QUALITY OF LIFE AMONG POST-SURGICAL PATIENTS OF BREAST CANCER VISITING A TERTIARY CARE HOSPITAL IN RAWALPINDI

Nadia Ozair, Javeria Kamran*, Sobia Asim, Anum Fatima*, Aliya Hisam***, Mehwish Ujala***

Armed Forces Post Graduate Medical Institute/National University of Medical Sciences (NUMS) Rawalpindi Pakistan, *Armed Forces Institute of Cardiology/National University of Medical Sciences (NUMS) Rawalpindi Pakistan, **Combined Military Hospital/National University of Medical Sciences (NUMS) Rawalpindi Pakistan, ***Army Medical College/National University of Medical Sciences (NUMS) Rawalpindi Pakistan

ABSTRACT

Objective: To evaluate the physical, psychological, social and environmental domains of QOL among post-surgical patients of breast cancer.

Study Design: Cross-sectional study.

Place and Duration of Study: The study was carried out at Breast Cancer Clinic and Oncology Department, Combined Military Hospital (CMH) Rawalpindi, from Jan 2017 to Mar 2017.

Material and Methods: All post-surgical females of breast cancer reporting at Breast Cancer Clinic and Oncology Department on follow-up appointments or receiving any type of treatment were included in this study. Physical activity levels were assessed by using the International Physical Activity Questionnaire QOL was determined by means of WHOQOL-BREF.

Results: Mean age of the participants was 41.3 ± 11.379 years. High proportions of participants (24%) reported having a college or university education. More than half of the women reported of being married (62%). Co-morbidities were reported among 36 (72%) patients and most frequently reported diseases were hypertension 13 (26%) and diabetes 8 (16%). Differences by age group, education level, marital status and counselling were important $p \leq 0.05$. Those women who received counselling were associated with having five times more likelihood of getting better scores in the environmental quality of life domain.

Conclusion: Post-surgical patients of BC, visiting a tertiary care hospital, generally have a good quality of life perception and are satisfied with their health.

Keywords: Breast cancer, Post-operative care, Quality of life.

INTRODUCTION

American Cancer Society states that "breast cancer is a malignant tumor that starts in the cells of the breast. A malignant tumor is a group of cancer cells that can grow into (invade) surrounding tissues or spread (metastasize) to distant areas of the body[2].

There is no single cause that explains breast cancer. Breast cancer is strongly related to age; only 5% of all breast cancers occur in women less than 40 years of age and over 80% of all female breast cancers occur among women aged 50 or more years[3]. The older a woman gets, the higher is her risk of developing breast cancer. The majority of breast cancers are not hereditary. About 85% of breast cancers occur in women who have no family history of breast cancer. These occur due to genetic mutations rather than inherited mutations that happen as a result of the aging process and life in general. Only about 5-10% of the women who get breast cancer have a family member diagnosed with it[11].

The most common type of neoplasm amongst women is 'Breast cancer.2It comprises of almost 18% of all the malignancies among female. IARC estimates that globally 14.1 million cases of cancers have emerged in 20124, in which almost 8 million have been reported from developing countries; encompassing 82% population of the world[7]. Worldwide, more than 1.1 million cases of BC are diagnosed every year and almost 4.1 million die due to this malignancy each year[8]. Incidence of BC vary about five-folds in different

Correspondence: Dr Nadia Ozair, Armed Forces Post Graduate Medical Institute, Rawalpindi Pakistan
Email: nozair69@gmail.com

regions of the world and estimates show an increasing trends in regions that previously had decreased rates of the malignancy[9]. It is now the most common cancer in developed as well as developing countries with around 690,000 new cases estimated in each region in 2008. Incidence rates vary from 19.3 per 100,000 women in Eastern Africa to 89.7 per 100,000 women in Western Europe, and are high (greater than 80 per 100,000) in developed regions of the world (except Japan) and low (less than 40 per 100,000) in most of the developing regions[7]. The United Kingdom (UK) and USA have some of the highest incidence rates worldwide (together with the rest of North America and Australia/New Zealand), making these countries a priority for breast cancer awareness[9-14]. The peak age of incidence is between 60-70 years in Western countries and 40-50 years in Asian countries[20].

MATERIAL AND METHODS

In this study, 50 females diagnosed with breast cancer were followed-up after surgery, recruited at a cancer clinic and their data was collected by the researcher, from March 2013 to June 2014. Post-surgical female patients of BC, between the ages of 15-55 years admitted in surgical ward and visiting OPD/breast cancer clinic in CMH Rawalpindi were included in the studythrough voluntary participation and after taking written informed consent of each participant. Post-surgical patients with mental disability and who refused to participate were excluded. This survey included a validated quality of life (QOL) measurement instrument: The WHOQOL-BREF (World Health Organi-zation Quality of Life Assessment Instrument BREF) available in English and translated and tested in Urdu version[3]. All of them produced a

Table-I: Socio-demographic characteristics of the participants.

Characteristics	Groups	n (50)
Age (years)	15-24	5 (10%)
	25-34	10 (20%)
	35-44	12 (24%)
	45-55	23 (46%)
Marital status	Married	31 (62%)
	Un-married	6 (12%)
	Divorced/Widow	13 (26%)
Educational Level	Illiterate	9 (18%)
	Primary	9 (18%)
	Matriculation	11 (22%)
	Secondary	9 (18%)
	≥12 grade	12 (24%)
Duration of illness (years)	<2	18 (36%)
	2 - <4	19 (38%)
	≥5	13 (26%)
Reconstruction done	Yes	20 (40%)
	No	30 (60%)
Counseling Done	Yes	46 (92%)
	No	4 (8%)
Type of disease	Hypertension	13 (26%)
	Diabetes	8 (16%)
	Asthma	6 (12%)
	Hypertension & Diabetes	9 (18%)
	Others	1(2%)
	Nil	13 (26%)

profile of four domains: Physical, psychological, social relationships and the environment.

The study was commenced after approval by the Institutional Ethical Review Board AFPGMI. Independent variables included were age, education, marital status, co-morbidities, duration of breast cancer, counselling and reconstructive surgery performed whereas, quality of life on the basis of following four health domains i.e; Physical, Psychological, Social, Environmental were considered as dependent variables.

The scores obtained by each respondent were then entered in SPSS version 21 along with demographic details. The data was analyzed in SPSS using descriptive statistics and tables. Non-parametric statistical tests were used to define quality of life (QOL). Based on the survey, Spearman's rank correlation coefficient (r) was calculated to determine the correlation among variables. As the independent variable had more than two groups of categories, the Krustal-Wallis one-way analysis of variance test was indicated to determine statistical significance.

A binary logistic regression analysis was run to assess how much variance in the different socio-demographic characteristics accounted for change in the likelihood of the general quality of life score, health satisfaction perception and four QOL domains.

RESULTS

Of the 50 post-surgical patients of breast cancer, who received the survey, all (100%) completed and returned the survey to the investigator.The mean age of the participants was 41.3 ± 11.379 years. 37 (74%) of the women gave history of other diseases while 13 (26%) women were having no co-morbidities (table-I).

Scores are scaled in a positive direction with a measure of 1 to 5 scales, where a higher score denotes higher quality of life. It was found that the participants had an equal perception of the general quality of life and general health satisfaction with a median value of 4 for both and standard deviations of 0.83 and 0.80, respectively. The social domain had the highest score among the other three domains with a median of 75 on a scale of 1-100. In the scales measured from 1 to

Table-II: Spearman correlation of the dependent variables of quality of life.

Dependent variables	Independent variables	rs
General quality of life	Counseling	0.26**
	Education level	0.18**
	Duration of illness	-0.13*
	Reconstruction done	0.16*
Health satisfaction	Marital status	0.17*
Physical	Counseling	0.28**
	Education level	0.16*
	Age	-0.15*
Psychological	Reconstruction done	0.34**
	Marital status	0.29**
	Family support	0.17*
	Counseling	0.26**
Social	Counseling	0.21**
	Education level	0.15*
	Duration of illness	-0.15*
	Family support	0.29**
Environmental	Counseling	0.32**
	Education level	0.24**
	Family support	0.30**

*$p \leq 0.001$, **$p \leq 0.05$

100, higher values, close to 100, indicated better quality of life.

Table-II shows estimates of Spearman rank order correlation coefficients (rs) of the relations among general quality of life, general health satisfaction, however, the four QOL domains were positively correlated with each other. All domains were positively correlated with counselling, being the strongest factor within the environmental domain with rs=0.32 and p=0.0001. The psychological domain had more correlations with most of the characteristics evaluated, having the stronger correlation with family support with rs=0.29 and p=.0001. Co-relation of age group, education level, marital status and counselling with QOL were found statistically significant (p≤0.05).

Table-III, with regards to health satisfaction, which had a median of 4, significant differences were found among women by their marital status and counseling (p≤.05).

Physical domain integrated seven items relating to: Activities of daily living, dependence on medications, energy and fatigue, mobility, pain and discomfort, sleep and rest, and work capacity. Breast cancer survivors reported a median in 63 of this domain (p≤0.05).

Psychological domainwas made up of six items: Body image and appearance, negative feeling, positive feelings, self-esteem, beliefs and thinking, learning, memory and concentration. This domain revealed a median of 69 points (p≤0.05).

Table-III: Median comparing quality of life variables with Socio-demographic Characteristics (Kruskall Wallis Test).

Variables	General[1]		Domains[2]			
	Quality of life	Health satisfaction	Physical	Psycholo-gical	Social	Environ-mental
Age						
15-24	4	4	63	68	81	69
25-34	4	4	63	63	75	69
35-44	3	4	60	63	75	69
45-55	2	4	56*	69*	70	65
Education level						
Illiterate	2*	3	56*	56*	75	56
Primary	2*	4	60	63	75	63
Matriculation	3	4	60	69	75	69
Secondary	3	4	63	69	81	69
> 12 grade	4	4	63	69	75	75*
Marital Status						
Married	4	4*	69	69	75	69
Un-married	2	3	63	69	75	63
Divorced/Widow	2	3	63	69	75	63
Counseling						
Doctor	3*	3	63	69	75	63
Nurse	2	2	63	69	75	69
Psychiatrist	3*	4*	69	75	81	81
Others	2	3	63	69	70	63
Duration of Illness						
<2 years	4	4	63	69	75	69
2-<5 years	4	4	63	69	81*	69
5 years and above	3	4	63	69	75	69

1: Scale 1-5, 2: Scale 1-100, *p≤0.05

Social domain was related to: Personal relationships, social support and sexual activity. Breast cancer survivors reported a median of 75 in this domain (p≤0.05).Women who were married reported a better score as well (Mdn=75), which is six points more than the score reported by women in the other categories (table-III).

Variables of environmental domain were related to financial resources, freedom, physical safety and security, health and social care, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation (leisure activities), physical environment (pollution, noise, traffic, climate), and transportation. Breast cancer survivors reported a median of 69 in this domain (p≤0.05).

A complete regression model was run by entering the socio-demographic and social support variables that were significant in the bivariate analysis (at p≤0.05). The model also included duration of illness which was entered based on literature that strongly shows that duration of illness influences the quality of life of breast cancer patients.

General quality of life model (table-IV), was included duration of illness, age, education level, counselling and family support as explanatory variables and a chi-square of 29.93 (p<.0005). The statistically significant variables in this model was "having 2 to < 5 years of duration of illness" and "counselling by psychologist".

Health satisfaction model was included duration of illness, age, education level, counselling, marital status, family support as explanatory variables. No variables were statistically significant in this model, and too many interactions were found among those variables.

Physical domain was included duration of illness, age, education level and counselling as explanatory variables 13.26 (p=0.10). In psychological domain (table-IV), p=0.000 indicated that the model was statistically significant. Social domain, duration of illness, age and counselling, family support were included as explanatory variables. In environmental domain (table-IV) a chi-square of 29.72 (p=.008) indicated and statistically significant variables were age and counselling, showing an increase likelihood of a better environmental QOL, OR=1.03, 95% CI (1.01, 1.08). Those women who received counselling were associated with having five times more likelihood of getting better scores in the environmental quality of life domain.

Table-IV: Summary of logistic regression analysis.

Variables	Wald	*p*-value	OR	95% CI
General QOL perception				
2 - < 5 years duration	5.27	0.022	2.17	1.12 – 4.22
Counseling	6.24	0.012	5.60	1.45 – 21.62
Psychological domain of QOL				
Age	8.32	0.004	0.87	0.43 – 8.45
Body image	6.04	0.014	0.14	0.03 – 0.67
Family support	6.85	0.009	20.50	2.13 – 196.75
Environmental domain of QOL				
Age	5.04	0.025	1.04	1.01 – 1.08
Counseling	8.83	0.003	5.84	1.82 – 18.69

DISCUSSION

It is quite evident from different studies that Breast cancer is spreading like an epidemic in Pakistan. It has many implications not only on the health status of the effected but also causing great financial problems and even health catastrophe[4]. The effects on the economy of the country cannot be ruled out as so are the ill effects in society. In Pakistan, breast cancer is the commonest form of cancer effecting females[10,11].

The best available treatment for this disease is 'surgery', may it be partial or radical. It is, therefore[9], need of the day to explore all the factors affecting the quality of life of patients with this killing disease. This study was, hence, conducted to assess the QOL of among post-surgical cases of breast cancer who report at a tertiary care hospital in Rawalpindi to determine association of different socio-demographic variables on the quality of life of a breast cancer patient.

In general, the post-surgical female patients of breast cancer had a good perception of quality of life and were satisfied with their health. This finding is similar to findings in prior research by Mols *et al*[16] who reported that long-term breast cancer survivors (>5 years) experienced good overall quality of life. This systematic review of ten articles reaches the same conclusion as this study[16-19]. Despite the fact that the quality of life among BC patients is relatively good, there is no doubt that many still experience substantial complications as a result of the cancer, its treatment or co- morbidities. The WHOQOL-BREF instrument produced very good insights into characteristics which affected several aspects of the lives of breast cancer survivors. This study found that social support principally from family and friends plays a very important role, creating significant relationships with all aspects of women's quality of life and positively impacting the long term cancer survivor's mental health.

Except for the social domain, participants with less than two years of duration of illness, experienced the worst quality of life in all other domains.16 The high score in the social support domain could be influenced by spiritual beliefs which also have shown high scores. Women who receive support from family appeared to experience better quality of life. Body image had a big influence in these women; the vast majority (97%) reported that they have high or very high levels of social support to overcome of their anxieties, giving this variable some influence on the general quality of life, psychological and environmental domain, but decidedly more impact on the social domain.

In contrast, reported scores showed that participants have the worst quality of life in the physical domain. Studies of problems experienced by long-term survivors reported a lesser physical, psychological and general quality of life among patients than the control group. Elderly women have different physical needs. That could explain the lowest score reported in this study. However, this finding was expected and is supported by a number of previous studies[20]. The mean age of the women in this study was 41.3 years old. Age was negatively correlated with quality of life, whereby younger breast cancer patients showed better quality of life perception through all the WHOQOL-BREF domains and health satisfaction. In contrast, women older than 45 years reported significantly lower general quality of life perception, physical and psychological domain scores[20].

In this study, duration of illness was negatively correlated with quality of life, as well as age, whereas those women with <5 years with breast cancer reported better quality of life perception and the highest and statistically significant score on the social domain. This finding is supported by other studies which reported that survivors who had more than 5 years of diagnosis had the lowest QOL domain scores[12]. Earlier studies also revealed that females with more than 5 years duration of illness reported a lesser physical, psychological and general quality of life than individuals in control groups[21]. However, it is important to mention that findings of a small number of studies contradict some of the findings of this study. For instance, previous studies[7] reported that women who had survived longer after diagnosis of breast cancer reported better overall quality of life and better psychological and social well-being than women with fewer years of survival.

CONCLUSION

Post-surgical patients of BC, visiting a tertiary care hospital, generally have a good

quality of life perception and are satisfied with their health. Support principally from family and friends plays a very important role in all aspects of QOL, impacting positively the long term cancer survivor's mental health. This is more so among younger patients. Elderly women have different physical needs that may explain the lowest score which they reported in this study. Finally, counselling, educational level, younger age and less than 5 years of cancer duration appear to produce positive influences on QOL. Since, the numbers of breast cancer patients will continue increasing over the next years, it is necessary to monitor this population. This study provides an important approach to the medical profession and generally shows what the women who have had a diagnosis of breast cancer think and feels and how their needs could be covered.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

REFERENCES

1. Tomich PL, Helgeson VS. Five years later: A cross-sectional comparison of breast cancer survivors with healthy women. Psycho-Oncology 2002; 11(2): 154-69.
2. Son BH, Ahn SH, Kim SW. Prevalence of BRCA1 and BRCA2 mutations in non-familial breast cancer patients with high risks in Korea: the Korean Hereditary Breast Cancer (KOHBRA) Study. Breast Cancer Res Treat 2012; 133(3): 1143-52.
3. Skevington SM, Lotfy M, O'Connell KA. The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial. A report from the WHOQOL group. Quality of Life Research 2004; 13: 299–310.
4. Waqar SH, Rasheed R, Malik ZI, Khaliq T, Zahid A, Ahmad N, et al. Analysis of Surgical Procedures for Breast Cancer in Pakistan Institute of Medical Sciences: A Decade of Change. Ann Pak Inst Med Sci 2012; 8(3): 8.
5. SALASC & GRISALES H. Calidad de vida y factoresasociados en mujeres con cancer de mama en Antioquia, Colombia. Rev Panam Salud Publica 2010; 28(1): 9-18.
6. SAMMARCO A. Quality of life of breast cancer survivors: a comparative study of age cohorts. Cancer Nurs 2009; 32(5): 347-56.
7. Rowland JH, Hewitt M, Ganz PA. Cancer survivorship: A new challenge in delivering quality cancer care. J Clin Oncol 2006; 24(32): 5101-04.
8. Agarwal G, Pradeep P, Aggarwal V, Yip CH, Cheung PS. Spectrum of breast cancer in Asian women. World J Surgery 2007; 31: 1031-40.
9. Asif HM, Sultana S, Akhtar N, Rehman JU, Rehman RU. Prevalence, risk factors and disease knowledge of breast cancer in Pakistan. Asian Pac J Cancer Prev 2014; 15: 4411-6.
10. Amir M, Ramati A. Post-traumatic symptoms, emotional distress and qualityof life in long-term survivors of breast cancer: A preliminary research. J Anxiety Disorder 2002; 16(2): 195-206.
11. Clark JC, Landis LL. Reintegration and maintenance of employees with breast cancer in the workplace. AAOHN J 1989; 37(5): 186-193.
12. Leggett S, Koczwara B, Miller M. The impact of complementary and alternative medicines on cancer symptoms, treatment side effects, quality of life, and survival in women with breast cancer - a systematic review. Nutr Cancer 2015; 67: 373-91.
13. Leong SP, Shen ZZ, Liu TJ, Agarwal, G, Tajima T, Paik NS, Sandelin K, et al. Is breast cancer the same disease in Asian and Western countries? World J surgery 2010; 34: 2308-24.
14. Lipscombe LL, Chan WW, Yun L, Austin PC, Anderson GM, Rochon PA. Incidence of diabetes among postmenopausal breast cancer survivors. Diabetologia 2012; 56(3): 476-83.
15. Masood K, Zafar T, Zafar J. A statistical evaluation of common cancer trends and cancer occurrence by age group in the population of Lahore, Pakistan, 1984-2011. J Registry Manag 2014; 41: 85-90.
16. Mols F, Vingerhoets AJ, Coebergh JW, Van De Poll-Franse LV. Quality of life among long-term breast cancer survivors: A systematic review. Eur J Cancer 2005; 41(17): 2613-19.
17. Park BW, Lee S, Lee AR, Lee KH, Hwang SY. Quality of life differences between younger and older breast cancer patients. J Breast Cancer 2011; 14(2): 112-18.
18. Park BW, Hwang SY. Unmet needs of breast cancer patients relative to survival duration. Yonsei Med J 2012; 53(1): 118-125.
19. Park JH, Bae SH, Jung YS, Kim KS. Quality of life and symptom experience in breast cancer survivors after participating in a psycho educational support program: A pilot study. Cancer Nurs 2012; 35(1): 34-41.
20. Gangane N, Khairkar P, Hurtig AK, Sebastián MS. Quality of Life determinants in breast cancer patients in central rural india. Asian Pac J Cancer Prev 2017; 18(12): 3325-32.
21. Shastri A. A study of quality of life among patients undergoing mastectomy for malignant breast lesions. Int Surg J 2017; 4(11): 3638-40.