Assessment Of Health Related Quality Of Life Of Breast Cancer Patients In District Rawalpindi Pakistan.

Dr Qurat Ul Ain, Muhammad Sareer, Maria, Muhammad Asad

Abstract: Globally Breast cancer incidence is increasing and mortality ratio because of breast cancer is also increasing in developing countries because of unavailability of screening and diagnostic facilities as well people are not aware from the risk factors and early symptoms so that timely intervention will lead to increase survival. Due to advance in detection and treatment, increasing number of women are diagnosed with surviving breast cancer each year one of the largest group of cancer survival.

The study aim to asses health related quality of life in patients of breast cancer who usually come for follow up after getting treatment. The study was conducted in HOLY Family Hospital Rawalpindi .The study was completed in three month duration. It was cross sectional descriptive study based on quantitative method.

A total of 78 female patients participated with breast cancer treatment and came for follow-up were included in the study ,the mean age was 44.3 year with a range from 25-55 year ,majority of patients were in 40-50 year of age.

Overall rating of quality of life was 9.0% responds very bad, 39.7% Bad, 41% neither good nor bad, and 10.3% responds good. Out of 78 respondents 40% were dissatisfied with their general health.

In this study quality of life assessed with different treatment modalities of breast cancer and out of that patient with partial mastectomy respond 50% bad and 50% of neither good nor bad, while 13% responds very bad and 33.3% bad of complete mastectomy. Radiotherapy treatment responds 25% very bad while 50% nor good nor bad while chemotherapy responds 40% bad quality of life.

Out of 78 almost 55% responds after complaint of treatment are pain, while 25% of complained weight gain, hair fall and slight fever, fatigue.

In conclusion subjects participated in study experienced decrease quality of life in parameter of specific social and physical health.

Introduction:

Breast cancer is leading cause of death of women worldwide with nearly 1.7 million new cases diagnosed in 2012.it shows 25% of all cancer in women. Breast cancer is most commonly occur after post menopause but it can also appear in pre-menopausal women as it is hormone related disorder.[i] Pakistan and other developing countries facing double burden of disease and cancers are prevailing more rapidly. Every one out of nine women in Pakistan is suffering from breast cancer and of 90,000 cases is diagnosed out of which almost 40,000 deaths every year.[ii]Incidence rate of breast

cancer in Pakistan is higher in south Asia 50/100,000 as compared to India 20/100,000.Cancer is a disease in which cells multiply abnormally. [iii]Abnormally cell division in breast is called as breast cancer. A breast cancer is life-threatening tumor which can affect one or both breasts. Breast cancer is caused when abnormal tissue in the breast begins to multiply uncontrollably. These cancerous cells can metastasis in the body and cause further damage. Breast cancer is easily diagnosed at an early stage and treatable which is good news in health care setting.[iv]. Breast tumors can be successfully treated before cancer spreads throughout the body. Breast cancer often begins with small tumor or enlarged lymph node. Change in life style, food, genetics, urbanization and globalization are the risk factors of breast cancer. Health related quality of life is now considered an important endpoint in cancer clinical trial.[v]Assessing quality of life in cancer patient could contribute to improve treatment and could even be prognostic. Among the studies of quality of life of cancer patients breast cancer has received most attention for several reason .Breast cancer patients has tremendous effect because after surgery often they get radiotherapy or chemotherapy which off course affects their HRQOL. [vi]Early detection, screening and treatment have improved and survivor now live longer so studying quality of life is important in this context

Literature review

A review of literature conducted to identify what kind of interventions has been undertaken for breast cancer and incidence and management of breast cancer globally and in Pakistan and also to get clear picture of QOL of breast cancer patients focusing on time period of 2004 to 2014.Literature review is done through PUBMED, HIGHWIRE, BMJ journals to get clear sense of health related quality of life of breast cancer patients.

Beside MeSH Terms quality of life, health related quality of life and breast cancer key words used for research.

Key words: Breast cancer, Quality of life, Health related quality of life.

2.1 Global:

.Nearly 1.5 million women were told that they have breast cancer in 2010.Highest incidence is in western countries but developing counties and south Asia is also suffering from high burden of breast cancer as there are less access to diagnostic facilities at early stage. According to the 2001 statistics of World Health Organization, 10 million people are diagnosed as cancer and most of which are in developing countries about 6 million people die of cancer every year around the world. Within the next 20 years, the number of cancer patients is estimated to rise to 10 million from 6 million[vii]. Globally burden of cancer rise upto14.1 million new cases and 8.2 million deaths in 2012.And there is marked increase in breast and cervical cancer. Incidence increases in most region of world but there are huge inequalities between rich and poor countries. Incidence rate is much higher in developed countries but mortality rate is higher in developing countries due to unavailability of screening and diagnostic facilities and expensive treatment and post treatment effect. For example in Europe incidence is 90/100,000 women annually and in developing countries in eastern Africa is 30/100,000 but in contrast mortality rate is more in eastern Africa. [viii] The highest rate was observed in Northern America - about 92 per 100,000 population for United States of America and 80 per 100,000 populations for Canada.[ix] Incidence rate of breast cancer is varying in different region like its incidence is 19.3/100,000 women in eastern Africa to 89.3/100,000 in Western Europe.[x]

Pakistan Situation:

Breast cancer is serious threat to Pakistani women as well because in Pakistan estimated 1 in every 9 women gets breast cancer at any stage of life. In Pakistan There is no mechanism for national level registry system for cancer registration to check epidemiology and causative factor of breast cancer.

What is Health related quality of life in breast cancer patients.

There is no consensus on single definition of HRQoL but to keep in mind the WHO definition that generic HRQoL means level of physical, social mental ,emotional and role functioning that include abilities ,relationship ,perception ,life satisfaction and well-being.[xi] While in other way we can describe is as HRQL can be defined as self-perceived aspects of well- being that are related to or affected by the presence of a disease or treatment[xii] .And basically HRQoL is patients self-report and perception about what he feels.

Quality of life is gap between patient's expectations and achievement, the lower the gap greater will be the quality of life.[xiii]

The World Health Organization Quality of Life (WHOQOL) Group has defined QoL as "individuals perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns" (WHO, 1997).[xiv]

Basically HRQoL is multidimensional, dynamic and on the basis of patients construct. Although it is difficult to measure but it can be assess through patient reported questionnaire.

Breast cancer treatment(like surgery, adjuvant therapy e.g. radiotherapy ,chemotherapy) definitely effect on the patients subjective perception of the disease.HRQoL is also effected by personality trait, financial resources, personal resources, family support, social acceptability and social support and strong cultural impact.[xv]

Basically the objective of breast cancer treatment is to eradicate disease, prolong life and improve quality of life. [xvi]Treatment of breast cancer may disrupt on the women physical functioning, social interaction, emotional disturbance and psychological functioning.

Aim

To improve the quality of health of women suffering from breast cancer by directing more efficient use of treatment.

3.2 Objectives.

1. To assess quality of life in women with breast cancer patients in District Rawalpindi.
2. To determine the effect of different treatment modalities of breast cancer on Health related quality of life.

3.3 Operational definition:

Quality of life operational definition is physical, functional, emotional and social wellbeing as her expectations or as she perceived.

CHAPTER 4 - Methodology

4.1 Study population

Literature review suggests that patients who diagnosed and didn't get treatment have still not gone through the life experiences. So those women who come back for follow up after completion of treatment were the target population.

4.2 Inclusion criteria

1. Women with diagnosed breast cancer.
2. Who have completed treatment and coming for follow up.
3. No prior neoplastic disease(cervical cancer, lung cancer)

4.3Exclusion criteria

1. Those that have a critical stage of disease.
2. Who have diagnosed mental disorder and cannot communicate.

3. Women with other gynecological cancer.

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4.4 Study design

Study design was descriptive cross sectional. The main focus of study was health related quality of life of breast cancer patients in light of WHO QOL standards.

4.5 Site of study

Rawalpindi commonly known as **Pindi** is a rapidly growing city in the Pothohar region of northern Punjab, Pakistan. It is located only 14 kilometers south from the capital of Islamabad, in the province of Punjab. The Rawalpindi/Islamabad metropolitan area is ranked the third highest in the country. Due to the high interdependence and intertwined areas of the two cities, they are known as the twin cities of Rawalpindi/Islamabad. In the 1950s, Rawalpindi was smaller than Hyderabad and Multan, but the city's economy received a boost during the building of Islamabad (1959–1969), during which Rawalpindi served as the national capital. Rawalpindi is in the northernmost part of the Punjab province, located 275 km (171 mi) to the north-west of Lahore. It is the administrative seat of the Rawalpindi District. Also, Rawalpindi is the military headquarters GHQ of the Pakistani Armed Forces.[xvii]

Many tourists use the city as a stop before traveling towards the northern areas. Numerous shopping bazaars, parks and a cosmopolitan population attract shoppers from all over Pakistan and abroad. The city is home to several industries and factories. Islamabad International Airport is located in Rawalpindi, which is also the Chaklala Airbase, and serves both cities and several neighboring districts for international flights.

There are three main Government Health facilities for the population of Rawalpindi and surroundings area of pindi. Those hospitals are Holy family Hospital, Benazir Hospital and District Headquarter Hospital. These hospitals are very busy and affiliated with the Rawalpindi Medical College.

This Study was conducted in surgical department of Holy family hospital in Rawalpindi.

4.7 Sample size:

Sample size estimated after thorough study of literature. Sample size was calculated with 95% confidence interval with 50% prevalence of poor quality of life for patients as the exact proportion was not known.

Sample size estimation was done by using the formula:

n= z2p (1-p)/d2.

Z= is the significance level (at 5% significance level and its value is 1.96)

P= is the proportion of patients satisfied with QOL be 50%

d= is the margin of error (it will be taken as 10%) here sample will be 91 and 10% will be for non-response

Sample Size: 100 Patients

4.8 Study duration:

3 month.

4.9 Study population:

In surgical department of HOLY Family Hospital Women with breast cancer who get treatment and coming for follow up.

4.10 Sampling technique:

A list of women come in hospital for follow up was obtained daily from hospital OPD and systematic random sampling was done from the list of OPD through until the sample size is

met. Questionnaire was distributed .All participants were being interviewed and the aim and any uncertainty explained. Complete confidentiality ensured to all patients.

4.6 Data collection method

Target population was approached by principal investigator and informed about the study. Informed consent obtained and Those who were willing to participate were given the WHO –QOL(WHO –BREF) questionnaire which was a self-administered Qn. For uneducated women the researcher read for them and entered the response. Questionnaire was translated in Urdu for the patients who could not understand English. Pilot testing of questionnaire was carried out in another hospital other than the hospital of study area. Questionnaire kept in lock in key with researcher. Field editing of questionnaire was done.

4.11 Data analysis plan:

Data were entered in SPSS, codes were given and analyzed on SPSS 16.0 version. Categories were defined and data was analyzed accordingly. Cron Bach's alpha was calculated to check internal consistency. Descriptive statistics such as mean standard deviation, rate, ratio was calculated for different variables.

Chi-Square test was used to find out association between quality of life with different treatment modalities of breast cancer.

4.12 Ethical consideration.

- Proposal was present to Institutional review board (IRB) of health services academy Chak shahzad for ethical approval.

- Permission was taken from hospital authorities.
- Written informed consent was taken from patient after informing them the objective and purpose of study. As this is no interventional study that's no physical risk to patients.
- They were guaranteed that the information obtained through the questionnaire will be kept secure and no one has access to it except principle investigator and it will be used for academic research purpose.

Result:

A total of 78 patients participated in the study and response rate was 78%.In this study, questionnaires have been filled by participants and for enhance accuracy; all participants were informed that their responses would remain confidential. The brief version of the WHO's QOL scale (WHOQOL-BREF) in this study. The questionnaire was translated in Urdu for the ease of patient so that they can understand well. This instrument derived from the WHOQOL-100. The WHOQOL-BREF questionnaire contains two items from the Overall QOL and General Health and 24 items of satisfaction that divided into four domains: Physical health with 7 items (DOM1), psychological health with 6 items (DOM2), social relationships with 3 items (DOM3) and environmental health with 8 items (DOM4). Each item is rated on a 5-point Likert scale. Each item of the WHOQOL-BREF is scored from 1 to 5 on a response scale. Raw domain scores for the WHOQOL were transformed to a 4-20 score according to guideline. Domain scores are scaled in a positive direction (i.e., higher scores denote

higher QOL). The mean score of items within each domain is used to calculate the domain score. After computed the scores, they transformed linearly to a 0-100-scale.

5.1 Demographic characteristics:

A total 78 out of 100 patients participated who come for follow-up after breast cancer treatment with the mean age of 44.3± 3.3 year filled out WHO-BREF Questionnaire. Non response rate was 20%.

The mean age was 44.3± 3.3 year with a range of 25-45 year. Age is divided in three categories out of which 4% of range 25-35 year of age, 61% of range 36-45year of age while 35%of age 46-55 year of age. Education status among all respondents was women with primary education was 84.6% while with secondary education 7.7%,women with bachelor was 3.8 % and women with master qualification was also 3.8%. Out of 78 respondent's 14.1% had monthly income less than 10,000 while 85.9% had monthly income more than 10,000. Domain scores for the WHOQOL were transformed to 4-20scores according to accepted guidelines. Cronbach's alpha value of 0.70 and over was deemed acceptable. The baseline means, standard deviations and internal consistency reliability are summarized in **Table 1.**

Domain	Cronbach's alpha	Min-Max	Mean± SD
Physical Health	0.842	12-26	17.29± 1.752
Psychological Health	0.725	18-31	23.40±2.182

Social Relation	0.53	5-12	7.88±1.367
Environmental	0.771	14-28	21.19±3.092

Higher value shows positive QOL.

All Domains had moderate Cronbach; alpha ranging from 0.85 to 0.77 except the WHOQOL social domain that is 0.53.The mean score was very low for the social domain that is 7.88.

Overall rating of quality of life was 9.0% responds very bad ,39.7% Bad ,41% neither good nor bad,and 10.3% responds good. The baseline means and standard deviation for all domain of WHOQOL instrument with respect treatment modalities of breast cancer are summarized in **Table 3 and Table 4**.

Table.3 WHOQOL domain scores with respect to treatment modalities of Surgical Treatment.

	Treatment modalities	N	Mean	Std. Deviation	Std. Error Mean
Physical domain	complete mastectomy	54	17.44	.984	.134
	Partial Mastectomy	12	17.25	3.415	.986
Psychological domain	complete mastectomy	54	23.13	2.249	.306
	Partial mastectomy	12	23.92	2.503	.723
Social domain	complete mastectomy	54	7.89	1.410	.192
	Partial mastectomy	12	7.83	1.337	.386

Environmental domain	complete mastectomy	53	20.83	3.074	.422
	Partial mastectomy	12	22.42	4.274	1.234

Table.4 WHOQOL domain scores with respect to treatment modalities.(Chemotherapy and radiotherapy)

	Treatment modalities	N	Mean	Std. Deviation	Std. Error Mean
Physical domain	chemotherapy	5	16.00	2.345	1.049
	Radiotherapy	4	16.25	2.217	1.109
Psychological domain	chemotherapy	5	23.60	.548	.245
	Radiotherapy	4	24.50	1.732	.866

Social domain	chemotherapy	5	7.40	.894	.400
	Radiotherapy	4	7.75	1.258	.629
Environmental domain	chemotherapy	5	21.20	.837	.374
	Radiotherapy	4	22.50	1.000	.500

The mean score of all treatment modalities for the WHOQOL physical domain and social domain were lower than the other domain scores.

Overall quality of life with respect of different treatment modalities is summarized in **Table 4& figure 6.**

Table 4 - Overall Quality of Life with respect of different treatment modalities.

	Quality of life					
Treatment modalities	Very bad	Bad	Neither bad nor good	Good	Very good	Total
Partial mastectomy	00	50%(6)	50%(6)	00	00	12

Complete Mastectomy	13%(7)	33.3%(18)	41%(22)	13%(7)	00	54
Radiotherapy	25%(1)	00	50%(2)	25%(1)	00	4
Chemotherapy	00	40%(2)	60%(3)	00	00	5
Other	00	33.3%(1)	33.3%(1)	33.3%(1)	00	3
Total						78

Quality of Life with respect of Different treatment.

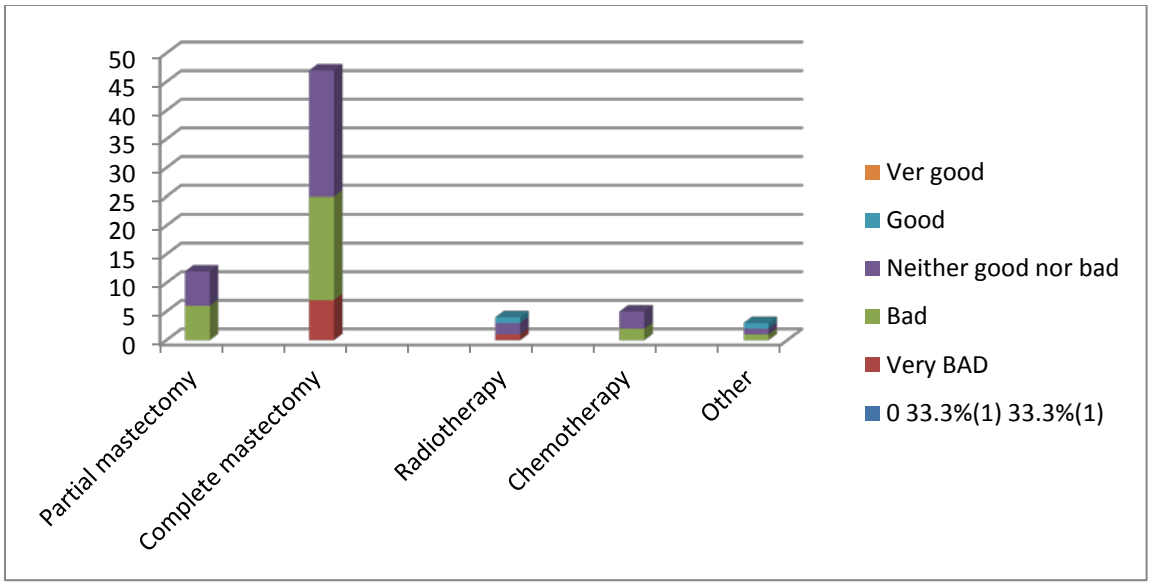

Figure 6. Quality of Life with respect of Different treatment.

Inferential Result

Cross Tabulation between Treatment Modalities and quality of life and four domains of WHOQOL BREF.

Different treatment modalities affected on physical and social domain of WHOQOL BREF.P<0.05 for the physical domain and treatment modalities that means that there is significance of physical health, social health and different treatment modalities while other 2 domain have p>0.05 and it shows fail to reject null hypothesis that there is psychological and environmental health affected by treatment modalities of breast cancer.

As P<0.05 for the quality of life and different treatment modalities that's why result shows that Overall Quality of life is affected with different treatment modalities

Conclusion:

The findings from this study is that subject participated and come for follow up experienced a decrease of QOL in parametric specific physical and social function. The WHOQOL BREF has shown fairly good utility in the specific disease population.

Overall QOL is affected with different treatment of breast cancer and mostly patients experienced bad QOL with surgical treatment (mastectomy, partial mastectomy) as compared with the other breast conserving treatment (radiotherapy, chemotherapy).

Discussion:

Thesis deals with scientific aspects and clinical results of a study aimed at assessing the impact of breast cancer and patients quality of life .Health related quality of life in women with breast cancer is the focus of thesis. The main finding of the thesis implies that women with breast cancer recover from breast cancer and emotionally from the phase of suspicious of cancer on the other hand ,the women decrease in physical function,fatique,other physical health problems after getting treatment from breast cancer indicating area of concern.

Finding from **GRANS and GOODWIN** revealed that the number of breast cancer survivor growing have been assessed with multiple instrument in order to compare the effect of treatment with those people with other chronic illness as well as to healthy population. In this study QOL has been assessed with **WHO-BREF QOL** instrument and asses patients on the basis of general Quality, overall satisfaction and four domains physical, environmental, social and psychological.

The original objective of Breast cancer treatment is to promote healthy life and prolong life, According to **SHOZO OHSUMIAD et al** breast conserving treatment like

chemotherapy and radiotherapy conserve and avoid removal of whole breast from women. Since QOL in breast conserving treatment has generally been expected to be better than that of patients with surgical treatment include mastectomy and partial mastectomy. Patient's undergone surgeries several months before might have receiving adjuvant therapy in those patients QOL generally consider poor because of many factors affecting on QOL like cultural, economic, education level and participants of study.

Result of the study indicate that research into HRQOL of breast cancer patients after getting treatment is not good as compared to other chronic disease.

In this study the mean age was 44.7 year with a range of 25-55 year which is higher as mentioned in study by **Mahmud and colleagues** where the age of breast cancer was 30-33 yrs. All domains had moderate cronbach,s alpha scores ranging from 0.77 to 0.8 ,except the WHOQOL social relationship domain. The mean score of social and physical domain was lower than the other domain while according to **FAKHRIYA JABER ALZABAITAY et al** QOL is significantly effect on Physical Domain and physical functioning while the mostly patients report anorexia and pain after getting treatment especially with surgical treatment (Mastectomy ,[partial mastectomy).

In the study overall QOL was poor and mostly were rated as neither good nor bad as **Drovel et al** mentioned in his study type of surgery did not effect on HRQOL in long term but it might effect on HRQOL in first year of surgery. **Retreat et al** mentioned in his study that survivors of breast cancer experienced better general health except pain

symptoms but worse mental health and sever rehabilitation problem like body image and social interest etc.

Treatment of breast cancer includes partial mastectomy, complete mastectomy, radiotherapy and chemotherapy and mostly QOL was affected by surgical treatment like complete mastectomy and partial mastectomy and in this study mostly physical health problems are associated with the surgical treatment of breast cancer. **Omneponten et al** mentioned in his study that women get surgical treatment younger than 50 year experienced less psychological disturbance as comparative in older patient. While in this study women with surgical treatment mostly suffer from physical symptoms especially with pain and physiological symptoms and there is not remarkable effect on mental health.

Satisfaction with general health was very bad in patients with surgical treatment as mentioned in **DROVEL et al study.**

The WHOQOL –BREF has compared favorably with other studies like **Cella D**. The cronbach,s alpha for each of its domain were large ,except for WHOQOL social relations, which is similar to other large, and may be because it consists of only three items. With respect of **Rohani C et** al study the influence of treatment on HRQOL among the different group getting different treatment. Studies which assessed the effect of surgery reported that conservative surgery had fewer repercussions on HRQOL than did radical surgery. A study of **Siglen E et al** about the influence of treatment on HRQOL shows that radical surgery, complete mastectomy had bad HRQOL.

Breast cancer is one of the neoplasm in which the treatment of choice,surgery tend to combine with other therapeutic strategies such as chemo, radio or hormonal therapy. Surgical influence on HRQOL is relatively common issue but it is initial treatment.

In brief there is clearly insufficient information is available on the HRQOL of women with breast cancer.

Since HRQOL is one of the principle result indicators for important care and evaluating new treatment for such patient and encouragement should be given to promoting research and publication in the field.

Study strength:

1. Cost effective study.

2. The strength also includes the perfect morbidity statistics and the identity number during hospital visits, which enable reliable follow up.

Study Limitation:

1. HRQOL while cross sectional study designs are not ranked highly on the continuum for research looking at cause and effect.

2. As the study population was drawn from one hospital, population is quite homogenous, and any generalization of the results has to be made cautiously.

3. Time constrain.

Authors Detail

Author Name	Email Address	Phone Number
Dr Qurat ul ain	draaneiseera@gmail.com	0092-333-3643355
Dr Rukhsana Khan	drrukhsanakhan@hotmail.com	0092-333-3643355
Muhammad asad	Asad_80@gmail.com	0092-340-0192717
Muhammad sareer	Sareer14620@gmail.com	0092-333-5463999

Funding source:

There is no funding source was availed for this study.

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