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ORIGINAL PAPER

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Perception and Knowledge of Facial Plastic Surgery Among Health Care Professionals at Tertiary Care Center, Jeddah, Saudi Arabia: Cross Sectional Study.

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ABSTRACT

Introduction: Plastic surgery is a medical specialty involving the restoration, reconstruction, or alteration of the body. Knowledge about facial plastic surgery among doctors is limited according to some literatures and enriched according to others, depending on the country and study population.

Aim: Aim of the study was to evaluate level of knowledge of health care professionals regarding facial plastic surgery. **Methods:** A cross-sectional study included total of 261 health care professionals (consultants, specialists and residents in training) at King Abdul-Aziz University Hospital (KAUH) from all subspecialties during July 2018. The data collected using pre-designed questionnaire and analyzed using professional statistics software. **Results:** Among 261 participants, sex distribution shows a male-female ratio of 2.78:1. The majority (62.8%) of participants were residents. Mean age (\pm SD) of participants was 32.28 ± 8.43 . Pediatrics, internal medicine, and general surgery were the most common specialties. Among participants, 75.5% agreed that taking training in plastic surgery program is a requirement to be a facial plastic surgeon whether it should be accompanied with at least one other surgery training (23%) or more than one other training (22.2%). The majority (97.7%) have never undergone a facial plastic surgery operation and 78.2% were not willing to undergo one. **Conclusion:** The study concludes that the knowledge and perception among healthcare professionals in KAUH regarding facial plastic surgeries is on relatively good basis but needs more updates and trainings.

Keywords: Facial, plastic surgery, knowledge, perception, health care professionals.

1. INTRODUCTION

Researchers in the psychology literature stated that, there are two components of personality; psychological and physical part. The latter, is determined by appearance which gives a first impression of personality and expectations in people. It is found that, people respond in a positive way to attractiveness and link it with successful, socially competent and strong characters (1). On the other hand, people respond in a negative way to craniofacial anomalies and correlate that to negative personality traits (2). Males and females concern about their physical appearance increasingly in Europe and America and a large number of them are seeking cosmetic enhancement. Besides that, many studies report that people are happy with the outcomes of aesthetic procedures (3). As a result of all these changes, significant attention is turned towards facial plastic surgery over the past several decades (4). Pasha et al. stated that facial plastic surgery is considered a subspecialty of ORL head and neck, plastic surgery and Maxillofacial surgeries (5). The facial aesthetic unit consists of the forehead, brows, the periorbital region, the cheeks, nose, the perioral region and chin and the neck (6). The aim of facial plastic surgery is to restore, reconstruct, and/or alter the anatomy and the changes of face and neck as those resulted from the normal aging process,

leaving the patient with a beautiful, younger-appearing face (4). A study done in Nigeria to assess the knowledge and perceptions regarding facial plastic surgery among a group of professionals, found that most of the study participants had some knowledge of facial plastic surgery; but, only a few expressed willingness to undergo facial plastic surgery (7).

“Plastic surgery as a specialty is poorly understood by our medical colleagues”, is the result of a study done in India to assess the awareness and knowledge of plastic surgery in healthcare professionals (8). A survey was conducted to assess the perceptions and misconceptions of the plastic and reconstructive surgeon, have found that, public perception of the plastic and reconstructive surgeon is limited and greatly underestimates this specialty (9). A similar study was done involving the residents of internal medicine, family medicine, and pediatrics training programs in the United States stated that, due to the overlap of plastic surgery with other specialties, a great number of mistakes are documented in referring the patients which leads to a workload on some specialties more than others. Therefore, more education of internal medicine, pediatrics, and family medicine physicians and trainees about plastic and reconstructive surgery is critically needed (10).

Due to the limited assessment of the current perception of facial plastic surgery among other doctors, this study aims to assess the knowledge and perceptions regarding facial plastic surgery among health care professionals at KAUH, Jeddah, Saudi Arabia.

2. AIM

This study aims to assess and evaluate level of knowledge of health care professionals regarding facial plastic surgery. Also, to find out and detect any significant differences between health care professional’s knowledge, and perception about facial plastic surgery according to their subspecialties and position in KAUH, Jeddah, Saudi Arabia.

3. METHODS

This cross-sectional study was conducted among a total of 261 health care professionals. Including consultants, specialists and residents at KAUH from all specialties during July 2018. An anonymous voluntary self-reported questionnaire was distributed to clinical professionals in wards, operating rooms and clinics of the hospital.

Before administering the survey, we pilot tested the questionnaire among 20 team members to assess the face validity, clarity, and sequence of items. The data collected on the questionnaire, which took up to 5 minutes to complete, included age, sex, specialty, position, and questions regarding their knowledge and perception about facial plastic surgery.

Approval for the study was received from the KAUH ethics review committees. Statistical analysis included descriptive analysis and chi-square tests with the use of SPSS software (version 23.0.0.0).

4. RESULTS

A total of 261 questionnaires were filled and returned. Demographic data are represented is the age, gender and position as a professional healthcare provider. Sex distri-

bution shows a male-female ratio of 2.78:1. The majority (62.8%) of participants were residents. Mean age (\pm SD) of participants was 32.28 ± 8.43 .

And the distribution of the healthcare professionals according to their departments with pediatrics, internal medicine, and general surgery being the most common (16.9%, 16.1%, and 10.7%) among the study group, respectively. Surgery departments, including cardiac surgeons, general surgeons, neurosurgeons, plastic surgeons, thoracic surgeons, trauma surgeons, and vascular surgeons, constituted 16.9% of all participants. However, plastic surgeon’s participants constituted only 0.8% of participants and ORL head and neck surgeons constituted 8% of the participants.

Assessment of health care professional’s knowledge

Among participants, 75.5% agreed that taking training in plastic surgery program is a requirement to be a facial plastic surgeon, whether it should be accompanied with at least one other surgery training (23%) or more than one other training (22.2%). However, 24.5% did not include plastic surgery training as a requirement and 14.9% among those included only training in a maxillofacial program.

On the other hand 42.5% of participants think that scar marks will be left over the face after a facial plastic surgery while about one-fifth were not sure/did not know.

Insignificant correlation was found between the position and perception regarding whether or not there will be scar marks on the face after a facial plastic surgery, whether or not facial plastic surgeries are highly costly and they are targeted by rich people, whether or not it is thought that facial plastic surgeries are very risky, and considering undergoing facial plastic surgery for facial abnormalities. A significant correlation between the position and perception was found regarding the willingness of undergoing facial plastic surgery with the majority of answers being ‘No’ and relatively increased ‘Yes’ responses by consultants. The majority (49%) responded ‘No’ to whether or not they think that facial plastic surgery is an expensive affair and meant for rich and famous people, while 40.6% thought so, and 10.4% did not know. Eighty-one respondents believe that the risk of facial plastic surgeries is similar to the risk involved in other surgeries, and 16.9% thought that they are very risky. The majority (78.2%) were not willing to undergo a facial plastic surgery operation and 97.7% have never undergone one. Ninety-two percent did not report any facial abnormalities while 8% reported different types of abnormalities and only 12.3% of those with abnormalities considered undergoing facial plastic surgeries.

Table (1) illustrates that the majority of respondents thought that the departments concerned with different types of plastic surgeries as follows; Eyelid tear and injury are thought to be performed mainly by ophthalmologists (59.4%), and plastic surgeons (33.3%), Fracture of the jaw and face mainly by oral and maxillofacial surgery, hair transplantation mainly by dermatologists, and plastic surgeons, cleft lip and palate surgeries mainly by plastic surgeons and pediatrics, difficulty on opening mouth surgeries mainly by oral and maxillofacial surgeons and ORL head and neck surgeons, Rhinoplasty operations mainly by ORL head and neck surgeons and plastic surgeons, burn operations, cuts over face surgeries, skin grafting, surger-

Perception about department concerned with plastic surgery	Summary statistics		
Eyelid tear and injury			
Dermatology	1 (0.4%)	liposuction	
ORL head and neck	6 (2.3%)	Dermatology	4 (1.5%)
General surgery	2 (0.8%)	ORL head and neck	3 (1.1%)
Ophthalmology	155 (59.4%)	General surgery	32 (12.3%)
Oral & maxillofacial surgery	8 (3.1%)	Neurosurgery	1 (0.4%)
Orthopedics	2 (0.8%)	Oral & maxillofacial surgery	3 (1.1%)
Plastic surgery	87 (33.3%)	Plastic surgery	218 (83.5%)
Fracture of the jaw and face			
ORL head and neck	17 (6.5%)	Botox	
General surgery	1 (0.4%)	Dermatology	60 (23%)
Neurosurgery	1 (0.4%)	ORL head and neck	4 (1.5%)
Oral & maxillofacial surgery	213 (81.6%)	General surgery	5 (1.9%)
Orthopedics	13 (5%)	Oral & maxillofacial surgery	2 (0.8%)
Plastic surgery	16 (6.1%)	Plastic surgery	190 (72.8%)
Hair transplantation			
Dermatology	163 (62.5%)	Surgery for facial wrinkles	
ORL head and neck	2 (0.8%)	Dermatology	26 (10%)
General surgery	1 (0.4%)	ORL head and neck	12 (4.6 %)
Oral & maxillofacial surgery	2 (0.8%)	General surgery	3 (1.1%)
Plastic surgery	93 (35.6%)	Oral & maxillofacial surgery	9 (3.4%)
Cleft lip and palate		Plastic surgery	211 (80.8%)
Dermatology	1 (0.4%)	Skin grafting	
ORL head and neck	31 (11.9%)	Dermatology	10 (3.8 %)
General surgery	7 (2.7%)	ORL head and neck	3 (1.1%)
Neurosurgery	1 (0.4%)	General surgery	11 (4.2 %)
Oral & maxillofacial surgery	44 (16.9%)	Oral & maxillofacial surgery	1 (0.4%)
Orthopedics	1 (0.4%)	Plastic surgery	236 (90.4%)
Pediatrics surgery	57 (21.8%)	Electrical burns	
Plastic surgery	119 (45.6%)	Dermatology	6 (2.3%)
Cuts over the face		ORL head and neck	2 (0.8%)
Dermatology	1 (0.4%)	General surgery	13 (5%)
ORL head and neck	5 (1.9%)	Neurosurgery	2 (0.8%)
General surgery	21 (8%)	Oral & maxillofacial surgery	2 (0.8%)
Oral & maxillofacial surgery	14 (5.4%)	Plastic surgery	236 (90.4%)
Pediatrics surgery	2 (0.8%)	Vitiligo	
Plastic surgery	218 (83.5%)	Dermatology	153 (58.6%)
Difficulty in opening mouth		ORL head and neck	19 (7.3%)
Dermatology	1 (0.4%)	General surgery	5 (1.9%)
ORL head and neck	39 (14.9%)	Neurosurgery	4 (1.5%)
General surgery	4 (1.5%)	Ophthalmology	1 (0.4%)
Neurosurgery	1 (0.4%)	Oral & maxillofacial surgery	5 (1.9%)
Oral & maxillofacial surgery	181 (69.3%)	Plastic surgery	74 (28.4%)
Pediatrics surgery	1 (0.4%)	Table 1. Perception about department concerned with plastic surgery (No.=261). P-value is calculated by Chi-square test, P-value <0.05 is statistically significant	
Plastic surgery	34 (13%)	ies for electrical burns and surgeries for facial wrinkles mainly by plastic surgeons, congenital anomalies of ear and nose mainly by ORL head and neck surgeons and plastic surgeons, etc.	
Rhinoplasty		Regarding the relation between the affiliation/position in the clinic of the participants and their perception about plastic surgery. Insignificant correlation was found between the position and perception regarding whether or not there will be scar marks on the face after a facial plastic surgery, whether or not facial plastic surgeries are highly costly and they are targeted by rich people, whether or not it is thought that facial plastic surgeries are very risky, and considering undergoing facial plastic surgery for facial abnormalities. However, significant correlation between the position and perception was found regarding the willingness of undergoing facial plastic surgery with the majority of answers being 'No' and relatively increased 'Yes' responses by consultants. Thus we conclude that consultants and specialists have better knowledge about facial plastic surgery specially in the field of ORL head and neck and plastic surgery.	
ORL head and neck	187 (71.6%)		
Neurosurgery	1 (0.4%)		
Ophthalmology	1 (0.4%)		
Oral & maxillofacial surgery	11 (4.2%)		
Plastic surgery	61 (23.4%)		
Burns			
Dermatology	21 (8%)		
ORL head and neck	1 (0.4%)		
General surgery	14 (5.4%)		
Neurosurgery	1 (0.4%)		
Plastic surgery	224 (85.8%)		
Congenital anomalies of ear and nose			
Dermatology	1 (0.4%)		
ORL head and neck	121 (46.4%)		
General surgery	2 (0.8%)		
Neurosurgery	2 (0.8%)		
Ophthalmology	1 (0.4%)		
Oral & maxillofacial surgery	16 (6.1 %)		
Orthopedics	1 (0.4%)		
Pediatrics surgery	19 (7.3 %)		
Plastic surgery	98 (37.5%)		

5. DISCUSSION

Facial plastic surgery is a broad field of ORL head and neck Maxillofacial and plastic surgery that is involved in cosmetic and reconstructive surgery techniques to improve surgical outcomes. The scope of practice for facial plastic surgery may include rhinoplasty, browlifts, facelifts, microvascular reconstruction, blepharoplasty, craniomaxillofacial trauma reconstruction, and facial defects corrections. This cross-sectional study was conducted among a total of 261 health care professionals including consultants, specialists and residents in training at KAUH.

According to perception and knowledge about plastic surgery our study reported; 42.5% of participants think that after facial plastic surgery operation, there are scar marks left over face. 40.6% of participants think that facial plastic surgery is a very expensive and 80.8% said it's risk is similar to risk involved in other surgeries. In Pune, India a questionnaire-based study among a selected group of healthcare professionals to assess their attitude, knowledge, and perception of plastic surgery reported; 74% of the participants felt that there are no scar marks left after plastic surgical procedure, 37% of the participants felt that plastic surgery is a very expensive and 87% of participants felt that the risk involved with plastic and cosmetic surgery is similar to other surgeries (8).

Approval for undergoing facial plastic surgery in our study was 12,6%, however, 12.3% had thought of undergoing facial plastic surgery for any facial abnormality. Our finding closed to results of study conducted in Lagos, Nigeria which reported; 14.6% of respondents expressed willingness to undergo facial plastic surgery for removal of facial wrinkles and excess fat on the cheeks and neck and only (13%) of the respondents had ever thought of undergoing facial plastic surgery (7).

As regarding perception about the training required to be a facial plastic surgeon, our study revealed that the majority of participants (30.3%) said training in plastic surgery program is required, only (1.5%) said training in general surgery program, training plastic surgery program and training in general surgery program (2.3%). Other trainings reported for example training maxillofacial program (14.9%), training ORL head and neck program, training in plastic surgery program, training in maxillofacial program (15.3%) and training in plastic surgery program, training in maxillofacial program (13.4%). Another study reported; 96% of the participants were aware that three years training in General surgery after M.B.B.S followed by three years training in Plastic surgery is required to be a facial plastic surgeon (8).

Regards Perception about department concerned with plastic surgery our study found that for eyelid tear and injury 59.4% of participants chose ophthalmology department, plastic surgery department preferred by 83.5% of participants for cuts over the face and 85.85% for burn management, 71.6% chose ORL head and neck for rhinoplasty and for hair transplantation participants chose dermatology by 62.5%. Another study reported; 93% of respondents preferred an ophthalmic surgeon to suture an eyelid injury, and 92% of respondents preferred a plastic surgeon to suture a cut over the face, 86% respondents preferred a plas-

tic surgeon for managing burns, 61% responded for plastic surgeon for doing a rhinoplasty and hair transplantation procedure had 67% participants responding for dermatologist (8). Researchers noticed low awareness and knowledge toward the scope of oral and maxillofacial surgery in the medical community among medical practitioners in Jazan Province in Saudi Arabia (11).

In a web-based survey the results were; For eyelid surgery the largest number, 69.7% of respondents, felt that plastic surgeons are experts, this was closely followed by 59.2% selecting ophthalmologist, for cleft lip and palate surgery 77.3% chose oral maxillofacial surgeon, followed by 56.1% for plastic surgeon (12). However, in our study 45.6% of subjects chose plastic surgery followed by 21.8% selected pediatrics surgery for cleft lip and palate surgery. The same study reported 75.6 % of respondents selected plastic surgeon, 45.4 % selected otolaryngologist, and 18.3 % selected oral maxillofacial surgeon for rhinoplasty (12). A study was done to record the prevalence of facial cosmetic surgeries among plastic surgeons, interestingly, thirty-six percent of plastic surgeons had a surgical cosmetic facial procedure and 75% has at least one minimally invasive cosmetic facial procedure. Facial plastic surgeons are frequent users of cosmetic facial plastic surgery. This could be attributed due to more access, knowledge base, values, or attitudes. By better understanding for surgeon attitudes toward facial plastic surgery, we can improve communication with patients and delivery of care (13).

The evolution of the non-surgical techniques as fillers, neurotoxins, 3D imaging, laser technologies and minimally-invasive techniques as endoscopic approaches is the future of facial plastic surgeries to minimize scars and treat aging faces or traumas and lots of work and focus are put on their development.

Study limitations: There was a limited amount of previous literature concerning the same topic. Residents participating in the study were relatively higher than specialists and consultants during data collection and this is due to higher availability and willingness of residents than specialists and consultants.

6. CONCLUSION

The study concludes that the knowledge and perception of healthcare professionals in KAUH regarding facial plastic surgeries is on relatively good basis but needs more updates and trainings, and it also concludes that more cases should be referred to facial plastic surgeons rather than other specialties for better outcomes. It is mandatory to establish, develop, and validate an instrument to measure physician's knowledge, and attitude toward any health problem. Which would deliberately enhance future studies, and provide researchers with a reliable, consistent tool.

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- **Author's contribution:** Author (1), (2), (3) have participated in the study conception, designing, planning. Authors (1), (4), (5) have share in the writing, data collection, analyzing the data and interpretation. All authors have participated in reviewing, correction of the manuscript, and approval of the final manuscript and preparation for submission to publication.
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