Quality of Life of Women, Pre- and Post-Operative Breast Cancer Surgery

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Introduction

Breast cancer is the second most common type of cancer (1.7 million new cases per year)¹,² amongst the women worldwide; and in Pakistan 25,928 (14.5%) of breast cancer cases have been diagnosed in 2020. A 30% increase has been observed over the last 25 years in the incidence rates of breast cancer, both in developing and developed countries.¹,²,³ It comprises of more than 18% of all female malignancies.¹ Surgical treatment for breast cancer increases the level of stress among women.⁴ This is because it has certain adverse reactions and peculiarities, like mutilation, severity and self-image alterations.⁵ Thus, social, psychological and physical aspects of women’s life are compromised and can negatively impact the Quality of Life (QoL).¹,⁷,⁸,⁹

Thereby, the understanding of these factors can ameliorate the process and effectiveness of cancer treatment.⁸

Accordingly, if the QoL is assessed, it possibly verifies the impact of surgical treatment. It also provides action plan for the nurses regarding rehabilitation and adherence of patients during treatment.⁹ In order to provide comprehensive and targeted care to the breast cancer patients, information about their demographic profile is necessary.¹⁰ The focus of this research study is to evaluate the Quality of Life (QoL) of women with breast cancer who came for treatment in surgery department before diagnosis and post-operative time period.

Objective: To evaluate the Quality of Life (QoL) of women with breast cancer who came for treatment in surgery department before diagnosis and post-operative time period.

Methodology: A prospective cohort study was conducted at General surgery Department, Islamabad Medical complex, NESCOM, from October 2021 to March 2022. Seventy four diagnosed breast cancer patients, above 18 years of age, who underwent surgical treatment (MRM and Axillary clearance), were selected. Qol was assessed with the help of EORTC QLQ C-30 and EORTC BR-23 questionnaire. Data was collected on opd follow up and through telephone. SPSS 20 was used to analyze the data and Wilcoxon test and Kruskal-Wallis test were performed.

Results: The QoL assessed at pre and post operative stage showed positive results only in the future prospects and emotional function domain. Whereas, negative results were scored in rest of the domains, which are symptoms in the arm, body image, financial concerns, sexual pleasure, cognitive function and physical function.

Conclusion: The need for a multidisciplinary approach for breast cancer patients is required regarding different dimensions that can improve their Qol.

Key Words: Breast cancer, breast carcinoma, Quality of Life (QoL), women, surgery.

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Methodology

In this prospective Cohort study, seventy four breast cancer patients were selected from General surgery Department, Islamabad Medical complex, NESCOM. Sample size was calculated by using WHO calculator. Confidence level is 95%, absolute precision is 10% and the population proportion is 0.741. Only patients diagnosed with breast carcinoma, above 18 years of age and who underwent surgical treatment (MRM and Axillary clearance) were included in the study. Patients with dementia, language disorder, Metastatic Breast cancer, and with severe complications in vital organs at the time of enrollment; were excluded from this study.

Two different types of data was collected that emphasized on the pre-operative recall status and post-operative current status of individual patients. The data was collected through telephone calls and from the Opd follow-up of patients. Both the instruments; EORTC QLQ C-30 and EORTC BR-23 were utilized to measure QoL.

All analyses were conducted using SPSS version 20.0. The tests performed included Wilcoxon test and Kruskal-Wallis test. The Wilcoxon test is used for comparing statistically significant data at different moments of the research. Data collected after assessment of parameters in pre and post operative moment is presented as Boxplot.

In case, if there are more than two independent samples, then Kruskal-Wallis test is used. This test is used to co-relate our parameter with socio-economic status in each moments (Moment 1: Pre-operative time period and moment 2: post operative time period).

The patients were classified in to different socio-economic categories according to social status, i.e. category A: Higher class; B: Middle class; C: working class and D: lower class.

Results

The mean age of breast cancer patients was 44.2 years, most of them were married (67.5%) and have had elementary or high school education (17.5%). Table I, depicted the socio-demographic data of all the respondents of this study.

The results of Wilcoxon test showed that Future perspective dimension and cognitive functioning in the moment 2 (postoperative period) was improved; while, the dimensions of Sexual Function, Social Function, Functional Limitations, Physical Function, Body Image and Symptoms in the Arm worsen in moment 2 (post operative period).

Table I: Socio-demographic Profile of women diagnosed with breast cancer

| Variable                  | Frequency | %     |
|---------------------------|-----------|-------|
| Marital Status            |           |       |
| Single                    | 8         | 10.8  |
| Married                   | 50        | 67.5  |
| Separate                  | 6         | 8.1   |
| Widow                     | 10        | 13.5  |
| Education Level           |           |       |
| Illiteracy or up to 3rd grade | 46     | 62.1  |
| Complete Elementary School| 13       | 17.5  |
| Complete High School      | 10        | 13.5  |
| Complete Higher Education | 5         | 6.7   |

Table II: Medians of the Pre and Postoperative Moments as per Kruskal-Wallis test.

| Scores                   | Socioeconomic Classification | p-value | Socioeconomic Classification | p-value |
|--------------------------|------------------------------|---------|------------------------------|---------|
|                          | B    | C    | D    | B    | C    | D    | B    | C    | D    |
| Physical Functioning     | 77.6 | 100.0| 100.0| <0.01| 57.7 | 61.0| 75.0| 0.1  |
| Functional Limitations   | 100.0| 100.0| 100.0| 0.4  | 29.2 | 50.0| 50.0| 0.2  |
| Cognitive Functioning    | 100.0| 81.2 | 81.2 | 0.5  | 100.0| 100.0|100.0| 0.5  |
| Social Functioning       | 81.2 | 81.2 | 100.0| <0.01| 29.2 | 50.0| 66.6| <0.01|
| Emotional Functioning    | 31.2 | 57.7 | 71.0 | <0.01| 61.0 | 71.2| 73.5| 0.4  |
| Financial Difficulty     | 0.00 | 0.00 | 0.00 | 0.3  | 33.3 | 33.3| 33.3| 0.3  |
| Symptoms in the Arm      | 0.00 | 0.00 | 0.00 | 0.8  | 22.2 | 16.6| 22.2| 0.8  |
| Global Health Status     | 79.6 | 72.4 | 79.6 | 0.2  | 57.7 | 57.7| 80.8| 0.3  |
| Sexual Functioning       | 16.6 | 16.6 | 16.6 | 0.9  | 0.00 | 7.3 | 0.00| 0.1  |
| Sexual Pleasure          | 57.7 | 57.7 | 33.3 | 0.2  | 0.00 | 57.7| 33.3| 0.1  |
| Body Image               | 91.6 | 100.0| 100.0| 0.3  | 50.3 | 81.3| 74.0| <0.01|
| Future Perspectives      | 0.00 | 33.3 | 0.00 | 0.1  | 0.00 | 0.00| 0.00| 0.9  |
The results of Kruskal-Wallis test showed that when the parameters being co-related to socio-economic status, better QoL was presented by the patients belonging to class C and D in the Physical Function dimension, at Moment 1 (preoperative moment). Also, QoL was improved in the Emotional Function dimension by the patients, belonging to class B, at moment 1.

On the contrary, at moment 2, higher QoL was presented by the patients in the Body Image dimension; while, better QoL was seen in women of class B in the Social Functioning dimension. (See Table II)

**Discussion**

An important aspect of measuring treatment success is assessing the QoL of women with breast cancer. The determination of the factors that predict changes in quality of life provides important information for clinical practice and can be used for the development of evidence-based guidelines for designing follow-up protocols for breast cancer survivors.

Study suggested that Socio economic status is strongly linked with QoL of women diagnosed with BR, as well as associated with stage of progression of disease. Worst QoL is reported by the people belonging to socio-economic deprived areas. Another study declared that higher incidence is associated with higher socioeconomic status; though, lower case fatality.

The major risk factor for breast cancer is the age of patient. Majority of the incidence cases are reported after 50 years of age. This study found out that 78% of the respondents were >40 years of age and while the rest of the patients were below 40 years of age.

Married women were also the majority in another study in breast cancer. This suggested that the presence of a partner is important, but their absence was not a risk factor.

It has been evidenced that higher education attributes a better QoL in breast cancer women. Breast cancer patients did not showed better scores on QoL scale with less than 8 years of education. Similar to this, a recent study conducted by Konieczny, et al., (2020) described that breast survivors with higher education showed higher QoL after breast cancer treatment. Thereby, education, marital status, and age are the demographic and social factors which influence the QoL of patients with breast cancer.

After surgery, Functional Limitations as well as Physical Functioning domain worsen in this study. However, a research study figured out that Nepalese breast cancer women; with higher education level, scored better results in the Physical Functioning dimension. After breast cancer diagnosis, better physical functioning is associated with increased physical activity. This also lessens bodily pain and fatigue in breast cancer women. Thus, the need for physical activity among breast cancer survivors should be accentuated.

QoL losses were higher, in the Sexual Pleasure and Sexual Function domain. Also some studies have described that the removal of tumor can have negative consequences significantly on the perception of sexuality and the body image.

In breast cancer patients, the cognitive function is also negatively affected. However, in the present study improvement was seen in cognitive functioning of women. This could be due to the fact that these women were still under treatment.

Another factor responsible for worsening of QoL is Financial Difficulty dimension. As a study declared that, 90% of Nepalese women had shown worse QoL because of financial difficulty dimension. However, in this study most of the patients did not experience any financial issues, as the surgical treatment in the respective hospital was free of cost.

The QoL of the patients in terms of Body Image dimension also worsen in this study. This is because of the process of (re) elaboration and reformulation after breast cancer. This has also become more difficult after prosthesis placement. Lower score in this dimension leads to the development of depression associated symptoms.

QoL is decreased in patients of this study due to the presence of symptoms in the Arm such as limitations in movement. Another study also came up with the similar results that poor QoL is associated with symptoms in arm.

Despite of so many limitations, positive scores were recorded in the Future Perspective domain. Similarly, in other studies better results were obtained by the patients in the domain of future prospects. It is the need of the hour to ascertain a multidisciplinary approach for breast cancer survivors. In such a way that different health professionals can provide collaboration regarding different dimensions; improving overall QoL.
Conclusion

QoL levels in women with breast cancer decreases with increased age, low socio-economic status and low level of education. The QoL assessed at pre and post operative stage showed positive results only in the future prospects and emotional function domain. Whereas, negative results were scored in rest of the domains, which are symptoms in the arm, body image, financial concerns, sexual pleasure, cognitive function and physical function.

Thus, there is a dire need to emphasize on the provision of support, care and relevant information regarding dimensions such as body image, sexual enjoyment and emotional function. Nevertheless, it is also vital to support the already established initiatives that guide and foster the development of future interventions.

References

1 Dell’Antônio-Pereira L, Brandão-Souza C, Amaral-Musso MA, Vieira-Calmon M, Costa-Neto SB, Barros-Miotti MH, Zandonade E, Costa-Amorim MH. Quality of life of women with pre-and post-operative breast cancer. Investigation y educacion en enfermeria. 2017;35(1):109-19. https://doi.org/10.17533/udea.ije.v35n1a13
2 Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: a cancer journal for clinicians. 2018;68(6):394-424. https://doi.org/10.3322/caac.21492
3 Akram M, Iqbal M, Daniyal M, Khan AU. Awareness and current knowledge of breast cancer. Biological research. 2017;50(1):33. https://doi.org/10.1007/s10549-017-0140-9
4 Franceschini G, Sanchez AM, Di Leone A, Magno S, Moschella F, Accetta C, Natale M. Update on the surgical management of breast cancer. Ann Ital Chir. 2015;86(2):89-99.
5 Abbas Z, Rehman S. An Overview of Cancer Treatment Modalities. InNeoplasm 2018 Sep 19. INTECHOPEN LIMITED London. https://doi.org/10.5772/intechopen.76558
6 Sibeni J, Picard C, Orri M, Labey M, Bousquet G, Verneuil L, Revah-Levy A. Patients’ quality of life during active cancer treatment: a qualitative study. BMC cancer. 2018 Dec;18(1):951. https://doi.org/10.1186/s12885-018-4868-6
7 de Castro Figueiredo Pereira Coelho R, Nunes Garcia S, Marcondes L, da Silva J, Andriele F, de Paula A, Puchalski Kalinke L. Impact on the quality of life of women with breast cancer undergoing chemotherapy in public and private care. Investigacion y educacion en enfermeria. 2018;36(1). https://doi.org/10.17533/udea.ije.v36n1e04
8 Sheikhalipour Z, Ghahramanian A, Fateh A, Ghiahi R, Onyeka TC. Quality of life in women with cancer and its influencing factors. Journal of caring sciences. 2019;8(1):9. https://doi.org/10.15171/jcs.2019.002
9 Chunilla TM, Egleston BL, Murphy CT, Sigurdson ER, Hayes SB, Goldstein LJ, Bleicher RJ. Patterns of multidisciplinary care in the management of non-metastatic invasive breast cancer in the United States Medicare patient. Breast cancer research and treatment. 2016;160(1):153-62. https://doi.org/10.1007/s10549-016-3982-x
10 El-Moselhy EA, Elshemy GG, Sultan AA, Nafea MA. Female Breast Cancer: Socio-Demographic, Lifestyle, and Clinical Risk Factors-A Hospital-Based Study in Two Egyptian Governorates. Biomedical Journal of Scientific & Technical Research. 2017;1(4):894-905. https://doi.org/10.26717/BJSTR.2017.01000328
11 Koboto DD, Deribe B, Gebretsadik A, Ababi G, Bogale N, Geleta D, Gemechu L, Mengistu K. Quality of life among breast cancer patients attending Hawassa University comprehensive specialized hospital cancer treatment center. Breast Cancer: Targets and Therapy. 2020;12:87. https://doi.org/10.2147/BCTT.S25030
12 Oyeka IC, Ebu GU. Modified Wilcoxon signed-rank test. Open Journal of Statistics. 2012;2(2):172-6. https://doi.org/10.4236/ojs.2012.22019
13 Ostertagova E, Ostertag O, Kováč J. Methodology and application of the Kruskal-Wallis test. InApplied Mechanics and Materials 2014;611: 115-120. Trans Tech Publications Ltd. https://doi.org/10.4028/www.scientific.net/AMM.611.115
14 Graells-Sans A, Serral G, Puigpinós-Riera R, DMA GC. Social inequalities in quality of life in a cohort of women diagnosed with breast cancer in Barcelona (DAMA Cohort). Cancer Epidemiology. 2018;54:38-47. https://doi.org/10.1016/j.canep.2018.03.007
15 Lundqvist A, Andersson E, Ahlberg I, Nilbert M, Gerdtham U. Socioeconomic inequalities in breast cancer incidence and mortality in Europe-a systematic review and meta-analysis. The European Journal of Public Health. 2016;26(5):804-13. https://doi.org/10.1093/eurpub/ckw070
16 White MC, Holman DM, Boehm JE, Peipins LA, Grossman M, Henley SJ. Age and cancer risk: a potentially modifiable relationship. Am J Prev Med.2014;46: 7-15. https://doi.org/10.1016/j.amepre.2013.10.029
17 Osborne C, Ostir GV, Du X, Peek MK, Goodwin JS. The influence of marital status on the stage at diagnosis, treatment, and survival of older women with breast cancer. Breast cancer research and treatment. 2005;93(1):41-7. https://doi.org/10.1007/s10549-005-3702-4
18 Gurdal SO, Saracoğlu GV, Oran ES, Yankol Y, Soybir GR. The effects of educational level on breast cancer awareness: a cross-sectional study in Turkey. Asian
Maharjan M, Thapa N, Adhikari RD, Petriti MA, Amaty KS. Quality of Life of Nepalese Women Post Mastectomy. Asian Pacific Journal of Cancer Prevention: APJCP. 2018;19(4):1005.

Shin WK, Song S, Jung SY, Lee E, Kim Z, Moon HG, Noh DY, et al. The association between physical activity and health-related quality of life among breast cancer survivors. Health and quality of life outcomes. 2017;15(1):132.

Alfano CM, Smith AW, Irwin ML, Bowen DJ, Sorensen B, Reeve BB, Meeske KA, et al. Physical activity, long-term symptoms, and physical health-related quality of life among breast cancer survivors: a prospective analysis. Journal of Cancer Survivorship. 2007;1(2):116.

Emilee G, Ussher JM, Perz J. Sexuality after breast cancer: a review. Maturitas. 2010;66(4):397-407.

Hormes JM, Bryan C, Lytle LA, Gross CR, Ahmed RL, Troxel AB, Schmitz KH. Impact of lymphedema and arm symptoms on quality of life in breast cancer survivors. Lymphology. 2010;43(1):1-3.

Villar RR, Fernández SP, Garea CC, Pillado M, Barreiro VB, Martin CG. Quality of life and anxiety in women with breast cancer before and after treatment. Revista Latino-Americana de Enfermagem. 2017;25.

Debess J, Riis J, Pedersen L, Ewertz M. Cognitive function and quality of life after surgery for early breast cancer in North Jutland, Denmark. Acta Oncologica. 2009;48(4):532-40.

Debess J, Riis J, Pedersen L, Ewertz M. Cognitive function and quality of life after surgery for early breast cancer in North Jutland, Denmark. Acta Oncologica. 2009;48(4):532-40.

https://doi.org/10.1080/02841860802600755

Jun EY, Kim S, Chang SB, Oh K, Kang HS, Kang SS. The effect of a sexual life reframing program on marital intimacy, body image, and sexual function among breast cancer survivors. Cancer nursing. 2011;34(2):142-9.

Niedzwiedz CL, Knifton L, Robb KA, Katikireddi SV, Smith DJ. Depression and anxiety among people living with and beyond cancer: a growing clinical and research priority. BMC cancer. 2019;19(1):1-8.

https://doi.org/10.1186/s12885-019-6181-4

Villar RR, Fernández SP, Garea CC, Pillado M, Barreiro VB, Martin CG. Quality of life and anxiety in women with breast cancer before and after treatment. Revista Latino-Americana de Enfermagem. 2017;25.

https://doi.org/10.1590/1518-8345.2258.2958

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;11:199.

https://doi.org/10.2147/BCTT.S200605