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Website:
www.jehp.net

DOI:
10.4103/jehp.jehp_582_24

Issues related to grooming among postmastectomy patients: An Indian perspective

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Abstract:

BACKGROUND: The surgical management of breast cancer results in the alteration of breast volume and clothing style, including designs of dresses, brassiere wearing, and use of breast prosthesis among the patients. It is important to understand the changing needs of breast cancer survivors related to their grooming practices. The current study provides data regarding the practices related to grooming associated with the changes in breast volume of breast cancer survivors.

MATERIALS AND METHODS: The study was conducted at a tertiary care center in northern India. A total of 191 breast cancer survivors attending the outpatient department for follow-up were enrolled consecutively. Apart from collecting data regarding the sociodemographic profile and clinical profile, a questionnaire was used to assess the grooming practices of the participants. They were ensured of the confidentiality of their information.

RESULTS: The unaffected breast had a significantly higher mean volume than the affected breast. After surgery, 60% were wearing brassieres. Pain at the surgical site was the most frequent justification for not wearing the brassiere. Only 10% of the participants were using breast prostheses. Some of these women were customizing prostheses using silicon, cotton, or towels. Around 40% of the participants said that they felt uncomfortable when using any of the prostheses. Most of them favored wearing cotton fabric after surgery.

CONCLUSION: Awareness regarding postmastectomy clothing may enhance the self-image of the survivors. It is recommended to have breast cancer clinics to provide counseling services for the survivors of breast cancer.

Keywords:

Breast cancer, breast volume, clothing issues, postmastectomy

Introduction

The breast is the most important feature in terms of defining a woman's beauty. The diagnosis of breast cancer brings a fear of loss of breast, impacting her femininity.^[1] These women experience changes in their bodies following various treatment modalities for breast cancer.^[2] Mastectomy is the most common treatment option in which the breast along with lymph nodes are removed. The scars and physical defects following surgery can lead to a disturbed body image.^[3] These

treatment-related impressions demonstrate that breast cancer survivors may no longer wear the same clothing they used to wear before the disease.^[4] They also feel the need to modify their clothing styles such as wearing loose-fitting clothes and even lose interest in wearing their brassiere.^[5] Clothing is considered to be a significant component of the appearance of an individual to enhance confidence and self-esteem. As beauty is a big concern for women who have had their breasts amputated, breast reconstruction surgery offers the chance to restore a woman's attractiveness. However,

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How to cite this article: Kaur M, Yadav BS, Dahiya D, Kaur S, Batta A, Rani A, *et al.* Issues related to grooming among postmastectomy patients: An Indian perspective. J Edu Health Promot 2025;14:57.

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Received: 30-03-2024
Accepted: 06-06-2024
Published: 28-02-2025

not all breast cancer survivors opt to restore their breasts; some prefer to wear prostheses after mastectomy, and many women choose to wear a particular style of padded brassier (bra) and keep cotton and some cloth in the bra pockets to retain the shape of the breast.^[6,7] This may be due to a lack of information and fear. Proper breast volume measurement knowledge is necessary for a brassier's basic design. This may also assist in determining the appropriate size of brassieres and prostheses for the woman.^[8,9] As a result, women may be helped to minimize skin irritation or discomfort due to postmastectomy pain and other issues by carefully selecting the clothes, prosthetics, and brassieres following surgery.^[10] The current study offers information on the grooming practices of breast cancer survivors with regard to brassier wearing, breast prosthesis use, clothing alterations, use of deodorants, and so on, associated with the changes in breast volume following breast surgery.

Materials and Methods

Study design and setting

This cross-sectional study was conducted in the outpatient departments of surgical and radiotherapy units of a tertiary care hospital in northern India.

Study participants

The participants who had undergone breast surgery (mastectomy/lumpectomy) at least 3 months back were enrolled in the study.

Sample size

The sample size was calculated using Cochran's formula as follows:

$$n = \frac{z^2 p(1-p)}{d^2}$$

where

n = minimum desired sample size

z = the standard normal deviation set at 1.96 corresponding with 95% confidence interval.

P = the proportion of the targeted population estimated to have particular characteristics, breast cancer in the case, estimated at 0.78% of all cancer patients (78% of breast cancer survivors had to change their clothing style after the breast cancer surgery).^[6]

q = the remaining proportion (1-p); d = minimum error, taken as 6% or 0.06.

So, by applying these values to the formula, the calculated sample size was 183. However, 191 survivors were enrolled in the study.

Data collection tools and technique

Sociodemographic and information profile sheet:

Information related to age, education, occupation, income, age at the time of diagnosis, type of treatment modality, any comorbidity, and other treatment-related information was obtained using this tool.

Grooming-related questions: It includes questions related to the use of brassieres and clothing such as wearing of the bra after surgery, its duration, the reason for not wearing a bra, bra brand, cup size, criterion for selecting a bra, type of bra, prosthesis, cost of the prosthesis, type of clothing, alteration in clothing style after surgery, and price and availability of clothing after surgery.

Measurement of breast volume: The measured parameters were mammary volume (MV), mammary projection (MP), medial breast radius (MR), lateral breast radius (LR), and inferior breast radius (IR) [Figure 1]. Breast volume [mammary volume (MV)] was calculated according to the following formula defined by Qiao et al.^[11] by inserting the measured MR, LR, and IR values of each participant. All the breast measurements were calculated in an erect posture with hands by the side of the body.^[12]

$$MV = \pi^3 \times MP^2 \times (MR + LR + IR - MP)$$

(MR is medial mammary radius—nipple to medial terminal crest; LR is lateral mammary radius—nipple to lateral terminal crest; IR is inferior radius—nipple inframammary fold length, and MP is mammary projection).

Reliability of tool

The tool was tested on 19 participants to determine its reliability. Two authors did the measurements independently. The calculated value of inter-rater reliability was 0.86.

Data collection procedure

The participants attending outpatient departments (OPDs)

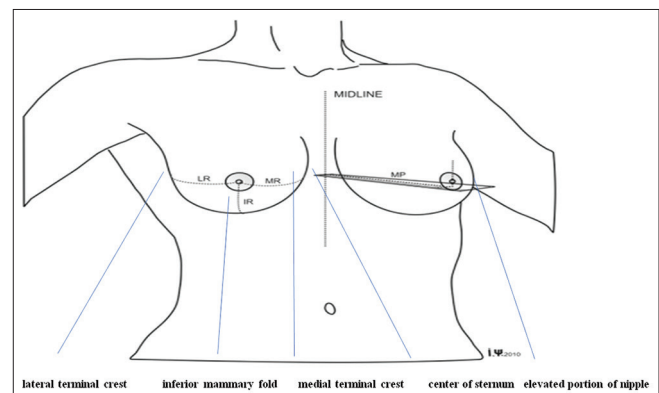


Figure 1: Parameters of the mammary volume (Source: ref 12)

of General Surgery and Radiotherapy and Oncology for their follow-ups were enrolled in the study. Following the confirmation of the eligibility criterion, they were counseled to participate in the study. Informed written consent was obtained from each participant. The information related to sociodemographic profiles, information profiles, grooming practices, and challenges related to their grooming practice were noted. Breast volume was calculated only for patients who have undergone breast conserving surgery. Maintaining their privacy, they were asked to sit on the examination table and then to undress the upper part of their body. The measurement was done as follows:

- First, medial mammary radius (MR) was measured by putting a ruler from the nipple to the medial terminal crest of the breast. Then, the lateral mammary radius (LR) was measured by putting a scale from the nipple to the lateral terminal crest of the breast. Then inferior mammary radius (IR) was measured from the nipple to the inframammary fold length.
- After that, mammary projection (MP) was measured by putting a scale perpendicularly in the center of the sternum and another scale over the projected part of the nipple to the center of the sternum where both scales met; then we measured the distance from the point where both scales meet to the center of the sternum.
- All the measurements were recorded on the mammary volume record sheet, and then the mammary volume was calculated for each parameter by using the Quio *et al.*^[11] formula.

Statistical analysis

Data were analyzed using SPSS version 25.0. Descriptive and inferential statistics were used in the study. Normally distributed data were presented in mean and standard deviation. Categorical data were presented in frequency and percentage. An independent *t*-test was employed to compare the breast volume. *P* value < 0.05 was considered as significant.

Ethical consideration

The study was approved by the ethical committee of the National Institute of Nursing Education (EC/NINE/2022/1). Permission was sought from the Head, Department of General Surgery and Radiotherapy and Oncology. Informed written consent was taken from the participants, and the confidentiality of their information was ensured.

Results

Sociodemographic profile of the participants

The mean age of the participants was 51.04 ± 10.47 years. Nearly half (48%) were in the age group of 51–70 years. Most of them were married. 22.5% of participants were housewives. According to the modified Kuppuswamy scale, 30% belonged to the lower middle class. A maximum (63%) of the participants were Hindu by religion. More participants were from nuclear families.

Clinical profile of the participants

Most (65.4%) of the participants were diagnosed at the age of 30–50 years. The mean age of the participants at the time of diagnosis was 46.22 ± 10.34 years. The mean BMI was $25.12 \pm 4.33 \text{ kg/m}^2$. Around one-third of the participants (37%) were in the pre-obese category with a BMI of $25.0\text{--}29.9 \text{ kg/m}^2$. About nearly half of the participants had a normal range of BMI (18.5 to 24.9). Many women (77.5%) were postmenopausal, and 6% had a history of cancer in their families. 78% of them had undergone mastectomy, and 22% had lumpectomy as breast surgery. 61% were ER-positive, and 70% received both radiotherapy and chemotherapy. Sixty-three percent of the participants were on anastrozole inhibitors, followed by tamoxifen (24%). Forty three participants (22.5%) underwent breast conserving surgery and 148 (77.5%) underwent mastectomy.

Comparison of the breast volume of the participants

The measurements of the unaffected and affected breast were compared using an independent *t*-test as shown in Table 1. A statistically significant difference was noted in the mammary projection, inferior radius, lateral radius, and mammary volume in the affected breast as compared to the unaffected breast. Regarding breast volume, the affected breast statistically has a lower volume as compared to the unaffected breast ($P < 0.001$).

Brassier-wearing and breast prosthesis practices among the participants

Around 60% were wearing a brassier after breast surgery, out of which 23.6% of the participants started wearing a brassier within 6 months of surgery. About one-third (31%) were wearing a brassier during day time only. Nearly half of the participants were wearing a padded brassier, and 17.5% were wearing a homemade

Table 1: Comparison of the breast volume among the participants *n*=43

Parameters	Unaffected breast (mean \pm SD)	Affected breast (mean \pm SD)	<i>t</i> (df)	<i>P</i>
Mammary projection (MP in cm)	3.87 \pm 1.38	3.32 \pm 1.18	7.54 (33)	<0.001
Medial radius (MR in cm)	12.19 \pm 2.93	11.25 \pm 2.84	2.80 (33)	0.08
Inferior radius (IR in cm)	9.21 \pm 1.76	8.29 \pm 1.82	5.07 (33)	<0.001
Lateral radius (LR in cm)	12.02 \pm 3.02	10.87 \pm 2.86	6.06 (33)	<0.001
Mammary volume (MV in ml)	555.82 \pm 377.68	410.35 \pm 299.84	4.82 (33)	<0.001

brassier, out of which most of the participants used to keep small towels inside their bras, though a few were keeping cotton inside their bras to give it the shape of breast. More than one-third of the participants were not wearing bras primarily because of pain at the surgical site. Regarding breast prosthesis, only 20 participants were using breast prostheses after breast surgery. Out of them, four participants were having discomfort with the prosthesis. A total of 12 participants were spending INR 1000–5000 per prosthesis. In the winter season, one-fourth of the participants used to wash the prosthesis once a week, However, in summer, 80% used to wash the prosthesis daily. Only 25% of the participants got information regarding the use of breast prostheses from the medical staff [Table 2].

Practices related to the clothing of the study participants

Most of the participants (96.3%) preferred cotton fabric before and after surgery. The majority of the participants used to wear salwar suits (traditional Indian dress of females) before and after surgery. Half of the participants were wearing the same style of clothing as they used to wear before the surgery. A total of 74.8% of participants used to wear loose clothing from the bust line, from the sides of the shirt, and sleeves after surgery. The majority of the participants were using dupattas to cover the breast area.

Challenges related to grooming practice

The majority of the participants did not know about the correct size of their brassier after the breast surgery, 95% felt hesitant in purchasing a bra after surgery, and 89% had difficulty in finding the color of their own choice. Most of the participants (97%) had difficulty getting the design they wanted. Nearly half (46%) of the participants felt hesitancy in giving measurements to female tailors, and almost all the participants (92%) felt hesitancy to give measurements to male tailors to get their dresses stitched. Only 10% preferred using deodorants, of which half had irritation with the use of deodorants [Table 3].

Discussion

Depending upon the extent of the disease, breast cancer surgery may involve excision of a breast or lump, leading to a diminished breast volume and physical disfigurement. There is a huge negative impact on women after surgical treatment of breast cancer, including feelings of less attractiveness, not liking their own appearance, or being unhappy with their breasts and scar. There is a paucity of research on the grooming practices of breast cancer survivors in India. The current study primarily focuses on assessments of breast volume and the grooming habits among breast cancer survivors.

Table 2: Brassier wearing and breast prosthesis practices of the participants $n=191$

Variables	<i>n</i> (%)
Wears brassier	114 (59.7)
Time to start wearing brassier after surgery ($n=114$)	
Within 6 months	45 (23.6)
6-12 months	34 (17.8)
>12 months	35 (18.3)
Time of wearing brassier	
During day time	59 (30.9)
When going outside	55 (28.8)
Never	77 (40.3)
Type of bra	
Padded	50 (43.8)
Nonpadded	44 (38.5)
Homemade/custom made	20 (17.5)
If homemade then the material you keep inside your bra ($n=20$)	
Small towel	15 (75)
Cotton	05 (25)
Criteria for selecting a bra	
Comfort	177 (92.7)
Cost	04 (2.1)
Company	05 (2.6)
Durability	05 (2.6)
Reasons for not wearing a bra ($n=77$)	
Pain at the surgery area	23 (12.0)
Swelling at the upper extremity	20 (10.5)
Not feeling like wearing a bra	15 (7.9)
Not aware of whether to wear a bra or not	14 (7.3)
Numbness at the affected area	05 (2.6)
Currently using breast prosthesis, $n=20$	20 (10.47)
Discomfort during wearing the prosthesis (4/20)	04 (20)
Cost of prosthesis (INR)	
1000-5000	12 (60)
>5000	08 (40)
Frequency of washing prostheses in winter	
Daily	05 (25)
Once a week	10 (50)
Twice a week	05 (25)
Frequency of washing prostheses in summer	
Daily	16 (80)
Once a week	03 (15)
Twice a week	01 (5)
Got information from medical staff regarding the use of breast prosthesis	05 (25)

Women in India avoid wearing bras after breast surgery due to a lack of awareness. In the present study, around 60% were wearing a brassier after surgery, out of which 24% started wearing bras within 6 months of surgery. Only 31% of the participants were wearing bras during day time, 28.8% used to wear when going outside only, and 40% were never in the practice of wearing a bra after surgery due to pain at the surgery area, numbness at the affected side, and swelling at the upper extremity. In a study conducted by Kaur *S et al.* on anthropometric

**Table 3: Challenges related to grooming practices
n=191**

Variables	n (%)
Brassier-related challenges due to	
a) Bra size	175 (91.6)
b) Purchase the bra	182 (95.2)
c) Color of their own choice	171 (89.5)
d) Design availability	187 (97.9)
e) Increase in cost	177 (92.6)
f) Awareness about front open bra	176 (92.1)
Clothing challenges related to tailor	
Feels hesitancy in giving a measurement of dress to the male tailor	176 (92)
Feels hesitancy in giving a measurement of dress to a female tailor	89 (46.5)
Deodorants (n=20)	
Use	20 (10.04)
Irritation with the use of deodorants	10 (50.0)
Talcum powder	
Use	15 (07.9)
Irritation with the use of talcum powder	05 (33.3)

breast measurement and brassier practices among women, it has been reported that 36.6% of females were wearing bras for 24 hours a day, and 27.7% used to wear bras only when going outside. In the same study, 76.2% of females had an awareness about their bra brand and size.^[8]

After surgical treatment, most of the women had to change their clothing patterns/designs. They prefer wearing loose clothes because of edema in the upper limb, pain, and scar at the affected area. However, in the present study, 51.3% were wearing the same style (salwar suit) of clothing as they used to wear before surgery. Salwar suits are the most popular clothing choice for North Indian women as most of the participants were from Punjab, Haryana, and Jammu and Kashmir, and their usual attire is a salwar suit. They feel comfortable wearing them both before and after the surgery.^[13] In a study conducted by Beard *et al.* on contemporary clothing issues of women post mastectomy, it has been reported that 82% of the participants preferred to wear the same style of clothing as they used to wear before surgery.^[10] It is also true that women usually have issues of privacy specifically so in women with some disability.^[14] In the current study also, many participants preferred to go to a woman tailor instead of a male tailor to get their dresses stitched.

In India, the majority of the women lack knowledge related to breast prostheses. As per the findings of the current study, only 25% got the information from healthcare professionals. A breast prosthesis is an artificial form that replaces the shape of the whole or part of the breast that has been removed.^[15] In the current study, 10.47% of the participants were using

silicon prostheses, whereas in another study by Jetha *et al.*, only six participants were using breast prostheses and 15 participants had received information regarding the use of prostheses.^[16] Women use breast prosthesis because they feel incomplete and embarrassed in front of other people due to the asymmetrical shape of the breast after mastectomy. In the current study, 75% of the participants preferred to keep a small towel/small cloth inside their brassier pocket and one-fourth of the participants preferred to keep cotton inside their bra pocket to give it a shape.

Many women were having discomfort with the use of breast prostheses because prostheses are the external things that they had to put in their breasts, which resulted in irritation and discomfort. In the present study, 40% of the participants were having discomfort while using breast prostheses, while in another study conducted by Borgesian *et al.* in Brazil, 43% of the participants were having discomfort.^[17] Such as weight of the brassier/prostheses, discomfort, displacement, unavailability of size or fit of the brassieres etc are reported in a recently published meta-analysis.^[18] Breast prostheses should be washed daily to maintain the hygienic status of women. In the present study, 25% of the participants used to wash the prosthesis once a week in winter; however, 80% used to wash the prosthesis daily in summer. In the present study, nearly half of the participants (43.8%) were wearing a padded bra, and 38.5% used to wear nonpadded bras. Kaur S *et al.* reported that 20.8% were wearing a padded bra and 77.2% of participants used to wear a nonpadded bra. A padded bra has many benefits for breast cancer patients after surgery. It can help in providing shape and give the bust a fuller look and may give some relief to the women from getting embarrassed.^[8]

The measurements of the affected and unaffected breasts were compared in the current study. Breast-conserving surgery is performed on the affected side, where the mass volume was decreased as a result of the procedure, demonstrating that the unaffected breast has a much greater mean volume than the affected breast. In the current study, the affected side mean mammary volume of 410.35 ml was significantly less than the unaffected side of 555.82 ml ($P < 0.01$). Similar findings have been reported by Avsar *et al.*, who conducted a study on 385 Turkish females, and there was a statistically significant difference in the mammary volume of both breasts. The right breast volume was larger than the left, but there was no breast morbidity present in the breasts of these women.^[9]

Strengths

- This study is the first of its kind in the Indian context wherein the authors attempted to explore practices

related to grooming associated with the changes in breast volume of the breast cancer survivors.

Limitations and recommendations

The limitation is the generalizability of research findings as the study is limited to the surgery and radiation unit of the hospital. Moreover, the study recruited the patients after 3 months of surgery.

Further qualitative studies can be conducted on the similar context to gather more insight and experiences of breast cancer survivors after breast surgery to develop counseling services and support groups for them. The multicenter studies may also be carried out for wider information from various regions of the country.

Conclusion

Data on grooming habits and anthropometric breast measurements of North Indian women are provided by the current study. The findings of the current study will be useful in comparing the grooming customs and associated difficulties experienced by North Indian women with those of other nations' women. The findings of anthropometric studies like ours will be useful in creating breast augmentation clothes and accessories. It is recommended to have the facility of counseling services for the survivors of breast cancer in order to provide them with the right information regarding clothes and prostheses.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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