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Analysis of the Application of Comprehensive Nursing Intervention in the Clinical Treatment of Acute Mastitis in Lactating Mothers

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Abstract: *Objective*: To explore the effect of comprehensive nursing intervention on acute mastitis in lactating mothers. *Methods*: 80 patients with mastitis during lactation were divided into a control group and an observation group. The control group received routine nursing, while the observation group received comprehensive nursing. The efficacy was observed. *Results*: The psychological status and symptom recovery of the observation group were better than those of the control group, and the incidence of complications was lower than that of the control group ($P < 0.05$). *Conclusion*: Effective nursing measures for acute mastitis during lactation have a positive impact on prognosis and recovery. Comprehensive nursing intervention can promote the improvement of psychological status and reduce the incidence of complications.

Keywords: Comprehensive nursing; Lactation; Acute mastitis; Nursing effect

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1. Introduction

In recent years, with the improvement of people's daily living standards, certain changes have occurred in the living environment, making the incidence of acute mastitis significantly increase, especially during the lactation period. During this period, mothers may experience acute suppurative infection, mainly manifesting as infectious inflammatory reactions, leading to breast pain, tenderness, or touch pain. The skin temperature around the breast gradually increases, and there are hard lumps in the breast. Mastitis is a common type of acute infectious disease during lactation for mothers. The main cause is secondary infection after milk accumulation in the breast, and the most common infectious bacterium is *Staphylococcus aureus*. Due to the failure to intervene in a timely and effective manner, the breast tissue may become infected and abscessed in severe cases, which is not conducive to breastfeeding and increases physical and psychological burdens. The incidence rate is mostly concentrated in the first to third week after childbirth, and it is more common in primiparous women, causing great pain and reducing the quality of life during postpartum. For patients with acute mastitis, routine nursing intervention is generally

provided in clinical practice, which can promote patients' understanding of the disease. However, factors such as inadequate self-care ability and prevention measures after returning home make the recurrence rate high, causing a significant physical and psychological burden on patients [1]. In recent years, comprehensive nursing measures have gradually gained attention. This method can exert comprehensive effects when intervening in patients with acute mastitis during lactation. It provides patients with standardized and comprehensive care, including clearing milk stagnation, physical therapy, and dietary care to prevent milk stagnation from causing other lesions, quickly relieve pain, achieve short-term cure, help restore breastfeeding function, and improve prognosis. Based on this, the following text takes patients with acute mastitis during lactation as an example to analyze the effect of comprehensive nursing.

2. Materials and methods

2.1. Basic information

The study period was from January 2024 to January 2025. The subjects were all patients with acute mastitis, totaling 80 cases. They were divided into groups by the lottery method, and the data is shown in **Table 1**.

Table 1. Data of patients with acute mastitis

Group	Number of cases	Average age (years)	Average gestational week (weeks)	Breast firmness		
				Degree 1	Degree 2	Degree 3
Control group	40	28.74 ± 1.96	39.41 ± 1.25	10 (25.0)	21 (52.5)	9 (22.5)
Observation group	40	28.68 ± 1.88	39.67 ± 1.48	11 (27.5)	22 (55.0)	7 (17.5)
x^2/t		0.1397	0.8488	0.0646	0.0503	0.3125
P		0.8892	0.3986	0.7994	0.8225	0.5761

2.2. Methods

The control group received routine nursing care. Temporarily stop feeding from the affected breast, clean the nipple and areola, and perform early massage and milk suction on the patient's nipple. The patient can slowly massage and push along the nipple direction with their fingers, increasing pressure to facilitate milk flow towards the milk duct, and use a breast pump to suction out the milk, thereby clearing the clogged mammary ducts. After milk suction, the milk should be expelled from the body as much as possible and should not accumulate too much. When there is too much milk and the newborn cannot suckle it all at once, a breast pump should be used to remove the excess milk. If there is nipple damage, breastfeeding should be stopped, milk should be regularly cleared, and antibiotic ointment should be applied to the damaged nipple until the wound heals before resuming breastfeeding. For severe infections, appropriate antibiotics should be selected based on bacterial culture and drug sensitivity results. Intravenous injection of antibiotics, preferably penicillin, may be necessary.

The observation group received comprehensive nursing care, including: (1) Specialized treatment: Breastfeeding assistance using massage and physiotherapy methods. After the birth of the newborn, the responsible nurse gently squeezes the mother's breasts to soften them, appropriately massages the breasts along the direction of the mammary ducts using a breast massager, stimulates milk flow using alternating hot and cold temperatures, or uses a breast pump. Skin care is performed using milk or lanolin cream to prevent dry and cracked breasts. Nipple shields or hydrogel pads are used to relieve discomfort caused by clothing friction.

(2) Psychological support: Nurses should observe the patient's emotional state during nursing care and provide timely psychological counseling when patients may experience psychological issues. For patients with breast hypoplasia, nurses should empathize with them and alleviate their fears about physical deformities. For patients concerned about not breastfeeding, nurses should explain that not breastfeeding will not affect the growth and development of the newborn, thereby reducing their psychological stress. Successful treatment experiences should be shared to enhance patients' confidence. For patients with family disharmony or a lack of a sense of security, nurses should provide psychological guidance along with the patients' families to improve negative emotions and enhance their sense of security. For patients who complain of significant fatigue, nurses should discuss with the patients' families to clarify their family responsibilities, reduce their role burden, and provide them with emotional support. (3) Health education: Actively educate patients about professional nursing knowledge related to their disease, emphasizing the importance of a positive attitude for breastfeeding and disease recovery. Encourage patients to choose a more reasonable feeding method, achieve breastfeeding, and help patients establish close parent-child relationships. Patiently answer questions, provide psychological counseling services, and strive to create a pleasant and harmonious nurse-patient relationship for patients. Strengthen health education for patients' families and create a comfortable rehabilitation environment. Advise patients to eat more light and nutritious foods, such as beans, lean meat, eggs, etc., which are rich in protein, contain less fat, have high dietary fiber, and are easy to digest. It is best to eat more at each meal, drink plenty of water, and eat less or avoid cold, greasy, and stimulating foods. (4) Disease nursing: For patients with acute mastitis, attention should be paid to redness, swelling, and pain in the breast area, as well as the possibility of high fever symptoms in the later stages of the disease. Therefore, it is required to be highly vigilant during the nursing process, strictly monitor the patient's body temperature, pulse, and respiration, check for an increase in white blood cells, and observe the efficacy of medication, especially for febrile patients, physical cooling methods can be adopted. For febrile patients, physical cooling with ice bags or cold towels can be given. If the patient has a high fever (body temperature exceeding 39°C) or a persistent high fever, antipyretic drugs should be given, but drugs that have no effect on breast milk should be selected. At the same time, the patient's temperature should be measured 6 times a day. (5) Pain nursing: Breast pain is an important symptom of acute mastitis. Initially, the breasts may feel swollen and painful, with the skin appearing normal or slightly red. Over time, the local lump may grow larger, the pain may intensify, and fever may occur. Nursing staff should respect the patient's pain experience, provide comfort, encouragement, and support, and help the patient increase their pain tolerance with an optimistic attitude. (6) Continued nursing: Use the internet platform as a carrier to promote disease knowledge, educate patients and their families about health knowledge through short videos, text, pictures, and other means, making it easy to find and understand disease-related knowledge and improve their awareness of disease knowledge. Create a WeChat group for mastitis, invite medical staff and patients to join the group, so that patients can use the group software to ask questions or seek help from doctors in real-time when needed. It is also convenient to share disease-related information in the group, distribute videos such as methods to prevent mastitis, and provide contact information to clarify everyone's responsibilities, so that patients can refer to and learn from it when performing self-care at home, improving self-care ability and effectiveness. To respond to patients' online inquiries, nursing staff will answer online from 20:00 to 21:00 every day, and the time will be extended in special circumstances. If there are questions that cannot be professionally answered, they will be recorded in detail, and answers will be sought from the attending doctor and the chief doctor. Patients will be replied to based on the answers of the chief and attending doctors, and the chief and attending doctors can be consulted directly for advice to satisfy the patients. A questionnaire is distributed

every month to understand patients' needs, the treatment and prevention effects of mastitis, and to inquire about whether breastfeeding habits are developed and whether there is postpartum depression. Patients are educated on the prevention of mastitis and related knowledge of home self-care, questions are answered, and the questionnaire is recorded and analyzed. This study strictly follows the 4-Cs nursing model, carries out continuous nursing for patients, and adheres to the research philosophy based on evidence to ensure the validity of the collected data. A platform is built for patients to easily access health information and support through standardized recording and communication systems, ensuring the quality of continuous nursing intervention.

2.3. Observation indicators

The effectiveness of this intervention was evaluated by observing the patients' symptoms and breast conditions, with specific criteria as follows: (1) Significant effect: The mother's milk was almost completely discharged, there was no redness, swelling, or pain on the skin, the body temperature was normal, and the breast lump subsided; (2) Effective: After the intervention, the lump decreased in size and pain reduced, but milk discharge was not smooth, and the body temperature ranged from 37.5–38°C; (3) Ineffective: The patient's milk discharge was not smooth, showing signs of redness, swelling, and pain, the lump size did not decrease or local abscesses formed.

The patients' anxiety and depression were evaluated using a psychological negative emotion scale, with higher scores indicating more severe anxiety and depression. Various breast improvement indicators were recorded, and the occurrence of complications was observed.

2.4. Statistical analysis

Data were processed and analyzed using SPSS 23.0, with chi-square ($x2$) and *t*-tests performed. Results were expressed as (n/%) and (Mean ± SD). A *P*-value < 0.05 was considered statistically significant.

3. Results

3.1. Evaluation of clinical treatment effect

The clinical efficacy evaluation showed that the observation group was significantly higher than the control group ($P < 0.05$).

Table 2. Comparison of clinical effectiveness rates between the control group and the observation group (*n*/%)

Group	Number of cases	Markedly effective	Effective	Ineffective	Total effective rate (%)
Control group	50	17 (34.00)	23 (46.00)	10 (20.00)	40 (80.00)
Observation group	50	20 (40.00)	27 (54.00)	3 (6.00)	47 (94.00)
x^2					4.3324
P					0.0373

3.2. Incidence rate of complications

The incidence rate of complications in the observation group was lower than that in the control group ($P < 0.05$).

Table 3. Comparison of complication incidence rates between the control group and the observation group (n/%)

Group	Number of cases	Breast distension and pain	Nipple injury	Nipple rupture	Total incidence rate
Control Group	50	4 (8.00)	2 (4.00)	2 (4.00)	8 (16.00)
Observation Group	50	1 (2.00)	1 (2.00)	0	2 (4.00)
x^2					4.0000
P					0.0455

3.3. Evaluation of psychological status

The psychological status scores of the observation group were lower than those of the control group ($P < 0.05$).

Table 4. Comparison of psychological status scores between the control group and the observation group (Mean ± SD)

Group	Number of cases	Anxiety score		Depression score	
		Before nursing	After nursing	Before nursing	After nursing
Control Group	50	55.67 ± 4.28	52.25 ± 2.75	55.73 ± 3.96	52.41 ± 2.08
Observation Group	50	55.72 ± 4.37	49.67 ± 2.81	55.81 ± 3.87	49.62 ± 3.07
x^2/t		0.0517	4.1502	0.0914	4.7584
P		0.9589	0.0001	0.9274	0.0000

3.4. Recovery effectiveness of prognosis

The rehabilitation indicators of the observation group were superior to those of the control group ($P < 0.05$).

Table 5. Comparison of rehabilitation indicators between the control group and the observation group (Mean ± SD)

Group	Number of cases	Symptom improvement time (days)	Duration of breastfeeding (months)	Breastfeeding rate	Readmission rate
Control group	50	3.71 ± 0.58	5.67 ± 0.85	35 (70.00)	7 (14.00)
Observation group	50	2.88 ± 0.41	6.82 ± 0.91	45 (90.00)	1 (2.00)
t		0.1956	5.2022	6.2500	4.8913
P		0.8456	0.0000	0.0124	0.00269

4. Discussion

Mastitis is an acute infectious disease that often occurs 3–4 weeks after childbirth. It commonly causes redness, swelling, and pain in one breast, accompanied by the development of hard lumps. If not effectively treated, it can lead to the formation of abscesses in patients, causing significant physical suffering. In severe cases, it can directly affect the breastfeeding effectiveness and overall health of the patient. To ensure rapid recovery, clinical nursing measures are extremely important [2].

Traditional nursing methods provide interventions such as psychological care, dietary guidance, and pain management, while closely observing and monitoring changes in the patient's condition during treatment.

However, among women with acute mastitis, especially primiparous women, inadequate knowledge about acute mastitis and deficiencies in nursing interventions can pose hidden risks, potentially affecting the health of both mother and child [3–8]. Factors such as mastitis pain and poor rest due to breastfeeding can lead to emotional disturbances in patients, manifesting as negative emotions like anxiety, depression, and irritability [9].

To address these issues, clinical applications of comprehensive nursing interventions have been introduced. This approach emphasizes the comprehensiveness of care, ensuring that patients' needs are met. In the implementation of comprehensive nursing, emotional support can eliminate negative emotions, encouraging patients to actively cooperate with medical care. Reasonable dietary adjustments and massage techniques can promote smooth milk flow, reducing the incidence of postpartum mastitis. After receiving direct psychological support, patients gain confidence from the successful treatment cases and feedback of other patients, fostering a positive and optimistic attitude when facing this problem and improving patient compliance. Furthermore, patients are provided with health education manuals or organized health lectures to disseminate knowledge, optimizing the way mothers access health information and allowing them to choose based on their interests [10–14]. Additionally, acute mastitis can be complicated by many related diseases. Therefore, during treatment, close attention should be paid to the patient's quality of life, especially their body temperature. Physical cooling methods can be adopted when the temperature is below 39°C; if it exceeds this temperature and cannot be lowered normally, doctors should be notified immediately, and temperature control should be guided by the doctor's instructions, closely monitoring changes in body temperature and recording nursing details. It is also essential to ensure hygienic care of the breasts, particularly for those with damaged or painful nipples, and to adopt a small, frequent feeding approach [15]. Simultaneously, continuous nursing care can promptly respond to patients' questions, gradually enhancing their understanding of health knowledge and confidence in breastfeeding, effectively preventing the occurrence of breast inflammation during lactation, and improving patients' psychological state and reducing depressive symptoms.

5. Conclusion

In summary, comprehensive nursing for acute mastitis in lactating women can promote symptom improvement, prevent adverse events, and demonstrate significant nursing effectiveness.

Disclosure statement

The authors declare no conflict of interest.

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