

ORIGINAL ARTICLE

Awareness and Acceptability of Breast Reconstruction Among Women with Breast Cancer in Twin Cities of Islamabad and RawalpindiMehwish Mehmood^{1*}, Ayesha Aslam¹, Waqas Ahmed², Sameena Aman¹, Ahmed Ali¹, Hira Feroze¹, Nousheen Saleem¹**ABSTRACT****Objective:** To determine the frequency of awareness and acceptability of breast reconstruction surgery among women in the twin cities of Islamabad and Rawalpindi.**Study Design:** Cross-sectional study.**Place and Duration of Study:** The study was carried out at the Department of Plastic Surgery, Fauji Foundation Hospital, Rawalpindi, Pakistan, from October 2022 to June 2023.**Methods:** A total of 271 patients between 20-70 years of age with a diagnosis of breast cancer were included. Demographic details, including marital status, education, residence, occupation, family history, awareness of breast reconstruction, and source of information about breast reconstruction, were documented on a proforma. All patients received information regarding breast reconstruction, and records of the frequency of acceptability and contributing factors were made. Data analysis was carried out by using SPSS 25.0.**Results:** The mean age of patients was 43.41 ± 8.98 years. Out of 271 patients, 114 patients (42.1%) had an awareness of breast reconstruction. The primary source of information was the treating physician in 60 out of 114 patients (52.6%). Breast reconstruction acceptability was reported in 110 out of 271 patients (40.6%). Family support was the most common reason for acceptance in 43 out of 110 patients (39.1%).**Conclusion:** Efforts need to be made at the community level to educate the general population about breast cancer treatment options, including breast reconstruction. Education was significantly associated with increased awareness and acceptability for breast reconstruction. Better cosmetic outcomes and family support were the factors for increased acceptability, while financial constraints and family pressures were reasons for the vice versa.**Keywords:** Breast Cancer, Breast Reconstruction, Cosmesis.**How to cite this:** Mehmood M, Aslam A, Ahmed W, Aman S, Ali A, Feroze H, Saleem N. Awareness and Acceptability of Breast Reconstruction Among Women with Breast Cancer in Twin Cities of Islamabad and Rawalpindi. *Life and Science*. 2024; 5(1): 9-15. doi: <http://doi.org/10.37185/LnS.1.1.509>This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International license. (<https://creativecommons.org/licenses/by-nc/4.0/>). Non-commercial uses of the work are permitted, provided the original work is properly cited.**Introduction**

According to estimates, around 2.5 million new cases of breast cancer are diagnosed each year, making it the most common cancer among the female

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population of the world.¹ Nearly half a million patients die annually because of breast cancer. It is the second leading cause of cancer death in women in the USA.² Pakistan has the highest incidence rate of breast cancer amongst all the Asian countries.³ Breast cancer was the most commonly diagnosed cancer and third most common cause of cancer-related mortality in Pakistan according to the Global Cancer Statistics of 2020.⁴ These ominous figures highlight the magnitude of the problem and the importance of awareness about the disease in the general population.

Breast reconstruction has brought about a

revolution in breast surgery over the last few decades. From the case of breast reconstruction by latissimus dorsi myocutaneous flap in 1896 by Tansini, to the introduction of silicone implants by Cronen and Gerow in 1961, to modern-day innovating techniques, breast reconstruction has seen immense progress.⁵ Data regarding the exact number of patients opting for breast reconstruction in the Pakistani population is very limited, and according to an audit by Aga Khan University Hospital, less than 1% patients in Pakistan undergo breast reconstruction.⁶

Majority of our population is unaware of the various options available for breast reconstruction. The knowledge, attitude, and practices must be studied to devise steps to employ various healthcare options in the community.⁷ The various factors cited as barriers to opting for breast reconstruction include lack of awareness, fear of recurrence, financial constraints, language barrier, misinformation, religious beliefs, and family or social pressures.^{7,8} In our country, lack of education amongst the female population with the majority of the population living in the rural areas compounds the problem.⁹ Even amongst the university students, the knowledge about breast cancer signs, symptoms, and treatment options is below par.¹⁰

The rationale of conducting this study was that there is limited literature on the awareness and acceptability of breast reconstruction in patients with breast cancer in the Pakistani population. The findings of this study will help in identifying the awareness and knowledge of our local community. It will also help in identifying the factors that need to be focused or worked upon to enhance the knowledge of the general population to improve the overall outcomes and increase the acceptability of breast reconstruction in the women suffering from breast cancer in particular and the overall population in general.

Methods

This prospective cross sectional study was carried out at the Department of Plastic Surgery, Fauji Foundation Hospital, Rawalpindi, Pakistan after ethical review committee approval held on 10th September 2022 vide IRB certificate number 663/RC/FFH. The duration of study was 9 months,

from October 2022 to June 2023. The sample size was calculated by the WHO sample size calculator as follows: confidence level of 90%; absolute precision 0.05, and anticipated population proportion of 51.01%.⁷ The sample size came out to be 271 patients. The sampling method used was non-probability consecutive sampling. Written informed consent was obtained from all patients included in the study.

The sample inclusion criteria included female patients between the ages of 20-70 years. Having body mass index (BMI) less than 30 Kg/m² and ASA class I, II, and III who presented to the surgery clinic as well as the plastic surgery outpatient department with the diagnosis of breast cancer and were advised a mastectomy. The exclusion criteria included patients with benign breast lesions, patients with recurrence, metastatic disease, patients with connective tissue disorders, those with language barriers, and those who were not willing to participate in the study.

Demographic details of all patients were recorded including marital status, education, place of residence, occupation, family history of breast cancer, awareness of breast reconstruction, and source of information about breast reconstruction. A questionnaire was prepared and translated into the Urdu language for easy understanding of patients. The residents and medical officers collecting the data also helped the patients solve the questionnaire. The status of the patient was also documented as awaiting surgery or follow-up after surgery. All patients were then provided information about breast reconstruction, and the frequency of acceptability was documented.

Data analysis was carried out using the Statistical Package for Social Sciences (SPSS) software version 25. Numerical variables such as age and BMI were expressed as mean and standard deviation. Frequencies and percentages were computed for quantitative variables like marital status, education, place of residence, occupation, family history of breast cancer, awareness and acceptability of breast reconstruction, and source of information about breast reconstruction. The chi-square test was applied after data stratification in terms of age, marital status, education, place of residence, and

occupation to determine breast reconstruction's awareness and acceptability, taking *p*-value of ≤ 0.05 as statistically significant.

Results

A total of 300 patients were enrolled in the study, out of which 271 patients completed the study questionnaire. The mean age of patients was $43.41 \pm$

8.98 years. Out of 271 patients, 161 patients (59.4%) were younger than 45 years of age while 110 patients (40.6%) were older than 45 years. The mean BMI of patients included in the study was 25.81 ± 1.92 Kg/m². The distribution of patients according to marital status, education, occupation, residence, and family history of breast cancer is given in Table 1.

Table 1: Summary of demographics details

S. No	Variable	Groups	No of Patients (%)
1.	Marital status	Married	234 (86.3%)
		Single	37 (13.7%)
2.	Education	Illiterate	85 (31.4%)
		Primary	96 (35.4%)
		Secondary	51 (18.8%)
		Higher	39 (14.4%)
3.	Occupation	Housewife	221 (81.5%)
		Working	50 (18.5%)
4.	Residence	Rural	153 (56.5%)
		Urban	118 (43.5%)
5.	Family History of Breast Cancer	Positive	43 (15.9%)
		Negative	228 (84.1%)
6.	Status of Treatment	Awaiting Surgery	202 (74.5%)
		Post-Surgery	69 (25.5%)

Out of 271 patients, 114 patients (42.1%) were aware of breast reconstruction options. The main source of information was the treating physician in 60 out of 114 patients (52.6%). Breast reconstruction acceptability was reported in 110 out of 271 patients

(40.6%). Family support was the most common reason for acceptance in 43 out of 110 patients (39.1%). The results of the study have been summarized in Table 2 below.

Data stratification for age, marital status, place of

Table 2: Results of the study

S. No	Variable	Category	No. of Patients (%)
1.	Awareness	Yes	114 (42.1%)
		No	157 (57.9%)
2.	Source of Information	Social Media	29 (25.4%)
		Family and Friends	25 (21.9%)
		Doctors	60 (52.6%)
3.	Acceptability	Yes	110 (40.6%)
		No	161 (59.4%)
4.	Reasons for Acceptance	Self-confidence	28 (25.5%)
		Family support	43 (39.1%)
		Cosmesis	40 (36.4%)
5.	Reasons for Refusal	Religious beliefs	24 (14.9%)
		Family pressures	66 (41.0%)
		Finances	70 (43.5%)

residence, education, and occupation in terms of awareness of breast reconstruction is given in

Table 3. Data stratification for age, marital status, place of residence, education, and occupation in terms of

Table 3: Data stratification for awareness of breast reconstruction

S. No	Variable	Variables Category	Awareness		P-value
			Yes	No	
1.	Age (years)	Less than 45	67 (41.6%)	94 (58.4%)	0.855
		Above 45	47 (42.7%)	63 (57.3%)	
2.	Marital Status	Married	94 (40.2%)	140 (59.8%)	0.112
		Single	20 (54.1%)	17 (45.9%)	
3.	Residence	Urban	64 (54.2%)	54 (45.8%)	<0.001
		Rural	50 (32.7%)	103 (67.3%)	
4.	Education	Illiterate	16 (18.8%)	69 (81.2%)	<0.001
		Primary	30 (31.3%)	66 (68.7%)	
		Middle	36 (70.6%)	15 (29.4%)	
		Higher	32 (82.1%)	7 (17.9%)	
5.	Occupation	Housewife	77 (34.8%)	144 (65.2%)	<0.001
		Working	37 (74.0%)	13 (26.0%)	

Table 4: Data stratification for acceptability of breast reconstruction

S. No	Variable	Variables Category	Acceptability		P-value
			Yes	No	
1.	Age (years)	Less than 45	70 (43.5%)	91 (56.5%)	0.242
		Above 45	40 (36.4%)	70 (63.6%)	
2.	Marital Status	Married	80 (34.2%)	154 (65.8%)	<0.001
		Single	30 (81.1%)	7 (18.9%)	
3.	Residence	Urban	68 (57.6%)	50 (42.4%)	<0.001
		Rural	42 (27.5%)	111 (72.5%)	
4.	Education	Illiterate	21 (24.7%)	64 (75.3%)	<0.001
		Primary	22 (22.9%)	74 (77.1%)	
		Middle	35 (68.6%)	16 (31.4%)	
		Higher	32 (82.1%)	7 (17.9%)	
5.	Occupation	House wife	71 (32.1%)	150 (67.9%)	<0.001
		Working	39 (78.0%)	11 (22.0%)	

acceptability of breast reconstruction is given in Table 4.

Discussion

Breast cancer nowadays is being increasingly diagnosed amongst Pakistani women because of various reasons, including awareness campaigns, the introduction of health care insurance by the government, and awareness drives and initiatives. The major reason for the delayed diagnosis in our society has been the social taboo and stigma associated with it due to lack of education. Even in our educated population strata, women are reluctant to undergo surgery due to a lack of knowledge of the surgical options as well as the reconstruction options available.

Our study is the first of its kind in the Pakistani population. The study population comprised women primarily belonging to the twin cities of Islamabad and Rawalpindi. The mean age of patients was 43.41 ± 8.98 years. Soomro et al. also reported that the most common age group for diagnosis of breast cancer in Pakistan was between 40-45 years of age.¹¹ Similarly, Malik et al. reported a mean age of 47.7 ± 11.8 years, similar to our study.¹² Bano et al. reported a comparably higher mean age of 50.58 ± 10.68 for patients presenting with breast cancer in their research.¹³

Out of 271 patients, 114 patients (42.1%) had an awareness of breast reconstruction. Women living in urban areas were more aware of breast

reconstruction by a statistically significant difference as compared to those belonging to rural areas ($p < 0.001$). Moreover, the acceptability to undergo breast reconstruction was also higher amongst the women belonging to urban areas ($p < 0.001$). Similarly, the level of education was vital to awareness and acceptability of breast reconstruction by a statistically significant difference, respectively ($p < 0.001$). Women who were doing jobs had a higher level of awareness and acceptability as compared to housewives ($p < 0.001$). A study by Kothari et al. published in 2012 reported that 24.2% of patients were aware of breast reconstruction options.¹⁴ Another recent study reported that 48.8% of women with breast cancer were aware of breast reconstruction following mastectomy.¹⁵ Higher levels of education and working status of women were significantly related to better acceptability for breast reconstruction in an Iranian study.¹⁶ Breast reconstruction awareness and acceptability can be further increased by involving the patient in the decision-making process and facilitating and improving the surgeon-patient communication.¹⁷

The main sources of information in most cases were the treating physicians and the paramedical staff (52.6%). Digital print and electronic media is also a major source of information these days. Nair et al. also reported that treating physicians were the main source of information for breast reconstruction in majority of patients followed by social media, family and friends in a similar research study conducted in India.⁷ Acceptability of breast reconstruction was significantly increased in patients who were counseled by the treating physician.¹⁸ One of the reasons for decreased awareness is that the treating surgeons are biased to offer the patients their preferred treatment options and, subsequently, non-referral to plastic and reconstructive surgeons.¹⁹

Our study also showed that unmarried females had a higher acceptability for breast reconstruction ($p < 0.001$). The major driving force for acceptance to opt for breast reconstruction is better cosmesis and improvement of self-confidence in the patients whereas factors such as financial constraints followed by family/ peer pressures and some

patient's religious beliefs were the main reasons for the non-acceptability of breast reconstruction.

In another subset of our patients, higher age was another reason not to opt for breast reconstruction; however, it didn't differ by a statistically significant proportion ($p = 0.242$). Similarly, Nair et al. also reported that the major factors governing the decision of not opting to undergo breast reconstruction were cosmesis not being the priority, financial issues, and family pressures.⁷

The limitation of our study was the smaller sample size. We recommend that more studies need to be carried out in other areas of the country to get the level of awareness and acceptability among the masses about breast cancer treatment options including breast reconstruction. Moreover, the breast awareness campaigns need to be improved as their effectiveness is very less.²⁰ In a developing country like ours, which is going through an economic crunch, such studies would help in determining the population which is most deprived and therefore will help to focus the distribution of available resources in an adequate manner thereby leading to maximal use of available resources.

Conclusion

Open communication and comprehensive information about breast reconstruction options are part of holistic patient care that will empower the patients and contribute significantly to their healthcare experience. Efforts need to be made at the community level, especially in rural areas, to educate the general population about breast cancer treatment options, including breast reconstruction. Level of education was significantly associated with increased awareness and acceptability for breast reconstruction. Better cosmetic outcomes and family support were the factors for increased acceptability.

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Authors Contribution

MM: Idea conception, study designing, data collection, data analysis, results and interpretation, manuscript writing and proof reading

AA: Idea conception, study designing, data analysis, results and interpretation, manuscript writing and proof reading

WA: Study designing, data analysis, results and interpretation, manuscript writing and proof reading

SA: Study designing, data analysis, results and interpretation, manuscript writing and proof reading

AA: Data collection

HF: Data collection

NS: Data collection

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