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Original Article

Comfortable nursing helps to reduce postoperative complications and pain for breast cancer patients in the perioperative period

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Abstract: Objective: To investigate the impact of comfortable nursing on pain and complications for breast cancer patients in the perioperative period. Methods: This study was conducted in 60 breast cancer patients admitted to our hospital between January 2017 and January 2019. These patients were randomly assigned to the control group and the experimental group. For the control group, 30 patients received routine nursing. For the experimental group, 30 patients received both routine nursing and comfortable nursing. Psychological state, pain degree, quality of life, complications, and satisfaction in nursing were analyzed and compared between the two groups. Results: Compared with the control group, anxiety self-assessment scale (SAS) score, depression self-assessment scale (SDS) score, visual analogue score (VAS), and complications in the experimental group were significantly decreased (all $P<0.05$). Meanwhile, quality of life and satisfaction in nursing in the experimental group were significantly higher than those in the control group (both $P<0.001$). Conclusion: Comfortable nursing is effective in improving breast cancer patients' psychological state, reducing the degree of pain, and increasing quality of life; providing patients with accelerated rehabilitation. It is therefore worthy of clinical application.

Keywords: Comfortable nursing, breast cancer surgery, complications, postoperative pain

Introduction

In recent years, the incidence of breast cancer has been increasing at an annual rate of 3% [1]. Radical breast cancer surgery is a common treatment for breast cancer. Most patients are accompanied by different levels of anxiety and depression due to the disease and changes in body shape after surgery. In addition, they suffer from pain and other complications. As a result, their life quality is poor [2]. Routine nursing is commonly used in clinical practice. However, patients' psychological and physiological needs are often ignored when they receive routine nursing, resulting in an increased incidence of complications and unsatisfied therapeutic effects [3]. Therefore, it is necessary to find a better scientific nursing model for these patients.

As a novel model, comfortable nursing is holistic. Patients are psychologically, physically, socially, and spiritually assisted when they receive this series of interventions in comfortable nursing [4]. Comfortable nursing is designed to be performed in throughout the entire nursing work, especially in each specific aspect of nursing. No matter whether the disease is curable or not, comfortable nursing can be actively provided to alleviate discomfort and improve quality of life [5]. Vodermaier et al. performed a study on 100 patients who were treated with breast cancer surgery, and their results showed that comfortable nursing played an important role in accelerating postoperative rehabilitation [6]. Here, 60 patients admitted to our hospital for breast cancer surgery from January 2017 to January 2019 were recruited to investigate the impact of comfortable nursing on pain and complications.

Materials and methods

General information

In total, 60 patients admitted to Hanzhong Central Hospital for breast cancer surgery

between January 2017 and January 2019 were enrolled in this study. Patients in the control group received routine nursing, while patients in the experimental group received both routine nursing and comfortable nursing.

This study was approved by the Ethics Committee of Hanzhong Central Hospital. Informed consent was signed by the patients or their family members.

Inclusion and exclusion criteria

Inclusion criteria: Patients were diagnosed by imaging and pathology; patients who qualified for surgery wanted to have the operation; patients with no serious diseases; patients had no mental or cognitive impairment; informed consent was assigned by the patients or their family members.

Exclusion criteria: Patients had metastatic cancer; patients with contraindication to surgery; advanced breast cancer patients had a predicted survival period below 1 year; patients received no postoperative follow-up; patients chose not to take part in this study.

Methods

Patients were allocated to the control group and the experimental group based on a random number table. Patients in the control group received routine perioperative nursing, which mainly included the generation of a good rehabilitation environment and frequent observations of various indicators like vital signs, urine volume, and infection.

For the experimental group, patients received both routine nursing and comfortable nursing. Specifically, comfortable nursing was composed of the following 3 parts: (1) before surgery. Nursing staff communicated with patients actively and enthusiastically to encouraged them to release their nervousness. At the same time, family members were instructed to encourage patients to make them feel cared for and hopeful for the future [6]. In order to provide patients with further relief of their nervousness and enhance their confidence in the operation, patients who had successfully undergone breast cancer surgery were introduced to them and even invited to a meeting to exchange and share their feelings and nursing methods. On the day before surgery, a pre-operative visit, which lasted for at least 40 min, was implemented to address patients' concerns about the operation. Questions raised by patients were actively answered. Meanwhile, patients' medical history was carefully reviewed in order to be well prepared for any abnormalities during surgery [7]. On the night before surgery, patients were instructed to get adequate rest to increase the success rate of surgery on the next day. For patients with poor sleep, incense or sleeping pills were applied to benefit sleep [8]. (2) During surgery. In the operating room, nursing staff actively studied patients' treatment and recovery history and closely observed the symptoms of patients, which were beneficial for the release of stress. (3) After surgery. According to patients' treatment methods and actual conditions, a reasonable diet plan was made to strictly control the diet. In order to be discharged as early as possible, patients were instructed to maintain a good night's sleep. In addition, going to bed early and getting up early were strongly recommended [9]. In the course of treatment, many patients suffered from negative emotions due to their own illness or family problems. Therefore, nursing staff communicated with patients as much as possible to relieve their negative emotions. In the process of communication, patients' feelings during the treatment process were understood and the nurses are therefore aware of the shortcomings of the treatment. In this way, relevant treatment was better formulated and perfected [10]. Previous treatment experience was also used for the treatment of current patients. What's more, specialists were hired to provide guidance on rehabilitation. In order to improve the quality of rehabilitation, nursing staff reasonably arranged the patients' daily diet, work and rest to ensure that patients had adequate nutrition and sleep, which helps to control patients' relevant indicators and reduce the occurrence of postoperative complications [11].

Outcome measures

Main outcome measures: Self-rating anxiety scale (SAS) and self-rating depression scale (SDS) were used to assess the anxiety and depression of patients in both groups before and after intervention, respectively. The higher the SAS score is, the more severe the anxiety.

Table 1. Comparison of basic data

Group	Control group	Experimental group	t/χ^2	P
Age (year)	65.17±10.62	66.84±9.68	0.864	0.596
Weight (Kg)	68.42±8.34	70.25±9.06	1.325	0.892
Operation time (min)	138.22±16.37	134.93±13.25	0.621	0.674
Anesthesia time (min)	148.68±13.09	151.37±14.83	1.735	0.846
BMI (kg/m^2)	20.93±3.24	21.26±3.87	1.527	0.663
Tumor grade				
I	12	13	0.693	0.707
II	12	10		
III	6	7		
Surgical approach				
Modified radical mastectomy	19	19	2.85	1
Simple mastectomy	19	20		
Breast-conserving surgery	2	1		
Bleeding volume (mL)	201.68±74.05	206.73±71.28	0.891	0.487
Pain relief				
Drugs	25	22	0.381	0.674
Analgesic pump	5	8		
Comorbidity				
Have	2	1	0.918	0.506
None	28	29		

Note: BMI: body mass index.

Similarly, the higher the SDS score is, the more severe the depression [12].

Visual analogue score (VAS) was applied to evaluate the pain degree of patients in the two groups on the day of surgery and 3 days after surgery. No pain was 0 points, while severe pain was 10 points. The higher the VAS score is, the more severe the pain [13].

During the period of hospitalization after surgery, complications such as upper limb edema, subcutaneous fluid, infection, restricted upper limb movement, and flap necrosis were recorded.

Quality of life, which was composed of physical function, psychological function, social function and material life, were recorded on the day of dischare. The quality of life was better when the score was higher [14].

Secondary outcome measures: Satisfaction in nursing was evaluated using a self-made questionnaire, which consisted of aspects like working attitudes, nursing professionalism, degree of care, environment for diagnosis and treatment, and nursing skills on the day of discharge. Results were divided into satisfied, basically satisfied, and dissatisfied. Satisfaction in nursing = (satisfied + basically satisfied)/the total number of patients × 100% [15].

Statistical methods

All data were analyzed using SPSS statistical software version 22.0. The measurement data were expressed as mean ± standard deviation ($\bar{x}$ ± sd). Independent sample t test was used for inter-group comparison, while paired t-test was applied for before-after comparison within the same group. The enumeration data were calculated as number/percentage (n/%); comparison was conducted with chi-square test. The difference was statistically significant when *P* value was less than 0.05.

Results

Basic data

As shown in **Table 1**, there were no significant differences concerning basic data between the two groups (all P>0.05).

VAS score

VAS score in the experimental group on day 3 after surgery was significantly lower than that in

Table 2. Comparison of VAS score ($\bar{x}$ ± sd)

Group	The day of surgery	Three days after surgery	t	P
Experimental group (n=30)	5.06±0.99	1.25±0.21	18.8236	0.0000
Control group (n=30)	5.07±0.92	2.99±0.34	10.6034	0.0000
t	0.0370	21.7704		
P	0.9706	0.0000		

Note: VAS: visual analogue score. Compared with patients in the two groups before intervention, both P<0.001.

Table 3. Comparison of SAS and SDS score ($\bar{x}$ ± sd)

Group	SAS score		SDS score	
	Before intervention	After intervention	Before intervention	After intervention
Experimental group (n=30)	65.36±11.64	47.22±7.36*	61.36±10.69	45.36±8.05*
Control group (n=30)	66.21±11.93	59.63±8.44*	61.14±10.97	52.47±9.34*
t	0.334	7.267	0.094	3.781
P	0.739	0.000	0.925	0.000

Note: SAS: anxiety self-assessment scale; SDS: depression self-assessment scale. Compared with patients in the same group before intervention, *P<0.05.

Table 4. Comparison of complications

Group	Flap necrosis	Upper limb edema	Subcutaneous fluid	Total complications
Experimental group (n=30)	1 (3.33%)	2 (6.67%)	0 (0.00%)	3 (10.00%)
Control group (n=30)	2 (6.67%)	5 (16.67%)	2 (6.67%)	9 (30.01%)
χ^2	5.623	3.677	5.322	8.09
P	0.004	0.027	0.006	0.004

the control group (1.25±0.21 vs 2.99±0.34, P<0.001, **Table 2**).

SAS and SDS score

As displayed in **Table 3**, there was no significant differences in SAS and SDS scores between the two groups before intervention (both P>0.05). While SAS and SDS scores in the experimental group after intervention were both reduced when compared with the control group (47.22±7.36 vs 59.63±8.44, P<0.05; 45.36±8.05 vs 52.47±9.34, P<0.05).

Complications

Complications in the experimental group (3 cases, 10.00%), were composed of flap necrosis (1 case, 3.33%), upper limb edema (2 cases, 6.67%), and subcutaneous fluid (0 cases) was significantly lower than that in the control group. Complications in the control group (9 cases, 30.01%), consisted of flap necrosis (2 cases, 6.67%), upper limb edema (5 cases, 16.67%), subcutaneous fluid (2 cases, 6.67%) (All P<0.05, **Table 4**).

Quality of life

As shown in **Table 5**, there was no significant difference in quality of life between the two groups before intervention (P>0.05). Compared with the control group, quality of life score in the experimental group after intervention was significantly increased (P<0.001).

Satisfaction in nursing

Satisfaction in nursing in the experimental group after intervention was significantly higher than that in the control group (93.33% vs 66.67%, χ^2=51.526, P=0.001, **Figure 1**).

Discussion

Breast cancer is a disease commonly observed in clinical practice. Results of a large number of clinical trials and survey suggest that most patients have insufficient understanding and knowledge of the rehabilitation process of breast cancer. Therefore, there are many patients suffering from negative emotions [16]. It is easy to have increased postoperative pain

Table 5. Comparison of life quality

Group	Experimental group (n=30)	Control group (n=30)	t	P
Psychological function				
Before intervention	44.8±4.11	45.2±4.23	0.445	0.658
After intervention	59.9±6.41*	46.8±5.64*	0.061	0
Physical function				
Before intervention	43.8±4.06	42.4±4.58	1.5	0.137
After intervention	59.3±7.24*	46.9±5.47*	8.961	0
Material life				
Before intervention	45.8±4.27	45.7±5.39	0.095	0.924
After intervention	60.8±8.05*	52.8±4.44*	4.942	0

Note: Compared with patients in the same group before intervention, *P<0.05.

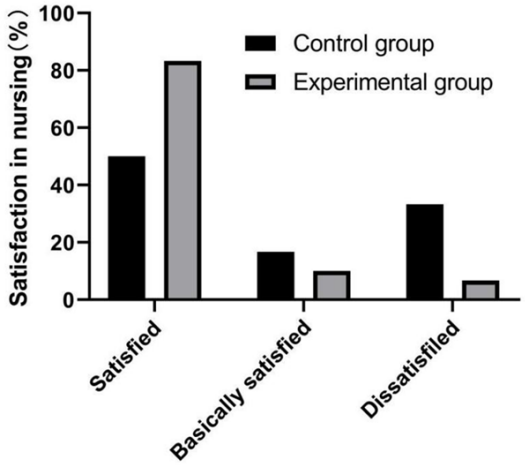

Figure 1. Comparison of satisfaction in nursing.

due to the severe stress response of the surgery. In addition, negative emotions are exacerbated on account of changes in the patients' body shape and accordingly, prognosis is worsened [17]. Routine nursing cannot meet the needs of breast cancer patients. As a new model, comfortable nursing can not only satisfy patients' psychological and physiological needs, but also improve the therapeutic effects [18]. In our study, SAS and SDS scores in the experimental group after intervention were significantly lower than those in the control group, which were basically the same as those reported previously [19].

Vodermaier et al. performed a study in 100 patients who were treated with surgery for breast cancer, and their results showed that comfortable nursing played an important role in accelerating postoperative rehabilitation [6]. Here, our study showed that comfortable nursing could provide patients with significantly improved life quality and alleviated negative emotions.

A large amount of clinical evidence has suggested that many breast cancer patients suffer from postoperative pain [20]. Comfortable nursing can provide patients with a way to help alleviate negative emotions, refocus attention, reduced pain, and increase pain threshold, resulting in accelerated recovery. In our study, VAS score in the experimental group on day 3 after surgery was significantly reduced when compared with the control group.

Due to the lack of self-care ability, patients' psychological state may not be healthy. They are can be accompanied by postoperative complications. In this study, complications in the experimental group were significantly lower than that in the control group, which was consistent with the result reported by Gerbershagen et al. [21].

In summary, comfortable nursing can provide breast cancer patients with reduced postoperative complications and pain, which is worth being widely applied in clinical practice.

Disclosure of conflict of interest

None.

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