

Application Analysis of Perioperative Comprehensive Nursing Management Intervention in Patients Undergoing Breast Surgery in Oncology Surgery

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Abstract: *Objective:* To analyze the effect of perioperative comprehensive nursing intervention on patients undergoing breast surgery in oncology surgery. *Methods:* A total of 100 patients undergoing breast surgery were selected as the study subjects and divided into a control group and a study group. The control group received routine nursing, while the study group received perioperative comprehensive nursing. The effects were observed. *Results:* The study group had lower negative emotion scores and complication rates than the control group, and higher range of motion of the affected shoulder joint and quality of life than the control group ($P < 0.05$). *Conclusion:* Oncology breast surgery is often accompanied by adverse psychological emotions during the perioperative period. To ensure surgical efficacy and postoperative recovery, comprehensive perioperative nursing measures can effectively prevent and develop complications, improve shoulder joint range of motion, and promote recovery.

Keywords: Perioperative comprehensive nursing; Oncology surgery; Breast surgery; Nursing effect

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1. Introduction

With the current socio-economic development, significant changes have occurred in people's living habits, leading to a gradual increase in the incidence of breast diseases among women, which is showing a trend of younger age. Currently, common breast diseases in clinical practice include breast tumors and severe breast conditions. The majority of patients admitted to oncology surgery departments are those with breast tumor diseases. Due to the relatively severe nature of the disease, it can have a significant impact on patients' physical and mental health, and the pathogenesis is complex. To ensure disease control, early breast surgery is often performed to ensure clinical effectiveness. As patients undergoing breast surgery are susceptible to multiple factors, perioperative nursing

measures play an important role. Routine nursing content is relatively simple, focusing only on the implementation of basic nursing tasks, and lacks comprehensiveness and targeted nursing, resulting in unsatisfactory nursing effects.

In recent years, perioperative comprehensive nursing has been gradually applied in clinical practice. This method provides patients with comprehensive nursing guidance, requires strict professional literacy and standards from nursing staff, and achieves high-quality guidance for patient care. Perioperative nursing is based on surgical treatment, with the entire nursing process integrated into surgical treatment ^[1]. Nursing staff play a vital role in supporting patients by offering comprehensive care and guidance. They should clearly explain essential ward information, treatment procedures, recovery expectations, and necessary precautions. By actively listening to patients’ concerns and maintaining open, empathetic communication, nurses can build trust and address individual questions effectively. Understanding each patient’s daily habits and personality helps in meeting their psychological needs. Additionally, by providing thorough preoperative, intraoperative, and postoperative care, nurses contribute significantly to the success of breast surgery and promote a smooth, healthy recovery, ultimately enhancing the overall quality of modern nursing care. In this regard, this study takes patients undergoing breast surgery in oncology surgery as an example to analyze the implementation effect of perioperative comprehensive nursing.

2. Materials and methods

2.1. Basic information

A total of 100 patients undergoing breast surgery in the oncology surgery department of the hospital from January to December 2024 are selected as the study subjects. The details are shown in **Table 1**.

Table 1. Patient clinical data

Group	n(cases)	Average age (years)	Average disease duration (months)	Tumor diameter (cm)	Body Mass Index (kg/m ²)
Control group	50	33.41 ± 2.45	5.87± 0.97	2.08 ± 0.35	23.74 ± 1.22
Study group	50	33.36 ± 2.51	5.92 ± 0.85	2.11 ± 0.38	23.68 ± 1.18
X2/t		0.1008	0.2741	0.4106	0.2500
P		0.9199	0.7846	0.6823	0.8031

2.2. Methods

In the control group, routine nursing care is provided. Before surgery, patients are helped to understand the basic knowledge of the disease, including the causes of the disease, nursing care during treatment, precautions in life, and related health care content. Patients are assisted to understand their own conditions, complete relevant examination items, and effectively monitor their vital signs. Patients are also guided on how to choose safe foods and how to have a nutritious diet.

In the study group, perioperative comprehensive nursing is implemented, including:

(1) Preoperative nursing

After the patient is admitted to the hospital during treatment, their overall health status is assessed, and patients are guided to perform necessary preparations, such as blood draws. At the same time, the

hospital environment and department equipment information are explained to alleviate anxiety about the unknown. Patients are given a clear explanation of the surgical content, expected effects, and other relevant information. Before surgery, it is ensured that the patient fully understood this content and is well-prepared. Finally, patients are encouraged to communicate and interact with each other to reduce their anxiety. Surgical facilities and instruments are inspected and cleaned, and the operating room temperature and humidity are maintained at appropriate levels before surgery. If patients had poor physiological conditions, large tumor diameters, large wound areas, or long expected surgical times, postoperative catheters and other auxiliary measures are prepared after admission. Before surgery, patients and their families are informed to prepare them psychologically and reduce doctor-patient conflicts. Additionally, patients are taught the skill of abdominal breathing and made to master it before surgery to facilitate postoperative recovery.

(2) Intraoperative nursing

Before the start of surgery, the indoor temperature is adjusted to 21–25°C, and the humidity should be controlled at 50–60%. A warming blanket is placed on the operating table ahead of time, with the temperature adjusted to 37–39°C. When the patient enters the operating room, nursing staff interacts with them, using friendly eye contact and comforting language to encourage them, and even using some words to provide psychological comfort. At the same time, various measures are taken to protect the patient's privacy, covering areas that do not require surgery. Before anesthesia, the patient is instructed to lie on their back with their head slightly raised, their arm on the same side as the surgery straight and placed on the armrest, a suitable knee pillow placed under their thigh, and a heel pad under their feet. The patient's knee is securely fixed 5cm above the knee to improve comfort.

Operating room nurses are familiar with the entire process and coordination methods of breast surgery, as well as the personal habits and requirements of each senior surgeon, to avoid wasting unnecessary time due to unfamiliarity with the operation. All necessary items are prepared ahead of time, and surgical instruments should be passed quickly and accurately to reduce useless time and unnecessary consumption caused by poor coordination. If the patient cannot close their eyes under anesthesia, their eyes should be protected. Cleaning solution and injection fluid is prepared before surgery and placed in a thermostat to adjust the temperature, typically set to close to 37°C. The nurses assist the anesthesiologist in administering heated intravenous fluids or blood transfusions to the patient, adjusting the temperature of the fluids to match the patient's body temperature. The circulating nursing staff provides warmth to the patient's body parts other than the surgical area, using blankets or warm fabrics to protect the patient.

During the entire surgical process, all relevant physiological parameters of the patient are observed and recorded. If any problems occur during the surgery, they are addressed promptly with the doctor. The cleanliness of the entire operating room is maintained, and the number of visitors are strictly controlled to prevent infections and other diseases.

2.3. Observation indicators

The perioperative psychological status is evaluated using the Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS). The lower the score, the lower the emotional level.

Complications are recorded, and the activity of the affected shoulder joint is evaluated after surgery. The quality of life after surgery is assessed using a quality of life scale, with a higher score indicating a higher quality of life.

2.4. Statistical analysis

Data was processed and analyzed using SPSS 23.0, with chi-square (X^2) and t-tests applied. Values are expressed as (n/%) or ($\bar{x} \pm s$). A P -value < 0.05 is considered statistically significant.

3. Results

3.1. Perioperative psychological status

The perioperative SAS and SDS scores in the study group were lower than those in the control group, with $P < 0.05$, as shown in Table 2.

Table 2. Comparison of SAS and SDS scores between the two groups ($\bar{x} \pm s$)

Group	n(cases)	SAS Score		SDS Score	
		Before nursing	After nursing	Before nursing	After nursing
Control group	50	53.58 $\pm$ 3.78	49.54 $\pm$ 2.81	54.13 $\pm$ 3.65	48.54 $\pm$ 2.74
Study group	50	53.62 $\pm$ 3.81	47.22 $\pm$ 2.52	54.37 $\pm$ 3.59	45.08 $\pm$ 2.96
t		0.0527	4.3463	0.3315	6.0657
P		0.9581	0.0000	0.7410	0.0000

3.2. Incidence of complications

The incidence of complications in the study group was lower than that in the control group, with $P < 0.05$.

Table 3. Comparison of the incidence of complications between the two groups (n/%)

Group	N (cases)	Infection	Pressure sore	Thrombus	Total incidence rate
Control group	50	4(7.50)	2(4.00)	2(4.00)	8(16.00)
Study group	50	1(2.00)	1(2.00)	0	2(4.00)
X^2					4.0000
P					0.0455

3.3. Improvement in shoulder joint mobility

The range of motion of the affected shoulder joint in the study group was higher than that in the control group after surgery, with $P < 0.05$.

Table 4. Comparison of the range of motion of the affected shoulder joint between the two groups after surgery ($\bar{x} \pm s$)

Group	n(cases)	Adduction	Abduction	Flexion	Extension
Control group	40	31.24 $\pm$ 1.26	94.25 $\pm$ 3.78	112.34 $\pm$ 5.47	43.52 $\pm$ 0.98
Study group	40	41.08 $\pm$ 2.85	125.34 $\pm$ 8.74	135.25 $\pm$ 6.85	46.34 $\pm$ 1.13
X^2/t		22.3289	23.0866	18.4802	13.3313
P		0.0000	0.0000	0.0000	0.0000

3.4. Quality of life

The quality of life scores in the study group were higher than those in the control group, $P < 0.05$.

Table 5. Comparison of the quality of life scores between the two groups ($\bar{x} \pm s$)

Group	N (cases)	Physical functioning	Role-physical	Social functioning	General health
Control group	40	62.34 $\pm$ 3.74	62.48 $\pm$ 3.89	62.37 $\pm$ 3.91	62.48 $\pm$ 3.88
Study group	40	65.48 $\pm$ 4.13	65.37 $\pm$ 4.12	65.48 $\pm$ 3.65	65.37 $\pm$ 3.74
X ² /t		3.9849	3.6065	4.1113	3.7920
P		0.0001	0.0005	0.0001	0.0003

4. Discussion

Breast surgery departments typically treat patients with breast tumors, often requiring surgical intervention to remove the lesion. However, traditional surgical methods offer limited control over incision location and size, resulting in large scars that can increase patient trauma. As people's demands for breast surgery have gradually increased, and with advancements in medical technology, minimally invasive surgical techniques have been increasingly applied. These techniques allow for more precise control of surgical incisions, reducing trauma and improving surgical safety^[2-4]. However, most patients have limited understanding of their condition and may experience fear and anxiety about disease progression during treatment. Additionally, the loss of important female organs can lead to feelings of self-doubt, uncertainty, and resistance, reducing patients' enthusiasm for participating in clinical treatment and affecting treatment outcomes^[5-9].

For patients undergoing breast surgery, the procedure often involves the removal of one breast, axillary vein branches, pectoral muscles, and ribs, and sometimes even the removal of lymph nodes in the affected axilla. This can cause significant physical trauma, especially in women, as breast removal can also lead to a decrease in social interaction abilities. While surgical techniques are crucial for improving patient outcomes, postoperative care is equally important. A good postoperative quality of life not only depends on the application of clinical techniques but is also influenced by perioperative nursing care. Patients' self-management plays a significant role in perioperative recovery, and a thorough understanding of their condition and treatment options is essential for active participation. To build patients' confidence in recovery, it is necessary to provide adequate psychological preparation and educate them about their condition, enabling them to develop appropriate disease awareness and mental preparedness^[10-14].

As a comprehensive nursing approach, perioperative integrated nursing involves personalized nursing guidance for patients before, during, and after surgery. By strengthening preoperative nursing and visits, this method allows timely attention to patients' physical and mental conditions, provides health education and psychological comfort, encourages patients to establish a positive attitude, and lays a solid foundation for surgery. During the operation, vital signs are closely monitored, and the surgical environment is optimized to provide a comfortable setting, reduce physical discomfort, and maintain good physiological conditions^[15]. Operating room nurses need to have a thorough understanding of all aspects of the surgery, closely coordinate with doctors in instrument delivery, minimize surgical time, prevent unexpected situations during the procedure, and ensure the smooth completion of the surgery. Postoperatively, patients receive enhanced basic nursing, sleep nursing, and incision care to prevent infection, improve sleep quality, and provide rehabilitation guidance as their physical

condition gradually recovers. This ensures the gradual restoration of physical function and improvement in quality of life.

5. Conclusion

Breast cancer surgery patients frequently experience negative emotional states, including anxiety and distress, throughout the surgical journey. Implementing holistic perioperative care strategies plays a vital role in optimizing surgical outcomes and enhancing recovery. These comprehensive nursing interventions serve to both prevent potential complications and facilitate rehabilitation, particularly in restoring upper limb mobility and shoulder function.

Disclosure statement

The authors declare no conflict of interest.

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