



Evaluation of Quality of Life, Social Support and Coping Strategies and Illness Adjustment in Patients with Breast Cancer: A Cross-sectional Study

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Received 2022 August 22; Revised 2022 November 05; Accepted 2022 November 23.

Abstract

Background: Breast cancer patients experience physical and emotional distress due to their diagnosis and treatment of their disease.

Objectives: This study aimed to assess the quality of life (QOL), social support and coping strategies, illness adjustment among breast cancer patients, and the type of breast surgery.

Methods: We conducted a cross-sectional study at hospitals in Zahedan, Iran, in 2020. We recruited 120 patients with breast cancer by census method. Data collection tools were the breast cancer-specific module (QLQ-BR 23), The adjustment to illness measurement inventory for Iranian women with breast cancer (AIMI-IBC), and the multidimensional scale of perceived social support (MSPSS) questionnaires. We performed the statistical analysis in SPSS software version 19.0.

Results: The mean age of patients in this survey was 47.35 ± 10.67 years. 53.3% of patients underwent a mastectomy, 34.2% had a lumpectomy, and 12.5% of patients had not been surgery. Patients on the functioning scale reported high scores for body image (78.61 ± 26.69) and future perspective (55.27 ± 26.71). Patients on the symptom scale had a high score upset by hair loss (49.16 ± 38.88). Also, the mean score of total social support was 45.71 ± 9.92 . In addition, they used the reasonable efforts coping strategy (4.07 ± 0.35), and the mean score of illness adjustment was 150.91 ± 16.29 .

Conclusions: The results of this study indicated that breast cancer patients received a high social support level, especially from family members, and had a high degree of adjustment to their illness. Also, patients were more upset about their hair loss and body image. Therefore, early disease detection can improve breast cancer women's quality of life and disease adaptation.

Keywords: Breast Cancer, Quality of Life, Social Support, Coping, Adjustment

1. Background

Breast cancer is one of the most common female malignancies worldwide and the principal cause of death among women in developed and developing countries (1).

Early detection and combination treatment such as chemotherapy, radiotherapy, hormone therapy, and surgical procedures can cure breast cancer (2). Surgical procedures, including mastectomy and breast-conserving therapy (lumpectomy), are the most prominent treatment for breast cancer (3). The survival is not different in these two surgical procedures (4), but patients who underwent lumpectomy had a better body image and quality of life (5). Also, a high QOL level could lead to long-term survival (6). Evidence showed that the type of surgery does not affect

any part of QOL except sexual function and body image domains (7, 8).

Some women with breast cancer reported physical and psychological distress due to cancer diagnosis and its treatment process that impair the different aspects of cancer patient life, such as family and social life (9). Therefore, patients use various strategies for coping with these stressful conditions. A previous study in Iran showed that coping strategies such as religious beliefs, accepting the reality of the disease, and positive or negative thinking about the disease are essential strategies used by Iranian women with breast cancer. Spirituality is the most common coping strategy (10).

The perceived social support is an essential determinant of patients' capacity with breast cancer to cope with

their disease and procedures. It could improve QOL and ease the adjustment to life after treatment (11). The previous study showed that high levels of social support through functional and positive coping reduce depressed and anxious symptoms in patients with breast cancer. Therefore, patients should get social support and be educated on using functional coping strategies (12).

2. Objectives

Researchers believe that the study's results will be helpful for oncology nurses in assessing patients in all aspects and improving their well-being. Therefore, this study aimed to assess the influence of surgical type on QOL, coping strategies, illness adjustment, and social support in breast cancer patients in Zahedan, Southeastern Iran.

3. Methods

In this cross-sectional study, we selected 120 female breast cancer patients using the census method from the Clinical Oncology Department of Khatam-Al-Anbia hospital and the Radiotherapy Department of Ali-Ebne-Abitaleb hospital in Zahedan, Southeastern Iran, from February to August 2020.

These two hospitals handle all cancer patients in Zahedan, and all patients who were referred to these two hospitals and met the inclusion criteria agreed to participate in the study.

The inclusion criteria included a confirmed breast cancer diagnosis, 18 years and older, and willingness to participate in this study. We used a self-administered questionnaire to collect patients' socio-demographic information and clinical characteristics. Also, we investigated the quality of life, social support, coping strategies, and adjustment to illness.

As most of the patients in this study were illiterate or had primary education, we interviewed them privately to fill out the questionnaires.

3.1. Quality of Life

The Quality of Life (QLQ-BR23) consists of 23 questions on four functional scales (body image and sexual functioning, sexual enjoyment, future perspective) and four symptom scales (arm symptoms, breast symptoms, systematic therapy side effects, and being upset by hair loss). We calculated the Item scores of the EORTC QLQ-BR23 according to the EORTC QLQ-C30 scoring manual (13). Each item had a five-point Likert score.

The range of scores for these questions is between 0 and 100. The range of scores for these questions is between

0 and 100. A high score for a functional domain represents a better functioning level, and a high score for a symptom domain represents a worse level of symptoms and more problems. This questionnaire is translated into Persian and validated in the previous study (14).

3.2. Coping Strategies and the Degree of Adjustment

We assessed women's coping strategies with breast cancer and the degree of adjustment to illness using an adjustment to illness measurement inventory for Iranian women with breast cancer (AIMI-IBC). This instrument had three domains (emotional turmoil, reasonable efforts, and avoidance) with 49 items. Each item had a five-point Likert score, ranging from 1 to 5, and a higher score for each domain reflects frequent use of the coping manner. The cut-off for this scale is 122.5. A mean score of ≥ 122.5 indicates higher adjustment with the illness, and a mean score lower than 122.5 indicates insufficient adjustment. The psychometric property of the AIMI-IBC questionnaire in Iranian women with breast cancer was confirmed (15).

3.3. Multidimensional Scale of Perceived Social Support

Zimet and colleagues developed the multidimensional scale of perceived social support (MSPSS) to measure perceived social support from friends, family, and significant others. This questionnaire consists of 12 items, each with a 5-point Likert-type response format (from 1 = strongly disagree to 5 = strongly agree). The score range is between 12 and 60, and higher scores reflect more perceived social support. The MSPSS had good validity and reliability in a previous study in Iran (16).

3.4. Statistical Analysis

The collected data were analyzed using SPSS software, version 19.0. We used chi-squared analysis to determine the frequency of the type of surgery across the demographic characteristics of patients. We assessed the mean score of quality of life, social support, coping strategy, and illness adjustment among the surgical type variables using the ANOVA and Kruskal-Wallis tests. When one-way ANOVA and Kruskal-Wallis tests were significant, we made multiple comparisons with the least significant difference (LSD).

We performed multivariate linear regression to adjust for covariates to evaluate surgical type's independent effects on QOL, coping strategy, illness adjustment, and social support in the presence of potential confounders. A P-value < 0.05 was considered significant.

4. Results

One hundred and twenty patients consented to participate in this study. The mean age of patients was 47.35 ± 10.67 years, and the time since diagnosis was 23.69 ± 20.38 months. Around half of the patients were of Sistani ethnicity (52.8%), followed by Baluch (40.8%) and others (6.7%). Three-fourths of patients were married (75.8), and most were housewives (88.3%). 16.3% of patients had a family history of breast cancer. At the time of the survey, 40.8% of patients had been diagnosed with stage III breast cancer, 34.2% with stage IV, 22.5% with stage II, and 2.5% with stage I. Most (90%) of the patients had received chemotherapy, and 64.2% had received radiotherapy. More than half of the patients underwent mastectomy (53.3%), followed by underwent lumpectomy (34.2%), and 12.5% had not been surgery (Table 1).

Based on the results of the chi-square analysis, patients who underwent lumpectomy more had received more radiotherapy than patients who underwent a mastectomy and were not surgical ($\chi^2 = 6.22$, $P = 0.04$). Most patients who underwent mastectomy had stage III and stage VI of the disease ($\chi^2 = 15.62$, $P = 0.004$).

4.1. Quality of Life

In the functioning scale, the higher mean scores were for body image (78.61 ± 26.69) and future perspective (55.27 ± 26.81), respectively, while the lower mean scores were for sexual enjoyment (14.86 ± 16.84) and sexual functioning (14.16 ± 17.63). On the other hand, on the symptom scale, upset by hair loss (49.16 ± 38.88) and systematic therapy side effects (45 ± 17.42) scored the highest, followed by arm symptoms (30.83 ± 26.73) and breast symptoms (13.63 ± 18.58).

The significant difference across surgical groups was present in the functioning scales (body image, sexual functioning, and sexual enjoyment) and symptom scales (arm symptom). Patients who underwent lumpectomy had the best sexual function, sexual enjoyment, and body image. On the other hand, patients who underwent a mastectomy had severe arm symptoms compared to patients who underwent a lumpectomy. After adjustment for the type of treatment (radiotherapy) and stage of the disease, this finding remained significant.

4.2. Perceived Social Support

The mean score of total social support was 45.71 ± 9.92 . Patients reported that they received the highest level of support from their family (18.02 ± 2.76), followed by significant other (14.45 ± 4.27) and friends (13.23 ± 5.21). The statistical analysis showed that perceived social support's

(MPSS) mean score and domains had no significant difference among surgical groups ($P < 0.05$). The finding was un-influenced even after controlling covariates (Table 2).

4.3. Coping Strategies and Illness Adjustment

Patients who participated in this study used the reasonable efforts coping strategy (4.07 ± 0.35) more than avoidance (3.39 ± 0.55) and emotional turmoil coping strategies (2.93 ± 0.55). Also, patients presented a high degree of adjustment to their illness (150.91 ± 16.29). Patients who underwent lumpectomy used more reasonable effort coping strategies ($P = 0.009$) and had a higher adjustment to illness ($P = 0.01$) than patients who underwent a mastectomy. These differences were still significant after adjustment for the covariate. The degree of illness adjustment in patients who underwent lumpectomy than those who underwent a mastectomy was not different (Table 2).

5. Discussion

In this study, Patients had the best score in body image and future perspective and the worst in sexual enjoyment and sexual function. The symptom indec's highest mean score was related to the side effects of treatment and the discomfort caused by hair loss, consistent with other studies (17). Studies have shown that cancer patients' different life quality areas are not static and change at various stages of the disease, after diagnosis, before and after treatment, and indifferent treatment methods that need special attention (18). Surgery to protect patients' breasts (lumpectomy) is performed in the early stages of cancer, improving body image and life quality (5). In this study, patients who underwent lumpectomy or did not have surgery had a better body image and fewer worries about the future than those who underwent a mastectomy. Previous studies reported that patients who underwent lumpectomies had a better body image than those who experienced a mastectomy (19, 20).

On the other hand, in this study, lumpectomy patients showed better sexual performance and enjoyment than other patients. A survey in Taiwan showed that the type of surgery affected only functional scores of BR23-FS and that patients undergoing lumpectomy reported better BR23-FS scores than patients undergoing mastectomy (21). A German study also found that patients with conservative breast treatment (BCT) had a better quality of life on most BR-23 scales (22).

Cancer patients use various strategies to deal with the health and psychosocial issues associated with a cancer diagnosis. Evidence showed that most Iranian women use active methods to deal with breast cancer, such as acceptance, religious coping, and planning (23), positively

Table 1. Demographic Characteristics of Patients: In General and by Type of Surgery^a

Variables	Overall (N = 120)	Lumpectomy (N = 41)	Mastectomy (N = 64)	No Surgical (N = 15)	P-Value
Age	47.35 ± 10.67	46.32 ± 10.55	48.08 ± 10.51	47.07 ± 12.09	0.71
≤ 50	75 (62.5)	28 (68.3)	37 (57.8)	10 (66.7)	0.52
> 50	45 (37.5)	13 (31.7)	27 (42.2)	5 (33.3)	
Time of since diagnosis	23.69 ± 20.38	19.15 ± 17.61	27.73 ± 21.72	18.87 ± 18.99	0.08
< 6	22(18.3)	8 (19.5)	10 (15.6)	4 (26.7)	0.33
6 - 12	43 (35.8)	17 (41.5)	20 (31.2)	6 (40)	
24 - 12	17 (14.2)	8 (19.5)	8 (12.5)	1 (6.7)	
> 24	38 (31.7)	8 (19.5)	26 (40.6)	4 (26.7)	
Marital status					
Married	113 (94.2)	40 (97.6)	60 (93.8)	13 (86.7)	0.29
Unmarried	7 (5.8)	1 (2.4)	4 (6.2)	2 (13.3)	
Educational level					
Primary or lower school	64 (53.3)	17 (41.5)	39 (60.9)	8 (53.3)	0.16
Secondary- high school	43 (35.8)	16 (39)	21 (32.8)	6 (40)	
College	13 (10.8)	8 (19.5)	4 (6.2)	1 (6.7)	
Ethnicity					
Sistan	63 (52.5)	23 (56.1)	33 (51.6)	7 (46.7)	0.71
Baluch	49 (40.8)	15 (36.6)	26 (40.6)	8 (53.3)	
Other	8 (6.7)	3 (7.3)	5 (7.8)	0 (0)	
Level of income					
Equal to expenditures	33(33.3)40	19 (46.3)	17 (26.6)	4 (26.7)	0.09
Lower than expenditures	80 (66.7)	22 (53.7)	47 (73.4)	11 (73.3)	
Place of residence					
Urban	93 (77.5)	33 (80.5)	47 (73.4)	13 (86.7)	0.46
Rural	27 (22.5)	8 (19.5)	17 (26.6)	2 (13.3)	
Employed status					
Housewife	106 (88.3)	33 (80.5)	60 (93.8)	13 (86.7)	0.11
Employed	14 (11.7)	8 (19.5)	4 (6.2)	2 (13.3)	
Menopausal status					
Pre menopause	73 (60.8)	15 (36.6)	26 (40.6)	6 (40)	0.91
Post menopause	47 (39.2)	26 (63.4)	38 (59.4)	9 (60)	
Stage of disease					
Stage I, stage II	30 (25)	17 (41.5)	13 (20.3)	0 (0)	0.004
Stage III	49 (40.8)	17 (41.5)	26 (40.6)	6 (40)	
Stage IV	41 (34.2)	7 (17.1)	25 (39.1)	9 (60)	
Family history of breast cancer					
Yes	(16.3) 16	6 (14.6)	10 (15.6)	0(0)	0.26
No	(86.7) 104	35 (85.4)	54 (84.4)	15 (100)	
Type of treatment					
Chemotherapy					
Yes	113 (94.2)	37 (90.2)	61 (95.3)	15 (100)	0.32
No	7 (5.8)	4 (9.8)	3 (4.7)	0 (0)	
Radiotherapy					
Yes	77 (64.2)	31 (75.6)	40 (62.5)	6 (40)	0.04
No	43 (35.8)	10 (24.4)	24 (37.5)	9 (60)	

^a Values are expressed as No. (%) or mean ± SD.

Table 2. Average Scores of Quality of Life, Perceived Social Support, and Coping Strategies in the Total Patient and According to Type of Surgery^a

	Overall (N = 120)	Lumpectomy (N = 41)	Mastectomy (N = 64)	No Surgical (N = 15)	P-Value	Adjusted P-Value ^b
BR23 functional scales^c						
Body image	78.61 ± 26.69	91.05 ± 16.07	67.44 ± 28.97	92.22 ± 17.94	0.001 ^d	0.001
Sexual functioning	14.86 ± 16.84	20.32 ± 17.28	11.97 ± 16.12	12.22 ± 16.01	0.03 ^d	0.006
Sexual enjoyment	14.16 ± 17.63	19.51 ± 18.22	11.97 ± 17.17	8.88 ± 15.25	0.04 ^d	0.04
Future perspective	55.27 ± 26.71	60.97 ± 25.71	50.52 ± 25.88	60 ± 31.37	0.11 ^d	0.16
BR23 Symptom Scales^e						
Systemic therapy side effects	45 ± 17.42	47.85 ± 15.64	45.16 ± 17.93	36.50 ± 18.23	0.08 ^d	0.18
Breast symptoms	13.68 ± 18.58	18.29 ± 19.82	11.45 ± 18.15	10.55 ± 15.25	0.05 ^d	0.1
Arm symptoms	30.83 ± 26.73	29.26 ± 27.41	35.24 ± 26.89	16.29 ± 18.71	0.03 ^d	0.007
Upset by hair loss	49.16 ± 38.88	47.15 ± 36.49	48.43 ± 40.25	57.77 ± 40.75	0.65 ^d	0.31
MSPSS						
Family	18.02 ± 2.76		18.48 ± 2.55	17.90 ± 2.22	17.26 ± 4.80	0.15 ^d
Friends	13.23 ± 5.21	14.60 ± 4.47	12.31 ± 5.31	13.40 ± 6.16	0.13 ^d	0.2
significant other	14.45 ± 4.27	15.07 ± 3.87	13.93 ± 4.41	15 ± 4.72	0.31 ^d	0.2
The total score of social support	± 9.92 45.71	48.17 ± 8.53	44.15 ± 9.68	45.66 ± 13.31	0.12 ^f	0.3
Coping strategies						
Emotional turmoil	2.93 ± 0.55	2.82 ± 0.52	3.03 ± 0.52	2.83 ± 0.72	0.13 ^f	0.11
Reasonable efforts	4.07 ± 0.35	4.19 ± 0.34	4 ± 0.28	4.02 ± 0.53	0.01 ^f	0.02
Avoidance	3.39 ± 0.55	3.40 ± 0.52	3.40 ± 0.53	3.34 ± 0.69	0.92 ^f	0.8
Illness adjustment	150.91 ± 16.29	155.58 ± 2.56	147.40 ± 1.83	153.13 ± 5.12	0.03 ^d	0.1

^a Values are expressed as mean ± SD.

^b P-value adjusted with radiotherapy and stage of the disease.

^c For functional scales, higher scores indicate better functioning.

^d P-value based on Kruskal Wallis tests.

^e For symptom scales, higher scores indicate worse functioning.

^f P-value based on ANOVA tests.

affecting these patients' psychological health and health behaviors, leading women to be more adaptable to their disease (24). In this study, patients mostly used positive coping strategies such as coping with the disease, avoiding negative thoughts about the condition, and having a high illness adjustment rate. Also, lumpectomy patients tried harder to cope with their illness than mastectomy patients and eventually became more adjustable to their illness. A previous study showed no significant difference in the total score of coping skills between the two groups of lumpectomy and mastectomy, and the patients in the mastectomy group used significantly more denial (25).

Patients in this study had high social support, which received the most support from family members, consistent with other studies (26, 27). A previous study showed that cancer survivors receive high social support and family members are the most crucial support source (28). In this

study, patients received less support from friends, while another study reported family and friends as the primary sources of support for breast cancer survivors (29). In the current study, women in the lumpectomy group received more social support than women in the mastectomy and non-surgical groups, but this difference was not statistically significant. Received social support may play an essential role in the type of response to surgery. A previous study showed that for women who decided to reconstruct after mastectomy, social support from family and other essential people could play a role in satisfaction with body image after breast surgery (30).

The study had several limitations that should be considered in interpreting the results. Due to the cross-sectional design, quality of life, social support, coping strategy, and illness adjustment were assessed at one point. Therefore, a longitudinal design with a large sam-

ple size can investigate these in breast cancer patients on several occasions during treatment and provide more light information.

5.1. Conclusions

Early detection of the disease, patient support, and education programs that teach coping strategies can improve breast cancer women's quality of life and disease adaptation. Providing emotional and social support from patients' family members and treatment team and informing and educating patients to use positive coping strategies can reduce some of the psychological stress resulting from breast cancer diagnosis and treatment.

Acknowledgments

The authors would like to thank all patients that participated in this study. We also appreciate all the healthcare workers in the Radiotherapy Department of Ali-Ebne-Abitaleb hospital and the clinical oncology department of Khatam-Al-Anbia hospital.

Footnotes

Authors' Contribution: S.K. participated in designing the study. S.K. participated in data collection. M.M. and S.K. participated in data analysis. S.K. participated in preparing the manuscript. All authors have read and approved the final version of the manuscript.

Conflict of Interests: The authors declare that there is no conflict of interest.

Data Reproducibility: The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

Ethical Approval: The Ethics Committee of Zahedan University of Medical Sciences approved this study (IR.ZAUMS.REC.1399.010).

Funding/Support: This article is part of the corresponding author's master's thesis, and Zahedan University of Medical Sciences has supported this work.

Informed Consent: The aim of the study was given to patients and written informed consent was obtained from all participants.

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