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Preoperative Stalking About Rhinoplasty and Its Effect on Patient Satisfaction

KBB-Forum
2019;18(1)
www.KBB-Forum.net

CLINICAL STUDY

PREOPERATIVE STALKING ABOUT RHINOPLASTY AND ITS EFFECT ON PATIENT SATISFACTION

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SUMMARY

Purpose: In aesthetic surgery, the patient satisfaction is the ultimate goal of any surgical procedure, including rhinoplasty. Our aim was to assess the influence of the internet for patients considering rhinoplasty and to determine its effect on patient satisfaction.

Material and Methods: A prospective study was conducted on 195 patients during their postoperative period of aesthetic rhinoplasty. A questionnaire was designed to explore the socio-demographic characteristics of the patients and the influence of the internet on their preferences regarding the surgeon and clinic. Visual analog scale (VAS) and Rhinoplasty Outcome Evaluation (ROE) were administered as a part of the questionnaire to measure subjective patient satisfaction degree.

Results: The questionnaire revealed most patients (n:105/195, 53,8%) use Internet as their main source of information about surgery and surgeons. Patients used internet had better VAS scores (p=0,013) and ROE scores (p=0.003) than the patients who did not use it. Out of these 105 patients who obtained information about rhinoplasty 98 (93,4%) stated that the comments about the surgeon on various websites (including review sites) had an effect on their preferences (p<0.001).

Conclusion: Internet and social media investigation (search) may be considered as a new variable which affects patient satisfaction, in addition to the already known factors such as age, sex and psychological status.

Keywords: Rhinoplasty, Patient Satisfaction, Internet

PREOPERATIF RİNOPLASTİ HAKKINDA ARAŞTIRMA YAPMA VE HASTA MEMNUNİYETİ ÜZERİNE ETKİSİ
ÖZET

Amaç: Rinoplastinin de aralarında olduğu bütün estetik cerrahi ameliyatlarında ana hedefimiz hasta memnuniyetidir. Bu çalışmada amacımız internet kullanımının rinoplasti olmayı düşünen hastalar ve hasta memnuniyeti üzerine etkisini değerlendirmektir.

Yöntem ve Gereçler: Estetik rinoplasti ameliyatı olan 195 hastanın ameliyat sonrası dönemlerini kapsayacak şekilde prospektif bir çalışma yapıldı. Hastaların sosyo-demografik özelliklerini ve internetin cerrah ve klinik ile ilgili tercihleri üzerindeki etkisini araştırmak için anket formu kullanıldı. Sübjektif hasta memnuniyetini belirlemek için ankete ek olarak görsel analog skala (VAS) ve Rinoplasti Sonuç Değerlendirmesi (ROE) uygulandı.

Bulgular: Anket sonuçları birçok hastanın (n: 105/195,% 53,8) interneti cerrahi ve cerrahlar hakkında ana bilgi kaynağı olarak kullandığını göstermektedir. İnterneti kullanan hastaların kullanmayan hastalara göre daha iyi VAS skorları (p = 0,013) ve ROE skorları (p = 0,003) saptandı. Rinoplasti hakkında araştırma yapan 105 hastadan 98'i (% 93,4), cerrahla ilgili çeşitli web sitelerindeki (inceleme siteleri de dahil olmak üzere) yorumların tercihlerini etkilediğini belirtti (p <0,001).

Tartışma ve Sonuçlar: İnternet ve sosyal medya araştırması, yaş, cinsiyet ve psikolojik durum gibi bilinen faktörlere ek olarak hasta memnuniyetini etkileyen yeni bir değişken olarak kabul edilebilir.

Anahtar Sözcükler: Rinoplasti, Hasta Memnuniyeti, İnternet

INTRODUCTION

Plastic surgery procedures are getting more and more popular due to wide availability of information about aesthetic procedures on the Internet and multimedia sources[1]. It is known that the patients who consider aesthetic surgery use the internet more often, compared with other patients[2].

The redundant medical information available on the internet, high accessibility, and the tendency of 21th century patients to acquire a certain level of knowledge for reducing preoperative anxiety explain the frequent use of this resource.

Rhinoplasty is one of the most frequently performed aesthetic operations. Thus, there is a significant increase in the amount of information spread about this surgery on the internet. The type and quality of the surgery, the experience of the surgeon; and the gender, age, cultural and educational background; and expectation level of the patient are the major factors which influence patient satisfaction[3-4]. Patient"s awareness and

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understanding of aesthetic operations are highly dependent on the information they obtain, especially from the Internet. According to Fox et al. the information obtained online had significant impact on the decision to undergo medical treatment for about 70% of internet users[5]. However, there are many websites focusing on different types of aesthetic surgery and there is no quality control of the medical information contained on these websites. Some medical portals or websites have the potential to mislead patients about the procedure they are interested in, which may result in a drop of satisfaction level during post-operative period[6].

The aims of this study are to determine the effect of the internet use and the preoperative information gained on the İnternet on patient postoperative satisfaction and doctor choice, as well as to evaluate how other factors affect patient satisfaction.

MATERIAL and METHODS

Study Population

This study was approved by Hacettepe University Ethical Committee and access to patients" data was granted. All procedures were performed in accordance with the 1964 Helsinki Declaration. Informed consent was obtained from all participants. Patients were selected from our departments" database. Twohundred-twentyseven consecutive cases who underwent rhinoplasty or septorhinoplasty between June 2015 and July 2017 were included in this study. All patients were invited by a phone call to visit the outpatient clinic and attend the study. Exclusion criteria for survey were, age less than 18 years, unwillingness to fill the questionnaire and presence of a facial anomaly such as cleft lip and/or palate. Demographic details and nasal trauma history of the patients were noted. Patients were also asked if they had undergone a revision surgery and what was the title of the surgeon who operated them (resident or specialist).

Surveys

The questionnaire contained information on the patients" demographic and sociological details, presence or absence of preoperative internet and social media research and influence of the obtained information on their future surgeon selection. Additionally, survey included questions the influence of other patients" comments on surgeon or/and clinic selection. The participants were asked whether the academic degree of the surgeon had an influence on their preferences. Nasal trauma history prior to operation was questioned and noted. Income status of the patients were analyzed in 3 subgroups as follows; low income, medium income and high income. Educational background of the participants were also divided into 3 subgroups; elementary school grade, high school grade and university grade.

In addition to survey, VAS (visual analog scale)[7] was applied to all participants in order to evaluate their satisfaction level regarding the surgical procedure by grading answers between 0 and 10. The values obtained were multiplied by 10 to bring the score into the range 0 to 100. VAS scores were accepted as the dependent variable and evaluated in relation to each and every item in the questionnaire. Figure 1 shows the questionnaire in detail.

In addition to abovementioned questionnaire Rhinoplasty Outcome Evaluation was also administered. The validated Turkish version of the ROE questionnaire, which is composed of six questions (5 about nose shape and 1 about nasal breathing), was used.[8] Each ROE question was answered on a scale of 0 to 4, where 0 stands for the most negative and 4 for the most positive. The answers to each question were added up and the total was divided by 24 and multiplied by 100 to obtain a result that ranged from 0 to 100 (0 = minimum satisfaction, 100 = maximum satisfaction). The final result was divided into 3 groups according to their quartile: 0 to 50 (no success), 50 to 75 (good), and 75 or more (excellent).

Statistical Analyses

Data analyses were performed by using the IBM SPSS Statistics for Windows, Version 22.0. (Armonk, NY: IBM Corp.). Descriptive statistic was performed to determine frequencies, percentages, mean values and standard deviation. Shapiro Wilkis and Kolmogorov Smirnoff tests were used to evaluate whether the data is distributed normally or not. To compare two

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independent groups; Fishers" exact test and Pearson Chi Square test were used. Since the distribution of age was not normal and the VAS score was an ordinal variable; Mann Whitney U test was used to analyze these variables. Results were considered statistically significant when p< 0.05.

RESULTS

195 patients out of 227 consecutive patients accepted the invitation and completed the questionnaire. Seventy-two (36,9%) of the participants were male whereas 123 (63,1%) participants were female. The age of patients ranged between 18 and 42 (25,9 ± 6,98).

Eighty-six (44,1%) participants fell under the low-income group while 74 (37,9%) were in medium and 35 (18%) were in high income group. Three (1,5%) participants had an elementary school certificate while 103 (52,8%) of them had a high school diploma and 89 (45,7%) had an undergraduate degree. Seventeen (8,7%) patients had nasal trauma history prior to surgery.

An evaluation of the VAS & ROE scores revealed that age, sex, income and educational status, and nasal trauma history had no influence on patient satisfaction. Of the 195 participants, 105 (53,8%) obtained knowledge about rhinoplasty on Internet. Remaining 90 (46,2%) cases did not use internet before the operation. VAS & ROE scores were influenced by the internet usage. Mean VAS score in patients surfed on internet and social media about rhinoplasty was 78,29±13,64 while the same score was 73,72±13,48 in patients who did not search on internet (p=0.013). Mean ROE score 19,08±3,22 in in patients surfed on internet and social media about rhinoplasty and 17,36±4,04 in patients who did not search on internet (p=0.003).

The demographic features, mean VAS & ROE scores and their distribution according to questions are demonstrated in Table 1.

Patients who obtained information about rhinoplasty (n=105) were investigated as a separate group. Out of 105 participants who used internet; 77 (73,3%) of them conducted a search on Instagram, 62 (59%) of them used Facebook and 65 (61,9%) of them visited online review sites (one participant can use more than one). Mean VAS & ROE scores of Instagram users were 75,98±14,05 and 18,35±3,76 respectively. Mean VAS & ROE scores of Facebook users were 75,61±14,87 and 18,14±3,88 respectively. Mean VAS & ROE scores of Review site users were 76±14,24 and 18,31±3,69 respectively. There was no difference between internet usage (p>0,05).

The patients who had sought information about rhinoplasty expressed that they went through the social media and review sites and were influenced by the comments there about the surgeon. Out of these 105 patients who obtained information about rhinoplasty 98 (93,4%) stated that the comments about the surgeon on various websites (including review sites) had an effect on their preferences (p<0.001). These variables and their relation to internet usage can be seen on Table 2.

Results showed that female cases tended to be more selective than male cases. 100 (81.3%) female patients particularly selected their surgeon while only 32 (44,5%) male patients did so (p<0.001). Income status was not relevant to the responses VAS and ROE scores (p>0.05). Age was only important in surgeon selection where the other responses were not related to the age. Mean age of patients who did surgeon selection was 23,8±5,42 and it was 28,2±6,48 in patients who did not prefer a specific surgeon (p=0.01). When the income status and responds to questions were examined; there was no statistically significant relationship between the income level and internet usage and surgeon selection as well as the patient satisfaction (p>0,05).

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1.How old are you?

2.Indicate your gender, please.

3.Indicate your income status, please.
 0-2000 Turkish Liras (Low)
 2000-5000 Turkish Liras (Medium)
 More than 5000 Turkish Liras (High)

4.What is your educational background?
 Elementary School
 High School
 University

5. Are your friends and/or other people around you aware of your nose deformity?
 Yes   No

6. Have you ever undergone rhinoplasty before?
 Yes   No

7. Have you experienced a nose trauma?
 Yes   No

8. Did the academic title of the physician have an influence on your surgeon selection?
 Yes   No

9. Did you use the Internet or social media to find information about rhinoplasty?
 Yes   No

10. If you did use the Internet or social media, did you review one of them? (You can select more than one option)
Instagram
Facebook
Online review sites

11. Did other reviews about the surgeon have an influence on your surgeon selection?
 Yes   No

12. Did negative reviews change your decision about the surgeon who will operate you?
 Yes   No

13. Did you make a specific surgeon selection?
 Yes   No

14. Please indicate your satisfaction about your rhinoplasty outcome. (0= very poor, 100=very well

Figure 1: *Complete list of 14 questions*

Table 1: The demographic features, mean VAS& ROE scores and their distribution according to questions. (Mann Whitney U test and Spearman Correlation test)

Variable		n	VAS scores	p value	ROE scores	p value
Sex	male	72	74,72±13,61	0.119	17,5±3,62	**0,015**
	female	123	77,48±12,94		18,74±3,7	
Income	low	86	74,13±13,53	0.082	17,77±3,89	0,231
	medium	74	77,03±12,68		18,73±3,71	

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	high	35	79,43±15,75		18,6±3,16	
Educational status	elementary	3	70±5	0.241	18,23±3,62	0,287
	high	103	75,49±13,26		18,09±2,6	
	university	89	77,78±13,37		18,31±3,83	
Nasal trauma history	yes	17	73,53±12,09	0.277	18,01±3,12	0,842
	no	178	76,74±13,32		18,32±3.65	
Rinoplasty surgery before	yes	11	76,82±15,7	0,696	18±4,63	0,888
	no	184	76,14±13,64		18,3±3,66	
Did the academic title of the physician have an influence on your surgeon selection?	yes	17	73,53±12,09	0,301	18,47±3,02	0,887
	no	178	76,43±13,87		18,26±3,78	
Did you make a specific surgeon selection?	yes	140	77,5±13,6	**0.043**	16,42±3,6	**0,035**
	no	55	73,82±11,9		18,74±3,72	

Table 2: Variables and their relation to internet usage.

Variable	n	VAS scores	p value	ROE scores	p value

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Did you use the Internet or social media to find information about rhinoplasty?	yes	105	78,29±13,64	**0,013**	19,08±3,22	**0,003**
	no	90	73,72±13,48		17,36±4,04	
Internet usage	Facebook	62	75,61±14,87	0,589	18,14±3,88	0,722
	Instagram	77	75,98±14,05		18,35±3,76	
	Review sites	65	76±14,24		18,31±3,69	
Did other reviews about the surgeon have an influence on your surgeon selection?	yes	88	73,04±14,97	0,065	18,3±3,76	0,593
	no	17	77,29±13,13		18,08±3,03	
Did negative reviews change your decision about the surgeon who will operate you?	yes	98	79,32±12,88	**<0.001**	19,22±3,44	**<0.001**
	no	7	74,64±12,82		16,16±4,12	

DISCUSSION

Outcomes research for rhinoplasty is characterised by the evaluation of the patient-related results of medical interventions, in terms of patient satisfaction or quality of life[9]. There has been an increasing interest in this form of outcomes evaluation especially in head and neck cancer patients in terms of quality of life. However, there are few specific outcomes studies in the field of rhinoplasty despite the fact that patient satisfaction is the ultimate goal of rhinoplasty[10]. There are several methods to measure outcomes in rhinoplasty such as surveys, anthropometric measurements and

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cosmetic outcome ratings. These measurements may provide objective data but they do not consider patients" desires; thus, they do not reflect patient satisfaction[11,12]. Evaluating outcomes from the patient"s perspective is essential to aesthetic surgery, as many key factors, such as appearance and contentedness about the procedure are best assessed through self-report of patients. By using a simple tool as a VAS, analysis of a group of patients can be performed in an efficient and time sparing way. In this study, we used a simple questionnaire with a VAS scale and patients cooperated well. The VAS scores of the patients were not influenced by demographic characteristics such as age, sex, income and educational status.

In our study; age was also important in surgeon selection while other responses were not influenced by the age. While the age of patients increases, awareness level of the patients regarding the possible outcomes and complications about the procedure also does so and the patients become more involved in their treatment.

It should also be noted that these "demanding" patients operated by a specialist reported that they were influenced by the information available on online review sites and this information may create more conscious patients which yields higher patient satisfaction.

The classical source of information in health-related issues is a consultation with the doctor. However, the Internet has become the specific tool for collecting and processing medical information and obviating the difficulties in surgeon and clinic selection recently[13].

Using internet prior to any medical treatment or surgical intervention has a variety of advantages; availability of wide range of information, interpersonal reaction and social interaction. The number of online review sites has steadily increased over the years and they are becoming one of the main sources of information for patients seeking rhinoplasty. They can provide information and support, engage patients to their physicians more and can create better informed and less anxious patients. On the other hand, they also have many disadvantages such as spreading inaccurate knowledge.

In a study of Jagadeesan et al.; it is reported that patients who sought information on the internet were usually women, middle-aged, and college graduates[14]. In our series; on the contrary, none of the socio-demographic features such as sex, age, income and educational status contributed to an increased use of internet regarding the operation. We suggest that this absence of a significant relation between the socio-demographic features and internet usage may have resulted from the high level of internet usage in our country.

Szychta et al. conducted a questionnaire-based study with 86 patients. In their series, 58.1 % of the patients accessed internet prior to rhinoplasty[15]. They found internet helpful but it had not affected their choice of clinic and it did not contribute to their information level about the procedure before consultation with a surgeon[15]. In our study, internet access level as a source of information was apparently higher with a rate of 93.8%. It was reported in the same study that one in ten patients had enrolled in an online review site before the operation whereas in our series the majority of the cases (n:94,91%) visited online review sites. This may be due to the increased popularity of Internet forums since the study of Szychta el al[15]. In our patient series, 44.9% of the cases stated that the comments about a surgeon on various websites had an effect their preferences where this rate was 52.3% in the study conducted by Szychta et al[15]. Although the patient population in our study seems more engaged in the process of using the Internet as a source of information than the ones in the mentioned study, the impact level of the internet-based information in both studies is quite similar.

Over the past ten years, online review sites emerged as a free medium in which people can rate their satisfaction and express the reasons behind their rating. These ratings and comments create an "electronic word of mouth"[16]. Online reviews are known to affect the patient"s decision. Besides, there are certain published cases of patients who came to harm due to the false information they obtained from the

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internet[17]. Psychological condition of the patient is another issue that should be investigated. Obsessed cases or patients with body dysmorphic disorder may spend more time in online forum sites and write exaggerated comments about their experiences[18].

Majority of our cases (51.4%) who performed search on the Internet visited online review sites and they were influenced by negative or positive comments on those sites while they were deciding on their surgeon. This means that "internet literacy" is another issue that need to be considered when providing health service. Surgeons dealing with aesthetic procedures must be competent enough to use internet as a method to communicate with their patients. As it is not easy for patients to distinguish between websites with high or low accuracy; surgeons should be familiar with the information on the Internet and guide the patients towards high quality web sources. Rhinoplasty surgeons should review the data available on websites regularly and give feedback about any deceptive information. Although the internet cannot replace the direct patient-surgeon contact, surgeons should encourage patients to consult them about the comments they came across and not to hesitate using internet to gather necessary information by recommending specific websites that contain accurate information about the subject; and also, if possible, they should create their own websites. This type of an online communication will strengthen the overall doctor-patient communication.

In our series most of the patients used social media platforms to search about the rhinoplasty and their surgeon. Instagram users were more "happy" than Facebook users. It should also be noted that these "demanding" patients might be influenced by the information available on social media and this information may create more conscious patients which yields higher patient satisfaction. Khansa et al. performed a social media analysis and they found that male patients were less satisfied about the final shape of the nose and female patients were more satisfied when the surgeon listens to them[19]. It was also reported that male patients tend to have difficulties in verbalizing their expectations and morphological outcomes of rhinoplasty[18-20]. A majority of our female patients used social media to select their surgeon. This may have been caused by the abundancy of the online review sites designed specifically for women in our country. However; male patients also revised these review sites during their rhinoplasty search. While the result of our study supports the study of Khansa et al. the issue of gender in rhinoplasty should be further analyzed to provide clearer explanation of the differences between male and female patients[19].

The novelty of this paper is the introduction of a new variable which affects patient satisfaction, "surfing on the internet and social media", in addition to the already known factors such as age, sex and psychological status.

Limitations of our study include the lack of consecutive cases operated by a specific surgeon, which adds the heterogeneity to our results. Future studies could provide a validated questionnaire related to "internet literacy" and stronger insight into patient satisfaction-online information relationship. The percentage of patients who obtained information from the internet and social media was quite high but this may have happened due to the fact that the patients who are interested in aesthetic operations are generally young and have a higher socio-economic status. Accordingly, the respective results may not represent the general Turkish population, suggesting a limitation of the study. Additionally; the psychological status of the patients was not objectively assessed in our study. It is known that the preoperative body dysmorphic disorder symptom scores are inversely correlated with patient"s satisfaction after surgery; therefore, it must be considered as a major determinant on patient satisfaction[21].

CONCLUSION

The internet and social media are important sources of information about rhinoplasty for patients, but it may contain inaccurate information due to a lack of sufficient data. Instagram seems to have a wider effect than Facebook and review sites.

In this study, the patients who are "the happiest" with their results are the more conscious ones who were involved in surgeon

selection and used social media. This might be interpreted as the level of knowledge and consciousness about the procedure and surgeon increases, the satisfaction scores do so as well. Using the internet and social media is especially important for the patients who will have aesthetic surgery; thus, the surgeons should not discourage patients from searching on social media platforms and review sites and they should help their patients who use the internet to find accurate information about their condition. When used appropriately, the Internet and social media can be helpful to both patients and surgeons.

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