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Influence of Psychological Nursing Intervention on Compliance of Postoperative Patients with Breast Cancer

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ABSTRACT

Psychological well-being plays a crucial role in the recovery and treatment adherence of patients undergoing surgery for breast cancer. Addressing the psychological needs of patients can mitigate negative emotions such as anxiety and depression, enhance their ability to participate in self-care, and ultimately improve clinical outcomes. This study investigates the impact of psychological care interventions on therapy compliance, emotional health, and self-care abilities in postoperative breast cancer patients. A retrospective analysis was conducted on breast cancer patients treated surgically at our hospital between March 2021 and February 2023. A total of 116 patients were divided into a control group (n=58), which received standard clinical care, and an experimental group (n=58), which received psychological care interventions. Treatment compliance rates, complication rates, nursing satisfaction, and psychological and self-care measures were assessed. Psychological states were evaluated using the Hamilton Anxiety Scale (HAMA) and Hamilton Depression Scale (HDMA), while self-care abilities were measured using the Exercise of Self-care Agency Scale (ESCA). The compliance rate in the experimental group was significantly higher (98.28%) compared to the control group (79.31%) ($P<0.15$). Both groups exhibited significant reductions in HAMA and HDMA scores post-intervention ($P<0.05$), with the experimental group showing greater improvements ($P<0.05$). Self-care metrics, including health knowledge, self-concept, self-responsibility, and self-care ability, significantly improved in both groups, with more pronounced gains in the experimental group ($P<0.05$). The complication rate in the experimental group (6.90%) was markedly lower than in the control group (24.14%) ($P<0.05$), and nursing satisfaction was higher in the experimental group (98.27%) compared to the control group (74.14%) ($P<0.15$). Psychological care

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interventions are essential in improving treatment adherence, alleviating anxiety and depression, enhancing self-care abilities, and reducing complications in postoperative breast cancer patients. These interventions strengthen nurse-patient relationships and promote better recovery outcomes.

Keywords: breast cancer; surgery; psychological nursing intervention; treatment compliance

INTRODUCTION

It is among the most frequent diseases diagnosed in the female population, affecting the mammary gland tissue and being considered a malignant neoplasia. From current data and information, breast cancer is still the leading type of cancer observed in women in the world and a considerable health issue because of the high incidence and coefficient of death [1, 2]. The early-stage breast cancer like carcinoma in situ not only is not dangerous for the life and health of a patient, but it also becomes dangerous when the disease progresses. But when the morphology and functions of breast cells fail, the intercellular connections also reduce and cells begin to slip off and freely travel through the bloodstream and lymphatic system. This dissemination of malignant cells raises greatly the chances of metastasis, which is one of the leading and major causes of high mortality as seen in advanced stages of breast cancer [3-5]. To the present, the main treatment methodology for breast carcinoma is radical mastectomy which entails surgical excision of the tumor, the adjacent breast tissue and sometimes axillary nodes. Radical mastectomy is thought to effectively remove cancerous tumours, halt the development of the disease and increase breast cancer patients' life expectancy. It has been evidenced in clinical trials to be effective hence a standard in breast cancer treatment [6-7]. Still, radical mastectomy highlights certain therapeutic options and its application lead to severe physical and psychological outcomes for the patient.

Limb dysfunction/ trauma and breast deformities which may develop as postoperative complications can devastatingly permanently and psychologically impair victims. Patients commonly note negative affects after surgery with anxiety and depression. Such psychological challenges often decrease the level of adherence to the treatments accelerating post-operative recovery. This paper considers these mental health issues as relevant to the promotion of optimal surgery results and the patient's rehabilitation of breast cancer.

Based on the above challenges, the paper establishes that there is a central importance of nursing interventions in postoperative care, especially regarding the psychological aspects of

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the recipients. Psychological nursing intervention is a type of nursing care delivery model that adapts humanistic concept of patient care delivery. This care model goes beyond organizing for the management of the bodily aspect of the disease and offers patient, tailored psychological care to deal with the mental issues experienced by patients. This approach is designed so that the composite care needed to meet each person's requirements will be optimally provided. Thus, psychological nursing interventions have revealed positive effects on patients' anxiety and depression in many patients, for example, older people with osteoporosis. Such interventions enhance psychological functioning and increase overall treatment adherence as well [8-10]. However, relatively little research evidence has been particularly conducted on the effects of psychological care to improve both medical treatment compliance and recovery outcomes among breast cancer patients who undergo radical mastectomy.

Thus, the present study aimed at exploring the impact of psychological nursing interventions on adherence and rehabilitation of breast cancer patients who have been treated by radical mastectomy. Altogether 116 patients attending our hospital in the period from March 2021 till February 2023 were included in this study. This study was designed to assess the feasibility of psychological care in enhancing treatment compliance, decreasing undesirable feelings and enhancing the whole recovery process. Through investigating the correlation between psychological nursing and postoperative results of breast cancer patients, this study contributes to the understanding of improving the effect of surgical treatment and improving the living quality of breast cancer patients. The projections are that the outcome of the research shall make for a reference to health care professionals interested in the adoption of person-centered and integrative care methods in the treatment of breast carcinoma and subsequent rehabilitation gains for patients.

METHODOLOGY

1 Data and methods

1.1 Normal data

Breast cancer patients who received breast cancer surgery in our hospital were considered as the study subjects and the index time was from March 2021 to February 2023, and their clinical information was reviewed. Inclusion criteria: This study had the following advantages: (1) All of included sufferers met the diagnostic criteria of breast carcinoma, (2) All sufferers were confirmed with breast carcinoma by pathological examination, (3) All

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patients have undergone radical breast cancer surgery in our hospital, (4)This has the approval of the Hospital Ethics Committee. Exclusion criteria: Patients with: (1)severe mental illness or intellectual disability; (2) tumor recurrence who received second surgery; (3) missing clinical data; (4) other malignant tumors; (5) severe heart, liver and kidney disease. The 116 breast carcinoma sufferers were divided into two: a control group with 58 subjects and an experimental group with 58 subjects, based on different nursing methods. Thus, the average age of the control one was (52.13±3.13) years, the mean illness duration was (7.10±1.01) months, and 10 instances were clinical stage I, and 48 instances were stage II. The experimental one group's mean age was (52.45±3.22) years and the mean illness duration was (7.08±0.98) months, 12 of number one were clinical stage I and 46 were stage II. There was no statistically significant difference in the data at the beginning of the study between the two groups ($P > 0.05$) See table 1.

Table 1 Analysis of the baseline data of the 2 groups

group	n	Age(years)	Disease course (month)	Clinical stage (I/II)
control group	58	52.13±3.13	7.10±1.01	10/48
test group	58	52.45±3.22	7.09±0.98	12/46
x^2 / t		0.581	0.091	0.353
P		0.562	0.928	0.552

1.2 Methods

Sufferers in the control one were intervened by routine clinical care methods, including health education, dietary intervention, postoperative functional exercise, cleaning and nursing after wound healing, etc.

Psychological nursing intervention was used to intervene the sufferers in the experimental one, and the specific contents were as follows: (1) Admission psychological assessment. When sufferers with breast carcinoma were received in the hospital for treatment, nurses should understand the severity of their illness, family situation, and analyze their psychological state. (2) Mental health education. It was necessary to tell breast cancer patients the basic knowledge content, treatment methods and dietary structure of the disease. Nurses should actively receive patients, build a good and harmonious relationship between nurses and patients, and at the same time provide actual clinical nursing services to patients, so as to assist them to actively cooperate with clinical work. (3) Cognitive psychological nursing. Most breast cancer patients do not know enough about the formation, treatment and

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postoperative rehabilitation and other content of breast cancer, and they will feel despair and fear when they are diagnosed with breast cancer, which is not conducive to clinical rehabilitation. Therefore, nurses should let patients understand breast cancer prevention and treatment related knowledge, so as to promote their understanding of the entire clinical treatment process, which is conducive to improving patients' treatment compliance. (3) Psychological Nursing: It was necessary to take targeted emotional care to improve patients' negative emotions, optimize the ward environment, introduce the ward environment and the use of public facilities to patients, so as to promote them to understand the familiar environment as soon as possible, and relieve their anxiety and depression. The psychological state of breast carcinoma sufferers is in a state of constant change during the admission process, so the care of patients should be continued until the patients are discharged. (4) Social support. By using the love from the family, family members and patients were urged to open a mouth and talk to each other so that these patients could feel the concern from the families, which helped the patients to adopt positive attitudes towards the disease.

1.3 Observation indicators

(1) Treatment compliance: which has been defined by three parts of full compliance, partial compliance, and noncompliance. The total treatment compliance is calculated as the number of complete and partial compliance divided by total number of observations during treatment multiplied by 100%. **(2) Bad emotions:** A comparison of the total score and subscales of Hamilton Anxiety Scale (HAMA) and Hamilton Depression Scale (HDMA) between the two groups was done. The greater the point, the greater the degree of depression and anxiety. **(3) Self-care ability:** The Exercise of Self-care Agency Scale (ESCA) between the 2 groups was compared. The greater the point, the stronger the self-care ability. **(4) Complications:** The occurrence of postoperative complications in the 2 groups was closely monitored, and the total incidence of complications was calculated. **(5) Nursing satisfaction:** The care satisfaction between the 2 groups were compared, including three aspects: very satisfied, generally satisfied, and dissatisfied. Total satisfaction (%) = (very satisfied instances + generally satisfied instances) / total observed instances ×100%.

1.4 Statistical methods

Data analysis was performed by SPSS 21.0. Enumeration data were represented by n (%), and pair-wise comparisons were performed by x^2 test; measurement data conforming to the normal distribution were represented by ($x \pm s$), pairwise comparisons were performed by

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independent sample *t* test. P <0.05 meant that the distinction was obvious.

2 Results

2.1 Analysis of the compliance of the 2 treatment groups

The total treatment compliance ratio of the control one was 79.31% (45/58), and that of the experimental one was 98.28 % (57/58). It had a obvious distinction in total treatment compliance ratio between the 2 groups (P <0.15). See table 2 and figure 1.

Table 2 The compliance compared between the 2 groups [n (%)]

group	n	fully compliant	partial compliance	non-compliance	total compliance rate
control group	58	17 (29.31)	29 (50.00)	12 (20.69)	46 (79.31)
test group	58	29 (50.00)	28 (48.28)	1 (1.72)	57 (98.28)
x^2					10.482
P					0.001

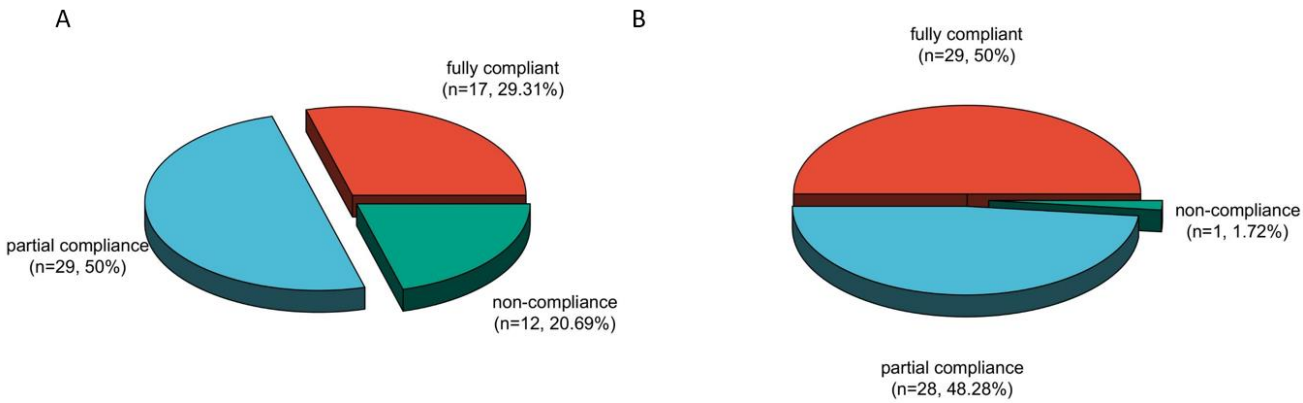

Figure 1 The distribution map of the compliance of the treatment in the 2 groups

Note: Figure A is the compliance distribution chart of the treatment one in the control one; Figure B is the compliance distribution chart of the treatment one in the test one

2.2 Analysis of the mental state of the 2 groups

After care, the HAMA score and HDMA score of the 2 groups were obviously less than those before care (P <0.05); after nursing, the HAMA point and HDMA point of the experimental one decreased more obviously (P <0.05). See table 3 and figure 2.

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Table 3 The HAMA score and HDMA score compared between the 2 groups ($\bar{x} \pm s$)

group	time	HAMA score	HDMA score
control group	Before Nursing	13.98±2.58	13.03±3.28
(n=58)	after care	9.53±1.87 *	9.28±1.77 *
test group	Before Nursing	14.03±2.64	12.98±3.43
(n=58)	after care	7.64±1.52 *#	7.03±1.24 *#

Note: * means in comparison of before care, P <0.05; # means compare to after care, P <0.05

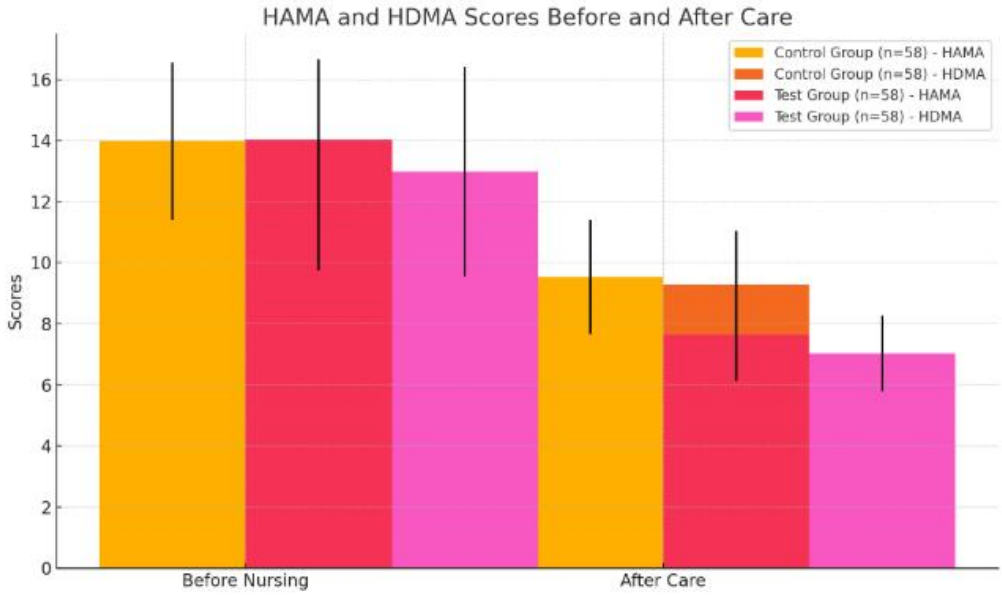

Figure 2 Analysis of the mental state of the 2 groups

Note: Figure A is the violin plot of the comparison of HAMA point between the control one and the observation one; Figure B is the violin plot of the comparison of the HDMA score between the control one and the observation one; **** indicates P < 0.001

2.3 Analysis of self-protection ability of two groups

After care, the health knowledge level, self-concept, self-responsibility and self-care ability points of the 2 groups were obviously greater than those before care (P <0.05); and the increase of the health knowledge level, self-concept, self-responsibility and self-care ability scores of the experimental one after care was more obvious than the control one (P <0.05). See Table 4 and Figure 3.

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Table 4 The ESCA scores compared between the 2 groups

group	time	Health knowledge level	self concept	self responsibility	self care ability
control group (n=58)	Before Nursing	35.47±4.50	21.24±2.41	16.83±2.56	27.48±2.52
	after care	40.28±4.73 *	26.84±2.29 *	22.62±2.87 *	32.64±3.35 *
test group (n=58)	Before Nursing	35.66±4.67	21.24 ±2.40	17.96±2.60	27.66±2.59
	after care	47.99±5.14 *#	35.27±3.40 *#	29.88±3.19 *#	41.52±4.11 *#

Note: * means compare to before care, P <0.05; # means in comparison of after care, P <0.05

Figure 3 The ESCA scores compared between the 2 groups

Note: Figure A is the violin plot of the comparison of health knowledge point between the control one and the observation one ; Figure B is the violin plot of the comparison of self-concept point between the control one and the observation one; Figure C is the violin plot of the comparison of self-responsibility point between the control one and the observation one ; Panel D is the violin plot of the self-care ability score comparison between the control one and the observation one ; **** indicates P ＜0.001

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2.4 Analysis of the occurrence of complications in the 2 groups

In the experimental one, it had 3 instances of subcutaneous effusion, 1 case of upper limb edema, and the total frequency of complications was 6.90% (4/58). In the control one, it had 4 instances of skin flap necrosis, 3 cases of subcutaneous effusion, 3 cases of upper limb edema, and 3 instances of incision infection, the total frequency of complications was 24.14% (14/58), and the total frequency of complications in the experimental one was obviously less than the control one (P <0.05). See Table 5.

Table 5 The frequency of complications compared between the2 groups n (%)

group	n	flap necrosis	Subcutaneous fluid	upper extremity edema	incision infection	always happen
control group	58	4 (6.90)	3 (5.17)	4 (6.90)	3 (5.17)	14 (24.14)
test group	58	0 (0.00)	3 (5.17)	1 (1.72)	0 (0.00)	4 (6.90)
x^2						6.576
P						0.010

2.5 Nursing satisfaction survey of two groups

In the experimental one, 40 instances were extremely satisfied, 17 instances were generally satisfied, and the total nursing satisfaction was 98.27% (57/58) . In the control one, 28 instances were very satisfied, 15 instances were generally satisfied, and the total nursing satisfaction was 74.14% (43/58). It had a obvious distinction in the total care satisfaction between the 2 groups (P <0.15). See Table 6 Figure 4.

Table 6 The care satisfaction compared between the 2 groups n (%)

group	n	Very satisfied	generally satisfied	dissatisfied	total satisfaction
control group	58	28 (48.28)	15 (25.86)	15 (25.86)	43 (74.14)
test group	58	40 (68.97)	17 (29.31)	1 (1.72)	57 (98.27)
x^2					22.368
P					0.000

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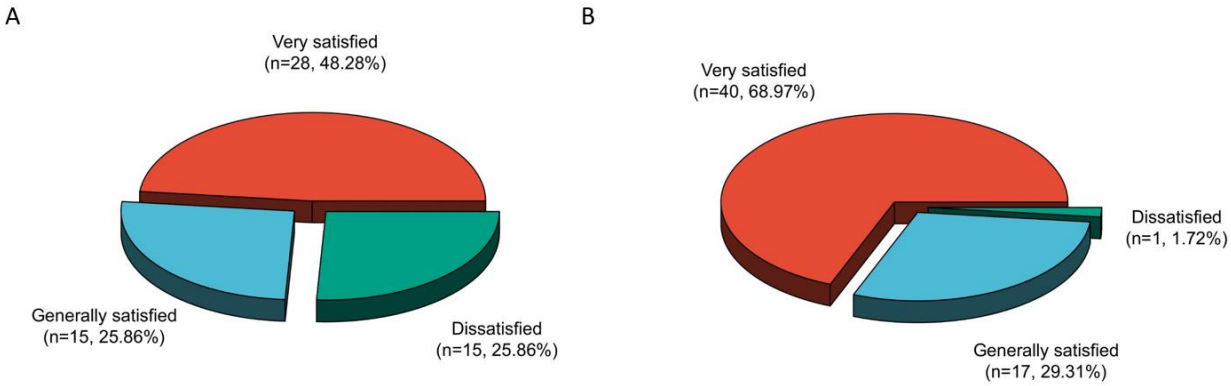

Figure 4 The distribution map of compliance between the 2 groups of treatments
Note: Figure A is the distribution map of care satisfaction in the control one; Figure B is the distribution map of care satisfaction in the experimental one

3. DISCUSSION

At present, people believe that the occurrence of breast cancer may be related to factors such as long-term use of estrogen, alcohol abuse, radiation, and genetics. However, the specific mechanism of occurrence and progression has not been fully revealed [11-12] . Relevant survey data in recent years show that the frequency of breast carcinoma is increasing year after year, and the age of onset has the trends of younger, which poses a huge threat to women's life and health [13-14] . Radical mastectomy is the most effective method for breast cancer treatment, which can significantly improve the survival rate of patients. However, various reactions caused by postoperative adjuvant therapy can cause the negative emotions of anxiety and depression in patients, affect their treatment compliance, and cause certain restrictions to postoperative recovery[15-17] . As a result, it is very important to concentrate on the psychological state of breast cancer sufferers after operation and provide targeted psychological nursing intervention.

Routine clinical nursing methods can have the promotion on the improvement of patients' symptoms to a certain extent. However, the nursing mode of this method is relatively single and lacks pertinence. It may not match the postoperative needs of patients, and it is difficult to meet the actual needs of sufferers. In the meantime, it could not eliminate the negative emotions of sufferers, which may lead to the waste of nursing resources [18-20] . In recent years, medical technology and nursing intervention concepts have been continuously improved, and clinical nursing methods have made great progress. Psychological nursing is a nursing model that can evaluate the psychological state and life quality of postoperative sufferers, and it

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could provide sufferers with targeted emotional care, while instructing them on diet, chemotherapy and rehabilitation exercises and so on [21-23]. In addition, patients can receive family and social support during the psychological care of patients, which can greatly improve patients' anxiety, depression and other negative emotions [24-26]. It has been reported that psychological health education can significantly enhance women's awareness level of breast cancer, help patients overcome psychological barriers, enhance their self-confidence, and actively cooperate with treatment, which is of great significance for prolonging the survival time of sufferers[27-30].

This research showing that it had a obvious distinction between the total compliance rate of 98.28% (57/58) in the experimental one and 79.31% (45/58) in the control one (P <0.15) . It showing that psychological nursing intervention could have the improvement on the compliance of postoperative treatment of breast cancer patients, because this nursing model can provide patients with high-quality dietary structure, which is conducive to enhancing the patients' tolerance to follow-up treatment. In addition, giving disease knowledge explanation and actual clinical nursing service to patients can also promote the understanding of the whole treatment process, make them actively cooperate with clinical work, and help improve the compliance of sufferers with treatment. What's more, the evaluation results of anxiety and depression showed that the points of HAMA and HDMA reduced in both groups after nursing, and the above points decreased more significantly in the experimental one after nursing (P<0.05). It showing that psychological nursing intervention plays an important role in solving the postoperative negative emotions of sufferers with breast carcinoma. The reason may be that this nursing model provides targeted emotional care for patients after breast cancer surgery, and establishes a positive and positive psychological state for them, which is conducive to enhancing their confidence in the face of the disease; in addition, the care and support of family members can also provide positive psychological construction for patients, which plays a vital role in improving patients' psychological-related pain . The results of self-care ability evaluation showed that the increase of the health knowledge level, self-concept, self-responsibility and self-care ability scores of the experimental one after care was more significant than the control one (P <0.05) . It showing that psychological care intervention could have the improvement on the postoperative self-care ability of breast carcinoma sufferers. This is because this care model could have the improvement on breast cancer patients' cognition and understanding of the disease, which is conducive to promoting them to get rid of psychological shadows and cooperate with treatment with a positive attitude, thus prolonging the survival time. In addition, this study also found that the total

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incidence of complications in the experimental one was 6.90% (4/58), which was obviously less than the control one (24.14% (14/58)) (P <0.05). It showing that psychological care intervention could reduce the risk of the occurrence of postoperative complications in sufferers with breast carcinoma. The results of self-made satisfaction survey in our hospital showed that the total nursing satisfaction of the experimental one was 98.27% (57/58) and that of the control one was 74.14% (43/58), and it had a obvious distinction (P <0.15) . It shows that psychological nursing intervention is beneficial to shorten the distance between nurses and sufferers and build a good relationship between nurses and sufferers.

CONCLUSION

In summary, active and effective psychological nursing intervention for patients with breast cancer can significantly improve patients' treatment compliance, improve their negative emotions of anxiety and depression, improve their self-care ability, reduced the risk of the occurrence of complications, which is conducive to promoting the harmonious relationship between nurses and patients. However, the samples selected in this study are from the same hospital, and the research energy is limited, so obtained research results may have a certain degree of bias. Therefore, future studies with large sample size, multi-center and long follow-up time will be carried out for further verification of the results.

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