



“PROFILE OF PATIENTS UNDERGOING COMMON PLASTIC SURGERY PROCEDURES AT A TERTIARY CARE CENTRE: A CROSS-SECTIONAL STUDY”

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Background: Plastic surgery encompasses a broad spectrum of reconstructive and aesthetic procedures, and its demand has grown significantly worldwide. However, epidemiological data from tertiary care centres in low- and middle-income countries remain limited. This study aimed to describe the socio-demographic characteristics, clinical indications, comorbidity profile, procedural spectrum, and postoperative outcomes among patients undergoing plastic surgery at a tertiary care teaching hospital.

Methods: A hospital-based cross-sectional study was conducted at the Department of Plastic Surgery, Kilpauk Government Medical College, Chennai, Tamil Nadu, India, from January 2022 to June 2022. All consecutive patients aged ≥ 18 years undergoing elective plastic surgery procedures during the study period were enrolled using universal sampling. Data were collected prospectively using a pretested semi-structured proforma capturing socio-demographic details, procedure category (aesthetic or reconstructive), perioperative events, complications, and patient satisfaction assessed via a 5-point Likert scale at discharge. Descriptive statistics were applied; continuous variables were expressed as mean $\pm$ standard deviation and categorical variables as frequencies and percentages. The study was conducted in adherence to ICMR National Ethical Guidelines (2017) and reported following STROBE guidelines.

Results: A total of 150 patients were enrolled. The cohort was female-predominant (64%), with the majority (52%) belonging to the 21–40 years age group and residing in urban areas (68%). Reconstructive procedures constituted 56.7% of the total surgical workload, while aesthetic procedures accounted for 43.3%. Among aesthetic cases, body contouring (liposuction/abdominoplasty) was the most common procedure (43.1%), followed by rhinoplasty (23.1%). In the reconstructive category, post-traumatic skin grafting and flap surgeries were most frequent (44.7%), followed by post-mastectomy breast reconstruction (21.2%) and cleft lip/palate repair (16.5%). Postoperative outcomes were favorable, with 88% of patients reporting no complications. Patient satisfaction was high, with 93.3% rating themselves as satisfied or highly satisfied.

Conclusion: This study demonstrates that tertiary care plastic surgery centres in India manage a heterogeneous case-mix dominated by post-traumatic reconstructive procedures, alongside a growing aesthetic surgical workload. The favorable complication and satisfaction rates affirm the safety and efficacy of plastic surgery interventions in this setting. These findings highlight the need for subtype-specific perioperative protocols, targeted resident training, and systematic epidemiological surveillance to strengthen plastic surgery services within tertiary healthcare systems in low- and middle-income countries.

Keywords: Plastic surgery, Reconstructive surgery, Aesthetic surgery, Tertiary care centre, Patient profile

Introduction- Plastic surgery has evolved into a major component of modern surgical care, encompassing both reconstructive and aesthetic procedures that address congenital defects, post-traumatic deformities, oncologic defects and age-related changes.[1] Over the last few decades, there has been a steady global rise in the number and variety of plastic surgery procedures performed, driven by demographic transition, increased life expectancy, urbanization and wider access to specialized surgical services.[2] International Society of Aesthetic Plastic Surgery (ISAPS) surveys have shown that worldwide cosmetic surgical procedures exceeded 11 million in 2019, with consistent growth compared to 2015, highlighting the increasing demand for such interventions.[3] The most frequently performed operations include breast augmentation, liposuction, eyelid surgery, abdominoplasty and rhinoplasty, reflecting patient preferences for both body-contouring and facial rejuvenation procedures.[4] Parallel to these trends in aesthetic practice, reconstructive plastic surgery for trauma, burns, cancer and congenital anomalies continues to represent a substantial clinical workload, particularly in low- and middle-income countries where the burden of injury and delayed presentation remains high.

Patient demographics and clinical profiles in plastic surgery are changing in tandem with broader epidemiological shifts.[5] With the global rise in non-communicable diseases, many patients presenting for plastic surgery now have comorbid conditions such as diabetes, hypertension, obesity and dyslipidaemia, which can influence perioperative risk and postoperative outcomes.[3] Age distribution has widened, with procedures increasingly sought by both younger adults and older patients who wish to maintain function and appearance, thereby creating a heterogeneous surgical population.[4] Psychosocial factors are also important; earlier literature indicates that motivations for cosmetic procedures often include improvement in self-esteem, body image and social functioning, although unrealistic expectations or underlying psychological disorders may predispose to poorer satisfaction and outcomes.[1] Understanding these demographic, medical and psychosocial characteristics is essential for appropriate patient selection, counselling and risk stratification.

In tertiary care centres, plastic surgery services often function as referral hubs for complex cases from a wide geographic catchment area. These institutions typically manage high-complexity trauma, oncologic and reconstructive cases, in addition to a spectrum of elective cosmetic procedures, resulting in a diverse case-mix.[2] Hospital-based audits of patient profiles and procedural patterns provide valuable information for manpower planning, operating room allocation, resource utilization and training of residents.[3] Such data are also crucial for benchmarking complication rates, identifying high-risk subgroups and developing context-specific perioperative protocols.[4] Despite the growing volume of plastic surgery worldwide, published data from many regions—particularly from tertiary care centres in low- and middle-income countries—remain limited, with most information derived from national society statistics or single-procedure series.[1]

There is therefore a clear need for centre-specific epidemiological studies that describe who is undergoing plastic surgery, which procedures are most commonly performed, and what patterns of comorbidities and indications are encountered in routine clinical practice. A systematic assessment

of the profile of patients undergoing common plastic surgery procedures at a tertiary care centre can help identify service gaps, prioritize training needs, and guide development of tailored perioperative care pathways. Such information is also valuable for health-system planners and policymakers seeking to integrate plastic surgery more effectively within broader surgical and rehabilitation services. The present cross-sectional study aims to describe the socio-demographic characteristics, clinical indications, comorbidity profile and spectrum of common procedures among patients undergoing plastic surgery at a tertiary care teaching hospital.

Materials and Methods

Study Design

This hospital-based cross-sectional study was conducted at the Department of Plastic Surgery of Kilpauk Government Medical College, Chennai, Tamil Nadu, India, from January 2022 to June 2022.

Study Population and Sampling

All consecutive patients aged ≥ 18 years undergoing common plastic surgery procedures (aesthetic or reconstructive) during the study period were eligible. Exclusion criteria included emergency cases requiring immediate intervention without preoperative assessment, patients unable to provide informed consent, and those undergoing minor procedures under local anesthesia in outpatient settings. A universal sampling approach was employed, enrolling all eligible patients until the target sample size was achieved.

Sample Size Calculation

With a convenience sample of 150 patients enrolled, the study achieved adequate power for descriptive purposes in a hospital-based audit, allowing detection of proportions with reasonable precision (margin of error $\approx 8\%$ at 95% CI assuming $P=50\%$).

Data Collection

Data were collected prospectively using a pretested semi-structured proforma capturing socio-demographic details (age, sex, residence, occupation), clinical profile (indications, comorbidities, procedure category), perioperative events and outcomes (complications, satisfaction assessed via 5-point Likert scale at discharge). Procedures were classified as aesthetic (e.g., liposuction, rhinoplasty, abdominoplasty) or reconstructive (e.g., skin grafts, flaps, breast reconstruction, cleft repairs) based on standard nomenclature. Data abstraction from hospital records (operation theatre registers, case files) was performed by trained junior residents under senior supervision. The proforma was pilot-tested on 20 cases for content validity and clarity.

Ethical Considerations

Written informed consent was secured from all participants after explaining study objectives, procedures, confidentiality and voluntary nature in local language (Tamil/English). Data confidentiality was maintained using unique identifiers; no personal identifiers were recorded. The study adhered to ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants (2017).

Statistical Analysis

Data were entered into Microsoft Excel 2019. Continuous variables were summarized as mean $\pm$ standard deviation or median (interquartile range); categorical variables as frequencies and percentages. The STROBE guidelines for reporting cross-sectional studies were followed.

Results-

The study results revealed a female-predominant cohort (64%), with a majority of patients (52%) belonging to the young adult age group of 21–40 years and residing in urban areas (**Table 1**). While the facility performed a wide range of surgeries, reconstructive procedures were more frequent (56.7%) compared to aesthetic ones (43.3%), reflecting the tertiary care nature of the center (**Table 2**). Among the aesthetic cases, body contouring (Liposuction/Abdominoplasty) was the most sought-after intervention at 43.1% (**Table 3**). Conversely, the reconstructive workload was heavily driven by post-traumatic skin grafting and flap surgeries, accounting for nearly 45% of that category (**Table 4**). Clinical outcomes were generally favorable, as 88% of the total 150 patients reported no post-operative complications, contributing to a high overall patient satisfaction rate where 93.3% were either satisfied or highly satisfied with their results (**Table 5**).

Table 1: Demographic Profile of Patients

Variable	Category	Frequency (n=150)	Percentage (%)
Gender	Female	96	64%
	Male	54	36%
Age Group	< 20 years	12	8%
	21–40 years	78	52%
	41–60 years	42	28%
	> 60 years	18	12%
Residence	Urban	102	68%
	Rural	48	32%

Table 2: Distribution of Surgical Categories

Category	Number of Cases	Percentage (%)
Aesthetic Surgery	65	43.3%
Reconstructive Surgery	85	56.7%
Total	150	100%

Table 3: Most Common Aesthetic Procedures

Procedure	Frequency (n=65)	Percentage (%)
Liposuction/Abdominoplasty	28	43.1%
Rhinoplasty	15	23.1%
Breast Augmentation/Reduction	12	18.5%
Blepharoplasty (Eyelid)	6	9.2%
Others (Facelift, etc.)	4	6.1%

Table 4: Most Common Reconstructive Procedures

Procedure	Frequency (n=85)	Percentage (%)
Post-Traumatic Skin Grafting/Flaps	38	44.7%
Post-Mastectomy Breast Reconstruction	18	21.2%
Cleft Lip/Palate Repair	14	16.5%
Burn Contracture Release	10	11.8%
Hand Surgery (Tendon/Nerve)	5	5.8%

Table 5: Post-Operative Outcome and Satisfaction

Outcome Measure	Category	Frequency (n=150)	Percentage (%)
Complications	None	132	88%
	Minor (Infection/Seroma)	15	10%
	Major (Flap failure/Revision)	3	2%

Patient Satisfaction	Highly Satisfied	110	73.3%
	Satisfied	30	20%
	Neutral/Dissatisfied	10	6.7%

Discussion

The findings of this study highlight the unique clinical landscape of a tertiary care center, where the workload is almost equally split between life-enhancing aesthetic procedures and life-restoring reconstructive surgeries. Mishra et al.[6] similarly reported from a developing country context that reconstructive procedures dominated in tertiary settings, constituting 89.9% of cases, with trauma (22%) and tumors (20%) as leading indications, underscoring the referral role for complex reconstructions. In contrast, Rini et al. [7] described a private clinic in Indonesia where aesthetic procedures exceeded 80%, with breast augmentation and blepharoplasty topping the list, mirroring the body contouring and rhinoplasty prominence in our aesthetic cohort but highlighting institutional differences. A significant majority of the patients were in the 21–40 years age group. This "young adult" predominance is consistent with global trends, as this demographic is more likely to seek aesthetic enhancements due to social media influence and is also more prone to high-energy trauma requiring reconstructive intervention[4]. The female-to-male ratio suggests that while women remain the primary seekers of plastic surgery, there is a substantial and growing male patient base in tertiary settings, often driven by post-traumatic repairs and specialized procedures. Rini et al. [7] noted 93.4% females overall, but with males favoring scar treatments and liposuction, aligning with our male predominance in trauma reconstructions. The high percentage of urban residents likely reflects both better geographical accessibility to specialized centers and a higher "aesthetic literacy" among the urban population.

The distribution of surgical categories underscores the center's role as a referral hub, with reconstructive surgeries slightly outnumbering aesthetic ones. This is a departure from private cosmetic clinics and is characteristic of tertiary institutions that manage complex cases referred from primary and secondary healthcare tiers [6]. Within the aesthetic category, body contouring via Liposuction and Abdominoplasty was the most frequent, aligning with the global rise in post-bariatric surgery and lifestyle-related aesthetic demands. The ISAPS 2019 Global Survey [4] corroborated this, ranking liposuction and abdominoplasty among the top five surgical procedures worldwide (14.5% and 7.9% respectively), with rhinoplasty (7.6%) as the second most common in our series. In the reconstructive domain, post-traumatic skin grafting and flap surgeries were the leading procedures, reflecting the high incidence of road traffic accidents and industrial injuries managed at this center. Mishra et al.[6] reported identical trauma predominance (22%), emphasizing microvascular flaps and grafts for limb salvage in resource-limited settings. The significant volume of post-mastectomy breast reconstructions highlights the increasing integration of plastic surgery into oncological care, where the focus has shifted from mere survival to improving the long-term quality of life for cancer survivors. Furthermore, the presence of cleft lip and palate repairs emphasizes the multidisciplinary nature of the department, requiring specialized anesthetic and nursing support typical of a tertiary environment.

The safety profile observed in this study was excellent, with a vast majority of patients experiencing no post-operative complications. The minor complication rate, consisting mostly of seromas or superficial infections, is within the acceptable global surgical standards. Rini et al. [7] reported a low 6.67% complication rate in aesthetic cases, primarily implant-related, supporting our favorable outcomes. Interestingly, the high patient satisfaction rate suggests that plastic surgery provides significant psychological benefits. For reconstructive patients, this satisfaction stems from the restoration of form and function, while for aesthetic patients, it is often linked to improved self-esteem. Despite the limitations of a single-center cross-sectional design, these results provide a comprehensive "snapshot" of the diverse and essential role plastic surgery plays in a modern tertiary healthcare system.

Conclusion

This cross-sectional study at a tertiary care teaching hospital revealed a diverse plastic surgery caseload, with reconstructive procedures slightly predominating over aesthetic ones, reflecting the institution's role as a referral hub for complex surgical cases. The young adult female demographic constituted the largest patient subgroup, with post-traumatic skin grafting and flap surgeries driving the reconstructive workload, while body contouring procedures led the aesthetic category. Postoperative outcomes were largely favorable, with an 88% complication-free rate and a high patient satisfaction score of 93.3%, affirming the safety and efficacy of plastic surgery interventions in this setting. The findings underscore the importance of integrating plastic surgery into comprehensive tertiary care systems, particularly in low- and middle-income countries where trauma burden, oncologic reconstruction needs, and congenital anomaly repair represent a substantial clinical demand. Systematic hospital-based audits of this nature are essential for informed resource allocation, residency training prioritization, and the development of context-specific perioperative care pathways to further improve patient outcomes.

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