

# Undergraduate Plastic Surgery Education: Problems, Challenges, and Proposals

*“Teach those who follow-hoping the young will go farther.”*

**-John B. Mulliken, MD**

Plastic surgery is a dynamic, sophisticated, constantly expanding, and evolving medical specialty that defies definition, not restricted by anatomical boundaries or patient age group, and based on principles rather than limited procedures, with surgical interventions ranging from complex microsurgery-based reconstructions to aesthetic procedures. However, medical students' perceptions of the field of plastic surgery are limited and underestimate the versatility of services offered by plastic surgeons.<sup>[1,2]</sup> In fact, medical students have been unable to choose plastic surgeons as experts in fundamental surgical scenarios to plastic surgery as a specialty, and plastic surgeons have been primarily recognized as esthetic surgeons.<sup>[1]</sup>

Although, the explanation for these findings<sup>[1,2]</sup> is the most likely multifactorial, two main reasons (namely, media exposure of the esthetic part of the specialty and lack of plastic surgery exposure during medical education) can be raised. The increasing fictional and nonfictional television programs and media exposure of esthetic interventions has created the impression that esthetic surgery is the dominant component of this specialty, as highlighted in a study<sup>[3]</sup> that showed that 89% of articles published in United Kingdom newspapers adopted “plastic surgery” in the context of “cosmetic surgery,” with only 10% referring to “reconstructive procedures.” Thus, as recent survey<sup>[2]</sup> demonstrate that medical students acquire their knowledge about the role of plastic surgeons primarily from the media/television, these misperceptions<sup>[1,2]</sup> of plastic surgeons as esthetic specialists can overshadow the role of plastic surgeons in fields as craniofacial surgery, hand surgery, pediatric plastic surgery, burn surgery, among other.<sup>[1,3]</sup> In addition, the lack of educational opportunities and direct clinic exposure to plastic surgery in undergraduate curricula (the proportion of medical schools teaching plastic surgery in their undergraduate curriculum has declined from 78% in 1986 to 13% in 2008, and many of the plastic surgery topics are being taught under other overlapping specialties within the undergraduate curriculum)<sup>[4-6]</sup>

is another important reason for medical students misunderstand the work of plastic surgeons.<sup>[1,2]</sup>

The lack of knowledge about the scope of plastic surgeons' practice<sup>[1,2]</sup> and limited plastic surgery exposure during medical school<sup>[4-6]</sup> demands urgent undergraduate educational measures to be established. As this education should occur at individual, regional, national, and global levels, all Plastic Surgery Societies, plastic surgeons, and medical educators should actively participate in the teaching and learning process of medical students.<sup>[1-6]</sup> Teaching should be brief, but include a broad overview of plastic surgery.<sup>[1]</sup> In plastic surgery literature, the most effective education method has been described as integration of plastic surgery into the core undergraduate curriculum.<sup>[2,4,6]</sup> However, as there are inherent difficulties of changing undergraduate curricula, alternative educational solutions are required for increased exposure to plastic surgery at the undergraduate level,<sup>[5,7,8]</sup> whereas an extensive educational reform does not occur. Therefore, multiple extracurricular or curricular training pathways (e.g., lecture and clinical rotations devoted to plastic surgical topics, lunch time talks with a plastic surgeon, theoretical, clinical and surgical settings, conferences, multidisciplinary symposiums, medical leagues, activity reports by E-mail and local newsletters, surgical skills practical sessions and workshops with feedback from plastic surgeons, educational courses by plastic surgeons at meetings for medical students, publication of plastic surgery review articles in medical education journals, and any combination of these) can be adopted to increase knowledge during undergraduate training about plastic surgeons' practice and the role of these specialists within the healthcare system.<sup>[1,2,4-8]</sup> In addition, media and television should be encouraged to transmit comprehensive information about the true role of plastic surgeons in the public, including medical students.<sup>[3]</sup>

This undergraduate teaching in plastic surgery has potential benefits to all future doctors (irrespective of career intentions), and ultimately, it can affect medical care provided to patients with congenital, developmental, and acquired abnormalities, as well as patients wishing to reshape their normal body structures in order to improve their appearance and self-esteem.<sup>[1,2,4-8]</sup> Really, as medical students are the future medical workforce and will serve as an important source of information to patients regarding the diversity of therapeutic modalities offered by plastic surgeons and will also serve as an important referral base for this specialty, undergraduate exposure to plastic surgery has the potential to avoid inappropriate or unnecessary referrals, to delay treatment, to facilitate the best possible treatment of complicated and complex conditions, and improve multidisciplinary communication.<sup>[1,5]</sup> In addition, as a medical student exposure to

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plastic surgery is the most influential factor in a student's decision to pursue a career in plastic surgery,<sup>[9]</sup> it is imperative that this exposure continues to grow in order to attract the brightest and best students to a career in this specialty.<sup>[5,8]</sup> For those who do not consider plastic surgery as a future career, this exposure is likely to teach them essential skills such as theoretical knowledge in plastic surgery and basic plastic surgical skills.<sup>[6-8]</sup>

It is important that all the influences of the "top plastic surgeons of the 20<sup>th</sup> century" such as Drs. Gillies ("father of the modern plastic surgery"), Converse ("editor of the first bible of plastic surgery"), Millard ("cleft craftsman"), Murray ("the Nobel Prize winner"), and Tessier ("father of modern craniofacial surgery") have had on past and present generations of plastic surgeons<sup>[10]</sup> are transmitted to medical students during the educational process. For this, major plastic surgery teaching changes at undergraduate level are need. It will be a long-term journey, but with the support of all those involved with medical education, it is possible to get there.

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