

Original Research Article

Plastic and reconstructive surgery - do our undergraduate medical students have adequate awareness about it? Can we do something to improve their exposure, knowledge and interest in it?

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ABSTRACT

Background: The purpose of this study is to assess the awareness levels about plastic surgery among medical students and to formulate appropriate teaching modules for undergraduate students to introduce and educate them about various plastic surgical procedures.

Methods: A questionnaire-based study was done to assess awareness about procedures done under plastic surgery among medical students from second through final year. Collected data were statistically analyzed. The results were used to propose changes in teaching modules to medical students.

Results: There is not much awareness about plastic surgery as a specialty amongst medical students. Plastic surgery is mostly perceived as cosmetic surgery, and the other procedures done under plastic surgery is not associated with the specialty by the medical students. Of all the clinical conditions given to the participants, there was not a single clinical condition where the respondents favoured undisputedly for plastic surgeons.

Conclusions: Plastic surgery as a specialty is poorly understood by our undergraduate medical students so authors conclude there is lack of awareness, knowledge and disposition about plastic surgical procedures among them. Based on the report's authors have formulated teaching and practical modules like enrichment courses, value added education, co-curricular activities and introduction to social media platforms related to plastic surgery for creating better awareness and knowledge among undergraduate medical students about plastic surgery.

Keywords: Enrichment course, Plastic surgery awareness, Value added education

INTRODUCTION

In spite of a wide spectrum of surgeries done under plastic surgery, there seems to be a limited knowledge not only among general public but also among medical professionals regarding various treatments given under plastic surgery.¹⁻⁴ This may lead to inappropriate and/or delay in referrals which may lead to suboptimal patient

care. This study was taken up to understand the attitude and perception of our undergraduate medical students about plastic surgery and to enable us form better educative tools and teaching models to enhance their exposure in the field of plastic and reconstructive surgery. As they are going to be the future medical professionals, teaching them about the specialty early before they graduate will enable them to provide better

specialized care to the society and reduce the delay in providing specific patient care.

METHODS

After procuring ethical committee clearance from Institute Review Board, a questionnaire-based study was conducted among undergraduate medical students of Saveetha Medical College, Thandalam, Kanchipuram district from January 2019 to March 2019. A total of 300 students participated in the study. First year students and those who were not willing to participate were excluded from the study.

The questionnaire was based on the study by Panse N et al and had two parts. In the first part, the participants were asked specific questions pertaining to plastic surgery with a multiple-choice option for marking the answers.² In the second part, the participants were given a list of clinical situations pertaining to plastic, reconstructive, and cosmetic surgery and were asked to indicate which specialty they think would be the best to treat the clinical situation mentioned. The other options of treating surgeons included general, ENT, ophthalmic, orthopedic, pediatric, urological, neuro, oral and maxillofacial surgeons and dermatologists. The responses were assimilated and statistically analyzed.

RESULTS

In the first half of questionnaire, 98.3% of the students questioned recognized the need for training to become a plastic surgeon, 4.7% felt plastic surgery and cosmetic surgery are the same, and 3.3% felt that cosmetic surgery is a part of plastic surgery. Of the 300 participants, 93.7% did not know why plastic surgery is called plastic surgery, 3.3% felt that some form of plastic is used to do plastic surgery. As many as 65.7% of the participants felt that scars vanish after plastic surgical procedure. 71.3% of the participants felt that plastic surgery is a very expensive. 92% of participants felt that the risk of complications is similar to other surgeries.

Table 1: Conditions for which more than 80% of undergraduate students chose plastic surgeons.

Rhinoplasty
Abdominoplasty
Botox
Liposuction
Breast reduction surgery
Skin grafting
Oncor construction
Hair transplant

In part 2 of the questionnaire, aesthetic surgery procedures have a favorable response towards plastic surgery. All participants favored a plastic surgeon doing a liposuction and breast reduction or augmentation

procedure. 99% favored a plastic surgeon doing an abdominoplasty as compared to 1% favoring a general surgeon. All of the participants responded for plastic surgeon (100%) for doing a rhinoplasty. Hair transplantation procedure had 100% for plastic surgeons. Nonsurgical aesthetic procedures like botox had 1% respondents favoring general surgeon as compared to 99% for plastic surgeons.

Table 2: Conditions for which undergraduate students did not consider plastic surgeons at all.

Facial lacerations and eyelid injury
Fracture of jaw
Bedsore
TMJ problems
Cleft lip and palate
Nerve injuries
Post-leprotic deformities
Hypospadias
Amputation of thumb and fingers
Congenital ear deformities
Gender re-assignment
Vitiligo and facial wrinkles
Non-healing ulcers
Tendon injuries
Congenital deformities of hand
Forearm fractures

For reconstruction surgery after cancer 99% preferred plastic surgeon over general surgeon.

41% and 57.3% preferred a plastic surgeon for management of burns and postburn deformities respectively (Figure 1 and 2). But with respect to brachial plexus injuries 96% felt neurosurgeon should be treating when compared to 4% who opted for plastic surgeon.

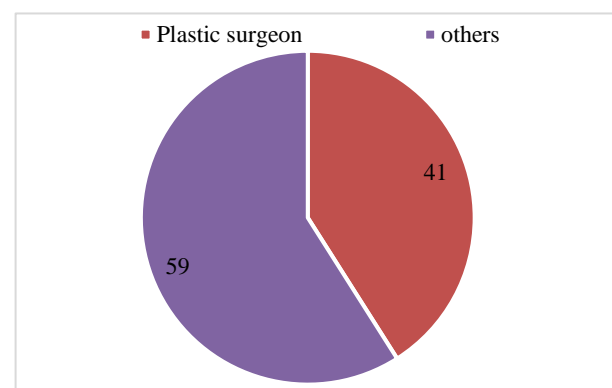


Figure 1: Burns deformities.

For eyelid injuries, 86.7% preferred general surgeons and 13.3% of respondents preferred ophthalmic surgeons to suture the eyelid, and all the participants preferred a general surgeon to suture a cut over the face. For facial fractures, 31% preferred oral and maxillofacial surgeons,

8.3% preferred general surgeons and 60.7% preferred others. Painfully, all of the participants preferred general surgeons over plastic surgeons in management of pressure sores.

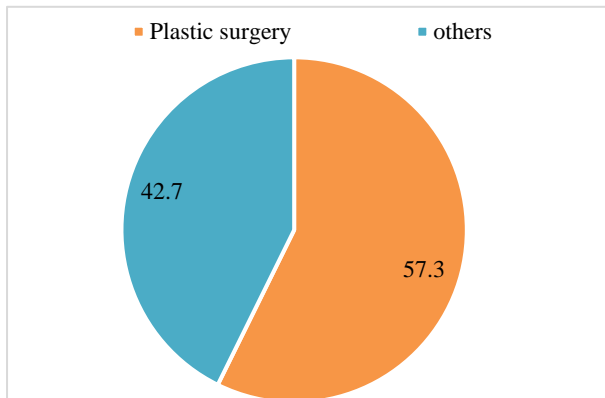


Figure 2: Post-burn deformities.

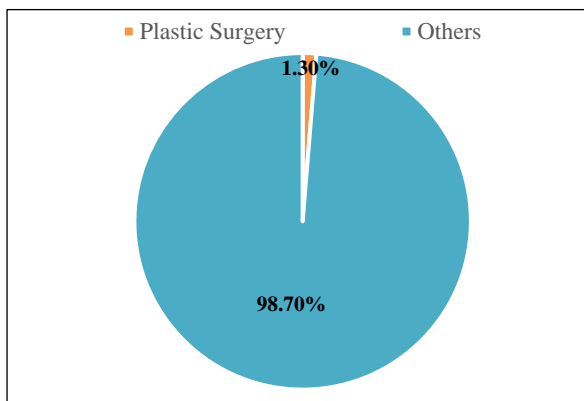


Figure 3: Hand fractures.

Only 1.3% chose plastic surgeon to manage hand fractures (Figure 3). 71% preferred general surgeons and 29% preferred others in management of tendon injuries of the hand.

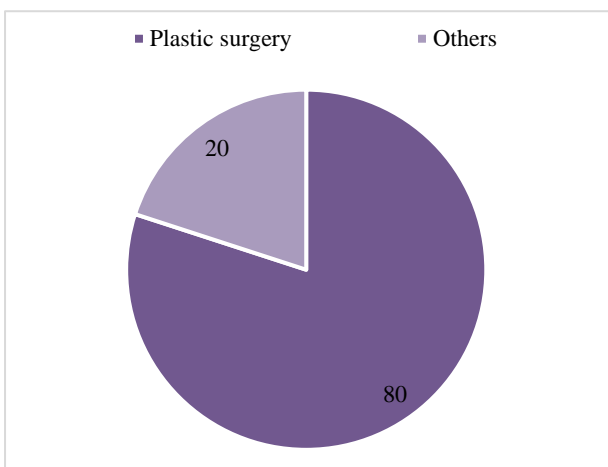


Figure 4: Skin grafting.

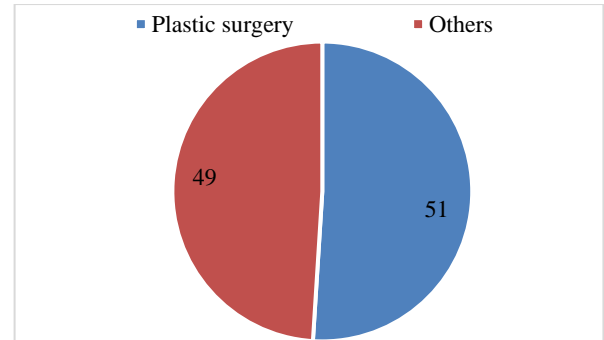


Figure 5: Electric burns.

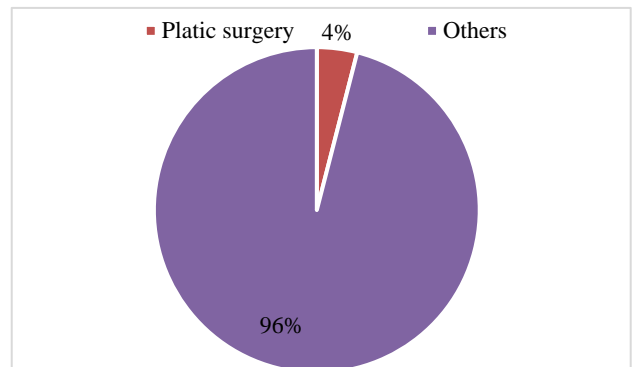


Figure 6: Brachial plexus injuries.

Out of 300, 95.7% felt that peripheral nerve injuries must be managed by a neurosurgeon. Hypospadias was divided among pediatric surgeons (89.7%), general surgeons (6.3%), urologists (1.7%), and others (2.3%). 51.3% preferred oral maxillofacial surgeons, 45.7% pediatric surgeons and 3% general surgeons to manage a cleft lip and palate. Among all, 59.3 preferred otorhinolaryngologist, 34.7 preferred pediatric surgeons, and 6% preferred general surgeons to manage congenital ear anomalies.

DISCUSSION

Plastic surgery as a specialty defies definition, doesn't have a specific organ system or anatomic area and is mostly principle based.² Authors deal with problems not only from head to toe but from hair to nail.

On analyzing the results of the study, findings were disappointing to say the least. It is very much evident that undergraduate students are poorly exposed to the contents of plastic surgery. So, it is important that the exposure is provided in early student days so that the learning process about the specialty will only grow along their student and professional life. It is crucial that as a specialty authors impress them quite early. Panse et al, have also reported similar not-so-impressive results.² There is similar trend with students from the United States.³

The current undergraduate medical curriculum does not provide substantiate exposure in super specialty topics.⁴

Though students are aware about the basics of various surgical problems, the progress in treatment process is not very well understood by them. Students don't have adequate idea about the end result and the department in which that is obtained.

Although this survey was done in Chennai, authors believe that the scenario in most parts of India and most of the developing world would not be very different. Apart from aesthetic surgical procedures, where majority of the respondents favored plastic surgeons, the results for other procedures are disappointing. It was even sad to note that there was not a single clinical condition which participants thought is the exclusive domain of the plastic surgeons. Specialty is still searching for its identity rather among the healthcare providers than among the general public.

Certain areas those are addressed in this regard are, students are aware of the fact that practicing plastic surgery needs a formal training. They are also aware about the fact that cosmetic surgeries like liposuction, rhinoplasty, hair restoration surgery and abdominoplasty are done by plastic surgeons. This may be due to marketing activities by individual practicing surgeons and clinics. Television programs and news about celebrities undergoing cosmetic surgical procedures has increased awareness among general public.^{5,6}

Plastic surgery as a problem-solving speciality

Coming to reconstructive surgery part, the results are very disappointing to say the least. Only bright spot in this regard is cancer reconstruction where 99% of students are aware that onco-reconstruction is done by plastic surgeons. Burns and postburn management is another area where there is reasonable awareness among medical students as to whom to refer these patients to. Recognizing plastic surgery as a wound care speciality treating complex wounds is lacking. Pressure sore management, diabetic foot wound care and reconstruction, physiological and debulking procedures for lymphedema, basic suturing principles and techniques to minimize scarring, scar management and therapy are some of the very common surgical problems in the community where plastic surgical principles when used correctly and at appropriate time will enhance the results significantly.

Hence, it is crucial to introduce these topics to undergraduate medical students with a plastic surgical perspective and by plastic surgeons themselves. This will not only expose the students to learn about the end result for these problems but also a wholistic knowledge about the same. Priming them about the recent advances in these topics is an additional advantage.

Plastic surgery in system-wise problems

In facio-maxillary region, an average upper middle-class parent demands a plastic surgeon to suture a facial laceration of his/her child. But, 100% of students who

participated in the study will call the help of a general surgeon to do the same. The disconnect between medical care professionals and general public is evident here. In practice, authors as plastic surgeons receive calls to attend to lacerations in critical areas like face, eyelids, nose, pinna, etc. though general surgical training provides good knowledge about suture techniques, suturing in these areas will require anticipation about the size, direction and long-term behavior of the eventual scar. Sound perspective about techniques of reconstruction before embarking into these areas cannot be underestimated. Plastic surgeons along with oral and maxillofacial surgeons, by large, provide surgical care for the treatment of facial fractures. Among congenital anomalies in face, cleft lip and palate and ear abnormalities are commonly seen. Dunkin CSJ et al, have reported 33% of British students preferring a plastic surgeon for treatment of cleft lip and palate.⁷ Vast majority of centers operating on cleft lip and palate in the world are headed by plastic surgeons and even in country, the pioneers in this sub-speciality have been plastic surgeons. It is a shame that authors could not take this fact across to medical students. Ear reconstruction, though students preferred otorhinolaryngologist, is again another group of surgeries addressed by plastic surgeons.

A study from South Africa has reported 36% of medical students opting for plastic surgery to treat hand fractures, whereas among students, only 1.3% preferred plastic surgeons for the same.³ These findings co-relate with Agarwal et al when they have written that hand surgery is one of the speciality that is poorly associated with plastic surgery among medical students in the United States.⁸

Possible ways to inculcate plastic surgery among medical students

Having analyzed the results, understand the need to make a change in teaching pattern to prevent detriment to the speciality.⁹ Stronger representation of these common problem-solving topics amidst general surgery classes to be handled by plastic surgeons.

As plastic surgeons it is vital that the initiative is from our side and authors should not brush such classes aside by quoting that super-specialists are too busy to teach undergraduate students. Authors contribution in undergraduate curriculum and teaching modules will be the primary step to change the perspective of medical students about reconstructive surgery.

Enrichment courses in plastic surgery. These are courses conducted by teaching staff in plastic surgery department to extend students' education beyond their course of study. Authors propose to conduct these courses as weekend modules for final year medical students in each subspecialty in plastic surgery that is relevant to them. Diabetic foot management, management of acute burns and burn sequelae, management of facial trauma, hand trauma to quote a few examples

Value added medical education. This program was primarily designed to bridge the gap between medical education and delivery of health care in the field level.¹⁰ Adaptation from this will be to have programs that will divide first clinical year students into smaller batches and post them according to their speciality of interest. One such speciality can be plastic surgery where each of these smaller batch students will take a role in patient care delivery from case sheet recording to assisting surgeries to maintaining follow-ups depending on the year of undergraduate training. This will help them to acquire deep insights about patient care delivery and also will expose them to mentorship benefits that will help them in shaping up into better clinicians.

Co-curricular activities and competitions pertaining to plastic surgery. Debates, quizzes and other activities among medical students will increase their curiosity and will make them ask more questions regarding history and practical aspects of the speciality. Prizes will be an incentive to kindle their interest.

Social media platforms. There are numerous groups across various social media platforms like “Learning general surgery” and “International microsurgery club” in Facebook where quality clinical material is shared and discussed. Exposing medical students to such educative platforms is not very difficult at the same time will improve their exposure. Also, they will get to know about leading centers in their field of interest in the world for them to visit and learn and get international exposure.

CONCLUSION

Plastic surgery as a specialty is poorly understood by medical students. It takes a motivated effort from the fraternity of plastic surgery to expose undergraduate medical students to wonderful world of plastic surgery. Enrichment courses, value added education, co-curricular activities and competitions and introduction to learning platforms in social media will not only increase their awareness about the speciality but also help them learn about plastic surgery and encourage them to take up plastic surgery as a profession later in life. The future of plastic, reconstructive, and aesthetic surgery is bright, and authors can make it even brighter by authors collective efforts in the years to follow.

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