Awareness of rhinoplasty surgery among the population in the Jazan Region, Saudi Arabia

Nehad K. Khawaji, Hadi M. Mokarbesh, Khalil I. Kariri, Fatimah H. Dallak, Faisal A. Othathi, Ayman M. Hakami, Abdulaziz Y. Wafi

Otolaryngology, King Fahd Central Hospital, Jazan, Kingdom of Saudi Arabia

ABSTRACT

Background: Cosmetic and plastic surgery is becoming increasingly prevalent all over the world among both men and women. Saudi Arabia ranks 22nd among the top 25 countries with the world's highest rates of cosmetic surgeries. This study aimed to assess the awareness of the population in the Jazan region regarding rhinoplasty surgery and to identify their main determinants. Material and Methods: A cross-sectional study of 425 participants was conducted at four randomly selected malls in Gizan City. A self-administered questionnaire was first developed to collect the data necessary to fulfill the research objectives, data were analyzed using Statistical Package for the Social Sciences (SPSS) version 22. The quantitative data were reported as a mean and standard deviation, and the qualitative data were reported as frequency and percentage. Regarding tests for significance, the Chi-square test used a P value less than 0.05 as an indicator of significance. Logistic regression was used to detect the predictors of poor knowledge of rhinoplasty surgery. **Results:** The mean age of the participants was 39.46 ± 10.08 . Of the participants, 53.6%have poor knowledge while 36.0% have good knowledge regarding rhinoplasty surgery. Moreover, 60.2% have an unfavorable attitude while 23.6% have a favorable attitude toward rhinoplasty surgery. The most important predictors of poor knowledge of rhinoplasty surgery are as follows: (a) old age (OR = 4.89), (b) illiteracy (OR = 4.12), (c) intermediate education (OR = 3.65), and (d) male sex (OR = 1.18). Conclusion: There was a low level of knowledge regarding rhinoplasty surgery among the study participants, most of the participants had negative (unfavorable) attitudes toward rhinoplasty surgery. Mass media plays an important role as a source of information. We recommend further studies to find out other personal factors affecting knowledge and attitude toward rhinoplasty surgery.

Keywords: Cosmetic, Jazan, plastic, predictors, rhinoplasty surgery

Introduction

Plastic surgery has continued to grow as a specialty as there is an intense increase in the number of cosmetic surgical techniques performed in Western countries in the past 10 years.^[1] About 8.3 million cosmetic surgical and nonsurgical procedures were performed in 2003. These numbers represent an increase of

Address for correspondence: Dr. Nehad K. Khawaji, Otolaryngology, King Fahd Central Hospital, Jazan, Kingdom of Saudi Arabia. E-mail: xx-x66-6@hotmail.com

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299% between 1997 and 2003, and the number has grown in the last decade. [2] For example, 11.7 million cosmetic treatments have been carried out in the United States since 2007, with the vast majority being minimally invasive procedures. [3] Others have suggested that the statistics minimize the number of procedures carried out, given that they exclude procedures done by nonplastic surgeons that enhance one's appearance. [4] Three reasons play a role in the increase in cosmetic surgery: medical progressions, patient features, and media effects. [5]

One of the most popular plastic surgeries is rhinoplasty, in which the nose is reshaped to increase facial beauty.^[6] The

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nose has a significant role in the aesthetics of the face^[7] as it is regularly assumed to be the most prominent facial feature. [8] A transformational process in such a significant area needs a lot of focus. As a surgical operation, rhinoplasty has two goals: to reconstruct the nose's shape and maintain or enhance the nose's airway function.^[9] In Saudi Arabia, rhinoplasty treatments have recently grown significantly and now account for 30% of all cosmetic surgeries performed there.^[10] Patients who need rhinoplasty have congenital or acquired functional or cosmetic problems or a combination thereof.[11] Any part of the nasal anatomy may be the subject of these complaints. [12] Surgeons have categorized the nose into three distinct parts: cartilaginous dorsum, bony dorsum, soft tissue, or skin. Rhinoplasty is considered one of the most challenging, complex, and unpredictable cosmetic operations globally.[11,13,14] The anatomical placement of the nose and various patient preferences contribute to the procedure's difficulty. Other challenges include the surgeon's required expertise in nasal anatomy and the challenge of keeping the nose's aesthetics and functionality at the same time.[11,13]

The outcomes of essential rhinoplasty may not fulfill individual preoperative expectations. Thus, reoperation may be provoked to enhance surgical results. [9,15] Research has shown that approximately 7.5-23% of subjects finally underwent revision or secondary rhinoplasty. [12,16-19] The reasons for doing a revision rhinoplasty include the failure of the first procedure to treat the patient's original complaint, the desire to treat a new iatrogenic deformity after the first rhinoplasty, and the loss of personal and familial characteristics. [20-22] A revision rhinoplasty could be emotionally and technically more challenging than the first rhinoplasty. [15,23] Scarring resulting from previous operations, landmarks loss, and lack of knowledge of what was previously done pose difficulties in revision surgeries.[13,23,24] Furthermore, patients considering a revision rhinoplasty may experience emotional distress from unsatisfactory results from prior procedures. [7] First, rhinoplasty patients' concerns are mostly different from those of revision rhinoplasty patients. [22] The most common complaints among patients looking to undergo revision rhinoplasty include obstruction of the nasal airway, saddle nose deformity, open roof deformity, crooked nose, asymmetry of the dorsum, excessive resection of dorsal, residual dorsal hump, bulbous tip, tip asymmetry, drooping tip, hanging columella, alar collapse, nostril asymmetry, and wide nostrils.[15,19,22,25-27] Additionally, revision rhinoplasty patients frequently experience respiratory problems. [21,22,25,28,29] Nevertheless, cosmetic or functional complaints are more frequent among patients requesting revision rhinoplasty. [25,27,28,30] Some studies report functional problems are more common, [27,28] whereas others demonstrate that cosmetic complaints are more frequently raised. [25,28] Therefore, it is important to comprehend candidate issues to achieve optimal results.^[19] To the best of our knowledge, there are no previous studies solely examining the population's awareness of rhinoplasty surgery in the Jazan region, which reflects the importance of the present work's aim to do so to identify their main determinants.

Material and Methods

Study design and setting

A cross-sectional study was conducted at four randomly selected malls (El-Danoub, Hyper Panda, Kadi Mall, El-Raya) in Gizan City, south of Saudi Arabia, which is bounded to the north by Asir region and to the south by the State of Yemen and from the east Asir region and the State of Yemen, and the Red Sea to the west. It was done from November 2022 to March 2023.

Study population

The study population sampled people visiting the selected malls in Gizan. First, a simple, random sampling technique was used to determine the study setting. Second, a convenience sampling approach was used to recruit the participants. The inclusion criteria were (a) adults 18 years old or above and (b) willing to participate in the study while the exclusion criteria were (a) those who do not live in Gizan and (b) those who do not have Saudi nationality.

Data collection tools

Data were collected using a self-administered, validated questionnaire. The first part included sociodemographic variables, i.e., age, gender, education, occupation, monthly income, and a number of close relatives or friends who have had a rhinoplasty done. The second part includes questions regarding knowledge, and attitude regarding rhinoplasty.

The questionnaire was examined by experts and committee members and by pretesting and cognitive debriefing to ensure content validity. To ensure the reliability of the questionnaire, a pilot study involving 30 participants who were not included in the survey was conducted to assess the face validity and the internal consistency reliability. Cronbach's coefficient alpha was used to estimate internal consistency reliability coefficients for the initial and retest tool administrations. It revealed that the median Cronbach's alphas for the tool (initial and retest) exceeded 0.81. Additionally, test–retest reliability was evaluated over a two-week period, and Pearson product–moment correlations between the first and retest administrations were obtained. These showed that correlation coefficients (r) > 0.70 (with P < 0.01).

Scoring: The knowledge was assessed through seven questions; each question was followed by choices including one right answer, one wrong answer, and a choice of "unsure." The right answer was graded as 5, the wrong answer was graded as 0, and the "I do not know" choice was graded as 1. The total score of the seven questions ranged between 0 and 35 points and was classified as good knowledge, [25-35] fair knowledge, [13-24] and poor knowledge (0–12).

The attitude was assessed using 11 items; each item was presented in five choices on a Likert-type scale graded from 1 to 5. The total score of the 11 items ranged between 11 and 55 points and was classified as unfavorable attitude, [11-26] in-between attitude, [27-42] and favorable attitude. [43-45]

Data analysis

Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 23 for Windows. The descriptive statistics were calculated in the form of frequency, counts, percentages, mean, and SD. The Chi-square was used to test the statistical significance of associations between study variables. Logistic regression analysis was performed to identify factors associated with poor knowledge. *P* value < 0.05 was assumed to be statistically significant.

Ethical consideration

Official ethical approval from the ethical committee of the Jazan Health Affairs Directorate was obtained. Consent was obtained as a prerequisite for data collection. All collected data will be kept confidential and used only for the purpose of research.

Results

Table 1 shows that the mean age \pm S.D of the studied sample is 39.46 \pm 10.08. 9.9%, 39.1%, and 51.0% of the participants are illiterates, intermediate, and university or higher education, respectively. 22.1%, 66.8%, 6.6%, and 4.5% are single, married, divorced, and widowed, respectively. 48.7% are employees, while 29.2% are workers.

Table 2 shows that 19.3% of the participants know the correct definition of rhinoplasty surgery. 21.6% know what is meant by plastic surgery.

Moreover, 20.9% know what is meant by cosmetic surgery. The table also shows that 15.3% and 20.5% know the indications and complications of rhinoplasty surgery, respectively, 18.6% of the respondents know the guidelines for plastic and cosmetic surgery, and 12.2% know about the availability of rhinoplasty surgery in the Jazan region.

Table 3 shows that 31.8% and 27.8% of participants disagree and strongly disagree, respectively, that rhinoplasty surgery is socially accepted. 38.6% disapprove the rhinoplasty surgery. However, 27.1% of participants expressed support for those who undergo rhinoplasty surgery to improve their looks or health. 44.9% disagree with the acceptance to have cosmetic surgery later. 35.8% and 28.4% agree and strongly agree, respectively, that rhinoplasty surgery is forbidden by religion. 24.7% and 32.0% agree and strongly disagree, respectively, that rhinoplasty surgery is a waste of money, and 44.0% are neutral people undergoing rhinoplasty.

The table also shows that 34.1% of participants agree that some people might undergo rhinoplasty surgery upon request of their spouse. 48.9% agree that mass media affects decisions regarding rhinoplasty surgery. 52.5% strongly agree that women undergo rhinoplasty more frequently than men.

Table 4 and Figure 1 show that 53.6% of the participants have poor knowledge while 36.0% of them have good knowledge

Table 1: Demographic characteristics of the studied participants

Characteristics	N=425	%		
Age "years":	Mean±S.D=39.46±10.08			
Sex:				
Male	232	54.6		
Female	193	45.4		
Education:				
Illiterate	42	9.9		
Intermediate	166	39.1		
University or higher	217	51.0		
Marital status:				
Single	94	22.1		
Married	284	66.8		
Divorced	28	6.6		
Widowed	19	4.5		
Occupation:				
Worker	124	29.2		
Employee	207	48.7		
Other	18	4.2		
Monthly family income by SR:				
Less than 5000	77	18.1		
5000-	232	54.6		
10000 or more	116	27.3		
Number of close relatives or friends				
who have done a rhinoplasty:				
0	226	53.2		
1	97	22.8		
2	59	13.9		
3	32	7.5		
4 or more	11	2.6		
Main source of information:				
- Friends	102	24		
- Relatives	37	8.7		
- Mass Media	260	61.2		
- Other sources	26	6.1		

Table 2: The correct answers of participants toward knowledge assessment items of rhinoplasty surgery

Knowledge assessment items of rhinoplasty surgery	No	%
The definition of rhinoplasty surgery:	82	19.3
The definition of plastic surgery:	92	21.6
The definition of cosmetic surgery:	89	20.9
The indications of rhinoplasty surgery:	65	15.3
The complications of rhinoplasty surgery:	87	20.5
The guidelines of plastic and cosmetic surgery:	79	18.6
The availability of rhinoplasty surgery in Jazan city:	52	12.2

regarding rhinoplasty surgery. Moreover, Table 4 and Figure 2 show that 60.2% have an unfavorable attitude while 23.6% have a favorable attitude toward rhinoplasty surgery.

Table 5 shows that 78.6% of those who are under 30 years old have good knowledge toward rhinoplasty surgery, whereas only 15.8% of those who are 50 years or older have good knowledge. The difference in the distribution of levels of knowledge regarding age groups is statistically significant (P < 0.001).

Table 3: Attitude of participants toward rhinoplasty surgery										
Items	Strongly disagree		0.		sagree Neutral		Agree		Strongly agree	
	No	%	No	0/0	No	%	No	0/0	No	0/0
Rhinoplasty is socially acceptable	118	27.8	135	31.8	98	23.0	40	9.4	34	8.0
I approve of rhinoplasty	148	34.8	164	38.6	36	8.5	48	11.3	29	6.8
We should support those who undergo rhinoplasty surgery to improve their looks or health	85	20.0	110	25.9	77	18.1	115	27.1	38	8.9
You accept cosmetic surgery later	140	32.9	191	44.9	46	10.8	32	7.6	16	3.8
Rhinoplasty surgery is forbidden by my religion	25	5.9	51	12.0	76	17.9	152	35.8	121	28.4
Rhinoplasty surgery is a waste of money	38	8.9	64	15.1	82	19.3	105	24.7	136	32.0
I would be ashamed to tell people when I was undergoing rhinoplasty	64	15.1	30	7.1	187	44.0	50	11.7	94	22.1
Some people might undergo rhinoplasty surgery at the request of their spouse	43	10.1	76	17.9	115	27.1	46	10.8	145	34.1
Mass media affects decisions regarding rhinoplasty surgery	26	6.1	22	5.2	70	16.5	208	48.9	99	23.3
Women undergo rhinoplasty surgery more frequently than men	25	5.9	11	2.6	104	24.5	62	14.5	223	52.5
I would be afraid to undergo rhinoplasty	72	16.9	114	26.8	63	14.8	84	19.8	92	21.7

Table 4: Level of knowledge and attitude of participants regarding rhinoplasty surgery						
Knowledge and Attitude	Participants N=425					
	No	0/0	Confidence interval at 95%			
Knowledge: Poor, Fair, Good	228, 44, 155	53.6, 10.4, 36.0	53.6±4.7, 10.7±2.9, 36.15±4.55			
Attitude: Unfavorable, In-between, Favorable	256, 69, 100	60.2, 16.2, 23.6	$60.15 \pm 4.65, 16.5 \pm 3.5, 23.8 \pm 04.0$			

Table 5: Distribution of the respondents' level of						
knowledge according t	o their gen	eral charac	teristics			
eneral characteristics	Poor	Fair	Good			

General characteristics	Po	or	F	air	G	lood
	No.	= 228	No.	= 44	No	= 153
_	No	%	No	%	No	%
Age groups [in years]:						
<30	7	10.0	8	11.4	55	78.6
30–39	55	45.5	12	9.9	54	44.6
40-49	112	73.7	9	5.9	31	20.4
≥50	54	65.9	15	18.3	13	15.8
$\chi^2 = 105.27$			P < 0	0.001		
Gender:						
Male	149	64.2	19	8.2	64	27.6
Female	79	40.9	25	12.9	89	46.2
$\chi^2 = 23.01$			P < 0	0.001		
Education:						
Illiterate	20	47.6	10	23.8	12	28.6
Intermediate	102	61.5	16	9.6	48	28.9
University or higher	106	48.8	18	8.3	93	42.9
$\chi^2 = 17.21$			P <	0.05		
Marital status:						
Single	39	41.5	18	19.1	37	39.4
Married	174	61.3	13	4.6	97	34.1
Divorced	8	28.6	7	25.0	13	46.4
Widowed	7	36.8	6	31.6	6	31.6
$\chi^2 = 41.70$			P < 0	0.001		
Monthly family income by SR::						
Less than 5000	38	49.4	15	19.5	24	31.1
5000-	128	55.2	19	8.2	85	36.6
10000 or more	62	53.5	10	8.6	44	37.9
$\chi^2 = 8.59$			P >	0.05		

The table also shows that 27.6% and 46.2% of males and females, respectively, have good knowledge, and the difference in

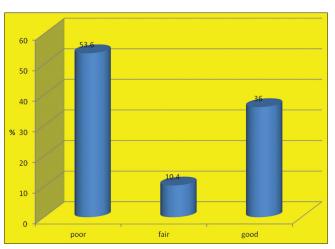


Figure 1: Level of knowledge of participants regarding rhinoplasty surgery

distribution is statistically significant (P < 0.001). 28.6% of illiterate participants and 42.9% of people with a university education or higher have good knowledge and the difference in distribution according to education is statistically significant (P < 0.05).

Regarding marital status, 39.4% of single and 46.4% of divorced participants have good knowledge and the difference in the distribution of levels of knowledge according to marital status is statistically significant (P < 0.001).

Table 6 shows the most important predictors of poor knowledge toward rhinoplasty surgery as follows: (a) old age (OR = 4.89), (b) illiteracy (OR = 4.12), (c) intermediate education (OR = 3.65), and (d) male gender (OR = 1.18).

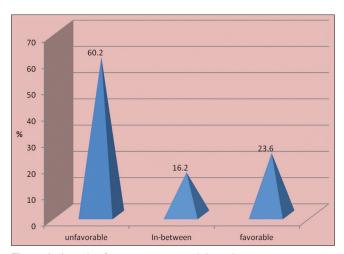


Figure 2: Attitude of participants toward rhinoplasty surgery

Table 6: Multivariate multinomial regression for
predictors of poor knowledge toward rhinoplasty surgery

Predictors	OR	95% CI	P
Age (≥40) [reference: <30 years]	4.89	1.55±0.32	< 0.0001
Gender (male) [reference: female]	1.18	1.75 ± 0.20	< 0.0001
Education (intermediate)	3.56	1.39 ± 0.26	< 0.0001
[reference: university or higher]			
Education (illiterate)	4.12	1.47 ± 0.11	< 0.0001
[reference: university or higher]			

Discussion

Cosmetic and plastic surgery is becoming increasingly prevalent all over the world, among both men and women. ^[32] In a 2013 survey conducted by the International Society of Aesthetic Plastic Surgeons, Saudi Arabia came in at number 22nd among the top 25 nations with the highest rates of cosmetic surgery worldwide. The study found that Turkey and Saudi Arabia with the highest rate of cosmetic and plastic surgery among Muslim countries with a total number of 104,767 and 46,962 surgical procedures, respectively, done in 2011. ^[33]

Nowadays, cosmetic surgery is trending in Saudi Arabia because it has become socially acceptable and people have assigned greater importance to the notions of beauty. [34] To the best of our knowledge, no studies have been performed in the southwestern region of Saudi Arabia regarding the knowledge and attitude of the population toward rhinoplasty surgery, in addition to plastic surgery and cosmetic surgeries in general. The main objectives of this study were to assess the awareness of the population in Jazan toward rhinoplasty surgery and to find out the main predictors of poor knowledge among them.

Mass media was the most common source of information mentioned by the respondents (77.9%), followed by friends (24.0%), relatives (8.7%), and other sources of formal learning (6.1%). Our findings are in agreement with those of other studies, [3,35,36] which found that mass media was the first source of information about plastic surgery mentioned by their study subjects.

In this study, most subjects did not know the correct definition of rhinoplasty surgery and could not differentiate between plastic surgery and cosmetic surgery, which is sometimes considered a part of plastic surgery. Only 21.6% of the respondents mentioned the correct definition of plastic surgery, which is sometimes known as reconstructive surgery and "a surgery to restore function or normal appearance by remaking defective organs or parts due to birth disorders, trauma, burns, and diseases." [37] The results match those of research on plastic surgery conducted in India in 2012 among medical professionals, which found limited awareness of cosmetic surgery as a specialty. [38]

The results of this study showed that 20.9% of participants indicated the correct definition of cosmetic surgery, which is conducted on normal, healthy body parts to maintain, restore, or improve one's physical appearance using elective surgical and medical procedures.^[37] In contrast to our research, a 2016 survey of female medical students at King Abdul Aziz Hospital in Riyadh similarly discovered that nearly half of the students were able to identify the most accurate description of cosmetic surgery.^[36] Nevertheless, Otene *et al.* (2016)^[35] discovered that in Nigeria, basic science students (50.6%) either provided incorrect information or lacked an understanding of the proper definition of aesthetic surgery. The variation between the present study findings and others could be due to the different target populations.

The present study findings revealed that 15.3% of respondents mentioned correct answers regarding the indications of rhinoplasty surgery, where they reported that the indications of rhinoplasty include (a) nasal tip modification, (b) internal nasal valve dysfunction, (c) thick nasal skin, (d) aesthetic deformity, (e) patient request for a change in nasal shape, and (f) improvement of anatomic nasal airway obstruction. These findings contrast with those of a study conducted in Iran in 2012, which found that 91.12% of the sample reported that rhinoplasty was solely for beautification. [39] The variation between the present study findings and others also be due to the different target populations.

The present study findings revealed that 20.5% of the subjects mentioned correct answers regarding the complications of rhinoplasty and reported the following complications: (a) excessive bleeding, (b) septal hematoma, (c) infection, (d) nasal blockage, (e) scar hypertrophy, (f) septal perforation, and (g) nasal stenosis. The findings contrast with the Iranian study^[39] which found that 91.07% mentioned nasal discharge, 89.44% mentioned skin discoloration, and 75.15% mentioned nasal blockage.

Only 18.6% of respondents mentioned that plastic or cosmetic surgery should be done only if there is disfigurement or loss of function and others (81.4%) "mentioned that we should not change God's creation." They did not mention beauty in general as a reason for doing esthetic operations. Religion and culture are important factors that affect Saudi attitudes regarding cosmetic surgery. In contrast to these findings, other studies revealed that securing a partner or a job is the main motivation for cosmetic surgery. [40]

Regarding the attitude of respondents toward rhinoplasty surgery as presented in Table 3, there is no differentiation between cosmetic and plastic surgery as a whole. The attitude of respondents toward rhinoplasty surgery is mostly negative. Most respondents (59.6%) disagreed that rhinoplasty surgery is socially acceptable, and the majority (73.4%) did not approve of having rhinoplasty surgery themselves. However, the attitudes toward elective rhinoplasty surgery differ from one place to another. For example, participants in a Chinese study thought that one should keep one's body intact because it is an inheritance from one's parents and because normal appearance is desirable. [2,41] Participants in a study carried out in Hong Kong in 2012 by Tam et al.[41] were even unwilling to marry women who had undergone aesthetic operations. On the other hand, the present study's findings are inconsistent with that found by a study conducted in Saudi Arabia in 2016, which reported that female medical students' attitude regarding cosmetic surgery at Al Riyadh is that it is a reasonable desire and most of the participants agreed that cosmetic surgery is common in general. [36] In this study, only (36.0%) agreed to support those who undergo rhinoplasty surgery, and the majority (77.8%) did not agree to have cosmetic surgery later in life.

Moreover, 64.2% of participants agreed that rhinoplasty surgery is forbidden by their religion. The attitudes of Saudis toward cosmetic surgery are influenced by culture and religion. This outcome is not surprising because these issues are highly significant in Saudi Arabia. Most of our respondents opposed cosmetic surgery because they believed that people should be content with how they were made. As a result, those people who want cosmetic surgery are frequently ridiculed. Similarly, in a study conducted in the UK, researchers focused on religious beliefs and attitudes toward cosmetic surgery after noting that "research exploring religiosity as a possible factor predicting the likelihood of undergoing cosmetic surgery is sparse". [42] Furthermore, it was suggested in the UK study that "religiously conservative individuals of all faiths will have stricter views about 'deception' and sins of vanity, and will be less likely to undergo cosmetic surgery than more liberal or atheist individuals.".[42]

About two-thirds of participants (67.0%) agreed that women undergo rhinoplasty surgery more frequently than men. Regarding factors influencing the chance of having cosmetic surgery, the evidence that is currently available indicates that women report being more likely than males to be willing to undergo certain aesthetic operations, [41,43] which has been explained as an impact of the greater sociocultural pressure on women to attain ideals of physical and sexual attractiveness.

48.9% of participants agreed that they might undergo rhinoplasty surgery upon the request of their spouse. This means that the participants were aware of the importance of cosmetic surgery to change their appearance. According to Park *et al.* (2009), particularly for people who are sensitive to social rejection, other people's criticism of one's looks can spark interest in cosmetic surgery. Additionally, Sherry *et al.* (2004)^[45] noted that

some people view cosmetic surgery as a way to live up to other's expectations and attract attention or admiration.

Regarding the level of knowledge and attitude of the participants toward rhinoplasty surgery as shown in Table 4, the present study findings revealed that 53.6% and 60.2% of participants had poor knowledge and unfavorable attitudes toward rhinoplasty surgery, respectively. These findings support with those of another study that reported that their subjects could not differentiate between cosmetic surgery and plastic surgery, and that the attitude of the participants toward plastic and cosmetic surgery was negative.^[3]

The study investigated factors that influence knowledge about rhinoplasty surgery among the participants. Table 5 shows that the age, sex, education, and marital status of the participants significantly affected their knowledge about rhinoplasty surgery, but the monthly family income insignificantly affected their knowledge. Moreover, the present study revealed that the most important predictors of poor knowledge as shown in Table 6 were: (a) old age (OR = 4.89), (b) illiteracy (OR = 4.12), (c) intermediate education (OR = 3.65), and (d) male sex (OR = 1.18).

Conclusion and Recommendations

There was a low level of knowledge regarding rhinoplasty surgery among the study participants, most of the participants had a negative (unfavorable) attitude toward rhinoplasty surgery. Mass media plays an important role as a source of information. We recommend further studies to find out other personal factors affecting knowledge and attitude toward rhinoplasty surgeries.

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Authors' contribution

All authors conceived and designed the study. All authors contributed to collecting and analyzing the data and writing the manuscript and its revision. All authors approved the final version of the manuscript and agreed to be held accountable for the content therein.

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Conflicts of interest

There are no conflicts of interest.

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