

Quality of Life of Women with Breast Cancer in Radiation and Isotopes Center

Ghofran Mahgoub Hussien Mohamed¹, Omer El faroug Salim²

1. MBBS, University of Khartoum, MRCS.Edinburg
2. FRCSI, Consultant of Surgery, Associate Professor of Surgery , University of Khartoum

Abstract:

Introduction : Worldwide breast cancer is the most common cancer among females, It is the leading cause of death in the developing countries.

Diagnosis of breast cancer has major impact on women quality of life, especially with advances in treatment modalities and disease-free survival the number of young survivors increased.

Objective: To assess quality of life in Sudanese patients diagnosed with breast cancer in Radiation and Isotopes Center, Khartoum.

Materials and Methods: A descriptive cross sectional hospital based study Radiation and Isotopes Center, Khartoum. 167 patients diagnosed with breast cancer pre- operative and post-operative receiving chemotherapy were included and interviewed using the Arabic version of SF-36 Quality of life standard questionnaire. Analysis was done with SPSS version 25.

Results : 52.7% were more than 50 years of age, 43.1% had low monthly income. 70.7% underwent surgical treatment, 29% of patients started first with chemotherapy. 55.1% underwent mastectomy and 15.6% underwent breast conserving surgery. The best score was for role limitation due to emotional health with 94.6% had good score (Mean 2.8 ,SD 0.45). The worst score was for role limitation due to physical health with 66.5% had bad score (Mean 1.6 ,SD 0.9). Social activities was extremely affected in 31.1% of patients. There is no difference in quality of life between patients treated with mastectomy versus those treated with breast conserving surgery in all domains except for social functioning which is better for mastectomy patients (p. value is 0.01).

Conclusion: The overall quality of life was within the average range for most domains of quality of life, but social functioning was extremely affected. So further studies are needed with inclusion of other centers with regular follow-up to assess change in pattern of quality of life over years. Patients should be enrolled in a social support groups for better outcome.

Keywords: Quality of life, breast cancer

Abbreviation: QOL: quality of life, BRCA1: BReastCancer gene1, BRCA2: BReastCancer gene 2, BCS: breast conserving surgery,

Introduction:

The term breast cancer refers to the malignant process that involves the breast. It can be lobular, ductal or inflammatory carcinoma ⁽¹⁾. Risk factor are hormonal (early menarche, late menopause, old age at first life baby and obesity while lactation and pregnancy are thought to be protective), nonhormonal (radiation exposure especially during adolescence, alcohol consumption and prolonged consumption of diet with increased fat content) and genetic factors (inheritance of certain genes such as BRCA1, BRCA2 and p53, it accounts for less than 5% of all cases) ⁽²⁾. Tumor spread occurs locally, through lymphatics and blood stream ⁽¹⁾.

Worldwide breast cancer is the most common cancer among females, and the second common cancer overall. It is the leading cause of death in the developing countries and the second cause of death after lung cancer in the developed countries like America. Since 2008 its incidence has increased by more than 20 percent, mortality increased by 14 percent. Internationally it represents one in four of all cancers in females ⁽³⁾.

In Africa, according to the international agency of cancer research the incidence of breast cancer is 27 per 100000 women in central Africa, 39 per 100000 women in southern Africa. ⁽³⁾. In sub-Saharan Africa the incidence is relatively low but the mortality is high owing to late presentation and poor health facilities. ^(4,5).

In Sudan there is no national cancer registry. In Sudan, there are only two reference cancer centers; both located in Central Sudan, that is, the Radiation and Isotopes Center, Khartoum (RICK) and the National Cancer Institute of the University of Gezira (NCI-UG) in Wad Medani. Breast cancer accounts for about one-fifth of all treated cancers and is the most frequent malignancy seen at both

RICK (17%, i.e. 2395 / 13,924 recorded cancer cases) and NCI-UG (21%, i.e. 732 / 3547 recorded cancer cases) ⁽⁶⁾.

Treatment options for breast cancer include surgery, chemotherapy, radiotherapy and hormonal therapy ⁽¹⁾. Surgery can be either mastectomy or breast conserving surgery (BCS). BCS can either be simple wide local excision or an oncoplastic surgery i.e. excision of the tumor plus some plastic procedures to reconstruct the breast ⁽⁷⁾.

WHO defines quality of life as an individual's perception of their position in life in the context of culture and value system in which they live and in relation to their goals, expectations, standards and concerns. It is a broad concept affected by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment ⁽⁸⁾.

Diagnosis of breast cancer has major impact on women quality of life, especially with advances in treatment modalities and disease-free survival the number of young survivors increased. usually young women will be more anxious about their body image, sexuality, loss of fertility, pain and fatigue which will lead to impaired physical function. ⁽⁹⁾.

The aim of this study is to assess the quality of life in patients diagnosed with breast cancer in Radiation and Isotopes Center in Khartoum, assessment of the effect of breast cancer on their social life and to compare the quality of life in mastectomy versus breast conserving surgery patients.

Materials and Methods:

This is cross-sectional study conducted in radiation and isotope center in Khartoum in the period of March- June 2019. One hundred sixty seven patients were enrolled in this study. Data was collected using the Arabic version of the standard questionnaire SF-36. The questionnaire included Patient variables (age, marital status, occupation, educational status, date of mastectomy) and disease-related variables (Physical functioning, role limitations due to physical health, role limitations due to emotional problems, energy/fatigue, emotional well-being, Social functioning, Pain, General health).

Exclusion criteria were male patient, age less than 20 years and patients refused to participate. A review of literature was done by searching the pubmed database related to the topic. Collected data was analyzed using SPSS version 25.

Results:

A total of 167 women with breast cancer were included in this study. 88 (52.7%) were more than 50 years of age, 69.5% were married, 66.5% were households, 13% had children below 5 years of age and majority 43.1% had low monthly income. 70.7% underwent surgical treatment, 29% of patients started first with chemotherapy. 55.1% underwent mastectomy and 15.6% was breast conserving surgery. The choice of surgery was by the doctor in 77.1%.

The quality of life according to SF-36 questionnaire is divided into eight domains. The best score was for role limitation due to emotional health with 94.6% had good score, followed by pain score 71.9% women had good score.

The worst score was for role limitation due to physical health with 66.5% had bad score. See table (1)

Table (1): scores of different domains of quality of life

Emotional wellbeing	Frequency	Percent	Mean	Standard deviation (SD)
Bad	3	1.8	2.4	0.53
Average	91	54.5		
Good	73	43.7		
Energy and fatigue	Frequency	Percent	Mean	SD
Bad	15	9	2.02	0.44
Average	134	80.2		
Good	18	10.8		
General health	Frequency	Percent	Mean	SD
Bad	3	1.8	2.4	0.53
Average	81	48.5		
Good	83	49.7		
Pain	Frequency	Percent	Mean	SD
Bad	24	14.4	2.5	0.73
Average	23	13.8	0.73	
Good	120	71.9		
Physical functioning	Frequency	Percent	Mean	SD
Bad	28	16.8	2.2	0.71
Average	75	44.9		
Good	64	38.3		
Role limitation due to emotional health	Frequency	Percent	Mean	SD
Bad	9	5.4	2.8	0.45
Good	158	94.6		

Role limitation due to physical health	Frequency	Percent	Mean	SD
Bad	111	66.5	1.6	0.92
Average	5	3		
Good	51	30.5		
Social functioning	Frequency	Percent	Mean	SD
Bad	85	50.9	1.7	0.87
Average	32	19.2		
Good	50	29.9		
Total	167	100		

The emotional and physical health extremely affected the social activities of the patients in 31.1% and it reduced the time spent in social activities in 29.9%. There were no significant statistical difference between mastectomy and BCS patients in quality of life, except for social functioning which is better for mastectomy patients (p value is 0.01) see table (2)

Table (2): Association between type of surgery and QOL:

QOL domain	p. value
Social functioning	0.01
Emotional wellbeing	0.5
Energy and fatigue	0.9
Pain	0.15
Role limitation due to emotional problem	0.7
Role limitation due to physical health	0.6
General health	0.6
Physical functioning	0.6

Discussion:

The study investigated the quality of life in patients following diagnosis of breast cancer in Radiation and Isotopes Center- Khartoum in March- June 2019. Results revealed that most of patients were above 50 years of age, majority were married and had low monthly income. These results were comparable to the international studies. ^(10, 11, 12)

Majority of the patients underwent surgical treatment first instead of neoadjuvant chemotherapy with the choice of surgery in most of them was decided by the treating doctor, and most of the patients underwent mastectomy. Treatment plan has to be discussed in a neutral way with the patient, she has to be given an adequate information about each modality of treatment and then she has to decide what is optimum for her.

The overall quality of life in these patients was within the average range in most of the domains. The domain that was mostly affected was the role limitation due to physical health, which had many contributing factors.

Firstly, majority of these patients were of low socioeconomic status, which will affect their nutrition and so body function. Secondly, the side effects of chemotherapeutic drugs. Thirdly, some of them had metastatic disease, which affect their general health. It is comparable to local studies which revealed overall good satisfaction, quality of life was affected in term of body image ⁽¹³⁾ . Compared to the international data patients had moderate to low quality of life ⁽¹⁴⁾ , Others, they had negative impact of cancer in form of health worry, body changes, self-evaluation and meaning of cancer. Despite that, they presented high scores of quality of life. ⁽¹¹⁾

The best score was for the role limitation due to emotional health and it had strong correlation to the religion spiritual values of the patients together with the social support from their families especially the husband. The studies also confirmed the importance of social support for better quality of life, married women, with greater spiritual values, less depressive symptoms initially were significantly correlated with initial higher level of social support, women whose social support deteriorated during first year, they reported more depressive symptoms and general worse health during the two years follow-up ⁽¹⁵⁾ .

The technique of surgery had no effect on quality of life in all domains except for social functioning in which mastectomy patients had superior scores compared to breast conserving surgery patients. Compared to international data studies revealed better quality of life for breast conserving surgery in form of body image, future perspective and side effects of systemic therapy ⁽¹⁶⁾ , other study concluded that women after breast conserving surgery had a higher quality of life compared to patients after mastectomy. The level of anxiety and depression were higher in women who underwent mastectomy ⁽¹⁷⁾ .

Conclusion:

The overall quality of life was within the average range for most domains of quality of life, the best score was for the role limitation due to emotional health, followed by pain score and the worst score was for role limitation due to physical health. The social life was extremely affected in most patients. The modality of surgical treatment did not affect the quality of life of patients.

References:

1. Norman S. Williams ed, Christopher J.K. Bulstrode ed, P. Ronan O'Connell ed. Bailey & love's short practice of surgery. 25th edition. 338 Euston Road London MW1 3BH, Hodder Education a Hachette UK company, 2008.
2. F. Charles Brunicki ed, Dana K. Andersen ed, Timothy K. Billiar ed, David L.Dunn ed, John G. Hunter ed, Jeffrey B. Matthews ed, Raphael E. Pollock ed. Shwartz's principles of surgery. Tenth edition. United states. McGraw-Hill Education. 2015.
3. Breast Cancer Foundation.(2019). Breast Cancer Research Foundation/ BRCF.[online] available at : [https:// www.bcrf.org/](https://www.bcrf.org/) [Accessed 1 Feb 2019].
4. Ferlay J, Soerjomataram I, Dikshit R, Eser S, Mathers C, Rebelo M, et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. *Int J cancer*. 2015;136: E359-86. doi: 10.1002/ijc.29210.
5. Jedy-Agba E, McCormack V, Adebamowo C, dos-Santos-Silva I. Stage at diagnosis of breast cancer in sub-Saharan Africa: a systematic review and meta-analysis. *Lancet Glob Health*. 2016;4: e923-35. doi: 10.1016/S2214- 109X (16)30259-5.
6. Elhaj, et al.: Overall Survival of breast cancer patients in Sudan 2001.
7. Richard Novell ed, Daryell M Baker ed, Nicholas Goddard ed, Kirk's
8. General surgical operations, 6th edition, London, Churchill Livingstone Elsevier. 2013
8. Who.int. (2019).WHO./WHOQOL: Measuring Quality of life Available at: <https://www.who.net/healthinfo/survey/whoqolqualityoflife/en/>/ [accessed 1Feb 2019].
9. Fang-Rong Shen, Ming Liu, Xia Zhang, Ya-Hong Feng, Long-Shu Zhou, You-Guo Chen. *Asian pacific J cancer prev*, 13, 3747-3759.
10. El Fakie s, El Rhazi K, Zidouh A, Bennani M, Benidr A, Errihani H, et al. *Asian Pac J Cancer Prev*. 2016 Dec 1;17(12):5063-5069.
11. Lopes JV1, Bergerot CD1, Barbosa LR1, et al. *Rev Bras Enferm*. 2018 Nov-Dec;71(6):2916-292.
12. Dell'Antônio Pereira L, Brandão-Souza C, Amaral Musso MA, et al, *Invest Educ Enferm*. 2017 Jan;35(1):109-119.
13. Toum M, Ibrahim MM, Zaki R, Khair AM. Postmastectomy Life Quality in Patients with Breast Cancer in Khartoum. *International Journal of Science, Environment and Technology*. 2014;3(3):1154-60.

14. Saraswati Bhandari, Aurawamon Sriyuktasuth, and Kanaungnit Pongthavornkamol, Asian Pac J Cancer Prev. 2017; 18(12): 3365–3371.
15. Thompson T, Pérez M, Kreuter M, et al. Soc Sci Med. 2019 Feb;223:117- 120.
16. Elvin T.Ng, Russel Z.Ang, Bach X.Tran, et al. Int. J. Environ. Res. Public Health 2019, 16, 4970.
17. Marzena Kamińska, Tomasz Ciszewski, Bożena Kukielka-Budny, et al. Annals of Agricultural and Environmental Medicine 2015, Vol 22, No 4, 724– 730.