

## Research Article

# Plastic Surgery Interaction with Other Specialities: Scope of Specialty in Different Minds

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### Abstract

**Background:** Plastic surgery is the problem-solving specialty and getting more technical advances very fast and during wars. Plastic surgery depends on both gross anatomy and minute anatomical and aesthetic units. It interacts with other clinical specialties in the concept of multidisciplinary approaches management of complicated medical and surgical problems.

**Aim of the work:** is to ascertain the knowledge about the scope of plastic, reconstructive and burn surgery specialty in the minds of public, junior doctors and non-plastic surgery specialized doctors.

**Patient and methods:** Questionnaire survey was designed to know what is the scope of plastic surgery specialty in minds of junior fresh graduated doctors, specialized non-plastic surgery-doctors and in minds of random population sample in Egypt and UK.

**Results:** The scope of plastic surgery specialty is limited in minds of general population sample, junior graduated doctors and senior specialized non-plastic surgeons. It was only 32%, 42% and 62-79% orientation, about the scope of plastic surgery specialty in minds of the three studied sectors respectively.

**Conclusion:** Plastic surgery specialty is neither only aesthetic practice nor burn management as it is in the minds of random population, junior doctors and even some specialized non-plastic doctors. Human medical and surgical health problems aren't one man show management, mandatory collaboration between all specialties is the key of success in health problems to get better outcome, and so more efforts should be done from plastic surgeons to explore ways to increase community's orientation about the specialty and its diversity.

### Introduction

Modern plastic surgery practice contributes in management of huge health problems either throughout providing surgical interventions or medical treatment. First Known description of plastic surgery procedure was more than 5000 years ago, when medical text from Ancient Egyptian Papyrus mentioned plastic surgery reduction of broken nose and post-operative fixation by the linen rods, almost in the same technique used today [1]. 800 years BC Indian surgeon, Sushruta, first one who highlighted the nasal reconstruction [2].

Charak and Sushruta work were originally in Sanskrit then translated 50 years later into the Arabic language during the age of Abbasid Caliphate and then transmitted to Italy in Europe via intermediaries [4]. 1st century BC, the Romans added their contribution in plastic surgery [3]. After World War 1 Gillies' McIndoe and Tommy Kilner inspired the new plastic surgery modern techniques. Gillies were sent near Basingstoke, to Rooks, down House, which became the official army plastic surgery unit. McIndoe founded a center named; Queen Victoria Hospital, for management of Jew and facial disfigurements in East Grinstead, Sussex. Tommy Kil-

ner who innovated the cheek retractor and worked with Gillies in world war first, went to Roehampton, and worked at Queen Mary's Hospital. All basics of modern plastic surgery practice and concepts are attributed to their generation, coming students after them, they were provided innovative ideas and techniques.

The scope of plastic surgery has been extended to include all human body, from hair to nail interventions and all body layers management starting from the skin, subcutaneous, muscle and bones reconstruction [5]. Now there is great diversity in the plastic surgery subspecialties including: aesthetic, burn management, hand surgery, general reconstructive, microsurgery, skin cancer, congenital anomalies, Cranio-maxillofacial, Oncoplastic and non-surgical procedures for treatment of ulcers, bed sores and burns and for aesthetic restoration. Plastic surgery principles are based on minute anatomy and functional and aesthetic units' concepts. Each principle and concept is serving for all sub subspecialty development and for getting better outcome regarding the surgery and the skilled well-trained plastic surgeon. Surgical applied anatomy, pathology, physiology, basic sciences, skills in surgery design of flaps, grafts, microsurgery, replantation, tissue transfer, aesthetic units, facial proportion, spirit of renaissance are fundamental to plastic surgery specialty.

## Patient and Methods

We designed questionnaire to ascertain the knowledge of three community sectors, each one is 100 persons, about the scope of plastic surgery. The three sectors are junior fresh graduated doctors, specialized - non-plastic surgery- doctors and random 100 hundred populations' sample. The questionnaire designed in English and in Arabic languages, giving the targeted study samples, the mostly practiced surgical and reconstructive procedures list, and giving them 15 specialties list to choose from them. We targeted the minds of three community sectors in two different countries cultures; in Egypt and UK. So we did the same questionnaire with the numbers, 100, for each sector in each country.

The study groups answered the following question; who is the specialist from the given specialties list, you will advise to treat each case of the given procedures list. We requested from candidates of each study group, to choose first and second choice. For the 1st choice we requested from her/him to select the given number of the specialty in A, and for second choice we requested from her/him to select the given number of the specialty in B. Given specialties were: Neurosurgeon, Maxillofacial surgeon, Plastic surgeon, Ophthalmologist, Pediatric Surgeon, Orthopedic surgeon, ENT surgeon, General surgeon, Dermatologist, Onco-surgeon, Urologist, Thoracic surgeon, GIT surgeon, Gynecologist and Andrology Surgeon.

Questionnaire was included detailed surgical procedures and interventions to ascertain the knowledge of the surveyed sectors. Given procedures were about; burns treatment, surgery for burns,

hand problems congenital, hand surgery for cut tendon, hand surgery for tendon transfer, hand surgery for swellings/tumors, hand surgery for arteries and veins, hand surgery for nerve, hand surgery for bone, brachial plexuses congenital, nerve graft in extremities, congenital anomalies of the cranium, congenital ear deformities, nasal fractures, rhinoplasty, cleft lip/ palate/hypospadias, oropharyngeal reconstruction, breast oncoplastic surgery, scalp lacerations, facial fractures, face lift, thoracic wall reconstruction, abdominal wall reconstruction, trunk reconstruction, surgery for bed sores, liposuction, aesthetic breast surgery, tummy tuck, skin cancers, microsurgery, grafts, flaps surgery, perineum reconstruction, penile surgery, vaginal agenesis, lower limb reconstruction, laser facial rejuvenation, hair transplantation, tissue expansion, Botox, filler and thread rejuvenations and vacuum/leech therapy for wounds. Questionnaire was signed with mention of each person's profession and date of graduation, if any, with statistical analysis for the survey data. Study was carried out through questionnaire survey at Al-Azhar University and Ministry of Health, Cairo, Egypt and Liverpool, UK.

## Results

The scope of plastic surgery specialty in minds of general population, junior graduated doctors and senior specialized non-plastic surgeons samples, was only 32%, 42% and 62-79% orientation, in minds of the three studied sectors respectively Figure 1.

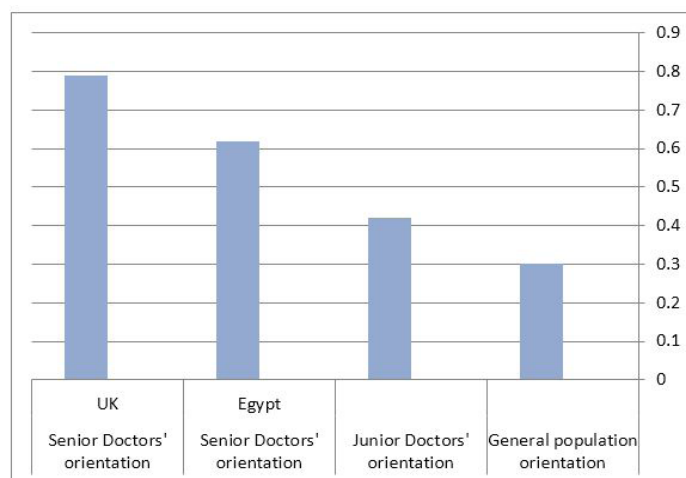


Figure 1: Orientation of different sectors in both countries, Egypt and UK.

General populations were aware only about aesthetic procedures and burn management mainly. Of 100 persons in this group, 20% of this group was aware about Onco-plastic breast surgery and the word of graft as it is plastic surgery procedure. Junior graduated doctors were more aware than general populations by 10%. This 10 % comes from their awareness by flaps and bed sores management. Where both sectors were well oriented about

aesthetic procedures more than hand, maxillofacial, microsurgery, reconstructive or skin cancer. Table 1.

Procedure type	Junior doctors' 1st choice	Junior doctors' 2nd choice	Not chosen
Face lift	84%	6%	10%
Aesthetic breast surgery	90%	10%	0%
Tummy tuck	64%	20%	16%
Skin cancers	10%	40%	50%
Microsurgery & Hand surgery	5%	10%	85%
Grafts, flaps surgery	85%	15%	0%
Perineum reconstruction	57%	13%	30%
Bed sores management	80%	7%	13%
Penile surgery	5%	2%	93%
Vaginal agenesis	5%	10%	85%
Lower limb reconstruction	20%	30%	50%
Laser facial rejuvenation	20%	10%	70%
Hair transplantation	70%	15%	15%
Tissue expansion	10%	30%	60%
Botox, filler and thread rejuvenations	25%	45%	30%

**Table 1:** Choices of junior doctors for plastic surgeon to practice each procedure.

Senior specialized non-plastic surgeons, was only oriented by 62-79% of plastic surgery procedures. They were 30% and 20 % more ascertaining procedures of plastic surgery, then general populations and junior graduated doctors.

The surprising result was that: there is no difference between questionnaire analysis of the two groups, junior fresh graduated doctors, and populations' sample in both countries, Egypt and UK. While specialized non-plastic surgery- doctors in UK were more oriented about the scope of plastic surgery by 17%, as it was 79% of plastic surgery procedures.

## Discussion

This study results show the limitation of plastic surgery procedures scope in minds of general population, junior doctors and specialized non-plastic surgeon as well. The scope of plastic surgery specialty in minds of general population sample, junior

graduated doctors and senior specialized non-plastic surgeons is under expected. It was only 32%, 42% and 62-79% orientation in Egypt and UK, about the scope of plastic surgery specialty in minds of the three studied sectors respectively. This means less expectation of different specialties interaction with plastic surgery specialty, and then may results in less optimum outcome in health providing diverse services.

The study shows different sectors orientations when, senior specialized non-plastic surgeons, was oriented by 62-79% of plastic surgery procedures. 32% and 42% of plastic surgery procedures were actual ascertained by general populations and junior graduated doctors. In study conducted by Alan David in 2013, in South Africa, surveyed, the knowledge of 33 house officers, about the scope of plastic surgery, showed underestimation and limitation of their orientation about the diversity of plastic surgery procedures to be only 36.4% in cutaneous malignancies, maxillofacial trauma, and hand surgery [6].

This study shows the 32% orientation, of junior doctors, but it carried on wider scale, 100 personnel of junior freshly graduated doctors in Egypt and UK, and also our study surveyed the general populations and specialized non-plastic surgery senior doctors. This result raises a question about training of the undergraduate doctors in plastic surgery specialty and the teaching of the curriculum of surgery which mainly carried out by dominant role of general surgery department. This internship training and curriculum teaching, might be in need for revisions as junior doctors are the pivot point in providing primary health care and mainly exposed for the decision of referrals for higher levels of care.

This study also shows the general population underestimation for the specialty and this comes with Gills et al one in Australia [7]. We believe in that; the non-controlled media marketing has helping in formation of false specialty practice image which is only limited for aesthetic surgery. This relative increase in orientation of non-plastic surgeon specialized doctors, than junior doctors or general population groups, might be attributed to their experience getting through practice and interaction within work environment.

The more orientation of non-plastic surgeon specialized doctors in UK, about 79%, than the Egyptian non-plastic surgeon specialized doctors, 62%, also raise a question about the multidisciplinary team management of health problems and how senior doctors think about interdepartmental co-operations. This study agrees with many other studies which have demonstrated under estimation of the scope of plastic surgery specialty in minds of medical and non-medical personals [8-10], but this study was carried out on wider scale of 300 persons in each country, divided into three groups; junior fresh graduated doctors, specialized non-plastic surgery- doctors and random populations' sample.

Plastic surgery deals with human body from hair to nails ei-

ther for reconstruction or aesthetic restorations. It interacts with Dermatology in treatment of facial aging, laser therapy, and treatment of vitiligo by ultrathin grafting, and skin treatments for rejuvenation and skin surgery.

It shares orthopedic surgery in treatment of hand fractures, tendon transfer, lower extremity complications, bone exposure, osteomyelitis and management of trauma by reconstruction by local and free flaps. Plastic surgery contributes with Onco-surgery in flap reconstruction and microsurgery for head and neck cancer, skin cancer, sarcoma and onco-plastic breast surgery.

Plastic surgeon works and collaborates with orthognathic and Orthodontic for management of primary and secondary cleft lip and nasal deformities and facial disproportion of the bony skeleton of the face. Plastic surgery specialty has very wide contribution in Maxillofacial fractures, tumors, facial palsy management and facial bones advancement, distraction and setting back of lower Jaw. Scalp lacerations, scalp expansion and craniosynostosis and other congenital skull deformities are managed by teamwork consists of plastic surgery, neurosurgery and Craniofacial surgery.

Neurosurgeon, Orthopedic are sharing plastic surgeon in management of carpal tunnel syndrome and ulnar nerve entrapment in the hand. Most of reconstructive procedures for pediatric congenital anomalies as brachial plexus, skull, ear, lip/ palate, velo-pharyngeal valve, hypospadias, epispadias, congenital hand, chest wall and abdominoperineal deformities are given hand by plastic surgeon either as primary operator, secondary operator or within multidisciplinary team management. Nasal aesthetic and reconstructive nasal surgery and remodeling are one of the famous procedures for plastic surgery specialty with great collaboration with ENT specialty in its management and also both specialties are sharing experiences in management of velo-pharyngeal incompetence, pharyngeal, laryngeal and external ear reconstruction.

General surgery is also a primary training for all plastic surgeons to provide them strong surgical bases for generalized principles and lifesaving procedures, burn management in general and abdominal wall structure reconstruction. Urologists are always interested in experience exchange with plastic surgeons for the reconstruction for the external urinary tract problems, as well as male genital system reconstruction, as regard Phalloplast, penile augmentation and penile augmentation. Genital reconstruction also makes plastic surgery reconstruction interact with anthropologists for penile augmentation, and with gynecologists for vaginal reconstruction in cases of vaginal hypoplasia or agenesis.

It is really difficult to find any surgical specialty doesn't share plastic surgery specialty in some procedures as first hand or second hand giving support, e.g. Many medical and non-medical career specialized persons may not imagine the relation between cardiac surgery specialty and plastic surgery specialty, but in fact there is a great collaboration and interaction between both, in cases

of treatment of chest wall congenital deformities, wounds management by reconstruction or treatment after chest wound dehiscence, or graft donor sites complications.

Aesthetic surgery also interacts with many other specialties as dermatological surgery, ENT and ophthalmology. For example, one of the commonest aesthetic procedures is blepharoplasty and it is practiced by both plastic surgeon and Ophthalmologist.

Aesthetic surgery training deals with undesirable aberrant qualities of normal body structures, including liposuction, hair transplantation, facial aesthetics, rhinoplasty, aesthetic breast surgery, tummy tuck, thigh lifting, arm lifting, and all over facial and body reshaping by surgery or non-surgical interventions. Plastic surgery has very wide diversity and modern techniques, getting every day update challenge and development, so the learning curve is relatively slow. Some surgeon is confined to certain subspecialty practice and some is practicing the entire specialty.

Plastic surgery specialist is able to help patients in very diverse and unique ways, and at the same time he has the ability to focus his practice either on cold aesthetic and reconstructive cases, on traumatic excited unpredicted trauma, or to practice academic research and has the option to have his own private career practice<sup>5</sup>. At the end of the day plastic surgery specialty provides surgeon flexibility in life style not allowed in other surgical specialties.

## Conclusion

Human medical and surgical health problems aren't one man show management. Mandatory collaboration between all specialties with each other is the key of success in health problems to get better outcome. Plastic surgery specialty is neither only aesthetic practice nor burn management as it is in the minds of random population, junior doctors and even specialized non-plastic doctors. But its scope extends to include hand surgery, general reconstructive, microsurgery, skin cancer, congenital anomalies, cranio-maxillofacial, oncoplastic and non-surgical procedures for treatment of ulcers, bed sores and burns and for aesthetic restoration.

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