

ASSESSMENT OF KNOWLEDGE, PERCEPTIONS&CAREER INTEREST OF PLASTIC SURGERY AMONGMEDICAL INTERNS' IN SELECTED HEALTH SCIENCE COLLEGE &PUBLIC TEACHING UNIVESRSITY HOSPITALS IN ETHIOPIA By Moti Tesfaye

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ADDIS ABABA UNIVERSITY COLLEGE OF MEDICINE AND
HEALTH SCIENCE SCHOOL OF MEDICINE DEPARTMENT OF
SURGERY PLASTIC AND RECONSTRUCTIVE SURGERY UNIT

ASSESSMENT OF KNOWLEDGE, PERCEPTIONS AND CAREER
INTEREST OF PLASTIC SURGERY AMONG MEDICAL INTERNS'
IN SELECTED HEALTH SCIENCE COLLEGE AND PUBLIC
TEACHING UNIVERSITIES HOSPITALS IN ETHIOPIA, 2025

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SURGERY

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Addis Ababa, Ethiopia

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Abstract

Background: Plastic surgery is often misunderstood among medical students, with misconceptions potentially limiting career interest. ⁵ This study assesses the knowledge, attitudes, and career preferences ¹⁰ of medical interns toward plastic surgery in Ethiopia.

Methods: A cross-sectional study was conducted from June 1 to July 31, 2025, among 324 medical interns across 10 randomly selected medical schools in Ethiopia, representing 30% of the country's 32 medical institutions. ¹³ A self-administered questionnaire collected data on socio-demographic characteristics, exposure, knowledge, perceptions, and career interest in plastic surgery. ² Data were analyzed using SPSS version 27

Results: ² Of the 324 participants (mean age 25.4 years, 59.9% male), 75% reported their hospital had a plastic surgery unit, and 69% had attended related lectures. However, only 27.5% completed a plastic surgery rotation. Knowledge was mixed: 89.6% recognized burn surgery and 88.3% cosmetic surgery as subspecialties, but misconceptions persisted, with 46.5% associating cleft lip with ENT. Most viewed plastic surgery as primarily cosmetic (37.7%) or equally cosmetic and reconstructive (32.3%). Career interest was low, with 51.3% uninterested and only 1% extremely interested, influenced by financial reward (60.8%), patient impact (58.5%), and technical skill (53.5%). Cultural stigma and limited exposure contributed to reluctance to pursue or undergo plastic surgery.

Conclusion: While medical interns in Ethiopia have some awareness of plastic surgery, misconceptions and unfavorable attitudes prevail, limiting career interest. Integrating mandatory plastic surgery education and increasing professional outreach could enhance understanding and attract talent to the field.

Keywords: Plastic surgery, medical interns, knowledge, perception, career interest, Ethiopia

1.Introduction

1.3 Significance of study

In Ethiopia, where medical education and healthcare resources are rapidly evolving, this study addresses the critical misunderstanding of plastic surgery among medical students, often seen as merely cosmetic rather than encompassing vital reconstructive procedures like hand, craniofacial, and burn-related surgeries. With a growing burden of trauma, burns, and congenital anomalies—prevalent due to road accidents, household injuries, and limited prenatal care this knowledge gap limits the specialty's recognition and utilization. Medical students' reliance on informal sources like social media and television mirrors global trends and risks perpetuating misconceptions in a resource-scarce context. By demonstrating that targeted education and clinical exposure can enhance understanding and interest, as evidenced internationally.

The study highlights the potential to improve Ethiopia's medical curriculum. This could foster appreciation of plastic surgery's role in addressing disability-adjusted life years, boost recruitment of local talent, and ensure appropriate referrals, strengthening patient care

The result from this study will have great importance and provides baseline evidence in the study area setting. It will be utilized by health Science College and University referral Hospital including different stakeholders and private organizations, researchers as source of information for better decision making at different level.

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2.3 Conceptual frame work

The below is Conceptual frame work is developed after review different related literatures (19). Study shows Career, Knowledge and perception of Plastic surgery are related to sociodemographic, individual and institutional characteristics .

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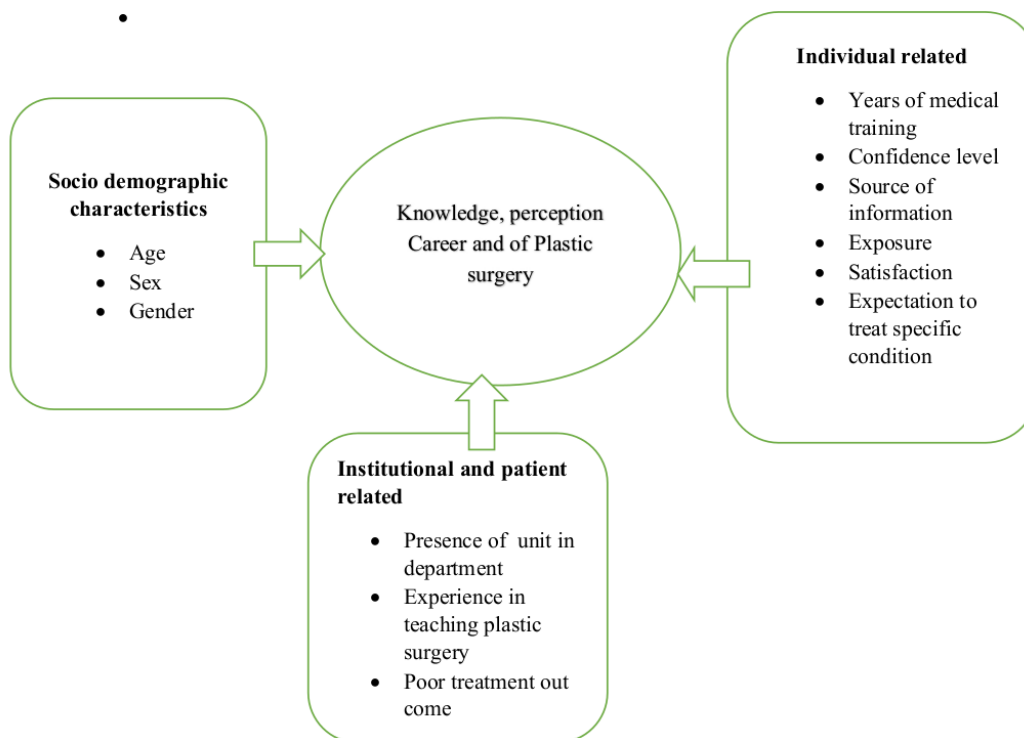


Figure 1. Conceptual frame work of knowledge, perception and future career of plastic surgery

⁹ 3.Objective

3.1 General objective

- ❖ To assess of knowledge, perceptions and career interest of plastic surgery among medical Interns' in selected health Science College and public teaching university hospitals in Ethiopia, 2025.

² 3.2. Specific objective

- To assess knowledge, of plastic surgery among medical interns'
- To assess perceptions of plastic surgery among medical interns'
- To assess career interest of plastic surgery among medical interns'

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4.1. Study area and period

The study was conducted in randomly selected ten medical schools in Ethiopia (approximately 30% of 32) were Jimma University, University of Gondar, Wollega University, Ambo University, Haramaya University, Adama Hospital and ¹²Medical College, St Paul's Millennium Medical College, Yekatit 12 Medical College, Hawassa University, and Arba Minch University. The total intern population across these schools was approximately 1200 based on 2024 Ministry of Education estimates. ²The study was conducted from June 1/2025 to July 31/2025.

4.2. Study Design

Institution based cross sectional study was employed. Primary data was retrieved from study participants through self-administered questionnaire.

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4.3. Population

4.3.1. Source population

All medical students from selected University and medical college from June 1/2025 to July 31 /2025

4.3.2. Study population

All medical interns students from selected University and medical college from June 1/2025 to July 31 /2025

.

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4.3.3. Inclusion and exclusion criteria

4.3.3.1 Inclusion criteria

All medical interns' students and full fill inclusion criteria was considered as eligible candidates in this study.

4.3.3.1 Exclusion criteria

Month off interns and unwilling to participate was excluded from this study

4.4 Sample size determination and sampling technique

Sample size was estimated using single proportion formula and finite population correction formula. A multistage stratified sampling technique was employed to select 324 participants, ensuring representation across the 10 selected medical schools and their diverse clinical rotations in Ethiopia. This method balances feasibility with the need for a representative sample reflective of geographic, institutional, and academic variability

Given Parameters:

$p = 50\% = 0.5$ (proportion of students with knowledge/perception, assumed as no prior data).

$q = 1 - p = 1 - 0.5 = 0.5$ (corrected from $q = 0.995$).

$Z(\alpha/2) = 1.96$ (for 95% confidence level, CL).

$d = 5\% = 0.05$ (margin of error).

$N = 1,200$ (total intern population across 10 institutions).

Non-retrieval rate = 10% (to account for incomplete responses).

$$n = (Z^2 * p * q) / d^2$$

$$n = (1.96^2 * 0.5 * 0.5) / 0.05^2$$

$$n = (3.8416 * 0.25) / 0.0025$$

$$n = 0.9604 / 0.0025 \approx 384$$

Finite Population Correction (FPC)

The FPC formula is: $n_{\text{adjusted}} = \frac{n}{1 + (n-1)/N}$

$$n_{\text{adjusted}} = 384 / (1 + 383/1200) \approx 291$$

$$n_{\text{final}} = n_{\text{adjusted}} / (1 - \text{non-retrieval rate})$$

$$n_{\text{final}} = 291 / (1 - 0.1)$$

$$n_{\text{final}} = 291 / 0.9 \approx 323.33$$

$$n_{\text{final}} = 291 / (1 - 0.1) \approx 324$$

, N_i is the number of interns at school while I , and N is the total intern population

(1,200). Which was allocated for each institutions accordingly .

4.5. Variables

4.5.1. Dependent variable(s)

- ☐ KAP and career preference of plastic surgery

4.5.2. Independent variables

☐ Socio-demographic characteristics

☐ age

☐ Sex

☐ gender

☐ Individual characteristics

☐ Confidence level

☐ Source of information

☐ Exposure

☐ Satisfaction

☐ Expectation to treat specific condition

☐ **Institutional and patient related**

- ☐ Presence of unit in department
- ☐ Experience in teaching plastic surgery
- ☐ Poor treatment out come

4.6. Operational Definition

Knowledge: *The level of factual understanding medical students have regarding the scope, procedures, and role of plastic surgery*

Perception : *Medical students' attitudes, beliefs, and stereotypes about plastic surgery*

Career interest : *The likelihood of medical students to pursue plastic surgery as a future career, measured by self-reported interest levels*

4.7. Data collection tool and techniques

The data was collected by using English version structured questionnaire containing Socio-demographic characteristics, exposure, knowledge and perception and individual related factor. The questionnaire was also developed by reviewing related literatures (11)(8). The tool was used to collect secondary data retrieved from intern medical students.. Data was collected through self administered online interview.

4.8. Data quality control and management

The quality of the data was ensured using a well-structured data extraction form carefully prepared to clearly defined research goals and objectives.. The form was pre-tested on 5% of the total sample that was not included in the study at other hospital.r. Data privacy and confidentiality was protected in compliance

with ethical standards and institutional guidelines. Lastly data analysis was done appropriately with alignment of research objective and research question.

4.9. Data analysis

The collected data was checked for completeness and inconsistencies. It was entered into Epi info software then exported for analysis to SPSS version 27 for the descriptive, bivariable and

multivariable logistic regression analysis. On Bivariable logistic regression analysis a p-value < 0.25 was used as a candidate for multivariable logistic regression analysis. Statistical significant association was tested at a p-value of < 0.05. The crude OR and adjusted odds ratio with 95% confidence interval was computed. Finally, the data was presented in tables and graphs as necessary.

¹⁵ 4.10 Results

Sociodemographic factors

A total of 324 medical students participated in the survey, with 305 reporting their age. The mean age was 25.4 years (median and mode 25, SD 1.67). The majority of respondents were male (50.95%) and medical interns (100%). Participants were enrolled across multiple institutions, most commonly Hawassa University and Addis Ababa University (each 13.29%).

Exposure to Plastic Surgery

Most respondents (75%) reported that their hospital had a plastic and reconstructive surgery unit. Approximately 69% had attended plastic surgery lectures or seminars, with an average of 2.96 sessions. Only 27.53% had completed a plastic surgery rotation, averaging 1.34 weeks. Primary sources of exposure included lectures (76.9%), interactions with plastic surgeons or faculty (57.59%), patients (55.38%), peers (49.05%), and media (41.14%). A minority reported no exposure (11.71%) or elective rotations (11.08%). Regarding residency training, 32.59% indicated the presence of a plastic surgery residency program in their city, and 73.1% had interacted with a plastic surgeon during their training, predominantly through lectures

Table 1 sex distrubution of the respondents

Sex	No
Male	194
Female	130
Total	324

Table 2 Institution of the respondents

Name othe instututions	No of the respondents	Percentage of the respondents
Jimma University	35	10.8
University of Gonder	35	10.8
Wollega University	27	8.33
Ambo University	28	8.54
Haramaya	25	7.72
Adama Hosppital and medical college	23	7.10

Saint Paul Millenium Hospital & Medical college	33	10.19
Yekatit 12 Medical college	26	8.02
Hawasa University	42	13.29
Addis Ababa University	42	13.29

Table 3 Exposure to plastic surgery

Means of exposure	Number
Lecture	243
Bed side and seminar	182
Patients	175
Peers	155
Media	130
Mandatory rotations	64
No exposure	35

Knowledge of plastic surgery

¹ When assessed on their definition of plastic surgery, most of the respondents viewed plastic surgery as cosmetic/beauty-focused (24%), while 11.4% saw it as both reconstructive and appearance-related, and 7% considered it purely reconstructive. Smaller proportions described it as soft tissue/skin surgery (4%), admitted having no idea (3%), or gave detailed accurate definitions (¹2%)

The respondents were also evaluated on the conditions managed by plastic surgeons, severed fingers, 70.9% of respondents identified plastic surgery as the responsible department, followed by orthopaedics (14.9%). In cases of severe facial burns, 75.3% chose plastic surgery, while 11.7% selected emergency medicine. For cleft lip, responses were divided between ENT (46.5%) and plastic surgery (42.4%). Breast reconstruction post-mastectomy was mainly linked to plastic surgery (76.3%), with oncology accounting for 15.2%. For congenital hand deformity, 53.8% associated it with plastic surgery, followed by orthopaedics (22.5%) and pediatric surgery (19.3%). Overall, plastic surgery was the most frequently identified department, though misconceptions were evident, particularly regarding cleft lip.

Among the respondents, 89.6% identified burn surgery and 88.3% identified cosmetic surgery as subspecialties of plastic surgery. Craniofacial surgery (69.6%), microvascular surgery (66.1%), and hand surgery (65.5%) were also commonly recognized. A small proportion incorrectly chose orthopedic surgery (7.9%)

Most respondents correctly associated common plastic surgery procedures with the specialty. Burn grafting was recognized by 93.04% of respondents, rhinoplasty by 82.59%, liposuction by 77.53%, breast augmentation by 70.25%, hand replantation by 61.71%, and cleft palate repair by 53.48%. In contrast, knee replacement was rarely associated with plastic surgery, with only 5.38% of respondents selecting it.

This indicates that while cosmetic and reconstructive procedures are widely recognized as part of plastic surgery, orthopedic procedures like knee replacement are generally not associated with this specialty.

Perception of plastic surgery

Most respondents described plastic surgery as a specialty concerned with reconstruction and/or appearance, with 11.39% emphasizing both, 6.65% associating it with beauty, 4.43% with reconstruction alone, and 4.11% with cosmetics. Smaller proportions mentioned a combination of reconstruction and cosmetic purposes or were unsure. This indicates a general understanding of plastic surgery as involving both reconstructive and aesthetic procedures, though some associate it primarily with cosmetic work.

Most respondents perceive plastic surgery as mostly cosmetic (37.7%), while 32.3% view it as equally cosmetic and reconstructive, 25.3% see it as mostly reconstructive, and 1.3% are unsure.

Career interest of plastic surgery

Out of 324 respondents, the majority (51.27%) were not interested in pursuing plastic surgery as a career, while 21.84% were fairly interested, 19.94% interested, 2.53% very interested, and 0.95% extremely interested. Among the 253 respondents who reported factors influencing their interest, the most common were financial reward (60.76%), patient impact (58.54%), technical skill required (53.48%), and job prestige (52.22%), followed by media portrayal (39.24%), faculty mentorship (32.59%), and lack of exposure (16.46%).

Among 324 respondents, interest in a plastic surgery career was generally low, with 51% not interested and only 1% extremely interested. Key factors influencing interest included financial reward, patient impact, technical skill, and job prestige. Most respondents were uncertain about undergoing plastic surgery themselves, citing self-acceptance, satisfaction with appearance, religious beliefs, or concerns about necessity. Peer perceptions were mostly neutral or somewhat positive, though 24% reported misconceptions, commonly viewing plastic surgery as solely cosmetic. Regarding education, 32% believed training should be mandatory in clinical rotations, while 40% felt it was relevant only for those pursuing the specialty.

4.11 Discussion

Our study suggests that while ¹medical students demonstrate some awareness of plastic surgery, their overall attitude toward it remains unfavorable. Similar studies conducted in various populations, particularly in developing countries, appear to support this finding.(1,20). The study

showed low ⁵ level of awareness and potential misconception of plastic surgery among medical interns. ⁵ Similar results were observed in study done Kenya were 88% of respondents identified plastic surgery as cosmetic surgery. Similar findings were reported among healthcare professionals in India, where 80% believed plastic surgery was primarily for ¹ cosmetic purposes. When asked about the conditions managed in this specialty, many students identified trauma, cleft lip, cleft palate, and scars as the main ones. But in our study cleft lip is equally identified as ENT case. Our study is similar to a study conducted in Saudi Arabia reported that the most commonly recognized conditions managed by plastic surgeons included burns, facial lifting and tightening, breast reconstruction, and wound care. In India, burns were most frequently associated with plastic surgery (20.4%), along with ulcers and cleft lip/palate. Despite being able to name certain conditions and procedures, students' overall knowledge of plastic surgery remained limited. (12,18&20)

¹ Our study also revealed that the procedures most commonly believed to be performed by plastic surgeons include burn grafting (93.04%), rhinoplasty (82.59%), liposuction (77.53%), breast augmentation (70.25%), hand replantation (61.71%), and cleft palate repair (53.48%). Kenyan ¹ study also showed that the common procedures thought to be done by plastic surgeons included liposuction (41%), breast enhancement (37%), and rhinoplasty (21%). A comparative study in Nigeria reported that the conditions managed by plastic surgeons included tattoo removal, breast augmentation or reconstruction, facelifts, Botox, and rhinoplasty. In addition, a study from India highlighted that the conditions most frequently associated with ¹ plastic surgeons were hypospadias, liposuction, breast augmentation or reduction, hair transplantation, and rhinoplasty. ⁵ In study done in Oman the most commonly recognized conditions included rhinoplasty (72.3%), ⁵ breast reduction or enhancement surgeries (66.1%), cleft lip and palate (63.5%), eyelid tears and facial cuts (63.5%), ⁵ burns (193 62.3%), and ¹ congenital anomalies of the ear and nose. The variations in procedures performed by plastic surgeons may be attributed to the differing levels of professional and medical exposure to plastic surgery across various populations. (1,12,19&20)

Plastic surgery as a specialty has often been challenging for the general public to clearly define and fully understand. As a specialty, plastic surgery is not limited to a particular anatomical area or set of techniques, but is guided entirely by underlying principles. Nevertheless, public perception of the field is often shaped more by external influences such as media and social surroundings than by the practitioners themselves. In our study most respondents described plastic surgery as a specialty concerned with reconstruction and/or appearance, with 11.39% emphasizing both, 6.65% associating it with beauty, 4.43% with reconstruction alone, and 4.11% with cosmetic. Plastic surgery is often viewed primarily as cosmetic surgery, while the broader range of patients and conditions it addresses tends to be overlooked. Among all the clinical scenarios presented to participants, there was no single condition for which respondents unanimously preferred plastic surgeons (20)

¹ Our findings revealed that most students do not wish to pursue a career in plastic surgery. This aligns with studies conducted in Saudi Arabia, where one study reported that 38.8% of students were interested in plastic surgery, while another found only 11% expressing interest. Additionally, the majority of students in our setting expressed reluctance to undergo plastic surgery common reason being cultural stigma. Most respondents were uncertain about undergoing plastic surgery themselves, citing self-acceptance, satisfaction with appearance, religious beliefs, or concerns about necessity. Similar to the Nigerian study most students in the Nigerian population were unwilling to undergo plastic surgery when given the option. This difference may be influenced by cultural factors as well as the opinions of family and friends. In the Nigerian study setting, 77% of respondents reported feeling embarrassed to undergo surgery if their family knew, and an equal percentage felt embarrassed if their friends were aware. The influence of family and friends likely accounts for the observed difference in willingness to undergo plastic surgery between our population and that of Nigeria which is similar to Ethiopia

Out of 324 respondents, the majority (51.27%) were not interested in pursuing plastic surgery as a career, while 21.84% were fairly interested, 19.94% were interested, 2.53% were very interested, and 0.95% were extremely interested. Among the 253 respondents who identified factors influencing their interest, the most commonly reported were financial reward (60.76%), patient impact (58.54%), technical skill required (53.48%), and job prestige (52.22%), followed

by media portrayal (39.24%), faculty mentorship (32.59%), and lack of exposure (16.46%). In Nigerian study 217 students (97.3%) aware of plastic and reconstructive surgery, only 15% were interested in specializing in it. Interest was influenced by year of study, intention to undergo cosmetic surgery, and viewing plastic surgery shows. Burns management (95.1%) was the procedure most commonly associated with the specialty. Knowledge was shaped by formal lectures and the presence of a full-time plastic surgeon. Overall, exposure to the specialty strongly influences perception, and reduced teaching may perpetuate misunderstandings. These findings indicate that although a majority of students are not inclined to pursue plastic surgery, many recognize motivating factors such as financial benefits, patient impact, technical skill, and professional prestige.(1,12,19&20)

Among 324 respondents, interest in pursuing a career in plastic surgery was low, with 51% expressing no interest and only 1% showing strong interest. Factors influencing interest included financial rewards, patient impact, technical skills, and job prestige. Most respondents were uncertain about personally undergoing plastic surgery, citing reasons such as self-acceptance, satisfaction with their appearance, religious beliefs, or doubts about its necessity. Peer perceptions of plastic surgery were generally neutral or slightly positive, though 24% noted misconceptions, often viewing the field as purely cosmetic. Educationally, 32% supported mandatory plastic surgery training in clinical rotations, while 40% believed it was only relevant for those specializing in the field.

The study revealed concerning findings, highlighting a significant lack of understanding about plastic surgery within the medical community. It is evident that our specialty is poorly understood, and we bear responsibility for this gap. Our field has not effectively promoted or raised awareness about the full scope of our work among colleagues in other specialties.

To address the lack of understanding about plastic surgery, we should integrate a dedicated topic on the spectrum of our specialty into undergraduate medical education, incorporating clinical photographs to vividly illustrate its scope. By showcasing the diverse roles and significant contributions of plastic surgeons to patient care, we can attract the brightest medical students to

our field. This increased awareness is essential to ensure plastic surgery remains at the forefront of medical advancements. The findings indicate that medical students in your setting possess some basic awareness of plastic surgery, likely recognizing it as a medical specialty, but their attitude toward it remains unfavorable. This poor attitude could stem from misconceptions, such as the belief that plastic surgery is primarily cosmetic rather than reconstructive or medically necessary, as noted in the earlier survey where 24% of respondents held such views. Other factors contributing to this attitude might include limited exposure to the full scope of plastic surgery, negative peer perceptions, or a lack of understanding about the specialty's impact on patient care, including its role in reconstructive procedures, trauma care, and congenital defect correction. To address this, the recommendation for increased professional outreaches and professional/medical exposure is critical. Professional outreaches could involve plastic surgeons engaging directly with medical students through workshops, seminars, or guest lectures that highlight the breadth of the specialty. These sessions could showcase real-world case studies, clinical photographs, and patient outcomes to demonstrate the transformative impact of plastic surgery, both functionally and aesthetically. For example, presenting cases of cleft palate repair, burn reconstruction, or hand surgery could counter the misconception that the field is solely cosmetic. Professional/medical exposure refers to integrating plastic surgery into the medical curriculum more robustly, particularly during undergraduate clinical rotations. The earlier data showed that only 32% of respondents supported mandatory training in plastic surgery, while 40% felt it was relevant only for those pursuing the specialty. To shift attitudes, structured exposure—such as mandatory rotations or shadowing opportunities—could allow students to observe plastic surgeons in action, interact with patients, and understand the technical and interpersonal skills required. This hands-on experience could foster greater appreciation for the specialty's complexity and its contributions to patient care. By implementing these strategies, plastic surgeons can correct misconceptions, improve attitudes, and attract talented students to the field. This is essential not only for dispelling myths but also for ensuring the specialty continues to draw the best and brightest, maintaining its role at the forefront of medical innovation. Increased outreach and exposure will help students see plastic surgery as a dynamic, impactful specialty that goes far beyond superficial aesthetic

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