

Original Article

Comprehensive nursing intervention effectively improves maternal psychological status and maternal postpartum quality of life

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Abstract: Objective: To explore the effect of comprehensive nursing on postpartum anxiety and depression. Methods: 148 primiparous were randomly divided into the control group (N=68) receiving routine nursing care, and the observation group (N=80) receiving comprehensive nursing care. The anxiety self-assessment form (SAS) was used to assess the degree of anxiety before and after nursing care, and the depression self-rating scale (SDS) was used to assess the degree of depression before and after nursing care. The blood loss within the initial two hours after delivery was determined by weighing all blood soaked materials. The total score of postpartum quality of life (physical, emotional, cognitive, role, social) of the two groups was assessed using the quality of life scale. Results: The SAS and SDS scores of the two groups after nursing care were significantly lower than those before nursing care ($P < 0.05$). There were no significant differences in SAS and SDS scores between the two groups before nursing care ($P > 0.05$). After nursing, the SAS and SDS scores of the observation group were significantly lower than those of the control group, and the difference was statistically significant ($P < 0.05$). The blood loss within the initial two hours after delivery in the observation group was significantly lower than that in the control group ($P < 0.001$). The total nursing satisfaction of the observation group (82.50%) was significantly higher than that of the control group (64.71%) ($\chi^2 = 6.099$, $P = 0.015$). The quality of postpartum life in the observation group was significantly higher than that in the control group ($P < 0.05$). Conclusion: Comprehensive nursing interventions can effectively improve postpartum anxiety and depression, reduce blood loss within the initial two hours after delivery, and significantly improve maternal postpartum quality of life and nursing satisfaction.

Keywords: Integrated nursing, self-rating depression scale, self-rating anxiety scale, clinical application

Introduction

About 20% of women in developed countries have mental health problems after childbirth [1]. According to statistics, the prevalence of postpartum depression in developed countries in the 1990s was 10-15% [2]. The incidence of postpartum anxiety is about 3%-43%, it may occur independently, and its incidence may be higher than postpartum depression [3].

For women in the world, having children is a common and important choice [4]. However, some factors such as women's anxiety during pregnancy, stressful life events, low level of social support, and history of previous depression may lead to postpartum depression [5].

Mild postpartum depression usually occurs about 10 days after delivery. It has such clinical symptoms as anxiety, depression, emotional sensitivity, and insomnia. Usually, no special treatment is needed, and the condition can be alleviated by strengthening family communication and comfort [6, 7]. However, severe postpartum depression usually lasts a long time and has clinical features of depression, anxiety, and mood swings. It may even entail suicidal thoughts, disturbances of consciousness, and psychotic symptoms over a period of at least two weeks. Regular treatment is needed to alleviate the condition [8, 9].

Anxiety during the postpartum period is usually unique at this stage, for example, concerns

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about the care and health of the baby and fear of criticism as a mother [10]. Studies have shown that maternal anxiety affects the infant's intimacy with the mother and feeding behaviors [1, 11], and may have an adverse impact on the child's cognitive and social development [12]. Maternal long-term anxiety and depression can reduce the secretion of norepinephrine, which can easily lead to postpartum hemorrhage [13]. At the same time, the tension and low mood make the mothers stay in a long-term negative energy state, so that it will affect normal life and work and interpersonal relationships as well as the quality of life [14, 15]. Therefore, in order to effectively alleviate postpartum anxiety and depression, families and medical institutions should give great importance to this problem and take effective measures to intervene.

Comprehensive nursing intervention is based on the establishment of a good relationship between nurses and patients and the use of scientific methods to care for the mother in order to achieve the purpose of alleviating maternal negative emotions [16]. Comprehensive nursing is divided into three stages around maternal care. All aspects of systemic care such as diet guidance, health guidance, birth knowledge information, psychological intervention, exercise intervention, and health guidance are provided to the mother before, during, and after childbirth [17]. At the same time, according to the individual's physical and psychological needs and conditions, nursing is carried out in a targeted manner, and all aspects of nursing are infiltrated and continuously developed [18].

The purpose of this study was to investigate the effects of integrated nursing on postpartum anxiety and depression in women and the effects of clinical application in order to provide better services for women and some references for clinical intervention.

Methods and materials

General information

A prospective analysis was performed on 148 primiparous admitted to our hospital from January 2016 to December 2017, whose age ranged between 25 and 35 years. With the Random Number Table, they were randomly divided into the control group receiving routine

nursing care, and the observation group receiving comprehensive nursing care. There were 68 and 80 patients in the control and observation group, respectively.

Inclusion criteria were primiparous over 18 years old, with complete clinical data, gestation from 28 to 36 weeks, and ability to understand and complete the questionnaires independently. Exclusion criteria were those with family history of mental disorders, use of psychotropic drugs, contraindications for vaginal delivery, pregnancy complications, history of drug allergy, indications for cesarean section, and liver and kidney dysfunction. The study was approved by the Medical Ethics Committee of our hospital, and informed consents were signed before childbirth by family members.

Nursing method

The parturients in the control group received routine nursing care, including the following care: assisting the mother to conduct a detailed physical examination, checking various vital signs, carefully informing and explaining childbirth, dietary knowledge, daily nursing methods, and helping the mothers to establish a positive attitude, divert negative emotions, and assistance to deliver smoothly.

The parturients in the observation group received comprehensive nursing care, including the following: before the delivery, the nursing staff informed the maternal family members of the importance of paternity, and during the delivery process, the nursing staff explained the process of childbirth in detail and enabled the mother to master breathing and force methods to aid in their cooperation with midwife doctors. These help the mother to relieve tension, and regulate self-state. Companionship of family members can also reduce maternal panic, anxiety, and other negative emotions. The nurses massaged the uterus of the parturient woman before delivery and applied regular pressure on the lower part of the abdomen using their fingers. The movements needed to be gentle and even, so that the parturient woman felt comfortable; the massage frequency was maintained at 30 times per minute so that the uterine wall of the parturient woman relaxed and allowed for smooth delivery. The nursing staff strictly monitored the vital indications of the mother during the delivery process,

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Table 1. General information [n (%)]

Factors	Observation group (n=80)	Control group (n=68)	t/ χ^2	P
Age (years)			0.118	0.852
≤30	58 (72.50)	51 (75.00)		
>30	22 (27.50)	17 (25.00)		
Height (cm)	163.78±3.77	164.84±3.98	1.622	0.099
Body weight (kg)	66.85±4.37	67.89±3.27	1.615	0.108
Gestational age (weeks)	37.75±2.86	38.21±1.72	1.160	0.248
Interspinous diameter of ischium (cm)	9.58±1.58	9.23±1.19	1.500	0.136
Fetal biparietal diameter (cm)	8.12±1.37	8.01±1.29	0.500	0.618
Entrance anteroposterior diameter (cm)	11.37±2.08	11.65±1.76	0.875	0.383
Exit front and rear diameter (cm)	9.28±1.83	9.11±1.62	0.593	0.554
Mode of delivery			3.244	0.099
Natural birth	46 (57.50)	29 (42.65)		
Cesarean section	34 (42.50)	39 (57.35)		
Education level			0.536	0.541
Below high school	18 (22.50)	12 (17.65)		
High school or above	62 (77.50)	56 (82.35)		

established a complete venous access, and replenished the blood volume in a timely manner whenever necessary.

All operations in the delivery process were strictly controlled within a sterile environment. When a woman had bleeding symptoms, a colposcopy was conducted to determine the cause of the bleeding. At the same time, effective measures were taken to deal with the emergency. According to the reason for maternal bleeding, a reasonable choice of hemostasis was applied. If the woman was bleeding heavily, it was necessary to immediately perform surgery to stop the bleeding and at the same time apply maternal shock treatment. The nursing staff would quickly prepare for the operation, and the maternal physical indications of the woman such as blood pressure, body temperature, and skin temperature among others were closely monitored. If there were other abnormal bleeding conditions, they would be immediately reported to the physician and the physician would be assisted in treating the parturient woman. Due to the decline in physical strength of the parturient woman after delivery, the emergence of autoimmune decline, bleeding, and other conditions could easily lead to infection. Nursing staff needed to strictly follow the requirements of standardized nursing, strictly apply aseptic operations to care for the parturient woman, and patiently explain how to use the disinfected perineal pad, care for the perineum,

maintain hygiene, and prevent infection. At the same time, the parturient woman needed sufficient sleep to promote the recovery of her body. The nursing staff would carefully guide the parturient woman in using the correct method to properly massage her breasts.

In the actual nursing guidance process, the nursing staff needed to guide the exercise according to the physical condition and recovery of the parturient woman, give her a balanced diet; and help her establish good living habits, which could help improve the symptoms of maternal anemia and promote the recovery of physical health. At the same time, before being discharged, the parturient woman would be informed on how to observe personal health care, and attend regular return visits. When the amount of maternal bleeding significantly increased or was more than the normal menstrual flow, the parturient was instructed to seek medical treatment promptly. The timing of nursing intervention for both groups started from hospitalization and lasted for 5 days.

Measurement outcomes

The anxiety self-assessment form (SAS) was used to assess the degree of anxiety before and after nursing care, and the depression self-rating scale (SDS) was used to assess the degree of depression before and after nursing care [19].

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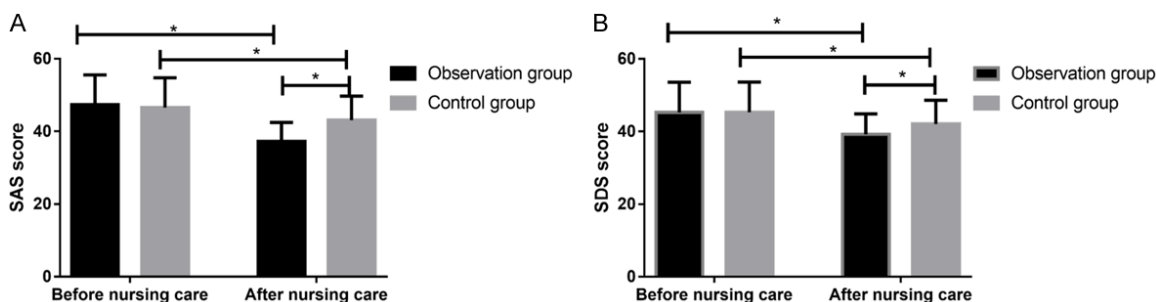


Figure 1. Comparison of SAS and SDS scores. The results showed that. A. The SAS score of the two groups after nursing was significantly lower than that before nursing, and the difference was statistically significant ($P < 0.05$). There was no significant difference in the SAS score between the two groups before nursing care, but the SAS score in the observation group was significantly lower than that in the control group after nursing care ($P < 0.05$). B. The SDS score of the two groups after nursing was significantly lower than that before nursing, and the difference was statistically significant ($P < 0.05$). There was no significant difference in the SDS score between the two groups before nursing care, but the SDS score in the observation group was significantly lower than that in the control group after nursing care ($P < 0.05$). * $P < 0.05$.

Table 2. Comparison of SAS and SDS scores

Group	Time	Observation group (n=80)	Control group (n=68)	t	P
SAS	Before nursing	47.36±8.23	46.59±8.16	0.569	0.570
	After nursing	37.27±5.21	43.13±6.58	6.044	<0.001
	t	9.265	2.722		
	P	<0.001	0.007		
SDS	Before nursing	45.28±8.31	45.34±8.29	0.044	0.965
	After nursing	39.24±5.63	42.09±6.53	2.851	0.005
	T	5.382	2.540		
	P	<0.001	0.012		

expressed as [n (%)], and the rates were compared using the χ^2 test. Measurement data were expressed as $\bar{x} \pm SD$ and an independent t-test was used for comparison between the two groups. Paired t-test was used for comparison within the group. $P < 0.05$ was statistically significant.

Results

Comparison of clinical data

There were no significant differences in age, height, weight, gestational age, ischial spine diameter, fetal biparietal diameter, anteroposterior diameter, exit anteroposterior diameter, production mode, and academic qualifications between the two groups ($P > 0.05$), which were comparable (**Table 1**).

Comparison of SAS and SDS scores before and after nursing between the two groups

The SAS and SDS scores of the two groups after the nursing care were significantly lower than those before nursing care, and the difference was statistically significant ($P < 0.05$). There were no significant differences in SAS and SDS scores between the two groups before nursing care ($P > 0.05$). The SAS and SDS scores of the observation group were significantly lower than those of the control group, and the difference was statistically significant ($P < 0.05$) (**Figure 1** and **Table 2**).

The blood loss within the initial two hours after delivery was determined by weighing all blood soaked materials [19].

The total score of quality of life (physical, emotional, cognitive, role, social) of the two maternal groups at the end of nursing care was assessed using the quality of life scale [20].

A survey was administered using the hospital's self-made nursing satisfaction questionnaire before discharge: 0-8 meant not satisfied, 8-14 meant relatively satisfied, and more than 14 meant very satisfied. Total nursing satisfaction = (very satisfied + relatively satisfied)/total nursing number * 100%.

Statistical analysis

The data were analyzed using SPSS 19.0 (Shanghai Kabe Information Technology Co., Ltd.) and GraphPad Prism 7. The count data was

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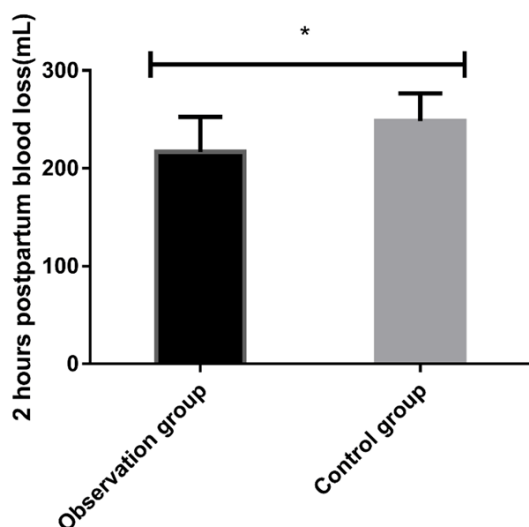


Figure 2. Comparison of the initial two hours of postpartum hemorrhage between two the groups. The results showed that the amount of postpartum hemorrhage in the observation group was significantly less than that in the control group ($P < 0.001$). * $P < 0.001$.

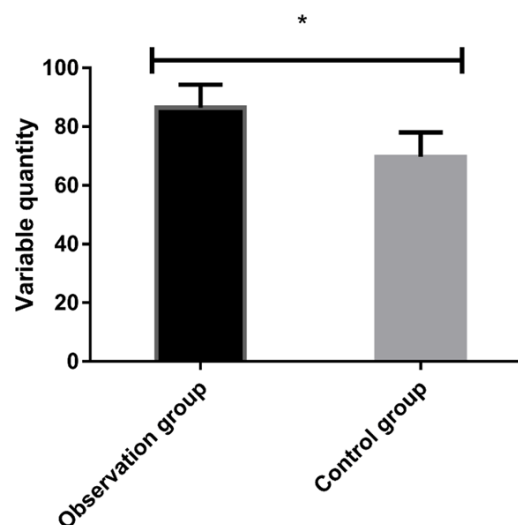


Figure 3. Comparison of the total scores of postpartum quality of life between the two groups. The results showed that the quality of postpartum life in the observation group was significantly higher than that in the control group ($P < 0.001$). * $P < 0.001$.

Table 3. Comparison of 2 hours postpartum blood loss

	2 hours postpartum blood loss (mL)
Observation group (n=80)	216.86±35.76
Control group (n=68)	248.25±28.33
T	5.845
P	<0.001

Comparison of blood loss within the initial two hours after delivery between the two groups

The blood loss within the initial two hours in the observation group (216.86±35.76 mL) was significantly lower than that in the control group (248.25±28.33 mL), and the difference was statistically significant ($P < 0.001$) (**Figure 2** and **Table 3**).

Comparison of total postpartum quality of life between the two groups

The quality of postpartum life in the observation group was significantly higher than that in the control group, and the difference was statistically significant ($P < 0.001$) (**Figure 3** and **Table 4**).

Comparison of maternal nursing satisfaction between the two groups

In the observation group, 29 people were very satisfied with the nursing care, 37 were rela-

tively satisfied, and 14 were unsatisfied. In the control group, 16 people were very satisfied with the nursing care, 28 were relatively satisfied, and 24 were unsatisfied. The total nursing satisfaction of the observation group (82.50%) was significantly higher than that of the control group (64.71%), and the difference was statistically significant ($\chi^2 = 6.099$, $P = 0.015$) (**Table 5**).

Discussion

Due to the special nature of pregnancy and lactation, women should not take drugs during pregnancy and after delivery. Therefore, prevention is much better than treatment [21]. To achieve the goal of preventing postpartum depression, comprehensive nursing interventions are needed throughout the pregnancy process, delivery, and postpartum period [22]. Psychological care can effectively suppress negative emotions such as fear and depression, establish a positive and optimistic attitude, and reduce the incidence of postpartum depression [23]. Dietary guidance can help with maternal nutrition, promote milk secretion, and enhance neonatal immunity [24]. Behavioral care can help women with uterine contractions, and promote blood stasis elimination and wound healing [25]. Health nursing after delivery can prevent postpartum infections and reduce the incidence of infections. Pain care can alleviate pain and repair wounds sustained during childbirth as early as possible

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Table 4. Comparison of postpartum quality of life between two groups at the end of nursing care

	Observation group (n=80)	Control group (n=68)	t	P
Quality of life	86.48±7.78	69.72±8.28	12.680	<0.001

Table 5. Comparison of nursing satisfaction [n (%)]

	Very satisfied	Relatively satisfactory	Not satisfied	Overall nursing satisfaction
Observation group (n=80)	29 (36.25)	37 (46.25)	14 (17.50)	66 (82.50)
Control group (n=68)	16 (23.53)	28 (41.18)	24 (35.29)	44 (64.71)
χ^2				6.099
P				0.015

[26]. Breastfeeding instruction can improve the frequency of breastfeeding, help women learn the correct feeding posture, and reduce the discomfort caused by improper feeding [27].

Nowadays, postpartum depression is gradually drawing people's attention. Therefore, it is necessary to track and monitor the emotions of women during various periods. This requires different scales for comprehensive evaluation and screening. SAS and SDS are independent of age, economic status, and gender; and can evaluate pregnant women, aiding in the timely identification of their emotional changes [28]. This study showed that the SAS and SDS scores of the two groups after nursing care were significantly lower than those before nursing care, and the difference was statistically significant ($P < 0.05$). There were no significant differences in SAS and SDS scores between the two groups before nursing care ($P > 0.05$). The SAS and SDS scores of the observation group were significantly lower than those of the control group, and the difference was statistically significant ($P < 0.05$). Studies showed that comprehensive nursing interventions made the SAS and SDS scores before, during, and after six hours of delivery lower than those of the control group, which helped in the adjustment of the maternal mood, maintained a peaceful mentality during childbirth and postpartum rehabilitation, and prevented postpartum hemorrhage [29]. This was basically consistent with the results of this study.

The blood loss within the initial two hours in the observation group (216.86 ± 35.76 mL) was significantly lower than that in the control group (248.25 ± 28.33 mL), and the difference was

statistically significant ($P < 0.001$). Due to the complexity and variability of the delivery process, it is easy for the woman to have negative emotions, which would lead to increased heart rate and insufficient gas exchange in the lungs, resulting in uterine hypoxia, and lack of contraction and slow expansion of the cervix, eventually leading to prolonged labor

[30, 31]. This process can also cause changes in the maternal neuroendocrine system, inhibit the release of oxytocin, and increase the incidence of postpartum hemorrhage [32]. The blood loss within the initial two hours after delivery accounted for 75% of the blood loss within 24 hours after delivery [33], which indicates that the key to preventing postpartum hemorrhage is to improve the nursing care within the initial two hours after delivery.

This study showed that the quality of postpartum life in the observation group was significantly higher than that in the control group, and the difference was statistically significant ($P < 0.001$). In the observation group, 29 people were very satisfied with the nursing in the observation group, 37 were relatively satisfied, and 14 were unsatisfied. In the control group, 16 people were very satisfied with the nursing, 28 were relatively satisfied, and 24 were unsatisfied. The total nursing satisfaction of the observation group (82.50%) was significantly higher than that of the control group (64.71%). Another study found that comprehensive nursing intervention can significantly improve patient satisfaction, reduce medical disputes, improve patients' quality of life, and better meet the needs of modern medical development which are consistent with our results [34].

During the transition from pregnancy and childbirth to motherhood, the transformation of women's roles and negative emotions such as fatigue, fear, and anxiety caused by physiological factors can affect the quality of their life [35]. Many problems suddenly encountered after childbirth put the maternal body and mind under pressure, and the parturients need to

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quickly adapt to the role of mothers who need to not only take care of themselves, but also their newborns [36]. Therefore, mothers need better care. Family members should be instructed to offer full understanding and care to the mothers. Psychological counseling and parenting knowledge should be provided for the mothers, and the diet needs to be nutritionally balanced, light, and diversified so that the mothers maintain a good mood and state, and establish close relationships with their infants; and to effectively improve the quality of their life.

However, there are still limitations in this study. The impact of comprehensive nursing intervention on the outcome of primiparous delivery has not been studied in this study. Moreover, the physical condition of the parturient, and the situation in which the specific implementation of the nursing is different, which may cause some errors or inaccurate data, and it is expected to be further improved in future research.

In summary, comprehensive nursing intervention can effectively improve postpartum anxiety and depression, reduce blood loss within the initial two hours after delivery, and significantly improve maternal postpartum quality of life and nursing satisfaction. This is conducive to the recovery of the mother's body, which is worthy of clinical promotion.

Disclosure of conflict of interest

None.

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