



“QUALITY OF LIFE ASSESSMENT AT VARIOUS STAGES OF TREATMENT OF BREAST CANCER PATIENTS IN INDIAN DEMOGRAPHICS”

Mrs. Shivakumari Devi*	(M.Sc.Nursing) Department Of Radiotherapy And Radiation Medicine Institute Of Medical Sciences Banaras Hindu University Varanasi, Uttar Pradesh, India. *Corresponding Author
Dr. Uday Pratap Shahi	(MD Radiotherapy) Department Of Radiotherapy And Radiation Medicine Institute Of Medical Sciences Banaras Hindu University Varanasi, Uttar Pradesh, India
Dr. Purnima Awasthi	Department Of Psychology Banaras Hindu University Varanasi, Uttar Pradesh, India
Ganeshkumar Patel	M.Sc (Physics), Dip Rp Department Of Radiotherapy And Radiation Medicine Institute Of Medical Sciences Banaras Hindu University Varanasi, Uttar Pradesh, India.

ABSTRACT AIM: - The aim of this study is to assess the QOL in breast cancer patients during different stages, mastectomy surgery, chemotherapy, radiation therapy. To evaluate quality of life of females after mastectomy and factors affecting the same in various domain of life

MATERIAL AND METHOD: -60 breast cancer patients (mastectomy=20, chemotherapy=20, radiotherapy=20) from May 2019 to Nov 2020. Translated version of a customized questionnaire based on the Royal College of surgeons, quality of life Instrument- Breast cancer patient version (QOL-BC), self-designed questionnaire. Questionnaire is used assess quality of life these patients. Prospective study after whole breast radiation therapy (50Gy plus a 10Gy boost). Patient data collected before beginning of cancer treatment, and at every stage of treatment surgery, chemo and radiation and 3 months after complete treatment. During the interview, we collected information on demographic characteristics, treatment method for breast cancer patient's mastectomy, chemotherapy, and radiotherapy social well-being and quality of life chemotherapy & radiotherapy patients. **Statistical analysis performed for the demographic characteristics of social well-being quality of life of mastectomy, chemo therapy and radiotherapy status were summarized using frequency and percentage for categorical variables, means and standard deviation (SD) for continuous variables. Analysis of variance (ANOVA) was used to compare mean of the total QOL scores in three study groups. Data analyses was done using SPSS version 16.0 software.**

RESULT: - For mastectomy surgery body image, pain, activity daily living, treatment, the mean QOL score coming out to be above the 50 percent of total QOL score, psychological aspect almost 50 percent score and sexual life less than 50 percent score. QOL chemotherapy total score coming out almost 50 percent and radiotherapy less than 50 percent score.

CONCLUSION: Adequate social support from family members, friends and neighbors, and higher scores of social well-beings, were associated with significantly improved quality of life Breast cancer patients.

KEYWORDS : Quality of life, breast cancer, mastectomy, chemotherapy, radiotherapy.

INTRODUCTION:-

Breast cancer is the most common non cutaneous malignancy diagnosed in women. As per National Cancer Registry Program & Indian council of Medical Research the incidence of breast cancer in India is varying in the range of 23 to 32% per 100,000 women.¹ Women's with breast cancer undergone mastectomy is a cause of concern which leads to many physiological and emotional effects such as an anxiety, depression, grief, anger, helplessness and high degree of passivism. In addition with mastectomy breast cancer patient has to take treatment of chemotherapy and radiation therapy treatment depending on stage and estrogen receptor status of diagnosis. Chemotherapy has many side effects such as loss of hair and radiation therapy with skin erythema and various toxicities.² These therapy associated toxicities further degrade both emotional, physical and mental status of the patient. Therefore, it is understood that breast cancer diagnosis and its treatment impacted on patient QOL (Quality of life). The present study concentrated to analyze the effect of various therapy effect on patient's quality of life. Quality of life in patient with carcinoma of breast along with physical status, World Health Organization (WHO) incorporates mental and social dimension also to its definition of health. WHO introduces the concept of "well-being" though there is no satisfactory definition of "well-being" Psychologist have pointed out two component of it, i.e. Objective and subjective.³ The objective component relate to concerns which are generally known as "standard of living" or "level of living." Whereas the subjective component of well-being is referred as quality of life. WHO pointed out three dimension of health which are physical, mental and social whereas four dimension of quality of life which are physical health, psychological, social relationship and environmental conditions. Therefore, it can be observed that health and quality of life both are somehow interrelated.⁴

Breast cancer patients have higher probability of survival after treatment. Chemotherapy and Radiation therapy (RT) after breast conserving surgery is the standard of care for the majority of breast

cancer patients, because it significantly reduce breast cancer recurrence and increase survival.^{5,6} Nevertheless many women hesitate to take treatment of chemotherapy & RT because fear of loss of hair especially in case of younger women, associated toxicities of these therapies which adversely affect their quality of life.

Present study intended to evaluate the Quality of life (QOL) among patients treated breast cancer at tertiary care hospital and factors affecting the same, in various domains of life physical, social, environmental and psychological. The aim of this study is assess the quality of life patients at each stage of full course of treatment which means after surgery, chemotherapy and radiotherapy and recognize the factors that affect Quality of life.

MATERIAL AND METHOD:-

The present study conducted among 60 consecutive female patients with biopsy proven carcinoma of the breast. (20 mastectomy, 20 chemotherapy, and 20 radiotherapy). Who attended radiotherapy, chemotherapy and surgical oncology outpatient department of university Hospital, Varanasi, India? This study was approved by Institute Ethical committee (IEC) of the Institute of Medical sciences, Banaras Hindu University, Varanasi, India. Female age ranging between 35 to 65 years of age were included in the study. Patients those could not complete the questionnaire by various reasons excluded from the study. The participant were mostly from eastern Uttar Pradesh and Bihar. A quality of life questionnaire containing eight parameter for patient's undergone surgery (Body image, psychological aspect, pain, sexual life, Daily living activity, Treatment, mastectomy surgery, overall experience) based on the Royal College of surgeon, England was used by the permission of copyright owner and self-developed questionnaire to asses' quality of life of patient's undergone treatment of chemotherapy and Radiotherapy.^{9,10} Additional questionnaire Quality of life Instrument Breast cancer patient version (QOL-BC). The study and questionnaire were explained to all the participants, and consent also taken. While collecting the data the questions were made

to understand the participants in their local language and the answer were recorded. Question related to the variables were answered using a five point scale. 1 –completely disagree to 5- completely agree (Totally agree). After the patients clear understanding has been confirmed, the patients is encouraged to complete every items in order. Some patients may feel that a given question is not applicable to them and they, therefore skip the item altogether.

The response is circled, which is most applicable. Frequency Table was prepared for each and every important variable. QOL is classified into three groups according to their mean range poor, moderate and good. Socio economic status is computed by modified B.G Prasad scale.¹¹ The information from coded schedule was transferred into a computer using statistical software for performing various statistical calculation. Data analysis is done according to The Royal College of surgeons of England guideline. subscale are Body image (6-10), psychological well-being (20-26), pain (38-52), sexual life(11-16), activity daily living(10-20), treatment (6-8), overall experience(10-13).

RESULT:

87 breast cancer patients were enrolled, of whom 60 patients completed one or more QOL assessment. Patients who did not complete any assessments either withdrew from the study or due to administrative reasons were not captured. The 27 patients who did complete assessments were not significantly different from those who did with respect to age or cancer stage.

The patients who completed follow-up assessments did not differ from those who did not with respect to BMI (p = 0.70), cancer stage (p = 0.12), history of prior RT (p = 0.77), treatment with chemotherapy (p = 0.86), or type of breast surgery (p = 0.21).

Breast patient demographics: The median age of the 60 breast cancer patients who completed more than one assessment was 59 (range, 30–77) (Table 1) 8.8 % of breast patients were stage 0 at diagnosis, and 50.4, 23.4, and 17.5 % stages I, II, and III respectively.

Median BMI was 28.4 (17.6–45.6). Twenty patients had chemotherapy prior to RT, Fifteen patients had a mastectomy and five patients had lumpectomy.

Table 1 Frequency distribution of demographic characteristics of study population (three group mastectomy surgery, chemotherapy, and radiotherapy).

SL NO	Variables	Mastectomy N=20	Chemotherapy N=20	Radiotherapy N=20	Total N=60
1	Age group 1. < 50 yrs 2. > 51yrs	20(100.0) 0(0.0)	13(65.0) 7 (35.0)	14(70.0) 6 (30.0)	47(78.3) 13(21.7)
2	Gender Female	20(100.0)	20(100.0)	20(100.0)	60(100.0)
3	Area of living 1 Urban 2 Rural	6(30.0) 14(70.0)	3(15.0) 17(85.0)	4(20.0) 16(80.0)	13(21.7) 47(78.3)
4	Family status 1 Single 2 Joint	12(60.0) 8(40.0)	12(60.0) 8(40.0)	12(60.0) 8(40.0)	36(60.0) 24(40.0)
5	Marrital status 1 Unmarried 2 Married	0(0.0) 20(100.0)	19(5.0) 19(95.0)	0(0.0) 20(100.0)	1(1.7) 59(98.3)
6	Religion 1 Hindu 2 Muslim	20(100.0) 0(0.0)	20.0(100.0) 0(0.0)	17(85.0) 3(15.0)	57(95.0) 3(5.0)
7	Type of diet 1 Vegetarian 2 Non vegetarian	2(10.0) 18(90.0)	4(20.0) 16(80.0)	2(10.0) 18(90.0)	8(13.3) 52(86.6)
8	Economic group 1 upper 2 middle 3 lower	3(15.0) 17(85.0) 0(0.0)	1(5.0) 17(85.5) 2(10.0)	8(40.0) 11(55.0) 1(5.0)	12(20.0) 45(75.0) 3(5.0)
9	Educational level 1 1 st -9 th 2 10 th -12 th 3 BA-UP	8(40.0) 9(45.0) 3(15.0)	11(55.0) 9(45.0) 0(0.0)	3(15.0) 16(80.0) 1(5.0)	22(36.7) 34(56.7) 4(67.0)

10	Types of surgery 1 Lumpectomy 2 Total mastectomy 3 Radical mastectomy	5(25.0) 13(65.5)	5(25.0) 13(65.5)	0(0.0) 20(100.0)	10(16.7) 46(76.7)
11	Types of treatment 1 Mastectomy 2 Chemother apy 3 Radiothera PY	20(100.0) 0(0.0)	0(0.0) 20(100.0)	0(0.0) 0(0.0)	20(33.3) 20(33.3)

Figures in parenthesis shows percentages

Table 1. shows descriptive analysis of demographic variable is given table in the group cases of Carcinoma of Breast (Mastectomy surgery, chemo therapy ,and Radiation therapy) Area of living (6+3+4)13=21.7% were from urban area and(14+17+16) 47=78.3% from rural area. Family status (12+12+12) 36=60.0% were from nuclear family and (8+8+8) 24=40.0% joint family. Marital status (0+1+0) 1=1.7% were from unmarried, (20+19+20) 59=98.3% married cases. Religion (20+20+17)57=95.0% from Hindu,(0+0+TMcases in Ca breast. Type of diet (2+4+2) 8=13.3% were vegetarian,(18+16+18) 52=86.6% is non vegetarian. Economic group (3+1+8) 12=20.0% were from upper group,(17+17+11) 45=75.0% Middle group. and (0+2+1) 3=5.0% lower economic group .Educational level (8+11+3)22=36.7% from 1st to 9th standard,(9+9+16)34=56.7% 10th to 12th standard, and (3+0+1)4=67.0% BA to up standard. Type of surgery (5+5+0) 10=16.7% were lumpectomy,(13+13+20) 46=76.7% Total mastectomy, and(2+2+0) 4=6.7% radical mastectomy. Types of treatment (20+0.0+0.0) 20=100.0% mastectomy surgery,(0.0+20+0.0) 20=100.0% cases chemotherapy, and (0.0+0.0+20)20=100.0% radiotherapy cases in Ca breast. TABLE 3 Association between social well -being with QOL three months of treatment.

Group	N	Mean	SD	95% confidence interval		Max	min	ANN OVA F	P value
				Lower bound	Upper bound				
Mastecto my	20	43.1500	4.12102	41.1979	45.1021	38.00	56.00	2.749	0.072
Chemoth erapy	20	43.6000	6.40230	40.6036	46.5964	30.00	51.00		
Radiothe rapy	20	46.8000	5.29747	44.3207	49.2793	39.00	57.00		
Total	60	44.5167	5.52496	43.0894	45.9439	30.00	57.00		

Table 2.

In table 2. One way analysis of variance was applied to see the difference in the quality of life of social well-being between three groups mastectomy, chemotherapy, radiotherapy and value of F is 2.749 and p<.072. Further the difference between the mean Quality of life is coming out the significant between mastectomy and radiotherapy t= 2.152, p>.001.

	Number of cases	Minimum	Maximum	Mean	Std deviation
Total QOL in chemo group (maximum score 7X4=28)	20	9.00	20.00	13.8000	3.05390
Total QOL in radio group maximum score (6X4=24)	20	7.00	17.00	11.0000	2.31699

Table 3. Mean, standard deviation (SD) for total quality of life score for chemotherapy and radiotherapy group in breast cancer patients. (Self-developed questionnaire)

Table 3. Shows that mean total QOL in chemotherapy group was 13.8000 with standard deviation 3.05390 (9-20 range) breast cancer patients at 3 months of treatment. The mean QOL score coming out to be almost 50 percent of total QOL 28 score. The mean total QOL radiotherapy group was 11.0000 with standard deviation 2.31699 (7-

17 range) breast cancer patients at three months of treatment. The mean QOL Score coming out to be less than 50 percent of total QOL 24 score.

	NOS of cases	Minimum	Maximum	Mean	Std deviation
Bimage total 4x4=16	20	6.00	10.00	9.1500	.98809
Psytotal 10x5=50	20	20.00	26.00	23.3500	1.30697
Painttotal 17x5=85	20	38.00	52.00	43.6500	3.26505
Sexl total 6x5=30	12	11.00	16.00	14.1667	1.69670
Adttotal 8x3=24	20	10.00	20.00	13.7500	2.53138
Treattotal 5x2=10	20	6.00	8.00	7.6500	.58714
Overall 4x4=16	20	10.00	13.00	11.30000	.65695
Valid N (Listwise)	12				

Table 4. Mean, standard deviation (SD) of the total score of the questionnaire The Royal College of surgeons of England, woman who had mastectomy surgery.

The table 4. shows the mean total quality of life in Body image was 9.150 with standard deviation SD±.988(6-10 range) Breast cancer patients at the three month of the treatment. The mean QOL score coming out to be above the 50 percent of total QOL 16 score. for the psychological aspect mean was 23.350 with SD± 1.387(20-26 range). The mean QOL score coming out to be almost 50 percent of total QOL 50 score. for the pain mean 43.650 with SD± 3.266(38-52 range). The mean QOL coming out to be above 50 percent total QOL score 85. Sexual life mean was 14.167 with SD± 1.70(11-16 range). The mean QOL coming out to be less than 50 percent of total QOL 30 score. For the activity Daily living mean 13.750 with SD ± 2.53 (10-20 range). The mean total QOL score coming out to be above 50 percent of total QOL 24 score. For treatment group mean was 7.650 with SD± .587(6-8 range). The mean QOL score coming out above the 50 percent of the total QOL 10 score. For the overall mean was 11.300 with the SD± .657(10-13 range). The mean total QOL coming out to be more than 50 percent of total QOL 4 score Descriptive analysis of QOL parameters score, mean at 3 months of treatment Breast cancer patients.

DISCUSSION:-

QOL in a person is not stable it change with perception of well-being. We can observe differentiation of QOL with time duration between first visit and investigation. Second visit with treatment modalities, their waiting time, and also impact of treatment process whether regression or progression of their health. Correlation is significant in QOL parameter score and sub scores. During the review we analyses that when a patients comes to the hospital for treatment overall QOL of the patient were average. In the first month, the patients QOL is declined because they have to go through many investigations and psychologically patient is very upset of her diagnosis and treatment is unable to accept the reality. With time passes and consultation patient accept the reality that she is suffering with cancer and cope with her treatment procedures.

In our study, almost all the patients were from underprivileged section of the society. As per the age distribution of the disease and the quality of life, in this study 50% of the patients under 40 years of age have poor quality of life and 60% of the patients between 51-60 years had poor quality of life. Number of studies have shown that younger patients experience more problems with respect to their partner relationship, sexual function and body image perception.^{12,13}

Majority of the patients were from low socioeconomic status and among the patients from medium socioeconomic status 36% were having average quality of life and 40% were having poor QOL. Patients with higher socioeconomic status have better access to health care and higher resources.

In this study most of the patients (94%) have no restriction of daily activities and only six percent have mild restriction of daily activities. Most of the patients (98%) experience some form of mild pain and discomfort. Pain and physical function of outcomes of modified radical mastectomy is related to the use of axillary dissection. In our study majority of the patients (68%) were not satisfied in their body image perception. Among these patients 91% were more than 51 years of age and 88% had poor quality of life Body image is often thought of just relating to physical appearance alone, but studies have related them to functionality and sense of fullness.¹⁴

In this study majority of the patients (60%) had severe psychological impairment and 30% had mild psychological impairment. Among the patients with severe psychological impairment almost all of the patients had poor quality of life. Among the various age groups 75% of the patients were above 51 years of age. The psychological changes associated with aging and menopause also contribute to the psychological state after surgery. Studies have shown that psychological impairment improves with time and since we had a follow up of only 6 months this improvement has not been found in this study.^{15,16} Treatment with chemotherapy was associated with worse QOL at earlier time-points, particularly at baseline prior to radiotherapy. We found that higher BMI was associated with worse QOL for breast cancer patients before, during, and after treatment even after adjusting for age, chemotherapy, prior RT, type of breast surgery, and comorbidities in breast cancer patients.^{2,17} the results from this study provide important descriptive information about breast cancer patients treated with radiotherapy and the association of obesity with QOL.

Study limitations are as follows. There are confounding factors that we may not have adjusted for in our analysis, although we did adjust for age, chemotherapy, comorbidities, prior RT, and type of surgery to address most likely possible confounders. One potential confounding factor is level of physical activity, and due to lack of information regarding physical activity in our population, we were not able to assess its impact.

CONCLUSION:-

The present study is under taken to validate and test for reliability of a quality of life tool for breast cancer patient's population in a tertiary care Hospital in North east India. The self-developed questionnaire and its sensitivity (chemotherapy reliability is .80 and validity is .89) and (radiotherapy reliability is .88 and validity is .84) is found to be satisfactory. Surgical resection provides a better chance of cure for the cancer of the Breast. When it is early detection and in indicial and first stage

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