0$, $X_2=1$, $X_3=0$ Bachelor's degree or college (X_3) $X_1=0$, $X_2=0$, $X_3=1$
X_3: With or without fixed job	No = 0, Yes = 1
X_4: Medical insurance type	Self-payment (reference) $X_1 = 0$, $X_2 = 0$, $X_3 = 0$ Rural cooperative medical care $X_1 = 1$, $X_2 = 0$, $X_3 = 0$ Basic medical insurance for urban employees $X_1 = 0$, $X_2 = 1$, $X_3 = 0$ Basic medical insurance for urban residents $X_1 = 0$, $X_2 = 0$, $X_3 = 1$
X_5: Monthly family income	< 3000 yuan = 1, 3000 - 5000 yuan = 2, 5000 - 10000 yuan = 3, > 10000 yuan = 4
X_6: Recent appetite	General = 1, Good = 2
X_7: Spousal relationship	Very satisfied (reference) $X_1 = 0$, $X_2 = 0$, $X_3 = 0$ General $X_1 = 0$, $X_2 = 1$, $X_3 = 0$ Satisfied $X_1 = 0$, $X_2 = 0$, $X_3 = 1$
X_8: Mother-in-law and daughter-in-law relationship	Very satisfied (reference) $X_1 = 0$, $X_2 = 0$, $X_3 = 0$, $X_4 = 0$ No need to deal with mother-in-law and daughter-in-law relationship $X_1 = 1$, $X_2 = 0$, $X_3 = 0$, $X_4 = 0$ General $X_1 = 0$, $X_2 = 1$, $X_3 = 1$, $X_4 = 0$ Satisfied $X_1 = 0$, $X_2 = 0$, $X_3 = 0$, $X_4 = 1$
X_9: Anxiety and depression	No = 0, Yes = 1
X_{10}: Family member depression history	No = 0, Yes = 1
X_{11}: Worry about fetal health	No = 0, Yes = 1
X_{12}: Pregnancy complications	No = 0, Yes = 1
X_{13}: Fear of childbirth	No = 0, Yes = 1
X_{14}: Social support	Original value input
X_{15}: Coping style	Original value input
X_{16}: Susceptible personality	Original value input

According to the above variable assignment method, the independent variables with statistical differences in the univariate analysis were substituted into the regression equation.

The results showed that a total of 10 variables entered the regression model during the middle and late stages of pregnancy, namely place of residence, monthly family income, recent appetite, mother-in-law and daughter-in-law relationship, personal history of anxiety and depression, obstetric complications during pregnancy, fear of childbirth, support utilization, positive coping, and susceptible personality. According to the model, women in the middle and late stages of pregnancy in rural areas had a 3.26 times higher risk of depression than those in urban areas; the higher the monthly family income, the lower the risk of depression; pregnant women with average recent appetite had a higher risk of depression than those with good appetite; pregnant women with average mother-in-law and daughter-in-law relationship had a higher risk of depression than those with satisfactory relationship; pregnant women with a personal history of anxiety and depression had a higher risk of depression; the greater the

fear of childbirth, the higher the risk of depression; pregnant women with high support utilization and who adopted positive coping styles had a lower risk of depression; and pregnant women with higher scores on susceptible personality had a higher risk of depression [9]. Details are shown in **Table 4**.

Table 4. Logistic regression model of depression in mid-to-late pregnancy (n = 588)

Variable	B Value	SE	β	p- value	OR Value	95% CI	
						Lower Limit	Upper Limit
Constant	-0.25	1.32	0.04	0.85	0.78		
Residence in rural areas	1.18	0.37	0.08	0.006	3.26	1.41	7.54
Monthly family income	-0.38	0.15	6.39	0.011	0.69	0.51	0.92
Recent appetite is general	0.77	0.24	10.33	0.001	2.15	1.35	3.43
Mother-in-law and daughter-in-law relationship is general	1.24	0.38	10.66	0.001	3.47	1.64	7.31
No history of anxiety and depression oneself	-1.15	0.47	5.91	0.015	0.32	0.13	0.80
No obstetric complications during pregnancy	-0.63	0.27	5.39	0.020	0.53	0.31	0.91
No fear of childbirth	-0.73	0.34	4.71	0.030	0.48	0.25	0.93
Support utilization degree	-0.19	0.08	6.46	0.011	0.83	0.71	0.96
Positive coping	-0.14	0.04	11.70	0.001	0.87	0.81	0.94
Susceptible personality	0.23	0.03	44.69	< 0.001	1.26	1.18	1.35

4. Effective strategies for preventing and treating perinatal depression

4.1. Establishing a standardized screening and early intervention system

To identify perinatal women's depressive symptoms early and provide targeted, personalized intervention and support, establishing a standardized screening and early intervention system is particularly urgent and important. Therefore, maternal and child health institutions and hospitals should incorporate perinatal depression screening into routine prenatal examinations and postnatal follow-up visits, aiming to dynamically monitor the mental health status of perinatal women during this special period [10,11]. On one hand, standardized scales, such as the aforementioned Edinburgh Postnatal Depression Scale and Social Support Scale should be adopted; on the other hand, unified screening criteria and clear operating procedures should be formulated to ensure the normalization of screening work and improve its quality and efficiency. If a perinatal woman is found to have depressive tendencies, a hierarchical intervention plan should be initiated immediately, and a sound rapid referral mechanism should be established to provide more professional and timely services for high-risk groups. Furthermore, to achieve differentiated intervention, a professional intervention team composed of obstetricians, psychologists, nurses, and other professionals should be established promptly. This facilitates early interventions such as psychological counseling and emotional regulation guidance for women with mild depression, and enables the formulation of personalized and comprehensive intervention plans for those with moderate or severe depression, that effectively integrating medication and psychological intervention to prevent the deterioration of problems and improve the timeliness and effectiveness of interventions [12].

4.2. Strengthening family support and social network construction

As important factors affecting perinatal depression, family and social factors deserve attention and emphasis from all parties. Thus, strong support from families and society is the guarantee and foundation for ensuring the mental health of perinatal women. On one hand, regarding the strengthening of family support, for perinatal women already experiencing depression, support from partners not only helps alleviate their depressive symptoms but also aids in the rapid recovery of their mental health to a normal level.

Partner support should not be limited to emotional care but should also extend to practical actions such as helping women share the burden of infant care and housework, and timely providing information on gynecological medical care or psychological counseling. This helps further reduce women's depression levels and assists them in adapting to the special perinatal period as soon as possible [13].

On the other hand, regarding social network construction, the key is to actively build mutual-aid groups and support platforms for perinatal women, facilitating more convenient and smooth communication and sharing among them. Community service centers, maternal and child health institutions, and other organizations should organize diverse publicity, exchange, and practical activities around themes related to perinatal depression such as parenting knowledge lectures and face-to-face psychological counseling. These activities aim to deepen perinatal women's understanding of depression, strengthen their psychological defense, and help them escape the distress of mental health issues including depression at an early stage. Additionally, society should strengthen the promotion and interpretation of cultural concepts such as equal, gender-neutral, and diversified family care division, and strive to create a social atmosphere of understanding and care for perinatal women, enabling them to live authentically [14].

4.3. Improving medical security and professional service provision

First, expand the coverage of medical insurance and effectively include the psychological treatment costs for perinatal women in the scope of medical insurance reimbursement, such as expenses related to perinatal depression screening, diagnosis, and treatment. This aims to reduce out-of-pocket spending on individual psychological counseling, alleviate the economic burden on perinatal women and their families, and fully stimulate women's initiative to seek medical care. Moreover, medical and health professionals should focus on integrating humanistic care with professional competence, particularly providing pregnant and lying-in women with a warm, harmonious, and professional support environment, smoothing their access to medical services, and enhancing the timeliness and convenience of seeking psychological help [15]. Finally, maternal and child health institutions at all levels and general hospitals should actively set up perinatal psychological clinics to provide convenient and professional psychological counseling services and medication treatment services for women in need and their families. This requires maternal and child health care personnel to actively and extensively acquire professional knowledge in psychology, master professional psychological intervention and treatment methods and tools, and significantly reduce the incidence of depression among perinatal women by implementing key measures such as early screening, timely identification, and effective intervention.

5. Conclusion

In summary, based on the research in this paper, factors such as place of residence, monthly family income, recent appetite, mother-in-law and daughter-in-law relationship, personal history of anxiety and depression,

obstetric complications during pregnancy, fear of childbirth, support utilization, positive coping, and susceptible personality are all closely associated with the occurrence of depressive emotions in perinatal women. Paying greater attention to the above factors and implementing effective strategies for preventing and treating perinatal women's depression from multiple dimensions, including building a standardized screening and early intervention system, strengthening family support and social network construction, and improving medical security and professional service provision cannot only provide timely and effective help and strong support for perinatal women but also further improve their mental health. Meanwhile, this study can provide scientific and basic data support for subsequent policy formulation and research design. However, this study still has certain limitations; in the future, relevant research should strengthen the in-depth exploration of the influencing factors of perinatal women's depression and formulate targeted intervention and treatment plans based on these factors to obtain more convincing research results.

Funding

Study on the Construction of a Perinatal Depression Risk Prediction Model Based on Artificial Neural Network, 2023 Xiangjiao Tong (Project No.: 361-23c0467)

Disclosure statement

The authors declare no conflict of interest.

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