

Perception of Plastic Surgery Among Medical Students and Role of the Media: A Cross-Sectional Study

Hatan Hisham Mortada, Yara Aayed Alqahtani, Hadeel Zakaria Seraj, Wahbi Khalid Albishi, Hattan Abdulhafed Aljaaly

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Abstract

Background: Plastic surgery specialty is gaining a lot of popularity recently. Despite this, there seems to be a limited perception and poor understanding by both medical professionals, including medical students, and the general public which might alter referral patterns as well as their choice to pursue a career in plastic surgery.

Objective: The purpose of this study was to assess the knowledge and perception of plastic surgery among medical students and to explore the influencing factors underlying particular beliefs.

Methods: Data for this cross-sectional study were collected between August 22 and December 22, 2017. The questionnaire was formulated on the basis of our own study objectives and from available questionnaires with similar objectives. It was composed of 14 questions divided into three main parts: demographics, the specialty of plastic surgery, and media involvement and its effect on plastic surgery. The study was conducted via an online questionnaire among medical students in all years at King Abdulaziz University Hospital, Jeddah, Saudi Arabia. Data were considered significant at $P < 0.05$. All analysis was performed by using SPSS, version 20 (IBM, Armonk, NY, USA).

Results: A total of 886 medical students participated in this study. The mean age of the participants was 21.2 years. The mean awareness score was 9.7 ± 4.2 for female students and 8.3 ± 4.2 for male students ($p < 0.001$). The condition most commonly recognized as being treated by a plastic surgeon was burns (70.3% of responses).

Conclusions: Medical students do not have adequate awareness of plastic surgery and early exposure to this specialty may enhance their awareness.

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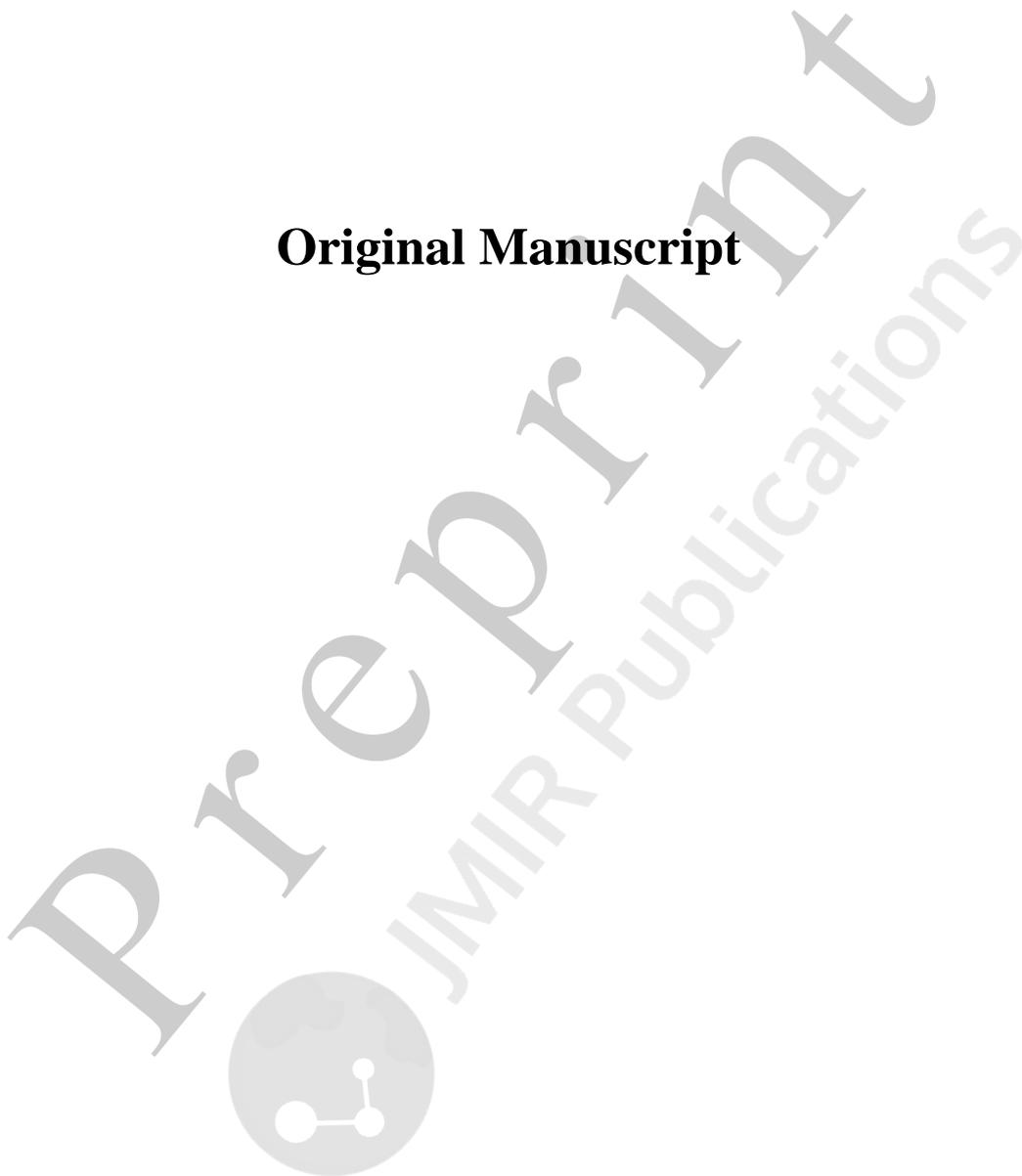
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Key words: Plastic Surgery; Perception; Knowledge; Medical Students, Media

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Abstract

Background:

Plastic surgery specialty is gaining a lot of popularity recently. Despite this, there seems to be a limited perception and poor understanding by both medical professionals, including medical students, and the general public Which might alter referral patterns as well as their choice to pursue a career in plastic surgery.

Objective:

The purpose of this study was to assess knowledge and perception of plastic surgery among medical students and to explore the influencing factors underlying particular beliefs.

Methods

Data for this cross-sectional study were collected between August 22 and December 22, 2017. The questionnaire was formulated on the basis of our own study objectives and from available questionnaires with similar objectives. It was composed of 14 questions divided into three main parts: demographics, the specialty of plastic surgery, and media involvement and its effect on plastic surgery. The study was conducted via an online questionnaire among medical students in all years at King Abdulaziz University Hospital, Jeddah, Saudi Arabia. Data were considered significant at $P < 0.05$. All analysis was performed by using SPSS, version 20 (IBM, Armonk, NY, USA).

Results

A total of 886 medical students participated in this study. The mean age of the participants was 21.2 years. The mean awareness score was 9.7 ± 4.2 for female students and 8.3 ± 4.2 for male students ($p < 0.001$). The condition most commonly recognized as being treated

by a plastic surgeon was burns (70.3% of responses).

Conclusion

Medical students do not have adequate awareness of plastic surgery and early exposure to this specialty may enhance their awareness.

Key words: Plastic Surgery; Perception; Knowledge; Medical Students; Media; King Abdulaziz University; Jeddah; Saudi Arabia;

Introduction

Plastic surgery is well-defined as the specialty concerned with restoration, reconstruction, and enhancement of the function and the appearance of body structures that are missing, defective, damaged, or misshapen. It encompasses both reconstructive and cosmetic surgery. [1] According to the American Society of Plastic Surgeons, nearly 17.1 million cosmetic procedures and 5.8 million reconstructive procedures were performed in 2016 alone; this represents an increase in cosmetic procedures of 132% since 2000. [2] Despite

this growth in the field; there seems to be a limited perception and poor understanding of this specialty by medical professionals, including medical students, and the general public.

[3]

Even though plastic and reconstructive surgeons require extensive surgical training and technical skills, they are mostly known for performing cosmetic surgeries. [4] An Indian study reported that plastic surgery is poorly understood in the medical community, as 12% of the participants thought that plastic and cosmetic surgeries were one and the same. [3] Similarly, a recent study conducted by Fraser et al. [5] concluded that medical students have a skewed perception that is largely influenced by television. As these students go on to become practicing physicians, their misconceptions regarding plastic surgery may negatively affect the specialty by altering patient referral patterns and their decision to pursue a career in plastic surgery.

No data are available in the literature about medical students' knowledge and perception of plastic surgery in Saudi Arabia. The purpose of this study was, therefore, to assess knowledge and perception about plastic surgery among medical students in Saudi Arabia and to explore the influencing factors underlying particular beliefs.

Materials and Methods

Study design and data collection

This cross-sectional study at King Abdulaziz University Hospital (KAUH) in Jeddah, Saudi Arabia, was conducted via an online questionnaire. Each class of medical students from second to sixth year was assigned two individuals to distribute the online questionnaires. A total of 886 medical students participated in the study. The data were collected from August 22, 2017, until December 22, 2017, All participants were informed about the demands of the

study and those who agreed to participate were enrolled. Participants who refused to participate or failed to complete the questionnaires were excluded.

Questionnaire variables

The questionnaire was formulated on the basis of our own study objectives and from available questionnaires with similar objectives. [6-8] It was composed of 14 questions divided into three main parts: demographics, the specialty of plastic surgery, and media involvement and its effect on plastic surgery. The first part included age, gender, educational level, and academic grade point average (GPA). The second part aimed to assess medical students' knowledge about plastic surgery. It was measured using an awareness score between 1 and 21, a higher score indicating more awareness about plastic surgery. The final part involved questions aimed at determining the role of media in students' perceptions.

Ethical considerations

This study was approved by the Institutional Review Board and the Research Ethics Committee of King Abdulaziz University in Jeddah.

Statistical methods

Descriptive statistics were used as the baseline characteristics of all respondents, the frequencies and percentages of respondents who had chosen other specialties, the sources of information regarding plastic surgery, and the conditions treated by plastic surgery. The student t-test was used to compare the mean difference in awareness scores of all respondents according to different variables. A one-way analysis of variance test was used to compare the mean awareness score among participants across decisions regarding plastic surgery and level of education. Spearman's correlation test was used to determine

the correlation between the score achieved and age, educational level, and academic GPA. A chi-squared test generated ***P values*** for participants who chose the plastic surgery specialty according to different variables. Data were considered significant at ***P < 0.05***. All analysis was performed by using SPSS, version 20 (IBM, Armonk, NY, USA).

Results

Participants

A total of 886 medical students participated in the study. The mean age was 21 years, and 50% were females. Students were from all different levels of medical school, 25.6% being in their final year. 66% of the students had a GPA between 4.5 and 5. (Tables 1)

Table 1. Summary of characteristics and responses of participants

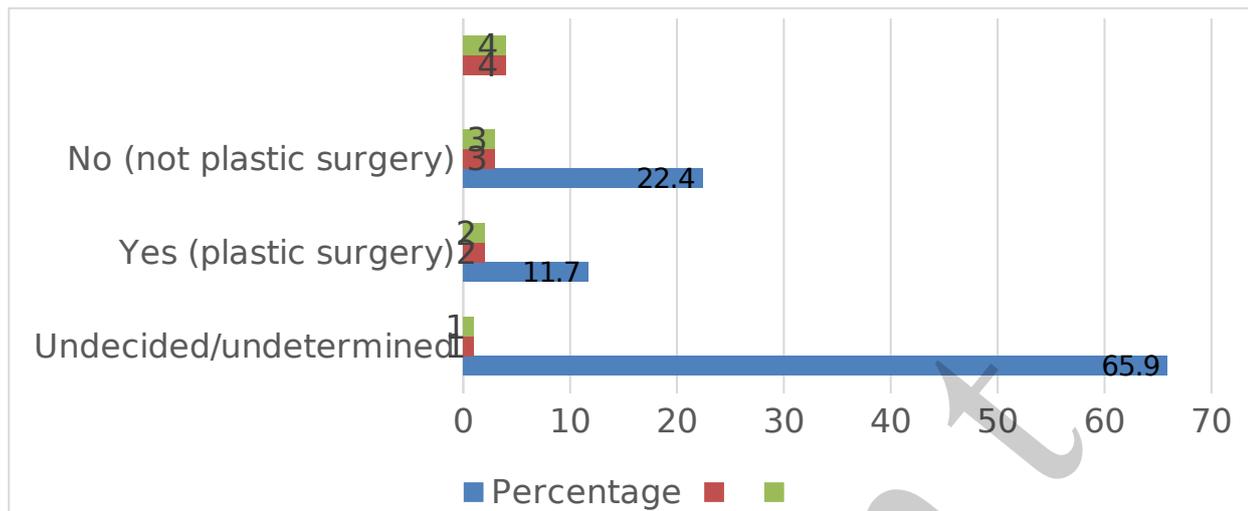
	Frequency	Percentage
Gender		
Female	440	49.7
Male	446	50.3
Educational level		
2nd year (Med17)	156	17.6
3rd year (Med16)	220	24.8
4th year (Med15)	188	21.2
5th year (Med14)	95	10.7
6th year (Med13)	227	25.6
Academic GPA		
<2.5	1	.1
2.5-2.99	7	.8
3-3.49	29	3.3

3.5-3.99	103	11.6
4-4.49	252	28.4
4.5-5	494	55.8
Exposed to medically themed television		
No	325	36.7
Yes	561	63.3
Exposed to a surgical discipline		
No	648	73.1
Yes	238	26.9
Decision about choosing plastic surgery		
Yes	102	11.5
No	39	4.4
Other specialty	162	18.3
Not decided	583	65.8

GPA = grade point average.

Among the sample, 65.8% of students had not yet decided on their career specialty, 11% had chosen to pursue a career in plastic surgery, and 22.7% had chosen a different specialty. (Figure 1)

Table 2. Specialty preferences among participants in numbers and percentages



Knowledge of plastic surgery

The mean awareness score was 9.7 ± 4.2 for female students and 8.3 ± 4.2 for male students ($p < 0.001$). Those who had been exposed to a surgical discipline had a score of 10.4 ± 4.4 versus 8.5 ± 4.1 for those who had no exposure ($p < 0.001$). Students who had not decided on their career specialty had a lower score (8.4 ± 4.1) compared with those who had chosen plastic surgery or any other specialty ($p < 0.001$). Sixth-year medical students had an awareness score of 10.5, which was higher than that of second-, third-, and fourth-year students ($p < 0.001$). (Table 2)

Table 2. Achieved score across various factors

Factor		N	Mean score	Std. Deviation	P Value student t test
Gender	Female	440	9.73	4.178	<0.001
	Male	446	8.30	4.196	
Exposed to medically themed television	Yes	561	10.01	4.029	<0.001
	No	325	7.29	4.060	
Exposed to	Yes	238	10.42	4.296	<0.001

a surgical discipline	No	648	8.49	4.110	
Want to be a plastic surgeon	Yes	102	9.73	4.446	.070
	Other specialty or not determined	784	8.92	4.213	
Decision regarding plastic surgery	Yes	102	9.73	4.446	P value ANOVA <0.001
	No	39	9.59	4.278	
	Other specialty	162	10.67	3.984	
	Not decided	583	8.39	4.138	
Educational year	2nd year (Med17)	156	6.95	4.011	P value ANOVA <0.001
	3rd year (Med16)	220	8.66	4.008	
	4th year (Med15)	188	8.84	4.087	
	5th year (Med14)	95	10.01	4.304	
	6th year (Med13)	227	10.49	4.092	

ANOVA = analysis of variance.

Burns were most commonly recognized as being treated by a plastic surgeon (70.3% of students), followed by rhinoplasty (67.6%) and breast reduction or enhancement (66.6%). The conditions least recognized as being treated by plastic surgeons were injuries to the nerves of the hand and legs (12.1% of students), tendon injuries of the hand (12.3%) and bedsores (13%). (Table 3)

Table 3. Conditions treated in plastic surgery

Condition	Frequency	Percentage
Burns	623	70.3
Rhinoplasty (nose job)	599	67.6
Breast reduction or enhancement surgeries	590	66.6
Botox	555	62.6

Cleft lip and palate (congenital)	536	60.5
Eyelid tears and cuts over the face	483	54.5
Congenital anomalies of ear and nose	460	51.9
Liposuction (fat aspiration)	456	51.5
Abdominoplasty (tummy tuck)	404	45.6
Fractures of the jaw and face	402	45.4
Hair transplantation	353	39.8
Sex change surgery	352	39.7
Finger amputations	229	25.8
Diabetic foot wounds	153	17.3
Fractures of the hand	123	13.9
Bedsore	115	13.0
Tendon injuries of hand	109	12.3
Injuries to nerves of hand and legs	107	12.1

Role of media in perceptions

Of the students in the sample, 63.3% had been exposed to medically themed television programs. Their awareness score was 10 ± 4 versus 7.3 ± 4.1 for those who had not been exposed to these programs ($p < 0.001$). (Table 1) The most commonly mentioned source of information was the Internet (54.4%), followed by the television (44.7%). (Table 4)

Table 4. Sources of information regarding plastic surgery

Source	Frequency	Percentage
Internet	482	54.4
TV	396	44.7

Friends	316	35.7
Snapchat	240	27.1
Instagram	234	26.4
Personal encounter	174	19.6
Twitter	127	14.3
Other	122	13.8
Teaching sessions	120	13.5
Magazines	87	9.8
Personal experience	86	9.7
Clinical rotations	81	9.1
Workplace	77	8.7
Facebook	26	2.9

Discussion

A total of 886 medical students participated in this study. The mean age of the participants was 21.2 years and half of them were females. Almost 66% of the students had a GPA above 4.5 out of 5. The mean awareness score was 8.3 ± 4.2 for male students and 9.7 ± 4.2 for female students ($p < 0.001$). The condition most commonly recognized as being treated by a plastic surgeon was burns (70.3% of responses), followed by rhinoplasty (67.6 of responses). As plastic surgery is a unique specialty that deals with everything from head to toe; it has no organ system of its own. Our data show that medical students lack a proper understanding of the specialty of plastic surgery. These findings are consistent with those of other studies that defined plastic surgeons as cosmetic surgeons only, or did not recognize the surgeries that are commonly performed by plastic surgeons, such as hand surgery and cleft palate surgery. [8, 9] Interestingly, these misconceptions are also held by other groups,

including the public, primary care physicians, and residents. [6, 7]

Students in our study believed that plastic surgeons most commonly treat burns (70.3%), perform rhinoplasty (67.7%), and perform breast reduction and enhancement surgeries. (66.6%) In contrast, in a study from Pakistan, the perception was that plastic surgeons most commonly perform hair transplant surgery (89.9%), followed by facial scar surgery (88.0%) and rhinoplasty (83.4%) [10]. However, in a study performed in India, burns were the most frequently named condition (20.4%), but at a much lower percentage than found in our study (70.3%) (4). Adeyemo et al. [11] reported that the most often named procedures were liposuction (88.2%) and hair transplant surgery (84.4%), whereas liposuction was named by only 53% of the study participants. A similar study conducted in Pakistan among college students found that the Internet was the main source of information about plastic surgery (88%). [10] This agrees with the results of our study (54.4%).

The revolution in various forms of media and social networking channels has made the conditions treated by plastic surgeons more recognizable. Medically themed series such as Grey's Anatomy and House seem to be significantly associated with better awareness of plastic surgery among the students in our study. The Internet and social media are considered a rich source of information for plastic surgery, as the majority of students identified them as their sources of information. In consideration of the new trends in social media and the advertisements that serve to educate students about cosmetic surgery, the use of the Internet and social media tools to promote a more accurate and realistic portrayal of medicine should be strongly advocated.

Medical students' perceptions about the different surgical disciplines may increase as they progress through their clinical years. Students in their final year in this study had significantly better knowledge about plastic surgery than did their younger peers. Despite

medicine and surgery being considered essential in shaping the educational foundation of the students, their lack of knowledge about plastic surgery may have a negative impact on their chances of obtaining a residency in this field. Plastic surgery is an extremely competitive specialty, and it is mandatory for students who wish to pursue a residency position in this field to have involvement in extracurricular activities that include electives and related research.

Female medical students were more knowledgeable and more aware of the discipline of plastic surgery than were male students. This could be explained by women's natural interest in beauty, and as they comprise the majority (92%) of plastic surgery patients according to the latest statistics by the American Society of Plastic Surgeons. [2]

This study is the first of its kind in Saudi Arabia to assess the perception and knowledge of medical students about plastic surgery. Many different modalities may improve awareness of this specialty. Self-explanatory brochures about this specialty and its different disciplines have been advocated as a tool to increase awareness.

Limitations

Although our sample size was much larger than that reported in any other article in the field, because the data came from a single institution, the level of awareness of medical students in Saudi Arabia may be underrepresented. [4, 5, 10]

Conclusion

In conclusion, medical students do not have adequate awareness of plastic surgery. Early exposure to this specialty may enhance their awareness. Internet and social media channels are rich sources of information and their use as educational tools should be encouraged.

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Conflict of interest:

The authors declare that they have no conflict interests.

Abbreviations:

- KAUH: King Abdulaziz University Hospital
- GPA: Grade Point Average

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