DOI: https://doi.org/10.54393/pjhs.v6i1.2610

PAKISTAN JOURNAL OF HEALTH SCIENCES
(LAHORE)
https://thejas.com.pk/index.php/pjhs
ISSN (E): 2790-9352, (P): 2790-9344
Volume 6, Issue 01 (January 2025)

Original Article

OPEN ACCESS

Plastic Surgery Awareness and Perceptions among Healthcare Professionals: A Single Centre Study at Liaquat University Hospital

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ARTICLE INFO

Keywords:
Awareness, Perception, Plastic Surgery, Healthcare Professionals

How to Cite:
Sanober, A., Siddiqui, A. S., Sheikh, S., Irshad, S., Sangrasi, H., & Qureshi, P. N. A. A. (2025). Plastic Surgery Awareness and Perceptions among Healthcare Professionals: A Single Centre Study at Liaquat University Hospital: Plastic Surgery Awareness and Perceptions among Healthcare Professionals. Pakistan Journal of Health Sciences, 6(1), 187-193. https://doi.org/10.54393/pjhs.v6i1.2610

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Received date: 29th November, 2024
Acceptance date: 22nd January, 2025
Published date: 31st January, 2025

ABSTRACT

Plastic surgery encompasses both reconstructive and aesthetic procedures, addressing functional and cosmetic needs. Misconceptions about its scope are common, even among healthcare professionals, underscoring the need to evaluate their awareness and perceptions. **Objectives:** To assess the level of awareness and perceptions of plastic surgery as a speciality among healthcare professionals at Liaquat University Hospital, Hyderabad and Jamshoro. **Methods:** A cross-sectional questionnaire-based study was carried out at Liaquat University Hospital, Hyderabad, and Jamshoro. Participants included 108 house officers and postgraduate residents working in nonsurgical specialities. The study excluded doctors from other specialities related to surgery and dermatology due to overlaps in the scope of practice with plastic surgery. **Results:** A majority of participants (79.6%) recognized that cosmetic surgery was a component of plastic surgery, while 12% considered them to be the same, and 3.7% disagreed. In terms of the origin of the term "plastic surgery," 82.4% of participants did not know the reason behind the term. Regarding the aesthetic procedures, participants reported rhinoplasty as done by plastic surgeons (61.1%), with 37% favouring ENT surgeons. Non-surgical procedures such as Botox were mostly attributed to dermatologists (51.9%), with 40.7% selecting plastic surgeons. **Conclusions:** It was concluded that the study revealed significant gaps in both awareness and perceptions regarding plastic surgery among healthcare professionals. There was a noticeable misunderstanding regarding the appropriate speciality for aesthetic procedures, such as liposuction and breast reduction, where other surgeons were preferred over plastic surgeons, indicating a need for improved education and awareness in the medical community.

INTRODUCTION

Plastic surgery, which includes both cosmetic and reconstructive procedures, is a multifaceted surgical speciality encompassing diverse subspecialties such as microvascular surgery, hand surgery, and cranio-maxillofacial surgery. Despite its growing demand globally, Pakistan faces a significant shortage of adequately trained plastic surgeons [1]. Similar to other countries, this disparity arises from the limited number of residency training slots available relative to the rapid expansion of the field. Globally, this trend is expected to persist unless training programs are expanded [2, 3]. Globally, plastic surgery is often misconceived as purely aesthetic due to media representations that prioritize cosmetic enhancements over reconstructive procedures. This misrepresentation has led to a limited understanding of the specialty's broader scope, which includes life-saving interventions such as burn treatment, trauma repair, and congenital anomaly corrections. In Pakistan, these global misconceptions are further shaped by cultural and societal factors [4]. A conservative outlook, insufficient media representation, and limited public awareness often portray plastic surgery as a luxury rather than a necessity. These

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perceptions can lead to stigma, underutilization of services, and challenges within the medical community, such as inappropriate referrals or neglect of reconstructive possibilities [4]. In Pakistan, medical education typically spans five years of undergraduate training followed by a house job, after which specialization is pursued through a fellowship or board certification in plastic surgery, requiring an additional five years. The exposure to plastic surgery during undergraduate medical training is limited, often restricted to select procedures, such as burn management or wound care. Research highlights that increasing early exposure to plastic surgery can significantly influence students' interest and understanding of the speciality [5]. However, similar to other nations, studies on this topic in Pakistan are often region-specific and fail to provide a national perspective [6]. Cultural and societal factors also contribute to misconceptions about plastic surgery in Pakistan. A conservative societal outlook, combined with insufficient media representation and limited public awareness, often portrays plastic surgery as purely cosmetic. These misperceptions extend into the medical community, leading to challenges such as erroneous referrals and underutilization of reconstructive procedures. Addressing these challenges is crucial to reducing stigma, enhancing awareness, and promoting interest in this competitive field [7, 8]. Identifying misconceptions early can enable curriculum reforms, improve interdisciplinary collaboration, and contribute to addressing the growing shortage of plastic surgeons in Pakistan.

Plastic surgery is a broad and multifaceted surgical specialty encompassing reconstructive procedures for burns, trauma, and congenital anomalies, yet it remains widely misconceived as purely cosmetic, even among healthcare professionals whose referral decisions and clinical judgments directly impact patient outcomes. In Pakistan, this problem is compounded by limited undergraduate exposure to plastic surgery, cultural stigma, and media-driven misrepresentation, creating significant knowledge gaps within the medical community that can lead to inappropriate referrals and underutilization of reconstructive services. This study therefore aimed to systematically assess the level of awareness and accuracy of perceptions regarding plastic surgery as a specialty among house officers and postgraduate residents in non-surgical disciplines at Liaquat University Hospital, Hyderabad and Jamshoro, to identify specific misconceptions and inform targeted educational interventions.

METHODS

A cross-sectional study was carried out at Liaquat University Hospital, Hyderabad, and Jamshoro. The duration of the study was from Nov 2021 to April 2022. A structured questionnaire was developed and administered to a sample of 108 participants, which included 108 house officers and postgraduate residents working in nonsurgical specialities. The study excluded doctors from general surgery, surgical super-specialities, orthopedics, Ear, Nose, Throat (ENT), ophthalmology, and dermatology due to overlaps in the scope of practice with plastic surgery. Only individuals holding an MBBS or higher qualification were included in the study. The study population size was determined to be 1,050 (600 house officers and 450 postgraduate residents), working in a study setting. All participants were selected using a non-probability consecutive sampling technique, ensuring that all eligible individuals meeting the inclusion criteria were included consecutively to reduce selection bias. The sample size was calculated using the Rao Soft Calculator [9], with a margin of error of 7.5%, a confidence level of 90%, and a response distribution of 50%. The final calculated sample size was 108 participants. The study was approved by the Ethical Review Committee of Liaquat University of Medical and Health Sciences, Jamshoro vide letter No. LUMHS/REC/-166. Informed written consent was obtained from every participant before being included in the study. The questionnaire comprised two sections, each designed with multiple-choice options to ensure structured responses. The Perceptions section (3 questions) explored general beliefs about plastic surgery, including its distinction from cosmetic surgery, the origin of its name, and its perceived exclusivity to wealthy individuals. The Awareness and Knowledge Gaps section (5 questions) assessed understanding of surgical outcomes, potential risks, and the appropriate specialists for conditions such as hypospadias, cleft lip/palate, and burns. The second section presented a series of clinical scenarios involving trauma, pathological conditions, reconstructive procedures, and cosmetic surgeries. The questionnaire was validated by 4 independent subject matter experts to face content validity before administration, aligning with standard research practices. Participants were asked to identify the speciality they believed to be most appropriate for managing each scenario. Options included various surgical specialities such as ENT surgery, ophthalmic surgery, neurosurgery, orthopedic surgery, pediatric surgery, urology, oral and maxillofacial surgery, dermatology, and plastic surgery. The exclusion criteria ensured a focused evaluation of nonsurgical specialities, minimizing bias from related fields. SPSS version 25.0 was used to analyze the data. The qualitative data were presented as frequency and percentages. The chi-square

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test was used to find the association between perception and awareness concerning gender and age group. p-value<0.05 was considered statistically significant.

RESULTS

The mean age of participants was 28.6 ± 7.21 years. Most participants were aged between 26–30 years (48, 44.4%), followed by 21–25 years (31, 28.7%), 31–35 years (21, 19.4%), and >35 years (8, 7.4%). Regarding gender distribution, 60 participants (55.6%) were male, and 48 (44.4%) were female. Participants were drawn from various nonsurgical specialities, with the highest representation from internal medicine (30, 27.8%), followed by pediatrics (25, 23.1%), psychiatry (20, 18.5%), cardiology (18, 16.7%), and radiology (15, 13.9%)(Table 1).

Table 1: Association of Maternal Hemoglobin Levels with Maternal Outcomes

Variables	Frequency (%)
Mean Age	28.6 ± 7.21 Years
Age Groups	
21–25 Years	31 (28.7%)
26–30 Years	48 (44.4%)
31–35 Years	21 (19.4%)
>35 Years	8 (7.4%)
Gender	
Male	60 (55.6%)
Female	48 (44.4%)
Specialties	
Internal Medicine	30 (27.8%)
Pediatrics	25 (23.1%)
Psychiatry	20 (18.5%)
Radiology	15 (13.9%)
Cardiology	18 (16.7%)

The perception of plastic surgery among healthcare professionals varies in terms of its differentiation from cosmetic surgery. A majority of participants (79.6%) recognized that cosmetic surgery is a part of plastic surgery, while 12% considered them to be the same, and 3.7% disagreed. In terms of the origin of the term "plastic surgery," 82.4% of participants did not know the reason behind the term, with only 5.6% associating it with the use of plastic materials in surgery. A significant portion (37%) viewed plastic surgery as expensive and for the rich, while 54.6% disagreed, and 8.3% were uncertain (Table 2).

Table 2: Perceptions Regarding About Plastic Surgery

Questions	Responses	Frequency (%)
Do you believe that plastic surgery? And cosmetic surgery are the same fields?	Yes	13 (12%)
	No	4 (3.7%)
	Cosmetic Surgery is a Part of Plastic Surgery	86 (79.6%)
	I Do Not Know	5 (4.6%)
What is the reason behind the Name of "plastic" surgery?	Because It Involves the Use of Plastic	6 (5.6%)
	After Surgery, The Face Looks Like Plastic	5 (4.6%)
	Don't Know	89 (82.4%)
	Other Reason	8 (7.4%)
Is plastic surgery expensive and only meant for rich people?	Yes	40 (37%)
	No	59 (54.6%)
	Not Sure	9 (8.3%)

Regarding awareness of the outcomes of plastic surgery, 74.1% of participants believed that plastic surgery did not leave scars on the face, while only 18.5% acknowledged the presence of scars. Concerning the risk of plastic and cosmetic surgeries, 87% believed the risk was similar to other surgical procedures, whereas only 7.4% thought they were very risky. In terms of appropriate specialities for various conditions, there was clear recognition of the plastic surgeon's role in treating burns (86.1%) and cleft lip/palate (54.6%). However, for hypospadias, opinions were more divided, with 38% considering pediatric surgeons as the most suitable, and plastic surgeons and urologists both received 25.9% of the responses (Table 3).

Table 3: Awareness and Knowledge Gaps in Plastic Surgery

Awareness Areas	Responses	Frequency (%)
Do you think plastic surgery leaves scar marks on the face?	Yes, There Are Scars	20 (18.5%)
	No, There Are No Scars	80 (74.1%)
	Don't Know	8 (7.4%)
Risk in plastic/ cosmetic surgeries?	High Risk	8 (7.4%)
	Similar Risk As of Other Surgeries	94 (87%)
	No Risk	5 (4.6%)
	Don't Know	1 (0.9%)
Appropriate Specialty for Hypospadias	Plastic Surgeon	28 (25.9%)
	Pediatric Surgeon	41 (38%)
	Urologist	28 (25.9%)
Appropriate Specialty for Cleft Lip/Palate	Plastic Surgeon	59 (54.6%)
	Other	49 (45.4%)
Appropriate Specialty for Burns	Plastic Surgeon	93 (86.1%)
	Other	15 (13.9%)

Regarding the aesthetic procedures, responses indicated some misunderstandings regarding the most appropriate specialities. For liposuction, 52.8% of participants preferred general surgeons over plastic surgeons (47.2%). This disparity was even more significant for breast reduction/augmentation, where 78.7% of participants favoured general surgeons over plastic surgeons (21.3%). Rhinoplasty showed a more favourable view of plastic surgeons (61.1%), with 37% favouring ENT surgeons. For hair transplantation, 61.1% opted for plastic surgeons, while 37% selected dermatologists. Non-surgical procedures such as Botox were mostly attributed to dermatologists (51.9%), with 40.7% selecting plastic surgeons (Table 4).

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Table 4: Aesthetic Procedures and Misunderstanding of Plastic Surgery Scope

Questions	Preferred Specialty	Frequency (%)
Liposuction	Plastic Surgeon	51 (47.2%)
	General Surgeon	57 (52.8%)
Breast Reduction/Augmentation	Plastic Surgeon	23 (21.3%)
	Breast Surgeon	85 (78.7%)
Rhinoplasty	Plastic Surgeon	66 (61.1%)
	ENT Surgeon	40 (37.0%)
Hair Transplantation	Plastic Surgeon	66 (61.1%)
	Dermatologist	40 (37.0%)
	General Surgeon	2 (1.9%)
Botox (Non-Surgical)	Dermatologist	56 (51.9%)
	Plastic Surgeon	44 (40.7%)
	Dental Surgeon	8 (7.4%)

Male and female participants had comparable misconceptions, with most agreeing that cosmetic surgery is part of plastic surgery (p=0.65) and a majority unaware of the reason behind the term "plastic" (p=0.81). Perceptions about plastic surgery being expensive and exclusive to the wealthy were similar across genders (p=0.98). While females leaned slightly more toward general surgeons for liposuction and breast reduction preferences, these differences were not statistically significant (p=0.19 and p=0.21, respectively) (Table 5).

Table 5: Gender Vs. Perceptions and Aesthetic Procedures Preferences

Questions / Procedure	Male (n=60)	Female (n=48)	p-Value
Do You Believe Plastic and Cosmetic Surgery Are the Same?			
Yes	8 (13.3%)	5 (10.4%)	0.65
No	2 (3.3%)	2 (4.2%)	
Part of Plastic Surgery	46 (76.7%)	40 (83.3%)	
Don't Know	4 (6.7%)	1 (2.1%)	
Plastic Surgery Is Called "Plastic" Because?			
Involves Plastic	4 (6.7%)	2 (4.2%)	0.81
Looks Plastic	3 (5.0%)	2 (4.2%)	
Don't Know	48 (80.0%)	41 (85.4%)	
Other	5 (8.3%)	3 (6.2%)	
Is Plastic Surgery Expensive and Meant for the Rich?			
Yes	22 (36.7%)	18 (37.5%)	0.98
No	33 (55.0%)	26 (54.2%)	
Not Sure	5 (8.3%)	4 (8.3%)	
Liposuction Specialty Preference			
Plastic Surgeon	32 (53.3%)	19 (39.6%)	0.19
General Surgeon	28 (46.7%)	29 (60.4%)	
Breast Reduction/Augmentation Preference			
Plastic Surgeon	10 (16.7%)	13 (27.1%)	0.21
Breast Surgeon	50 (83.3%)	35 (72.9%)	

Younger (≤30 years) and older (>30 years) participants had similar views, with most identifying cosmetic surgery as part of plastic surgery (p=0.79) and expressing a limited understanding of why it is called "plastic" (p=0.83). Both age groups showed comparable perceptions about cost exclusivity (p=0.71). While younger participants slightly favoured plastic surgeons for liposuction and breast reduction, the differences were not significant (p=0.78 and p=0.17) (Table 6).

Table 6: Age Groups Vs. Perceptions and Aesthetic Procedures Preferences

Questions / Procedure	≤30 Years (n=79)	>30 Years (n=29)	p-Value
Do You Believe Plastic and Cosmetic Surgery Are the Same?			
Yes	9 (11.4%)	4 (13.8%)	0.79
No	3 (3.8%)	1 (3.4%)	
Part of Plastic Surgery	63 (79.7%)	23 (79.3%)	
Don't Know	4 (5.1%)	1 (3.4%)	
Why Is Plastic Surgery Called "Plastic"?			
Involves Plastic	4 (5.1%)	2 (6.9%)	0.83
Looks Plastic	4 (5.1%)	1 (3.4%)	
Don't Know	63 (79.7%)	26 (89.7%)	
Other	8 (10.1%)	0 (0%)	
Is Plastic Surgery Expensive and Only for the Rich?			
Yes	28 (35.4%)	12 (41.4%)	0.71
No	43 (54.4%)	16 (55.2%)	
Not Sure	8 (10.1%)	1 (3.4%)	
Liposuction Specialty Preference			
Plastic Surgeon	38 (48.1%)	13 (44.8%)	0.78
General Surgeon	41 (51.9%)	16 (55.2%)	
Breast Reduction/Augmentation Preference			
Plastic Surgeon	14 (17.7%)	9 (31.0%)	0.17
Breast Surgeon	65 (82.3%)	20 (69.0%)	

DISCUSSION

This study highlighted the significant knowledge gaps and misconceptions about plastic surgery among young healthcare professionals at Liaquat University Hospital, Hyderabad, and Jamshoro. While 79.6% correctly identified cosmetic surgery as a subset of plastic surgery, 12% conflated the two entirely, and 4.6% were uncertain. This finding aligns with previous studies indicating that healthcare professionals often lack clarity regarding the distinction between reconstructive and aesthetic procedures in plastic surgery. A study by Perrault *et al.*, found that even medical professionals frequently associated plastic surgery primarily with aesthetic enhancements rather than its reconstructive aspects, which encompass burn treatment, trauma management, and congenital anomaly corrections [10]. Interestingly, 82.4% of participants were unaware of the origin of the term "plastic surgery," with only 5.6% erroneously attributing it to the use of plastic materials in surgery. This reflects a common public and professional misconception that the term "plastic" relates to synthetic materials rather than its etymological origin from the Greek word plastikos, meaning "to mold" [11]. A similar observation was made in a

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study by Gili *et al.*, where a majority of participants lacked basic knowledge about the nomenclature of the field [12]. These misconceptions could lead to misdiagnoses and underutilization of plastic surgery services, negatively impacting patient outcomes. Over time, they may hinder the growth of plastic surgery as a speciality in Pakistan by limiting interest and training opportunities. Financial barriers and perceptions regarding the affordability of plastic surgery were another focus area. While 37% viewed plastic surgery as expensive and primarily for affluent individuals, 54.6% disagreed. Many professionals perceived plastic surgery as expensive and primarily accessible to wealthy individuals, which limits its perceived relevance in public healthcare settings. This disparity may reflect differences in exposure to public versus private healthcare systems [13]. Public hospitals often offer subsidized reconstructive surgeries, contrasting with the high costs associated with cosmetic procedures in private settings. Studies in similar settings, such as the work by Hery *et al.*, have shown that perceptions of cost frequently deter patients from seeking even medically necessary reconstructive procedures [14]. The awareness of plastic surgeons' roles in specific medical conditions also revealed inconsistencies. While a majority correctly identified burns (86.1%) and cleft lip/palate (54.6%) as domains of plastic surgery, only 25.9% associated hypospadias correction with this speciality. Pediatric surgeons were favoured for this condition (38%). The limited knowledge about plastic surgeons' roles in reconstructive procedures is possibly due to insufficient exposure during medical training. This misperception is supported by findings from Petmeza *et al.*, which reported confusion about the scope of plastic surgery among medical professionals, particularly regarding pediatric conditions [15]. The study also assessed knowledge about risks and outcomes. A majority of healthcare professionals (87%) believed the risks of plastic and cosmetic surgery were similar to those of other surgical procedures, indicating a sound understanding of surgical risks, similar to the findings of the study done in the UK among undergraduate medical students [16]. However, the finding that 74.1% believed plastic surgery does not leave scars suggests an overly optimistic view of surgical outcomes, potentially influenced by media portrayals. Media portrayal often exaggerates aesthetic outcomes and focuses on cosmetic procedures, shaping unrealistic expectations and skewed perceptions of the full scope of plastic surgery. A systematic review by Shauly *et al.*, emphasized the role of media in shaping unrealistic expectations among both healthcare providers and the public [17]. Misunderstandings regarding the management of aesthetic procedures were pronounced. For liposuction and breast augmentation, general surgeons were favoured over plastic surgeons by 52.8% and 78.7% of participants, respectively. This contrasts with findings from studies in high-income countries, where plastic surgeons are predominantly recognized as specialists for these procedures [18]. Healthcare professionals often conflated cosmetic surgery with plastic surgery and incorrectly attributed procedures like liposuction and breast reduction to general surgeons instead of plastic surgeons. [19]. On the other hand, the study revealed stronger recognition of plastic surgeons' expertise in rhinoplasty (61.1%) and hair transplantation (61.1%), similar to findings by Alosfoor *et al.*, in a comparable resource-limited setting [20]. The variability in participants' responses regarding aesthetic procedures may stem from limited exposure to plastic surgery and the dominance of general surgery in doctor's perceptions. The cultural stigma around aesthetic procedures and gaps in medical education contribute significantly to misconceptions about the roles and expertise of plastic surgeons. Cultural taboos, media portrayals, and a lack of formal education on the broader scope of plastic surgery likely contribute to these misconceptions. The use of convenience sampling in our study and single-centred study limits the generalizability of findings. Moreover. Future research could employ random sampling and include multiple hospitals across regions to improve representativeness and reduce bias.

The use of convenience sampling in our study and single-centred study limits the generalizability of findings. Moreover. Future research could employ random sampling and include multiple hospitals across regions to improve representativeness and reduce bias.

CONCLUSIONS

It was concluded that the study identified key knowledge gaps among healthcare professionals regarding plastic surgery. A significant portion (82.4%) of participants lacked understanding of the term "plastic surgery," and misconceptions about its scope and procedures were prevalent. For instance, general surgeons were incorrectly preferred over plastic surgeons for aesthetic procedures like liposuction and breast reduction. Additionally, while the majority did not view plastic surgery as excessively risky, misunderstandings about its cost and perceived exclusivity persisted. Integrating educational modules into training programs for healthcare professionals from non-surgical specialities can help correct misconceptions and foster a more informed understanding of the speciality.

DOI: https://doi.org/10.54393/pjhs.v6i1.2610

Authors' Contribution

Conceptualization: AS
Methodology: AS, ASS, SS, SI, PNAAQ
Formal analysis: ASS, SS, HS
Writing and Drafting: PNAAQ, AS, ASS, SS, SI
Review and Editing: PNAAQ, AS, ASS, SS, SI

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

The author received no financial support for the research, authorship and/or publication of this article.

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