

Breast Organ-Specific Surgical Practice: Perspectives of Indian Surgeons

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Abstract: *Objectives:* Cancer care is changing rapidly, with many countries embracing organ-specific specialization to offer more focused and effective treatment. In India, however, most surgeons continue to practice in a more generalized way, and we still do not fully understand how they feel about shifting toward subspecialized care. This question becomes especially important in breast cancer—the most common cancer among Indian women—where dedicated expertise can make a real difference in early detection, treatment quality, and patient survival. This study aims to explore how Indian surgeons view breast organ-specific practice, their willingness to adopt it, and the challenges they foresee.

Methods: Cross sectional study conducted in July 2024 in 100 surgeons of India using a self-administered google form questionnaire. Responses were evaluated and assessed.

Results: Out of 100 responses, 45% were from private/corporate setting, 39% from government institutes. 30.6% were from west, 27.6% from east, 22.4% from south and 19.4% from north zone. 55% were from surgical oncology, 36.4% were from general surgery. As per the study, breast (31%) and gastro-intestinal surgery (29%) were the subspecialty of choice. 47.5% agreed that they would be interested in breast specific surgery practice if proper training was available. 30.9% considered this to be less stressful with fewer complications. Majority (48%) thought that lack of patient awareness about breast cancer specific surgeon was the biggest disadvantage of organ specific practice. 22% considered it to be technically undemanding. 51% and 27.1% suggested that a dedicated and recognized training is required and organ specific practices are required at hospitals/institutions respectively. Notably, female surgeons were more likely to choose breast surgery compared to males (50% vs. 20%), a difference that was statistically significant ($p = 0.015$; 95% Confidence Interval (CI): 1.50–12.25)

Conclusion: Breast organ specific oncosurgery practice is still uncommon in India. More dedicated training programs are required along with adequate employment opportunities to fill the lacunae in promoting the same.

Keywords: Oncology, Breast cancer, Organ specific practice, Surgery.

INTRODUCTION

Breast cancer is the most common cancer in the world with an estimated 2.3 million new cases. It is the fifth leading cause of cancer mortality worldwide, with 685,000 deaths. It accounts for 1 in 4 cancer cases and for 1 in 6 cancer deaths and ranks first for incidence in most countries [1]. Even in India, breast is the leading site of cancer, posing an important public health problem [2]. A multidisciplinary approach to breast cancer, including awareness programs, preventive measures, screening programs for early detection, and availability of optimal treatment facilities which includes well trained and qualified surgeons, are vital for reducing both incidence and mortality of cancer in Indian women [3]. The management of breast cancer has seen a paradigm shift from primarily surgical management to multimodality therapy and personalized care. This requires proper understanding of tumor

biology with special importance to systemic and targeted therapy as well as minimally invasive and aesthetic oncologic techniques. Breast surgeons need to embrace this multidisciplinary approach with good knowledge of the interaction of systemic therapy and locoregional therapy. Another important factor which needs consideration is the ability to distinguish benign conditions and identification of high-risk patients who may benefit from risk reduction. As a result, the surgical treatment of breast cancer and clinical decision-making have become more complex validating sub-specialty training in breast surgical oncology.

Studies have demonstrated that the establishment of high-volume specialist breast units has an impact on improved outcomes in breast cancer care and survival [4,5]. Breast specialized practice has been associated with more favorable oncologic and patient satisfaction outcomes [1-4, 6-9]. A study also concluded that breast focused surgeons are more competent [10]. The need for specialized training is also highlighted by the decreased comfort of surgical trainees in

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comprehensive breast cancer management and surgical techniques such as axillary dissection and modified radical mastectomy in general surgery residency [5].

There is a constant debate regarding organ specific practice or generalized practice. Gradually the world is moving towards sub specialization. In India, however, surgical practice remains largely generalized, and unlike many high-income countries, there is no clear national framework for breast subspecialization. Importantly, there is a paucity of national data on surgeons' attitudes, practice patterns, or readiness to adopt organ-specific specialization in breast oncology. This gap is significant because breast cancer is the most common cancer in the country, and understanding surgeons' perspectives is crucial for developing targeted training pathways, workforce planning, and improving patient care standards.

This study was therefore designed to evaluate Indian surgeons' perspectives toward breast organ-specific practice, identify perceived opportunities and barriers, and generate evidence that can inform future policy and training strategies in breast oncology.

METHODS

A cross-sectional survey was conducted among surgeons across India in the month of July 2024. A structured, self-administered questionnaire was designed using Google Forms and distributed through a combination of professional surgical networks, including surgical societies and surgeon groups. Participants were randomly selected ensuring representation across different geographic regions and practice settings including teaching hospitals, private hospitals, and government institutions. The survey targeted surgical trainees as well as practicing general surgeons involved in the management of breast diseases.

The questionnaire consisted of 17 items divided into demographics and professional background, current breast surgery practice patterns, knowledge of advances in the management of breast cancer, attitude toward breast organ-specific subspecialization and perceived barriers to adopting subspecialization.

The content of the questionnaire was developed based on existing literature and reviewed by a panel of three senior breast surgeons for face and content validity. A pilot test was conducted with 10 surgeons who were not included in the final analysis and based on their feedback, minor modifications were made.

Participants were informed about the nature of the study and consent was taken for using their responses for this study. Reminders were sent and the first 100 responses were evaluated and assessed. After 100 responses were obtained, no more responses were accepted. As all the questions were not made compulsory, each question had variable number of responses. The results obtained were evaluated and analysed. The appropriate pie diagrams and tables were used for graphical presentation of data. The data was entered in Microsoft Excel spreadsheet and analysis was done using online statistical calculators/ Statistical Package for Social Sciences (SPSS) (Version 21.0, SPSS Inc, Chicago, IL, USA) and MedCalc version 12.5 for windows (MedCalc Software, Ostend, Belgium). For comparisons between categorical variables (e.g., gender vs. subspecialty choice, gender vs. attitudes, perceived advantages and disadvantages), the Chi-square test was applied and the p value <0.05 was considered as statistically significant. The study adhered to STROBE guidelines, and Institutional Review Board approval was not required as it involved knowledge assessment without sensitive personal data.

RESULTS

Out of 100 responses, 70 were males and 30 were females. 65 were in the age group of 31-40 years while 31 and 4 respondents were in the age groups of 21-30 and 41-50 years respectively. 74 were married and 26 were unmarried. The zone wise distribution (98 responses) was west - 30.6%, east - 27.6%, south - 22.4% and north - 19.4%. 45 respondents were from private/corporate setting, 39 from government institutes and 16 from trust hospitals. As per the study, breast (31.5%) and gastro-intestinal surgery (29.3%) were the two highest subspecialties of choice followed by head and neck (13%), hepatobiliary (10.9%) reconstructive (6.5%), genitourinary (6.5%) and neurosurgery (2.2%) (92 responses) (Figure 1). 68.4% found the concept of subspecialisation reasonable while 31.6% did not (98 responses). 47.5% agreed that they would be interested in breast specific surgery practice if proper training was available (99 responses). According to 30.9% respondents (97 responses) the best advantage of choosing breast as a subspeciality was that it is less stressful while fewer emergencies, fewer complications and part time work feasibility was chosen by 28.9%, 11.3%, and 13.4% respectively (Figure 2). 48% respondents thought that lack of patient awareness about breast cancer specific surgeon was the biggest disadvantage of organ specific practice while 22%

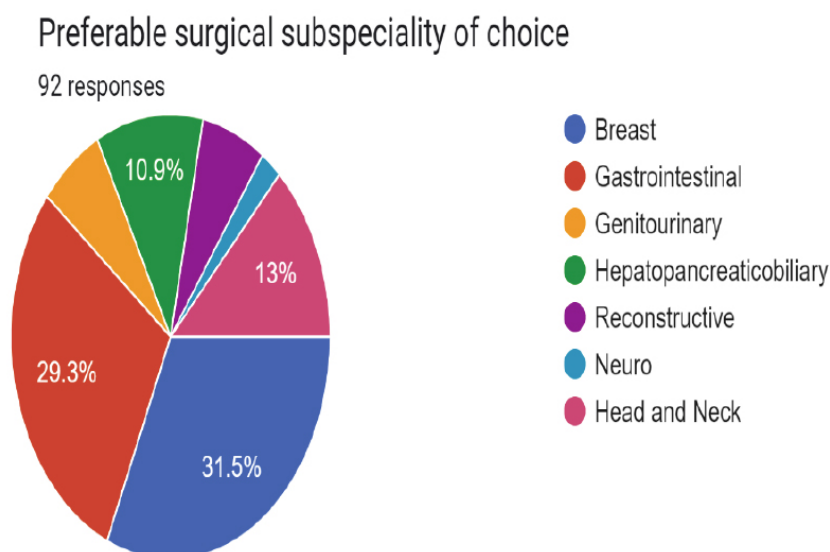


Figure 1: Subspecialty of choice.

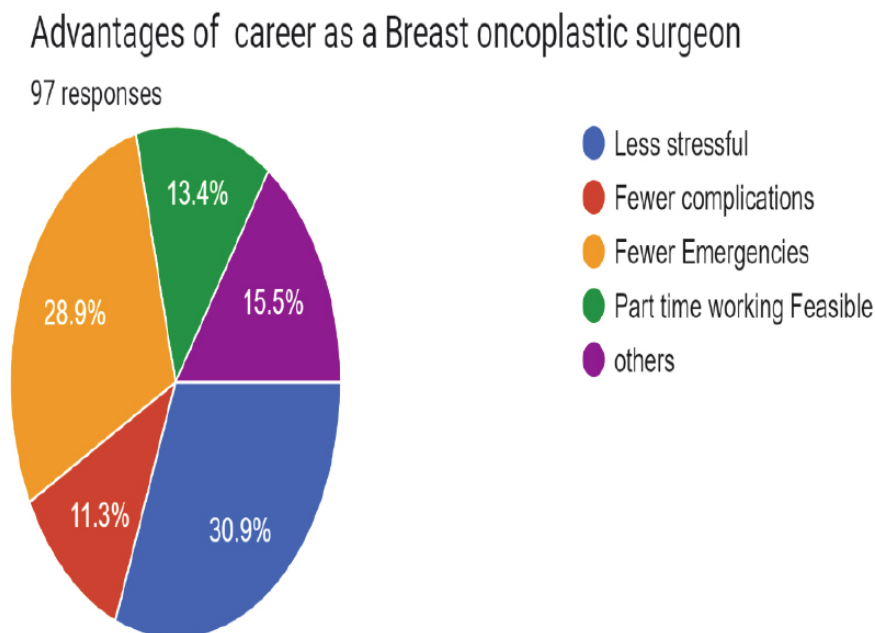


Figure 2: Advantages of career as a breast oncoplastic surgeon.

considered it to be technically undemanding. 19%, 7%, and 4% respondents chose lack of vacancies, escalating litigations and earning potential as the biggest disadvantages respectively (Figure 3). 76% of the trainees were aware of the molecular biology of breast cancer but only 58% knew about the prognostic, staging and therapeutic implications of the different molecular subtypes. Also, only 56.8% (99 responses) were aware of the newer advances of breast oncoplasty. On asking for their suggestions for making breast surgery more lucrative as a subspecialty (96 responses), 51% suggested that a dedicated and recognized training programme is required, 27.1% said that organ specific practices are required at

hospitals/institutions while 16.7% asked for better employment opportunities and, 5.2% believed that improvement in research opportunities would be helpful (Figure 4).

The responses of males and females were analyzed separately (30 females and 70 males). Amongst the 30 females, breast was the subspecialty of choice in 15 while the remaining 15 chose other subspecialties. Breast was the chosen subspecialty by 14 males while 48 chose other subspecialties, highest being gastrointestinal surgery chosen by 23 males (total 92 responses). This difference was statistically significant with a p-value of 0.015 and 95% Confidence Interval

Disadvantages of career as a Breast oncoplastic Surgeon

100 responses

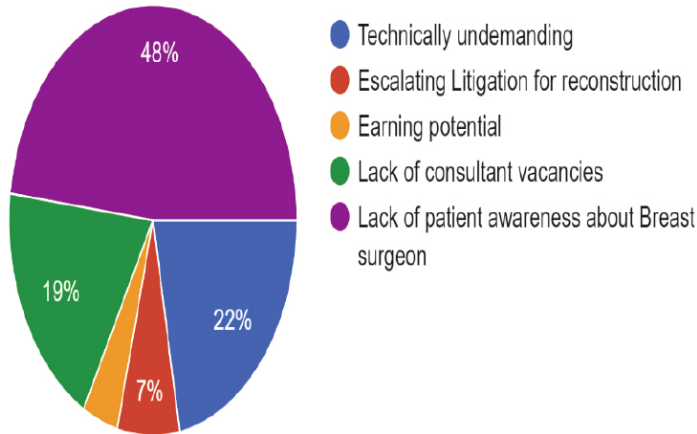


Figure 3: Disadvantages of career as a breast oncoplastic surgeon.

what would you suggest is needed further in Breast surgery subspeciality

96 responses

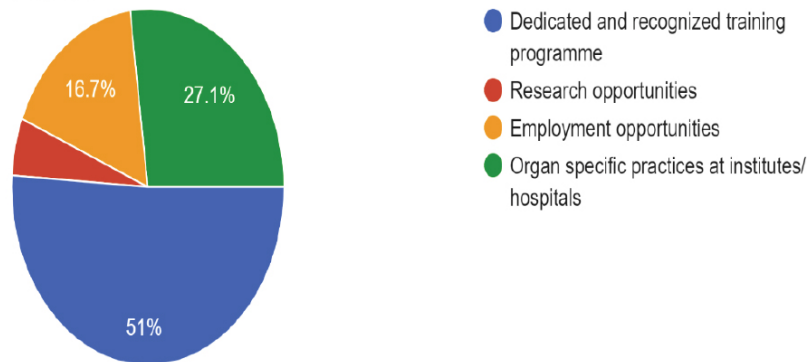


Figure 4: Suggestions for improvement in breast surgery subspeciality.

Table 1: Subspeciality of choice among females and males

	Females	Males	p-value	95% Confidence Interval
Breast	15	14	0.015 (Significant)	1.50–12.25
Other subspeciality	15	48		

(CI): 1.50–12.25 (Table 1). Of the 30 females, 22 found the concept of subspecialisation in breast surgery reasonable while 8 did not. Amongst males these numbers were 45 and 23 respectively (total 98 responses). But this difference was not statistically significant with a p-value of 0.638 and CI: 0.58–3.76.

Females considered less stress and fewer emergencies the biggest advantage of choosing breast subspeciality (9 each). According to males also these were the biggest advantages (21 and 19 respectively).

17 out of 30 (56.6%) females considered the biggest disadvantage to be lack of patient awareness

about breast surgeon while only 5 (16.6%) thought it was technically undemanding. Amongst 70 males, these numbers were 31(44.2%) and 17 (24.28%) respectively. But this difference was not statistically significant with a p-value of 0.5691 and CI: 0.61–4.41.

The suggestions for making breast subspeciality more lucrative also did not differ amongst males and females with 15 out of 30 females (50%) and 34 out of 66 males (51.5%) suggesting dedicated and recognized training programmes as the best option and there was no significant difference between both groups with p = 0.88 and CI: 0.41–2.14.

DISCUSSION

This study was conducted with the aim of evaluating Indian surgeons' perception about breast specific practice. The results of this study suggest that breast surgery is slowly becoming a popular career choice as it was the subspecialty of choice in 31.5% respondents. It was closely followed by gastro-intestinal surgery at 29.3%. Also, 68.4% found the concept of subspecialisation reasonable and 47.5% agreed that they would be interested in breast specific surgery practice if proper training was available. This was in contrast to the results in the study by Kollias *et al.*, 20 years back where they found only 4.8% selected breast as their first speciality preference [11]. Similar survey of surgical trainees in the UK demonstrated a similar lack of interest in breast surgery as a future career [12,13]. A study by Ainsworth *et al.* found that 18% of trainees selected as the first choice of subspeciality and 50% agreed with the concept of subspecialisation in breast [14].

30.9% respondents in this study selected less stress as the biggest advantage of choosing breast as a subspeciality while 28.9% selected fewer emergencies as the reason. Kollias *et al.* found the most common reason for choosing breast training as either a first or second choice subspecialty was due to rewarding patient interactions [11].

In our study, 48% respondents thought that lack of patient awareness about breast cancer specific surgeon was the biggest disadvantage of organ specific practice.

According to Ainsworth *et al.*, 42% of trainees not interested in a career in breast surgery considered it to be not technically challenging [14]. This was similar to the study by Kollias *et al.*, which also found lack of technical challenge was the leading reason for not choosing breast surgery as a subspecialty [11]. There is a general perception that breast surgery is relatively simple and uncomplicated which may be due to the lack of exposure of trainees to advanced breast surgical and oncoplastic techniques. Furthermore, breast specialization requires knowledge of cancer biology, molecular genetics, pathology, radiation oncology and medical oncology. Trainees who are only preoccupied with the technical aspects of surgery may find this unreasonable. In the current study, 76% of the trainees were aware of the molecular biology of breast cancer but only 58% knew about the prognostic, staging and therapeutic implications of the different molecular subtypes while only 56.8% were aware of the newer advances of breast oncoplasty.

Historically, it has been seen that a significant proportion of trainees choosing breast surgery were female. It may be because female trainees think that they can provide 'women's health' in surgery and offer women the opportunity to see a female surgeon. In our study as well, 50% of female respondents chose breast as the first subspeciality of choice. But 29% of the males did so too.

In this study we also curated a list of suggestions from the respondents regarding ways of making breast as a subspeciality more appealing to trainees. 51% suggested a dedicated and recognized training programme, 27.1% chose organ specific practices at hospitals/institutions, 16.7% asked for better employment opportunities while 5.2% believed that improvement in research opportunities would be helpful.

The need to better define breast surgery as a subspeciality has led to the formation of specialist breast surgical societies such as Breast Surgery International, the Association of Breast Surgery (UK and Ireland), the American Association of Breast Surgeons and the Breast Surgeons of Australia and New Zealand (Breast Surg ANZ). Along similar lines, the Association of Breast Surgeons of India (ABSI) was established in 2011, with the vision of becoming the voice of breast surgery in India. Its objectives were to promote the art and science of breast disease in the Indian subcontinent, to improve the standards and training in breast disease, to develop breast surgery as a distinct subspecialty in India, to create public awareness about the importance of early detection of breast cancer, to promote the study and research of breast disease and to provide consensus statements regarding the standardized and optimum management of various breast diseases in Indian scenario "in order to find an Indian solution to Indian problems".

One major hindrance in establishing breast organ specific practice, especially in a developing country like India is the poor doctor-patient ratio. There is a school of thought which says that selecting to focus only on one specific organ may not be feasible in the general population who still does not have access to timely cancer care. However, there is enough evidence to suggest that it is high time we shift our focus from quantity to quality. A lot of breast cancer patients are still being mismanaged at the grassroot level due to lack of adequate training and knowledge about the disease biology, the multidisciplinary treatment approach as well as advanced oncoplastic procedures among surgeons. Still there are cases where patients

have a vertical mammography scar on their chest. Also, the practice of operating on a breast cancer patient without performing mammography or immunohistochemical tests is not uncommon. This can result in more harm than good to these patients.

There is emerging data which suggests that “breast-focussed” surgeons have better outcomes. They are more likely to do breast-conservation surgery than are general surgeons. Also, they have fewer positive margins resulting in fewer re-excisions and, therefore, fewer mastectomies. They also have better patient satisfaction [9]. Specialization improves outcomes due to greater patient volume, enhanced technical ability, more integrated multimodality treatment, use of advanced techniques, and enhanced patient satisfaction.

CONCLUSION

Breast surgical oncology is a complex and evolving specialty. It requires multidisciplinary knowledge of cancer biology, molecular genetics, pathology, radiation oncology and medical oncology. But breast organ-specific practice is still uncommon in India. This study highlights a positive attitude toward subspecialization among surgeons and also reveals significant gaps in structured training, institutional support, and awareness. These challenges can be addressed by establishing national fellowship programs, integrating organ-specific modules into surgical curriculum and strengthening high-volume training centres. Improved patient awareness and clear career pathways can further promote breast surgical oncology as a viable and rewarding subspecialty, ultimately leading to evidence-based and patient-centered breast cancer care.

CONFLICT OF INTEREST

The authors have no relevant financial or non-financial interests to disclose

FINANCIAL DECLARATION

No funding was received for conducting this study

INFORMED CONSENT

It was a cross-sectional survey using a self-administered Google form questionnaire among randomly selected surgical trainees and practicing general surgeons and participation was voluntary with consent of the participants

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POTENTIAL CONFLICT OF INTEREST

None.

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