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Original Article

Psychological intervention improves quality of life for patients with breast cancer

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Abstract: Objective: To investigate how to improve quality of life for patients with breast cancer by psychological intervention. Methods: A total of 263 breast cancer patients and their spouses were analyzed retrospectively. Both patients and their spouses received psychological counseling in an intervention group. Patients and their spouses who received routine nursing care were treated as a control group. The couples answered quality of life questionnaires (using the QLQ-30 scale), pre- and post-treatment depression self-assessment questionnaires (SDS), and self-assessments of anxiety (SAS). Results: After treatment, the SDS and SAS scores of the intervention group were significantly lower than those of the control group ($P<0.05$). The SDS and SAS scores of the spouses of the intervention group after treatment were lower than those of the control group ($P<0.05$). The scores of the QLQ-30 scale between the two groups showed that there was no significant difference in physical function scores and pain scores ($P>0.05$), but there were significant differences in cognitive function, social activity function, emotional function, and marrital life scores. The most significant difference between the groups was found in the scores of emotional functioning in the two groups. The scores in the intervention group (87.54±7.85) were significantly higher than those in the control group (65.94±8.07), $P<0.01$. Conclusion: Psychological interventions for breast cancer patients and their spouses can effectively improve the quality of life for the cancer patients, and therefore, these interventions are worthy of promotion in clinical practice.

Keywords: Breast cancer, psychological counseling intervention, QLQ-30 scale, pain scores

Introduction

Breast cancer is one of the most common malignant tumors in women, and it accounts for about 9% to 12% of all malignant tumors [1]. According to the statistics of Lyman et al. [2], the number of newly diagnosed breast cancer patients in 2015 was about 1.2 million, which was about 10 times more than the number of 10 years ago. In some populous countries, such as China and India, the incidence of breast cancer is even higher [3]. At present, breast cancer is already the leading cause of cancer death in women. Its incidence is rising year by year, and more reports expect [4] that in the next 50 years, the incidence of breast cancer will surpass that of lung cancer to become the highest occurring global malignancy after gastric cancer. Not only that, because there are no significant feature in the early stages of breast cancer and most patients have a lack of medical knowledge, this often leads to missing the best period for treatment of the disease and also contributes to a higher mortality rate [3].

According to statistics, the survival rate of breast cancer patients is only 60% within 5 years, and in older patients, the survival rate is lower [5]. Due to the high incidence and mortality rate of breast cancer, it is a key focus for clinical research. With the deepening of research, the effectiveness of breast cancer treatment through modified radical mastectomy has gradually stabilized, and the current treatment efficiency has reached about 75% [6]. However, radical mastectomy requires removal of the lymphatic system and tissue around the breast and axilla, which can easily cause upper limb edema and scapular movement disorders. It also causes great damage to the overall beauty of women, affecting their future life and work [7]. Furthermore, the treatment process is

Table 1. Comparison of general data between the two groups of patients

	Intervention group (n=152)	Control group (n=111)	$\div^2$ or t	P
Age	40.18±12.56	41.33±11.87	0.75	0.45
Body weight (KG)	58.17±10.59	56.42±12.84	1.21	0.23
Disease course (day)	24.83±8.66	26.12±9.04	0.24	1.17
Marriage time (year)	10.58±6.47	9.66±7.09	1.09	0.28
Residence			0.35	0.56
City	89 (58.55)	69 (62.16)		
Countryside	63 (41.45)	42 (37.84)		
Education level			0.49	0.48
<University	102 (67.11)	79 (71.17)		
≥University	50 (32.89)	32 (28.83)		
Does it work			0.15	0.69
Yes	57 (37.50)	39 (35.14)		
No	95 (62.50)	72 (64.86)		
Does the spouse work			0.90	0.34
Yes	107 (70.39)	84 (75.68)		
No	45 (29.61)	27 (24.32)		
Does the spouse drink			0.64	0.43
Yes	32 (21.05)	19 (17.12)		
No	120 (78.95)	92 (82.88)		

painful, and the patient's psychological state is also easily affected by negative emotions such as anxiety, resulting in poor prognosis and living conditions [8]. The influence of negative emotions is not limited to the patient themselves, but also to the patient's spouse. The patient's spouse not only needs to face the pressure of taking care of the patient, but also needs to bear the burden of work and family. The psychological impact of the patient's change in mood may even be greater for the spouse than the patient [9, 10]. Therefore, psychological intervention for patients and their spouses is extremely important for the treatment of breast cancer. At present, research [11-13] has shown that psychological intervention for ovarian and cervical cancer patients and their spouses can effectively improve the quality of life for patients and enhance the spousal relationship.

Since 2015, our hospital has advocated psychological counseling and intervention for gynecology and oncology surgery patients and their spouses. In this study, we analyzed the files of breast cancer patients admitted in 2015, aiming to assess the intervention and its value for patients and their spouses. It also provides a reference for future clinical diagnosis and treatment of breast cancer patients.

Materials and methods

General information

A total of 263 breast cancer patients and their spouses who were enrolled in our department of gynecology and oncology were retrospectively analyzed. Inclusion criteria included clinical symptoms consistent with breast cancer diagnostic criteria [14]: breast cancer diagnosed by biopsy in our hospital; ages between 25 and 50 years; female gender; having had a radical mastectomy after diagnosis; married; willing to cooperate with hospital staff. After screening, a total of 346 cases and their spouses were included in the study. Exclusion criteria included severe organ failure; cardiovascular and cerebrovascular diseases; additional cancers; chemoradiotherapy before surgery; pregnancy; mental illness; drug allergies; patients transferred after surgery; and patients whose spouse was unable to come to the hospital. After screening, 263 cases and their spouses were included in the study. Among them, 152 patients and their spouses were admitted to the hospital after 2015. Both patients and their spouses were counseled by psychological intervention as part of an intervention group. Another 111 patients and their spouses were admitted to the hospital before 2015. Both patients and their spouses who received routine nursing care were treated as a control group. All subjects in this study signed informed consent paperwork. This study was approved by the Ethics Committee of the First Affiliated Hospital of Kunming Medical University.

Method

All nursing care was strictly carried out in accordance with the 2014 Nursing Handbook [15]. The routine care of the control group included maintaining the ward temperature and ventilation; conducting examinations of the patient's body functions; closely following the patient's

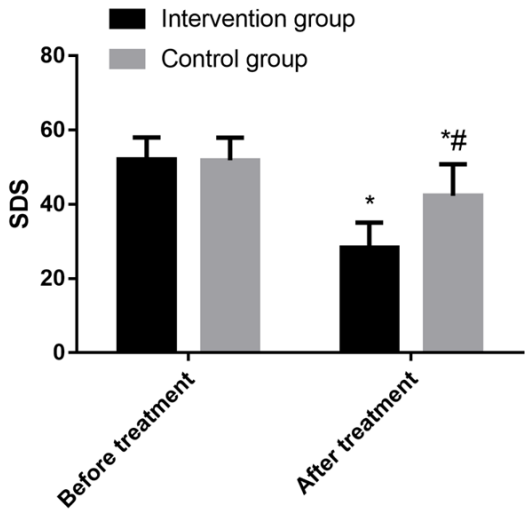

Figure 1. Comparison of SDS scores between patients in the intervention group and controls. There was no significant difference in SDS scores before treatment (P>0.05). After treatment, the SDS score of the intervention group was significantly lower than that of the control group, P<0.05. *represents comparison with the same group before treatment SDS score, P<0.05. #represents the SDS score of the intervention group, P<0.05.

vital signs; strictly following doctor's advice to take anti-inflammatory analgesic drugs; organizing weekly lectures on disease-related knowledge for patients and their spouses. The intervention group was given additional psychological intervention, which included timely response to concerns of the patient and the spouse; making handbooks of successful healing cases for the patient and their spouses to read; regular psychological assessments of both the patients and their spouses, monitoring of changes in mental status; organize all patients and spouses to participate in parties and activities; telephone follow-up after discharge, inform the patient of precautions, remind them to review; encouragement of active communication between the patients and their spouses; teach spouses care and skill knowledge for patients after discharge; guide and adjust the psychological state of spouses.

Observation indicators

Clinical information (such as age, weight, pathological stage, etc.) of patients in the two groups; patient quality of life questionnaire after 3 months of discharge: The QLQ-30 scale [16] was used to assess physical function, cogni tive function, social activity function, emotional function, pain levels, and marital life satisfaction. The patient and the patient's family members were given a comprehensive depression self-assessment (SDS) pre-and post-treatment and an anxiety self-assessment (SAS) after being given clarifying information for each item.

Statistical method

SPSS22.0 statistical software (Shanghai Beka Information Technology Co., Ltd.) was used to analyze and process the data. The enumeration data such as patient pathological stage, place of residence, etc. were expressed in the form of rate. A chi-square test was used for comparison between groups, the measurement data such as the QLQ-30 scale score, SDS score, etc. were expressed in the form of mean ± standard deviation, and t-tests were used for comparison between groups. The P<0.05 mean difference was statistically significant.

Results

General data comparison

Comparing age, course of disease, weight, duration of the marriage, place of residence, and cancer staging between the intervention and control groups, showed no significant difference (P>0.05). Therefore, the two groups were comparable (**Table 1**).

SDS and SAS results

There was no significant difference in SDS and SAS scores between the intervention group and the control group before treatment (P> 0.05). After treatment, the SDS score of the intervention group was (28.34±6.77) points, which was significantly lower than that of the control group (42.33±8.51), P<0.05. After treatment, the SAS score of the intervention group was (30.44±8.07) points, which was also significantly lower than that of the control group (40.52±5.68), P<0.05. There was no significant difference in SDS and SAS scores between the spouses of the intervention group and the control group (P>0.05). After treatment, the mean SDS score of spouses of the intervention group was (14.82±3.88) points, which was significantly lower than that of the control group (24.86±5.99) P<0.05. After treatment, the mean SAS score of the spouses of the intervention group was (12.34±4.05) points, which was

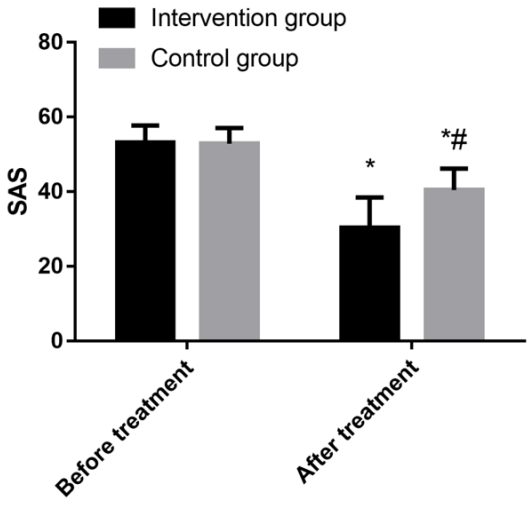

Figure 2. Comparison of SAS scores between patients in the intervention group and controls. There was no significant difference in SAS scores before treatment (P>0.05). After treatment, the score of SAS in the intervention group was significantly lower than that in the control group, P<0.05. *represents comparison with pre-treatment SAS scores in the same group, P<0.05. #represents the SAS score compared with the intervention group, P<0.05.

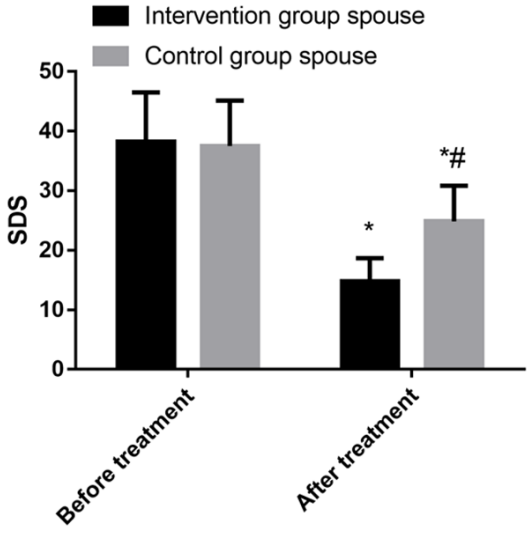

Figure 3. Comparison of the SDS scores of spouses in the intervention group and the control group. There was no significant difference in SDS scores before treatment (P>0.05). After treatment, the SDS score of the intervention group was significantly lower than that of the control group, P<0.05. *represents comparison with the same group before treatment SDS score, P<0.05. #represents the SDS score of the intervention group, P<0.05.

also significantly lower than that of the control group (21.87±4.86), P<0.05 (**Figures 1**-**4**).

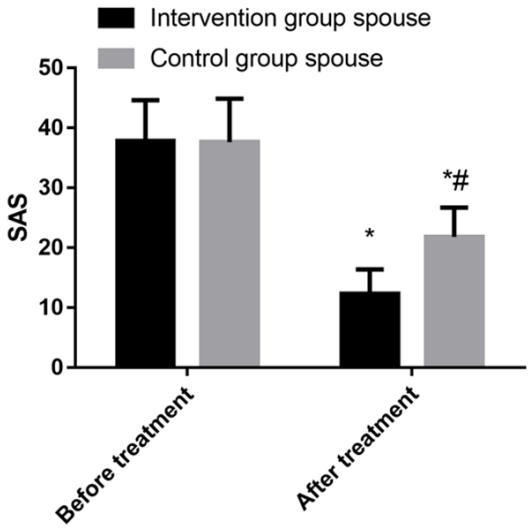

Figure 4. Comparison of SAS scores between the spouse of the intervention group and the spouse of the control group. There was no significant difference in SAS scores before treatment (P>0.05). After treatment, the score of SAS in the intervention group was significantly lower than that in the control group, P<0.05. *represents comparison with pre-treatment SAS scores in the same group, P<0.05. #represents the SAS score compared with the intervention group, P<0.05.

QLQ-30 scale score results of patients in two groups

The QLQ-30 scores of the two groups showed that there was no significant difference in physical function scores and pain scores (P>0.05), but there were significant differences in cognitive function, social activity function, emotional function, and marital life scores. The mean cognitive function score of the intervention group was (84.62±5.24) points, which was significantly higher than that of the control group (70.33±6.97), P<0.01. The mean social activity function score of the intervention group was (88.43±6.82) points, which was significantly higher than that of the control group (65.94±8.07), P<0.01. The mean marital life score of the intervention group was (86.18±8.64) points, which was also significantly higher than that of the control group (67.59±7.55), P<0.05. The most significant difference between the two groups was the emotional function score. The intervention group's mean score of (87.54±7.85) was significantly higher than the control group's mean score of (62.53±6.51), P<0.01 (**Table 2**).

Table 2. Two groups of patients QLQ-30 scale score results

	Intervention group (n=152)	Control group (n=111)	t	P
Physical function	75.21±8.08	74.81±7.26	0.41	0.68
Cognitive function	84.62±5.24	70.33±6.97	18.98	<0.01
Social activity	88.43±6.82	65.94±8.07	24.43	<0.01
Emotional function	87.54±7.85	62.53±6.51	27.38	<0.01
Pain situation	82.54±6.07	81.57±7.24	1.18	0.24
Couple life	86.18±8.64	67.59±7.55	18.16	<0.01

Discussion

Breast cancer not only causes a great threat to the life and health of female patients, but also easily brings problems in psychological function and mental health status [17]. Breast cancer is closely related to women's secondary sexual characteristics. In the course of treatment, patients not only need to endure great pain, but they also have to worry about damage to their self-image and confidence. It not only causes great problems for patients, but also is burdensome to the patient's family [6]. With the current emphasis on health, the treatment not only includes the disease itself, but also extends to the patient's psychological state and living standards.

After a long and painful treatment process, patients with malignant tumors can easily lose hope. About 26% of patients with malignant tumors suffer from a recurrence of the disease or the development of other diseases due to a poor post-treatment mental status [18]. Research [19, 20] has increasingly pointed out that for the treatment of patients with malignant tumors, psychological counseling is a key determinant of the prognosis of patients. This article compares quality of life for patients and their spouses between those with psychological intervention and without psychological intervention after treatment. It shows that psychological intervention has a very high application value in improving quality of life for breast cancer patients.

The results of this experiment show that in terms of SDS, SAS, and quality of life scores, the psychological interventions group of breast cancer patients and their spouses was significantly better than the control group, who received only routine nursing care. This suggests that psychological intervention also has an effective value in improving the prognosis for breast cancer patients. This is consistent with the findings of Mattioli et al. [21], which corroborates the results of this experiment. Through communications with breast cancer patients and giving them answers to difficult questions, not only are the problems that the patients encounter after discharge solved, but it also reduces the patient's anxiety about the disease and prognosis. As a result, patients become more aware of their own condition, correctly view their own diseases, and improve their optimistic outlook. According to the research of Roberts et al. [22], maintaining an optimistic and confident attitude can help with the rehabilitation of many diseases. Psychological intervention requires medical staff to conduct long-term communication, education, and psychological counseling during hospitalization and after discharge and to help the patient maintain an optimistic attitude [23], which greatly improves the patient's rehabilitation, quality of life, and prognosis.

During the diagnosis and treatment of breast cancer, family support and care is important [24], and the spouse's care of the patient is the best source of support. This support and understanding can increase the patient's feelings of self-esteem and being loved. Therefore, guidance and psychological intervention for spouses is also a key point for treatment. Through the disease education and psychological counseling, the relationship between husband and wife is effectively improved. The spouse understands the pain experienced by the patient during the course of treatment, and will give the patient better care and support and will also help the patient to overcome the problems encountered during the rehabilitation process.

In the control group, there was no psychological intervention support, and the patients not only had to face the threat caused by their malignant tumors, but they also had to deal with the damage of losing one or more breast. Therefore, the psychological condition of patients was often easily affected by negative emotions such as depression and despair, along with a loss of self-esteem and desperateness. Serious cases may even lead to suicide [25]. The depressed mood, appetite, and sleep quality of breast

cancer patients not only has a great impact on their health, but also seriously affects the overall atmosphere of the patient's family. At this time, if the spouse does not give enough support and care to the patient, it will cause the feelings between husband and wife to drift into a vicious circle, which will lead to a worsening of the quality of life for patients. This is also one of the underlying causes for the differences between the two groups of patients.

This experiment still has deficiencies. For example, the study is relatively small, and the range of patient's ages is relatively small. However, this experiment was conducted using rigorous screening criteria, and advanced statistical software was used for analysis and processing to achieve the best experimental results. We will continue to perform follow-up for the subjects of this study and to refine and improve our experimental methods to reduce all contingencies.

In summary, psychological counseling and interventions for breast cancer patients and their spouses can effectively improve the prognostic quality of life for patients, which is worthy of promotion in clinical practice.

Disclosure of conflict of interest

None.

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