Emotional Security And Quality Of Life Among Breast Cancer Patients Who Undergone Mastectomy

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Abstract
Background: In the treatment of breast cancer (BC), mastectomy is a crucial step. However, the decision to have a mastectomy as a therapeutic option can have long-lasting negative effects on a woman. For one, the procedure might leave her feeling mutilated and devalued, and it may also pose a danger to her sense of femininity. **Aim:** The research aimed to Evaluate the emotional security and quality of life (QOL) among patients with BC who have undergone mastectomy and to investigate how various BC diagnoses and treatments affect a person's sense of emotional stability. **Methods:** The current research was prospective cross-sectional to evaluate the emotional security and QOL among post-mastectomized female BC patients attending General Surgery Outpatient Clinics at Assiut University Hospital and South Egypt Cancer Institute from May 2020 to March 2022. The study involved 145 female cases with BC. **Results:** In the current study, we observed that older (≥ 45 years old) women reported higher emotional security and higher scores of QoL sub-scales (Physical health restrictions, emotional health restrictions, fatigue, and pain) compared to younger age BC women. **Conclusion:** The QOL becomes an essential clinical endpoint for cancer treatment. The QOL and emotional security assessment produced valuable information and revealed the factors necessary for developing cases' health status. **Keywords:** Breast cancer, Iran, mastectomy, nursing, quality of life.

Introduction
According to the 2014 Egyptian population-based cancer registry, BC accounts for 33.8 percent of all female cancers in Lower Egypt, 26.8 percent in Middle Egypt, and 38.7 percent in Upper Egypt **(1).**

In BC, mastectomy is a common medical procedure. However, mastectomy as a treatment option might leave a woman feeling mutilated and devalued, and it may pose a danger to her sense of femininity, which has a long-lasting negative influence on her **(2).**

A woman's breasts carry significant symbolic value and are integral to her body image. Having a mastectomy might be especially devastating if she places a high value on her breasts. One or both breasts being amputated has been linked to a number of issues in women, including infertility, decreased sexual interest, and anxiety about having the same thing happen again **(3).**

A strong social network can help patients cope with stress and boost their health. The persistent need to rely on others may lead cancer cases who lack social support to develop more pessimism **(4).**

The QOL of a BC patient is significantly affected by both the diagnosis and therapy, making it essential for medical personnel to understand this impact **(5).**

The study set out to determine how different stages of BC and the length of time a patient has had the disease affect a person's sense of emotional security and QOL after a mastectomy.

Patients And Methods
Study Design: The study is cross-sectional from May 2020 to March 2022.

Site of the study: general surgery outpatient clinics at Assiut University Hospital and South Egypt Oncology institute.145 patients who meet the criteria of the study based on previously reported patients who had undergone mastectomy 33.5% of the sample

size was measured by openEpi, version 3, open-source calculator **(6)**.

Inclusion criteria: All participants must fulfil the following inclusion criteria: female patients aged 18y_55y, first-time BC diagnosis, females with a history of mastectomies they gave informed consent.

Exclusion criteria: Exclusion criteria include: female patients with concurrent comorbid psychiatric or neurological illnesses, disease recurrence, cases appearing with additional malignancies, and unwillingness to engage in study.

Methods

The patients were assessed according to semi-structured interviews with each patient and informant to exclude any psychiatric illness, socio-demographic and mental state examination.

Socio-economic scale: This scale has been developed by **Sawsan I & AF (7)** and was an updated scale containing all the variables of the previous one and translated into Arabic by **El-Gilany et al. (8)** and back-translated into English to assess validity and reliability. Sawsan I and AF are credited with developing this scale. It comprises seven categories, including education and culture domains, occupation domains, family domains, family assets domains, economic domains, home cleanliness and health care domains, which determine a family's socio-economic standing.

This scale has a total score of 84, and levels of socio-economic status were categorized as follows:

- <42 = very low level of socio-economic status.
- 42< 63= low level of socio-economic status.
- 63<71.4= middle level of socio-economic status.
- 71.4-84= high level of socio-economic status.

Emotional security scale: This scale measures the emotional security of healthy or diseased individuals in different age groups, starting from late childhood to senility. The Arabic version is used in this study and translated by dr Zeinabshokier.

This scale has a total score and levels of socio-economic state.

The scale has a total score of 162, and the level of emotional security was categorized as

- Zero to 30 …low emotional security
- 31   To 62…mild emotional security
- 63 To 96…moderate emotional security
- 97 To 131…high emotional security
- 131 To 162…very high emotional security

Quality of life: Short form 36 Quality of life questionnaire (SF-36 Qol): The SF-36 QoL survey evaluates patients' health. It comprises eight scaled scores, each a weighted sum of the questions in its respective parts. On the presumption that every question contributes the same weight, every scale is immediately turned into a 0-100 scale. With zero representing the least favorable health state and 100 representing the most favorable health state.

Sample Size calculation: The sample size was measured by openEpi, version 3, an open-source calculator, an alpha error of 20%, an 80% power of study of 80%, and a confidence level of 80%. The sample size needed was 143 patients based on previously reported patients who had undergone mastectomy at 33.5%.

Statistical analysis: All statistical computations were performed with version 22 of SPSS (statistical package for the social science; SPSS Inc., Chicago, IL, USA). The data were statistically reported using terms such as mean and ±standard deviation (±SD), median and range where the data was not normally distributed, frequencies (number of instances), and relative frequencies (percentages) when suitable. Since the data did not follow a normal distribution, the Mann–Whitney U test was utilized to compare quantitative variables across the different research groups. A Chi-square (χ2) test was carried out to compare categorical data. In cases where the anticipated frequency was lower than five, the exact test was utilized instead. The Pearson correlation test determined the degree of association among the various variables. The significance threshold for the P-value is always set at 0.05 and uses two tails.

Ethical considerations: The study was approved by Assiut University Faculty of Medicine under number IRB 17101398. The

patient provided informed consent, and confidentiality was maintained throughout all steps of the study. The patient was not exposed to any risks and could withdraw anytime without affecting their medical care. They were provided with an explanation of the processes involved and the findings of the investigations conducted as part of the study.

Results:

Table 1 Demographic data of the studied BC cases (n=145)

Variable name	N	(%)
Age (years)		
- Mean ± SD	42.26 ± 9.86	
- Median (range)	44 (20 – 55)	
Marital status		
- Married	62	(42.8)
- Single	39	(26.9)
- Divorced	30	(20.7)
- Widow	14	(9.7)
Occupation status		
- Housewife	97	(66.9)
- Working	37	(25.5)
- Student	11	(7.6)
Socio-economic status		
- Very low	47	(32.4)
- Low	46	(31.7)
- Middle	41	(28.3)
- High	11	(7.6)
Family history		
- Negative	95	(65.5)
- Positive	50	(34.5)

Quantitative data are presented in mean± SD and median (range), and qualitative data are presented as numbers (%).

As regards socio-economic status, 47 (32.4%) have very low socio-economic status, 46 (31.7%) have low socio-economic status, 41 (28.3%) and 11 (7.6%) have middle and high socio-economic status, respectively. Fifteen cases (34.5%) have a positive family history of BC **(Table 1).**
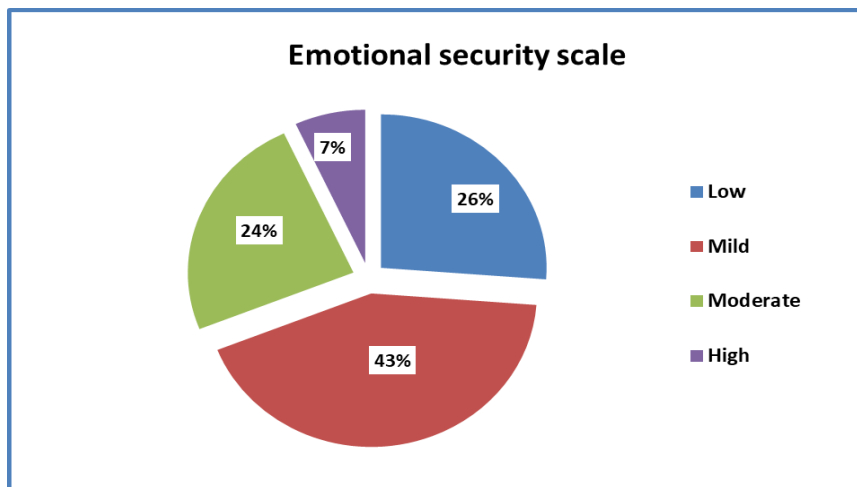

Figure 1: Pie graph showing the distribution of emotional security degree among the studied cases.

Table 2: Scores of QOL of the studied BC cases (n=145)

Items	N (%)
Physical function	
- Mean ± SD	52.28 ± 24.28
- Median (range)	55 (0 – 100)
Limitations due to physical health	
- Mean ± SD	14.14 ± 33.57
- Median (range)	0 (0 – 100)
Limitations due to emotional problems	
- Mean ± SD	14.02 ± 33.72
- Median (range)	0 (0 – 100)
Fatigue	
- Mean ± SD	31.66 ± 23.38
- Median (range)	30 (0 – 95)
Emotional well being	
- Mean ± SD	33.82 ± 24.19
- Median (range)	32 (0 – 84)
Social functioning	
- Mean ± SD	45.55 ± 25.14
- Median (range)	50 (0 – 88)
Pain	
- Mean ± SD	38.02 ± 25.31
- Median (range)	35.5 (0 – 90)
General Health	
- Mean ± SD	40.07 ± 19.20
- Median (range)	45 (5 – 80)
P value	**0.000***

* Significance defined by p < 0.05.
 (**Table** 2) shows that high scores in (physical function, Emotional well-being, social functioning, and general health) mean a high quality of life.

Table 3: Distribution of scores of QOL of the studied BC cases by age (n=145)

Items	Age <45 years (n=74)	Age ≥ 45 years (n=71)	P value
Physical function			**0.000***
- Mean ± SD	60.63 ± 21.24	44.66± 24.54	
- Median (range)	70 (20 – 100)	45(0– 90)	
Limitations due to physical health			**0.005***
- Mean ± SD	6.08 ± 22.97	22.54 ± 40.35	
- Median (range)	0 (0 – 100)	0 (0 – 100)	
Limitations due to emotional problems			**0.002***
- Mean ± SD	5.86 ± 22.99	22.54 ± 40.54	
- Median (range)	0 (0 – 100)	0 (0 – 100)	
Fatigue			**0.000***
- Mean ± SD	21.96 ± 18.71	41.76 ± 23.59	
- Median (range)	20 (0 – 80)	40 (0 – 95)	

Table 3: Distribution of scores of QOL of the studied BC cases by age (n=145). ***(Cont.)***

Items	Age <45 years (n=74)	Age ≥ 45 years (n=71)	P value
Emotional well being			0.000*
- Mean ± SD	45.18 ± 22.18	22.18 ± 20.91	
- Median (range)	44 (0 – 84)	16 (0 – 84)	
Social functioning			0.000*
- Mean ± SD	54.15 ± 22.65	37.30 ± 24.77	
- Median (range)	50 (13 – 88)	37.5 (0 – 88)	
Pain			0.000*
- Mean ± SD	30.37 ± 24.97	45.99 ± 23.26	
- Median (range)	33.8 (0 – 78)	45 (0 – 90)	
General Health			0.000*
- Mean ± SD	48.80±16.76	31.69 ± 17.68	
- Median (range)	50(5-80)	25 (5 – 75)	

(Table 3) Shows that by comparing the scores of QOL of the studied BC cases by age, we found that older patients (≥ 45 years old) have higher scores for (limitation due to physical health, limitation due to emotional problems, Fatigue and Pain) as compared to younger patients, which mean that older age had lower QOL.

Table 4: Distribution of scores of emotional security of the studied BC cases by socio-economic status (n=145)

Emotional security scale	Very low & low SES (n=93)		Middle & High SES (n=52)		P value
- Mean ± SD	43.83 ± 18.24		61.51 ± 33.59		0.006*
- Median (range)	40 (11 – 90)		50.5 (13 – 123)		
-	n	%	n	%	
- Low	25	(26.9)	13	(25.0)	0.000*
- Mild	48	(51.6)	14	(26.9)	
- Moderate	20	(21.5)	15	(28.8)	
- High	0	(0.0)	10	(19.2)	

Table 4 shows that by comparing the scores of emotional security of the studied BC cases by their socio-economic status, we found that patients with higher socio-economic status have higher emotional security than patients with lower socio-economic status (P<0.001).

Table 5: Distribution of scores of emotional security of the studied BC cases by tumor stage (n=145)

Emotional security scale	Stage 2 (n=77)		Stage 3 (n=68)		P value
- Mean ± SD	57.45 ± 30.82		41.65 ± 15.91		0.010*
- Median (range)	54 (18 – 123)		36 (11 – 90)		
- Low	22	(28.6)	16	(23.5)	0.000*
- Mild	20	(26.0)	42	(61.8)	
- Moderate	25	(32.5)	10	(14.7)	
- High	10	(13.0)	0	(0.0)	

Table 5 shows that by comparing the scores of emotional security of the studied BC cases by their tumor stage according to classification by the American College of Surgeons, we found that patients with an earlier stage at the time of surgery (stage 2) have higher emotional security as compared to patients with advanced stage at the time of surgery (stage 3) (P<0.001).
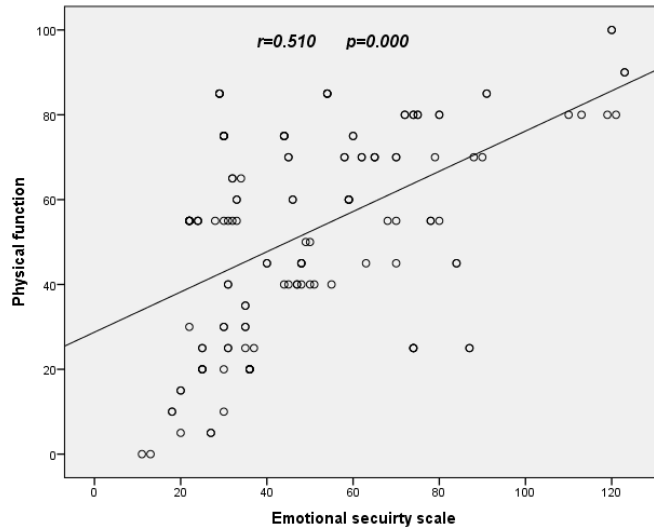
Figure 2: Scatter Plot graph displaying the association among emotional security score and QOL "Physical function" in studied BC cases.
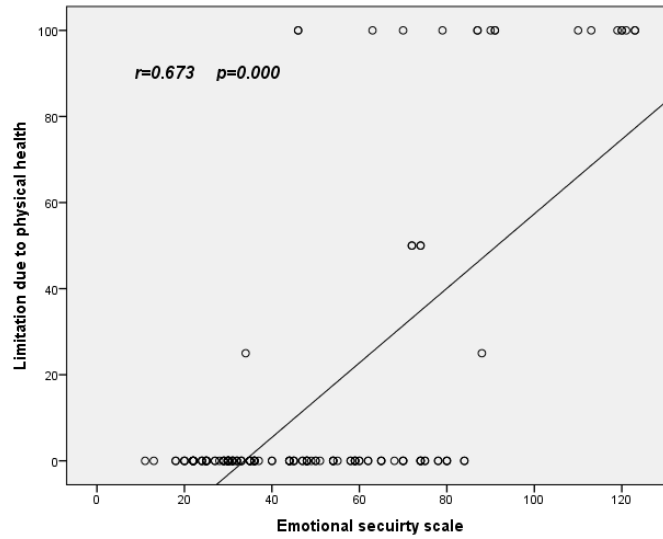

Figure 3: Scatter Plot graph displaying the association among emotional security score and QOL "Limitation due to physical health" in studied BC cases.
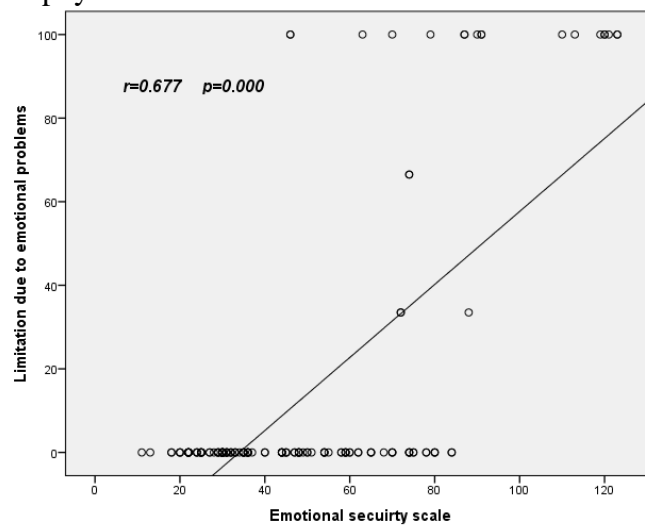

Figure 4: Scatter Plot graph displaying the association among emotional security score and QOL "Limitation due to emotional problems" in studied BC cases.

Discussion

The current research was a prospective cross-sectional study to evaluate the emotional security and QOL among post-mastectomized female BC patients attending General Surgery Outpatient Clinics at Assiut University Hospital and South Egypt Cancer Institute from May 2020 to March 2022. 145 female cases with BC were involved in the research.

The study participants' mean age was 42.26 ± 9.86, ranging from 20 to 55 years old. The majority were married, housewives, had low socio-economic status and were without a family history of cancer (42.8%, 66.9%, 64.1% and 65.5%, respectively). A similar finding was reported by the current Egyptian research of **Khater et al. (9)**, as the author reported that Participants' ages ranged from 26 to 80, with a mean age of 47.5 ± 11.0 years old. Seventy percent were married; ninety-three percent were stay-at-home moms; and sixty-three percent had no history of cancer in their families.

In the current study, we observed that older aged (≥ 45 years old) women reported higher emotional security and a higher score of all QoL sub-scales (physical capacity, health-related limitations, health-related restrictions, mental state, energy level, mood, social skills, pain level, and overall health) contrasted with younger age BC women.

Nevertheless, our conclusion ran counter to previous research, which suggested that a higher age is related to a worse QOL and/or a weaker sense of emotional stability **(10, 11).** The discovery may have several potential explanations, one of which is the accumulation of losses, which may include both personal and interpersonal losses. Examples of personal losses include damage to one's health and one's financial resources. Accordingly, it was hypothesized that variations in negative feelings or symptoms between younger and older patients were connected to developmental processes over the life span. These processes include acquiring more effective coping mechanisms and increased resilience via experience. **(12)**. Their QOL while they had BC **(9).**

QOL is known to be low for individuals with multiple malignancies and metastases **(10, 13, 14).** The same pattern between early and mature BC stages was seen.

Emotion regulation is the process by which people consciously shape their emotional lives, both in terms of the feelings they experience and how they exhibit those emotions **(15).** How people express and control their emotions significantly impacts their happiness **(16).** When facing a potentially fatal illness like BC, these effects become considerably more pronounced **(17).**

Furthermore, psychological responses to BC, such as emotional distress, have been shown to diminish BC survivors' QOL **(18).** This explains the positive correlation between emotional security and QOL among our studied cases.

Conclusion

The QOL becomes an essential clinical end goal in the decision-making process about cancer therapy. The QOL and emotional security assessment offered helpful information and revealed aspects of patients' lives that are essential to enhancing their health.

Recommendation

Based on the findings of the current study, it is recommended that:
1) The assessment of emotional security and QOL by simple, easy-to-use questionnaires should be incorporated as a part of routine clinical management of BC among Egyptian women.
2) Ongoing health education programs about the disease and how to cope with it should be organized as early as possible to alleviate the stress and anxiety among the studied participants.

References

1. Ibrahim AS, Khaled HM, Mikhail NN, Baraka H, Kamel H. Cancer incidence in Egypt: results of the national population-based cancer registry program. Journal of cancer epidemiology. 2014 Sep 21;2014.

2. Sheppard LA, Ely S. Breast cancer and sexuality. The Breast Journal. 2008 Mar;14(2):176-81.

3. Härtl K, Janni W, Kästner R, Sommer H, Strobl B, Rack B, et al. Impact of medical and demographic factors on long-term quality of life and body image of breast cancer patients. Annals of oncology. 2003 Jul 1;14(7):1064-71.

4. Moyer A, Salovey P. Predictors of social support and psychological distress in women with breast cancer. Journal of Health Psychology. 1999 Mar;4(2):177-91.

5. Dubashi B, Vidhubala E, Cyriac S, Sagar TG. Quality of life among younger women with breast cancer: study from a tertiary cancer institute in south India. Indian journal of cancer. 2010 Apr 1;47(2).

6. Salem AA, Salem MA, Abbass H. Breast cancer: surgery at the south Egypt cancer institute. Cancers. 2010 Sep 30;2(4):1771-8.

7. Sawsan I F, AF ES. Determining simple parameters for social classifications for health research.1983; 13 (5): 95-107

8. El-Gilany A, El-Wehady A, El-Wasify M. Updating and validation of the socio-economic status scale for health research in Egypt. Eastern Mediterranean health journal. 2012 Sep 1;18(9).

9. Khater AI, Noaman MK, Hafiz MN, Moneer MM, Elattar IA. Health-related quality of life among Egyptian female breast cancer patients at the National Cancer Institute, Cairo University. Asian Pacific Journal of Cancer Prevention: APJCP. 2019;20(10):3113.

10. Ahmed AE, Alharbi AG, Alsadhan MA, Almuzaini AS, Almuzaini HS, Ali YZ, et al. The predictors of poor quality of life in a sample of Saudi women with breast cancer. Breast Cancer: Targets and Therapy. 2017 Feb 9:51-8.

11. Al Zahrani AM, Alalawi Y, Yagoub U, Saud N, Siddig K. Quality of life of women with breast cancer undergoing treatment and follow-up at King Salman Armed Forces Hospital in Tabuk, Saudi Arabia. Breast Cancer: Targets and Therapy. 2019 May 27:199-208.

12. Goldblatt H, Cohen M, Azaiza F. Expression of emotions related to the experience of cancer in younger and older Arab breast cancer survivors. Ethnicity & Health. 2016 Nov 1;21(6):564-77.

13. Tang Z, Wang J, Zhang H, Sun L, Tang F, Deng Q, et al. Associations between diabetes and quality of life among breast cancer survivors. PLoS One. 2016 Jun 22;11(6): e0157791.

14. Wyatt G, Sikorskii A, Tamkus D, You M. Quality of life among advanced breast cancer patients with and without distant metastasis. European journal of cancer care. 2013 Mar;22(2):272-80.

15. Gross JJ. Emotion regulation: taking stock and moving forward. Emotion. 2013 Jun;13(3):359.

16. Scheibe S, Carstensen LL. Emotional aging: Recent findings and future trends. Journals of Gerontology Series B: Psychological Sciences and Social Sciences. 2010 Mar 1;65(2):135-44.

17. Stanton AL, Low CA. Dispositional and stressor-related emotion regulation in the context of a chronic, life-limiting stressor. Journal of Personality. 2012 Apr;80(2):287-311.

18. Cohen M, AbdallahMabjish A, Zidan J. Comparison of Arab breast cancer survivors and healthy controls for spousal relationship, body image, and emotional distress. Quality of Life Research. 2011 Mar; 20:191-8