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RESEARCH ARTICLE

“COMPARING QUALITY OF LIFE IN BREAST CANCER PATIENTS AFTER MODIFIED RADICAL MASTECTOMY VERSUS BREAST-CONSERVING SURGERY” AT GOVERNMENT CANCER HOSPITAL, AURANGABAD

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Abstract

Background: Breast Cancer is the most frequently seen cancer among women. Different types of surgeries for Breast cancer have a different impact on the quality of life of the patients. The aim of the study is to evaluate the cosmetic effect and impact of surgery type on quality of life in Breast cancer patients.

Methods: 30 patients of Breast Conservative Surgery (BCS) and 30 patients of Modified Radical Mastectomy (MRM) aged between 25 to 85 years were included in this study. The complete demographic data, tumor characteristics and treatment modalities used were recorded. Validated Turkish version of EORTC QLQ 30 (Version 3) and EORTC QLQ BR45 questionnaires were used for all patients to assess the quality of life and Harvard's scale was used for Breast cosmesis grading. Statistical analysis was done to compare BCS and MRM data which was collected

Results: When identical parameters were compared in both arms of BCS and MRM taking into consideration the factors like general wellbeing, physical role, cognitive, sexual, psychological, social functions BCS has a favorable outcome on the quality of life of the Breast Cancer patients. The results are statistically significant as well.

Conclusions: Quality of life of Breast cancer patients depends on type of surgery done. So in the decision making process, active patient participation is sought as per quality of life should be taken into consideration and treatment planning should be done accordingly.

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Introduction:-

Globally, Breast cancer is the commonest malignancy among women. In 2020, new breast cancer cases were estimated at about 2.3 million, representing 11.7% of all cancer cases. (1)

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Early detection and improvements in the treatment of Breast cancer has led to the longer survival of the patients. A multidisciplinary approach with the combination of surgery, chemotherapy, Radiotherapy, Hormonal therapy and targeted therapy is required for the treatment of Breast cancer. Breast cancer and its treatment affect the identity and quality of life of the patients to a deep depth. So, in addition to research in the diagnosis and treatment of Breast cancer, it is now mandatory to study the quality of life of such patients. Women play an essential role in the family, so their quality of life assessment should be an integral part of Breast cancer management. (2)

The time duration from the initial diagnosis, treatment, and follow-up is crucial for Breast cancer patients as it is a transition time of poor adjustment and decreased quality of life. (3) So, the management of Breast cancer can be planned accordingly, taking into consideration the quality of life of the patient. Psychological stress, anxiety, and depression are common in breast cancer patients. The treatment of Breast cancer has a direct impact on the social, economic, physical, and psychological aspects of the patient and the whole family.

The effect on patients' quality of life directly affects the treatment also. So for the past few years, psychological and emotional concerns have been addressed in intervention research of women with Breast cancer. During the assessment of QOL of Breast cancer patients, various factors are to be considered, such as stage of the disease, early or advanced Breast cancer, type of treatment received, the side effect of chemotherapy or radiotherapy, and 5-year survival period. Disease-free interval and many such factors.

There are many QOL assessment instruments to assess the QOL of Breast cancer patients like EORTC QLQ-30 Questionnaire, EORT QLQ-B23 Questionnaire, EORTC QLQ-45 Questionnaire, FACT-B, FBSI (Breast symptom under) FACT-ES, life satisfaction questionnaire etc. These instruments can be used as per availability and feasibility for the assessment of QOL of Breast cancer patients (4).

Comparison of QOL in different surgery like Breast-conserving surgery and modified Radical mastectomy can be done for Breast cancer patients by different questions. The questionnaire compares the various aspects of quality of life such as Global health state, functional scales and symptom scales of the Breast cancer patients.

Breast-conserving surgery in early Breast cancer and in young women affects, the physical and psychological status of the women in a satisfactory way as the Breast is intact in comparison to the modified radical mastectomy (5) So the judgement of the type of surgery plays a crucial role in maintaining the quality of life of Breast cancer patients, also with the advent of effective chemotherapeutic drugs in neoadjuvant setting can be useful for downstaging locally advanced breast cancer and make them suitable for Breast conservative surgery.

Methods:-

An Observational study of 60 Breast cancer patients aged between 25-85 years is done. Patients with early Breast cancer are included in this study, 30 patients have undergone Breast conservation surgery (BCS arm), and 30 patients have undergone modified Radical mastectomy (MRM arm). Complete socio demographic profile, patient characteristics, tumor characteristics and treatment-related characteristics have been recorded. All patients have undergone surgery, followed by adjuvant chemotherapy, radiotherapy, Hormonal and targeted therapy as per their receptor status.

For the assessment of the quality-of-life EORTC QLQ-E30 and EORT QLQ-BR, 45 Questionnaires of all patients have been reassessed after one month of treatment i.e., surgery, chemotherapy and radiotherapy, and comparison of QOL in both the arms of BCS and MRM has been done followed by statistical analysis.

Harvard's scale for Breast cosmesis has also been recorded to compare the cosmesis in the arm of BCS.

Statistical analysis was carried out with the help of Statistical Package for the Social Sciences (SPSS) version 24.0, Professional. The description of the data was done in the form of arithmetic mean $\pm$ SD for quantitative data, and frequency (%) for qualitative (categorical) data. Comparison of means of two groups was carried out by Student's unpaired t test for numerical normal data. For comparison of categorical variables chi-square test was used. Results are graphically represented where deemed necessary by using Microsoft Excel 2016. All statistical tests were two tailed. A p-value of < 0.05 was considered statistically significant.

Results and Discussion:-

30 patients with early Breast cancer are in the arm of BCS, and 30 patients are in the arm of MRM. Maximum patients are in age group of 41-55 years in both the arms (Table1). In BCS arm 20% of patients were premenopausal, and 80% pts were postmenopausal. In MRM arm 23.33% of patients were premenopausal and 76.67% of patients were post-menopausal (Table 2). Most patients in both arms had tumor in the lateral upper quadrant of the Breast (Table 8). 56.67% patients in BCS arm and 43.3% patients in MRM arm were having Right Breast affected (Table3). 70% of patients in BCS arm have good Breast cosmesis as per Harvard's scale (Table 9).

EORTC QLQ C-30 Questionnaire (Table 10)

We found no significant difference in the restriction of physical functioning, Role functioning, sleep disorder, effect on appetite, altered bowel habit, Nausea & Vomiting & cognitive dysfunction in both the arms of BCS & MRM. But the difference in the emotional strength of the patient in both arms was significant as more emotional, depressed females were in MRM arm with P-value= 0.0106, which is significant.

EORTC QLQ- BR45 Questionnaire (Table 11)

We found no significant difference in the sexual life interest and Breast or chest wall symptoms related to the treatment given in both the arms of BCS and MRM. Body image problems were more in MRM patients than in BCS patients with P-value = 0.001 which is a very significant Fear and anxiety for future perspectives were more in MRM patients than in BCS patients with P-Value = 0.0005 which is also very highly significant.

Patients who had undergone MRM had more arm dysfunction with limited arm mobility interfering with their day-to-day activities as compared to patients with BCS P-value of 0.0077, which is again significant.

Cosmesis satisfaction was found to be much better and acceptable in the arm of BCS patients compared to MRM patients with P-Value=0.0002, which is highly significant.

EORTC QLQ-C30 Questionnaire is designed to measure QOL in cancer patients. The assessment is comprised of nine domains, including physical role, cognitive, emotional, social, fatigue, pain, nausea and vomiting(6).

EORTC QLQ-BR-45 Questionnaire

EORTC QLQ BR-23 was one of the first disease-specific questionnaire developed in 1996 to assess QOL in patients with Breast cancer EORTC QLQ- BR45 is the modified and final version of EORTC QLQ B-23 Questionnaire which cover all the aspects of Breast cancer including domain related to hair loss, body image problems, future perspectives, sexual life interest, arm dysfunction, Breast symptoms and cosmesis satisfaction.

The overall benefits of QOL assessments include their use in preventive intervention and their potential to inform clinicians about the patient's illness and how the treatment can effect the QOL of cancer patients. The questionnaire also improves the communication between physicians and patients, releasing the patients' fear and anxiety (7). QOL measurement is potentially helpful in improving patient care, and functional capacity and in identifying other physical and emotional problems based on which proper counselling of the patients can also be done, which leads to further improvement in the quality of life of the cancer patients.

Comparing both the arms of BCS and MRM, it has been found that women who had undergone BCS felt more blessed and satisfied. While, women who had undergone MRM felt incompleteness in their life. Females of BCS arm were more confident, emotionally strong and believed that they had conquered their breast cancer.

Females who had undergone BCS were satisfied with their body image due to their clothing style not being affected, and even social life was not disturbed.

In a most physical aspect of the QOL, the proportion of women who had undergone BCS had fewer complaints than MRM patients. A sense of enjoying life was more in women who had undergone BCS.

The Breast is highly important for female sexuality, body image and reproductivity. The removal of Breast in MRM surgery leads to many physical, psychological and social problems which affect the quality of life of Breast cancer patients. It negatively affects body image, self-confidence, psychological status, sexual life, clothing style, and interpersonal relationships.

So, the choice of surgical method should be considered in light of expected survival outcome, the impact on QOL, available resources, and patient preferences.

Table 1:- Comparison of Age group of Breast cancer patients in BCS and MRM arms.

Age Group	BCS (n=30)	MRM (n=30)
25-40 years	6.7% (2)	13.33% (4)
41-55 years	56.6% (17)	43.33% (13)
56-70 years	30% (9)	30% (9)
Above 71 years	6.7% (2)	13.33% (4)

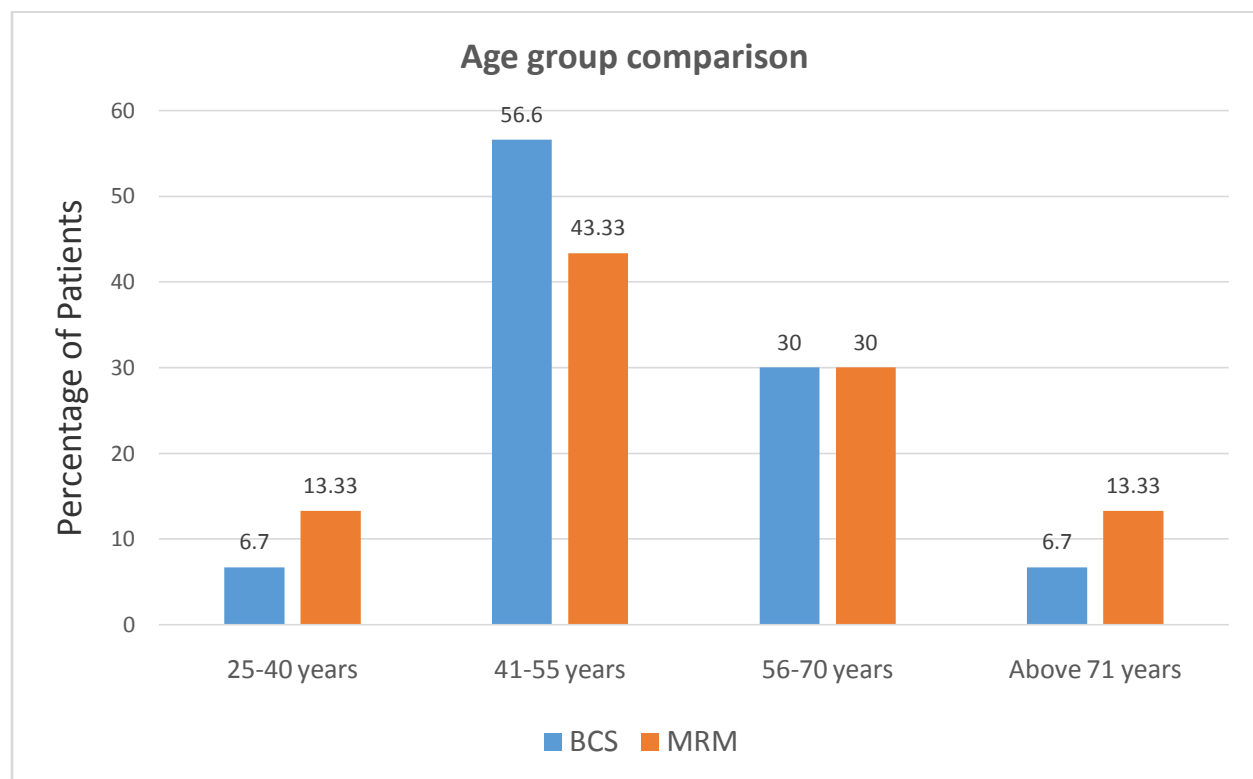
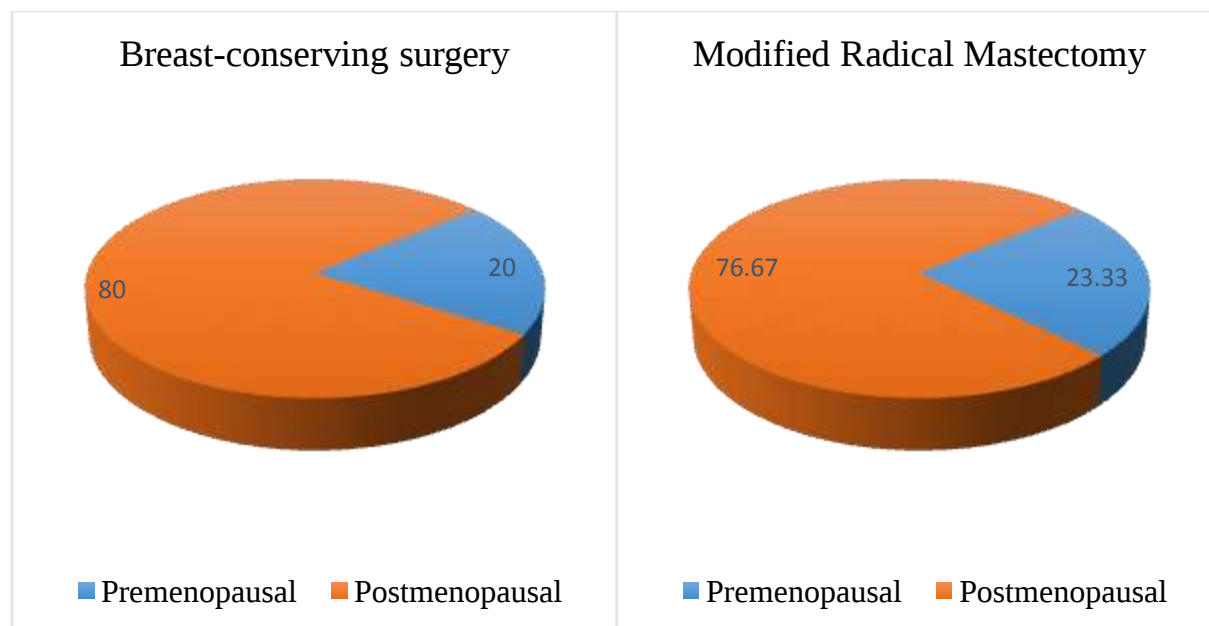
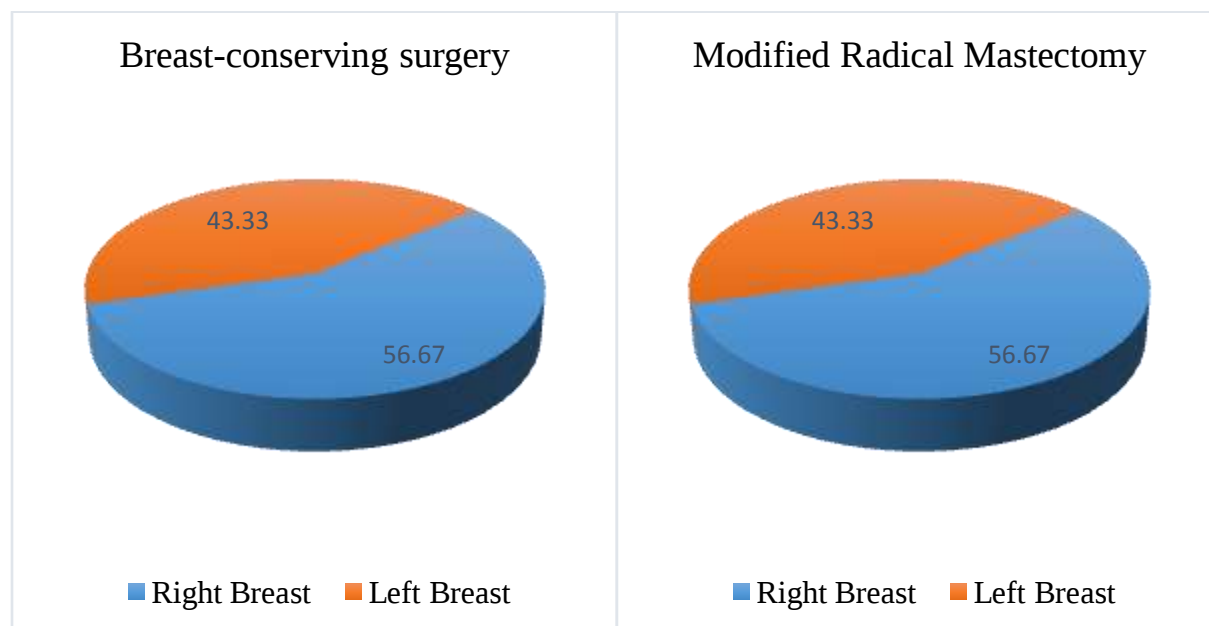


Table 2:- Menopausal status of Breast Cancer patients in BCS and MRM arms.

Menopausal status	BCS (n=30)	MRM (n=30)
Premenopausal	20% (6)	23.33% (7)
Postmenopausal	80% (24)	76.67% (23)

**Table 3:-** Showing Laterality of Breast cancer in BCS and MRM arms.

Breast cancer laterality	BCS (n=30)	MRM (n=30)
Right	56.67% (17)	56.67% (17)
Left	43.33% (13)	43.33% (13)

**Table 4:-** Showing Tumor Location in Breast in both the arms of BCS and MRM.

Tumor location	BCS (n=30)	MRM (n=30)
Lateral upper Quadrant	50% (15)	36.67% (11)
Lateral lower Quadrant	10% (3)	16.67% (5)

Medial lower Quadrant	10% (3)	10% (3)
Medial upper Quadrant	16.67% (5)	23.33% (7)
Peri-areolar	0% (0)	10% (3)
Missing	13.33% (4)	3.33% (1)

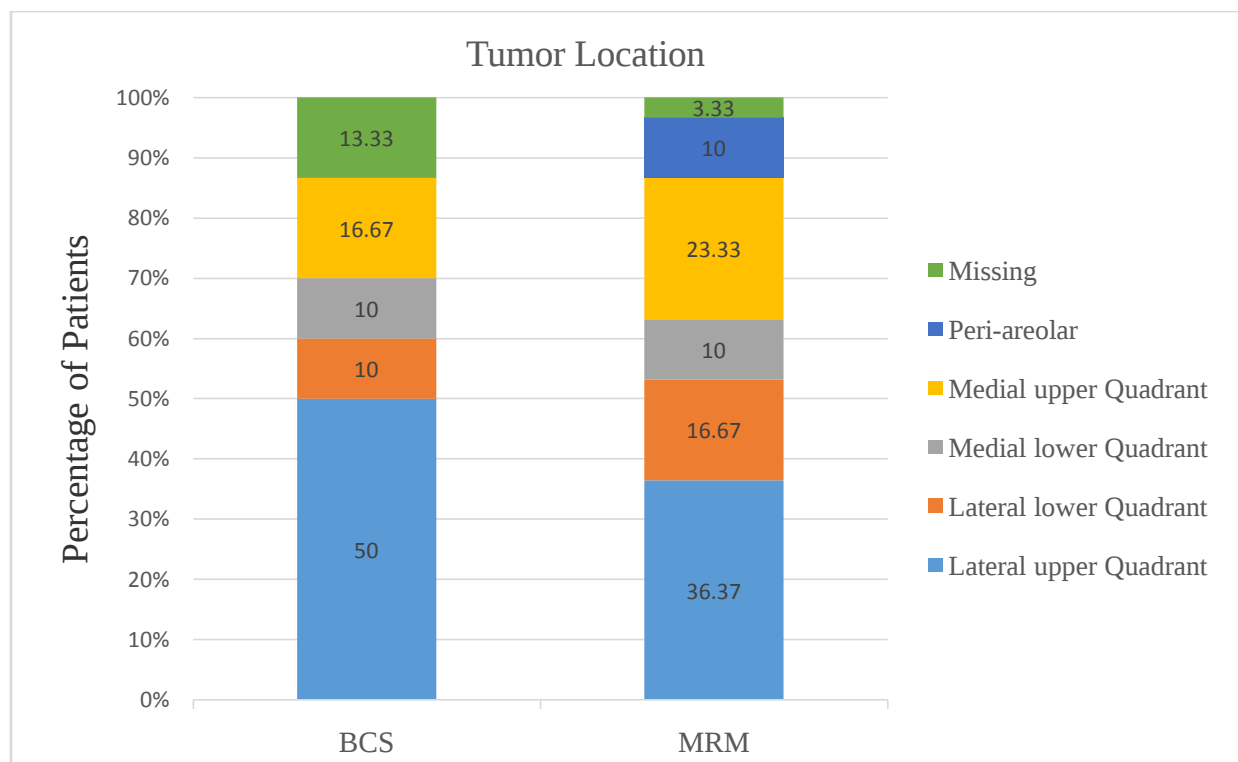


Table 5:- Showing occupational status of Breast cancer patients.

Employment status	BCS (n=30)	MRM (n=30)
Employed	36.7% (11)	63.3% (19)
Unemployed	63.3% (19)	36.7% (11)

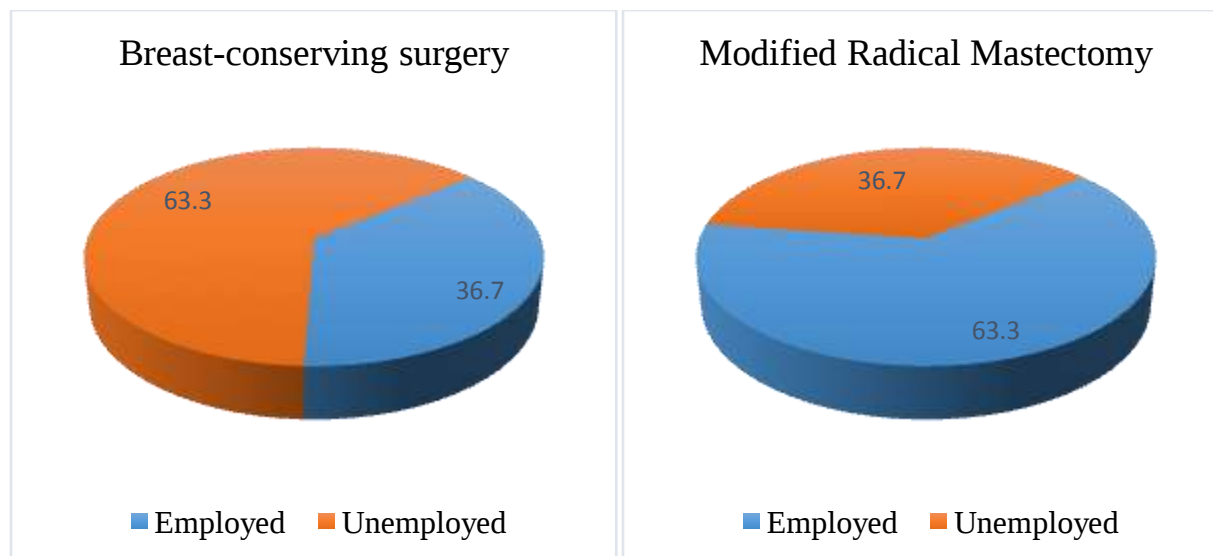
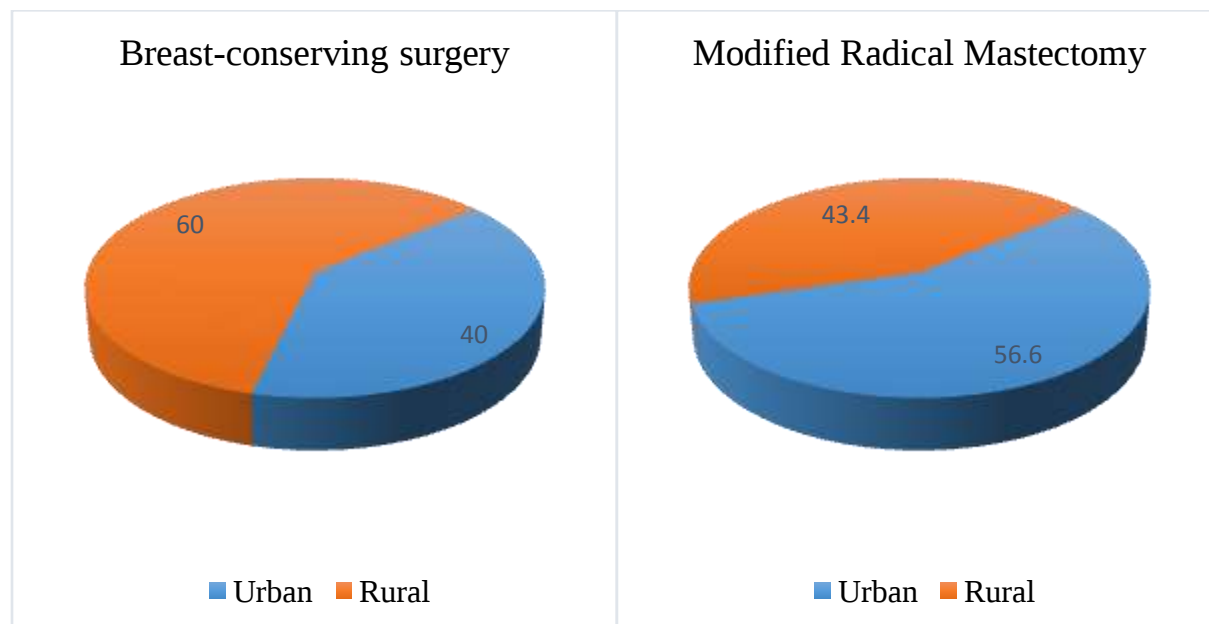


Table 6:- Showing living environment of Breast cancer patients.

Residing at	BCS (n=30)	MRM (n=30)
Urban	40% (12)	56.6% (17)
Rural	60% (18)	43.4% (13)

**Table 7:-** Showing Marital Status of the Breast cancer patients.

Marital Status	BCS (n=30)	MRM (n=30)
Married	86.7% (26)	60% (18)
Single	13.3% (04)	40% (12)

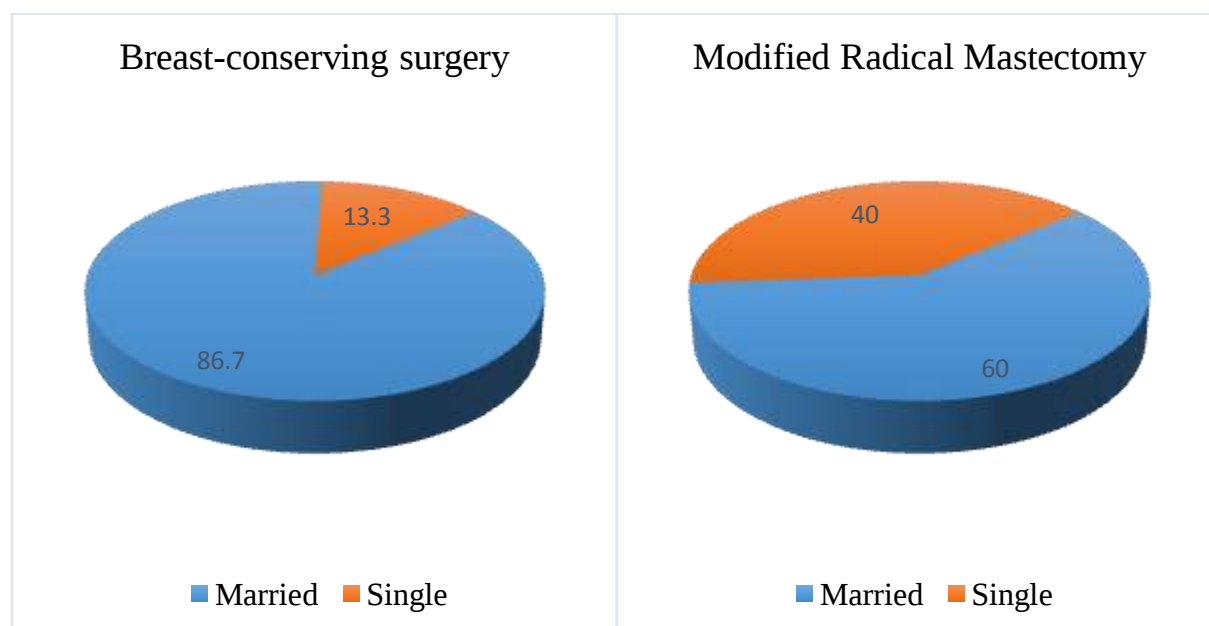
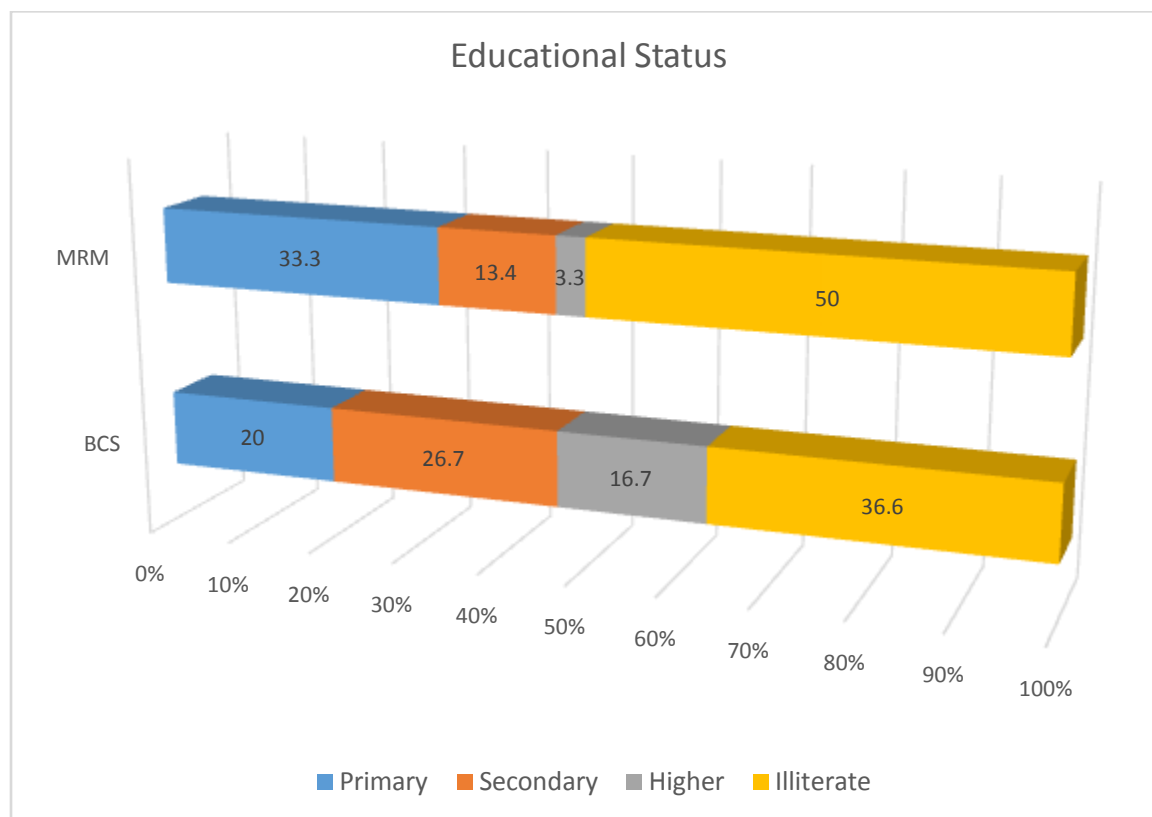


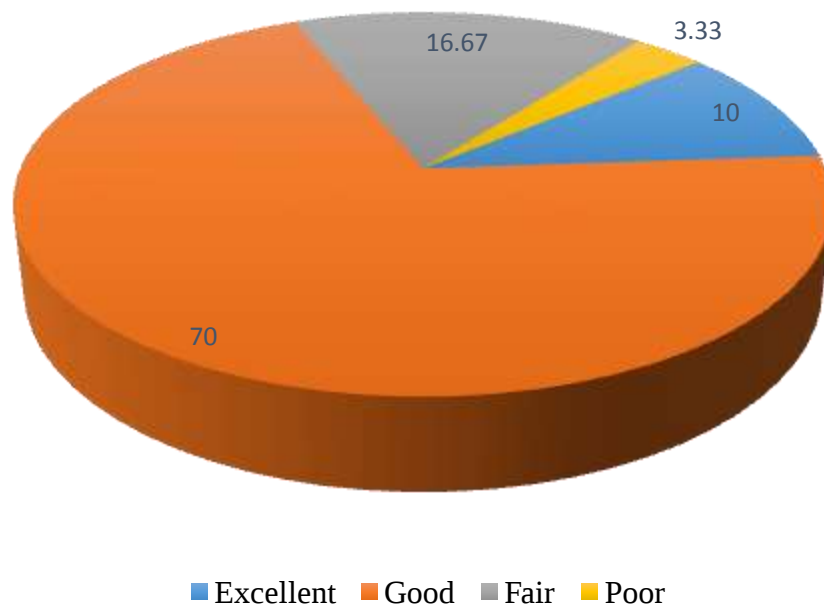
Table 8:- Showing Educational status of Breast Cancer patients.

Educational status	BCS (n=30)	MRM (n=30)
Primary	20% (6)	33.3% (10)
Secondary	26.7% (8)	13.4% (4)
Higher	16.7%(5)	3.3% (1)
Illiterate	36.6% (11)	50%(15)

**Table 9:-** Harvard's scale for Breast cosmesis in Breast cancer patients of BCS arm (Harvard's/ NSABP / RTOG Breast cosmesis grading).

Rating based on Harvard's scale	BCS (n=30)
Excellent	10% (03)
Good	70 % (21)
Fair	16.67% (05)
Poor	3.33 % (01)

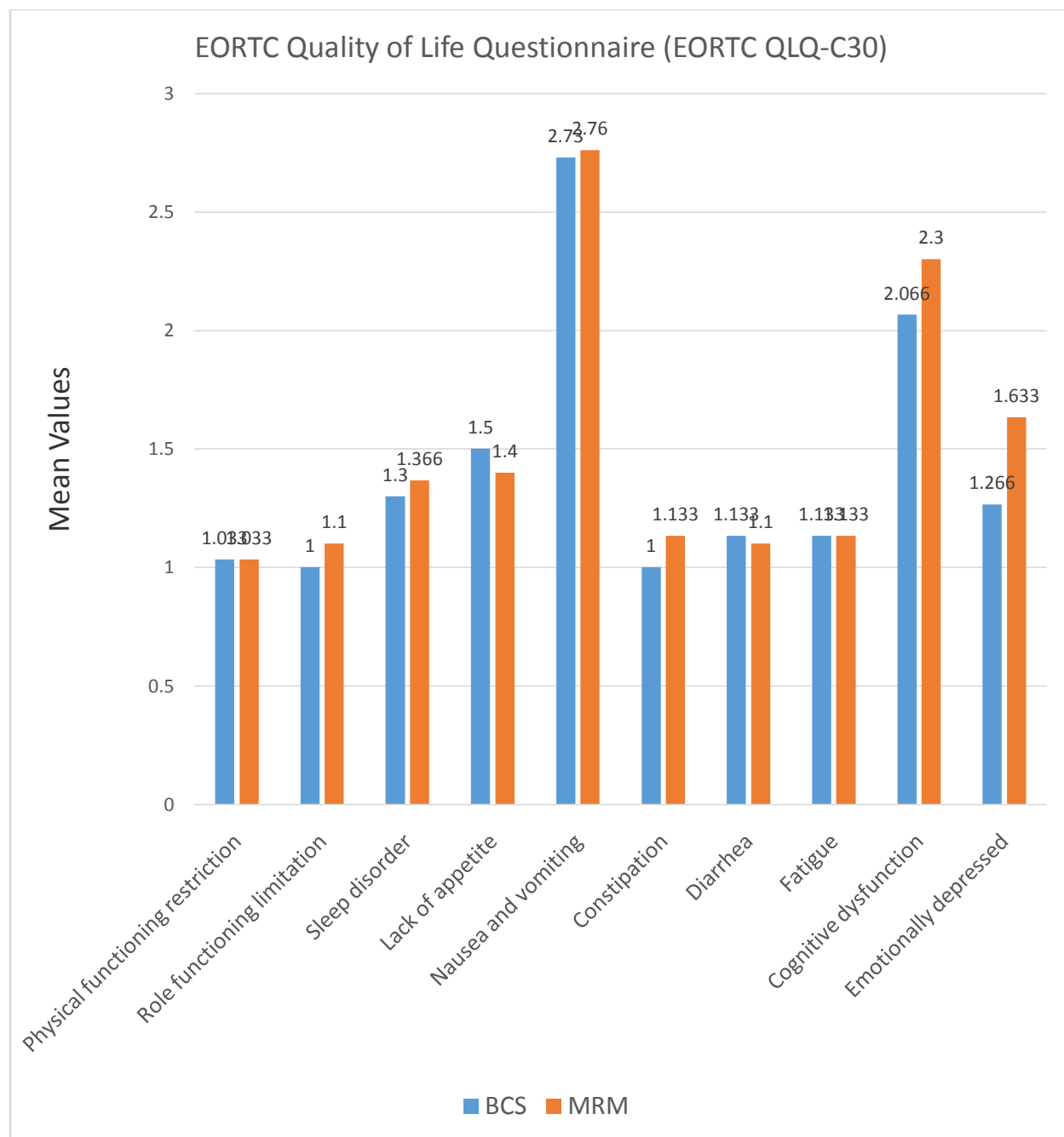
Rating based on Harvard's scale



Questionnaire In Both Bcs And Mrm Arm

Table 10:- EORTC- QLQ 30.

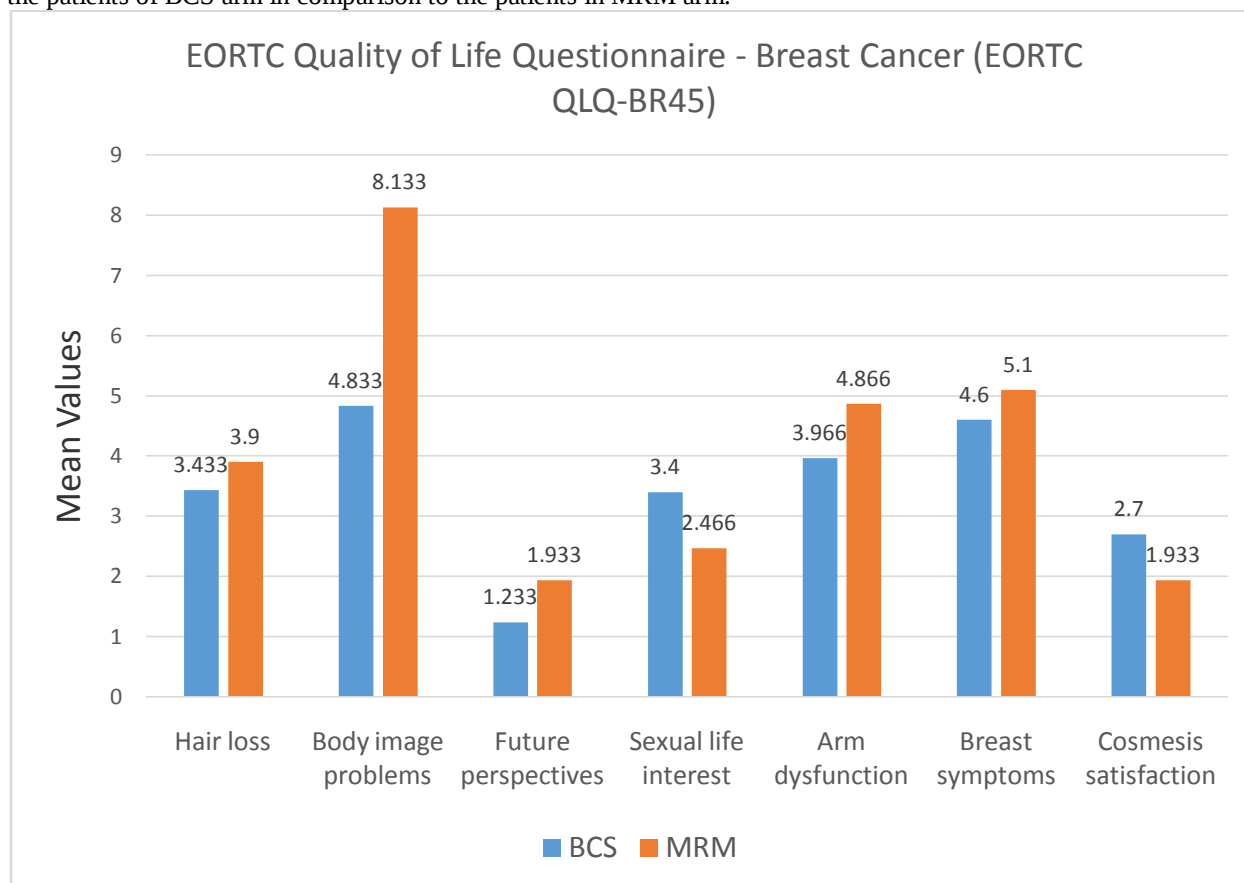
Variable	BCS Mean $\pm$ SD (n=30)	MRM Mean $\pm$ SD (n=30)	Pvalue
Physical functioning restriction	1.033 $\pm$ 0.1825	1.033 $\pm$ 0.1825	1.000
Role functioning limitation	1 $\pm$ 0	1.1 $\pm$ 0.4025	0.176
Sleep disorder	1.3 $\pm$ 0.702	1.366 $\pm$ 0.668	0.7105
Lack of appetite	1.5 $\pm$ 0.731	1.4 $\pm$ 0.621	0.5702
Nausea and vomiting	2.73 $\pm$ 0.98	2.76 $\pm$ 1.165	0.9144
Constipation	1 $\pm$ 0	1.133 $\pm$ 0.434	0.0986
Diarrhea	1.133 $\pm$ 0.434	1.1 $\pm$ 0.305	0.734
Fatigue	1.133 $\pm$ 0.345	1.133 $\pm$ 0.345	1.000
Cognitive dysfunction	2.066 $\pm$ 0.253	2.3 $\pm$ 0.702	0.0912
Emotionally depressed	1.266 $\pm$ 0.449	1.633 $\pm$ 0.614	0.0106 Significant

**Table 11:-** EORTC- QLQ 45.

Variable	BCS Mean $\pm$ SD (n=30)	MRM Mean $\pm$ SD (n=30)	Pvalue
Hair loss	3.433 $\pm$ 0.971	3.9 $\pm$ 0.305	0.014 significant
Body image problems	4.833 $\pm$ 1.662	8.133 $\pm$ 2.687	0.0001 Very highly significant
Future perspectives	1.233 $\pm$ 0.568	1.933 $\pm$ 0.868	0.0005 Very highly significant
Sexual life interest	3.4 $\pm$ 1.849	2.466 $\pm$ 2.33	0.1462

Arm dysfunction	3.966 ± 1.066	4.866 ± 1.431	0.0077 Significant
Breast symptoms	4.6 ± 1.069	5.1 ± 1.398	0.1251
Cosmesis satisfaction	2.7 ± 0.749	1.933 ± 0.739	0.0002 Very highly significant

In EORTC –QLQ 45 Questionnaires maximum domains are significant suggesting that the quality of life is better in the patients of BCS arm in comparison to the patients in MRM arm.



Conclusion:-

Over all, QOL of women who had undergone BCS is found to be greater than that of those who had undergone MRM. Counselling and rehabilitation of patients requiring breast surgery must be given importance in our clinical practice. QOL measures like different type of questionnaires should be incorporated into day-to-day practice. The efforts that physician take to enquire about QOL leads to the improvement of Doctor- Patient communication and shows that how much care the doctor takes regarding the well being of the patient. So the careful selection of the QOL assessment should be considered to provide a reliable and valid outcome.

QOL assessment benefits by providing insights in to the various life domains that are usually unaddressed like patients' mental health, emotional well being, family and social relation, uphold finances etc. This knowledge is significant because many breast cancer patients stress that quality of life is just as important, if not more important than quantity of life.

So, the treatment strategy including surgery and adjuvant treatment for breast cancer patients should also be based on the quality of life of the patient in consideration with other factors too.

Long term disease free survival, 5 year survival rate and progression free survival is under assessment.

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