

# Factors Affecting the Selection of the Bariatric Surgeon-A Survey Study

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### Abstract

There are various factors considered by the patients in the process of selecting the hospital and the surgeon like professional certifications. The experience of the surgeon for all types of surgeries has a great influence on the patients' preference. In some surgical procedures patients prefer gender concordant surgeons like gynecological operations. These factors have been evaluated in many studies regarding different types of operations.

**Keywords:** bariatric surgery; sociodemographic; kruskal wallis; patient; bariatric surgeon

### Introduction

There are various factors considered by the patients in the process of selecting the hospital and the surgeon like professional certifications [1]. The experience of the surgeon for all types of surgeries has a great influence on the patients' preference. In some surgical procedures patients prefer gender concordant surgeons like gynecological operations [2,3]. These factors have been evaluated in many studies regarding different types of operations. However, there is no such a research on the factors that the obesity patients consider when choosing their surgeon. Since the demand for bariatric surgery is increasing day by day, understanding the factors playing a role in the decision making process of these patients is important for both surgeons and hospitals. In this study we aimed to comprehensively determine the factors considered by the patients in selection for the bariatric surgeon.

### Methods

We developed a self administered online questionnaire by using Google survey platform. An introduction part informing the participants about the study's aim was added at the beginning of the survey. No financial rewards were given for completing the questionnaire. Ethical approval was obtained from our university's Institutional Ethical Board. The survey was designed to question the sociodemographic characteristics of the patients (table 1), the frequency of using social networks to obtain information (table 2) and the factors contributing to the bariatric surgeon selection process by the patients including the bariatric surgeon related factors and the hospital related factors (table 3,4). In addition, statements to find out the patients' view on the contributing factors were included (table 5).

		Min-Max	Mean±SD
age		18-57	34,11±11,74
which doctor you consult about your illness is the doctor you will be operated (median)		1-9	2,04±1,74 (1)
		n	%
age group	<age of 40	34	63
	age of 40 and upper	20	37
Sex	male	27	50
	female	27	50
education level	primary school	9	16,7
	middle school	11	20,4
	high school	20	37
	university	14	25,9

job group	working	31	57,4
	housewives	15	27,8
	student	8	14,8
income level	low	5	9,3
	intermediate	47	87
	high	2	3,7
the frequency of using social media	yes	45	83,3
	no	9	16,7

Table 1: Distribution of general features

The social media networks that are used to obtain information	Very rare	rare	sometimess	often	Very often
	n (%)	n (%)	n (%)	n (%)	n (%)
web sites (n=45)	19 (%42,2)	1 (%2,2)	7 (%15,6)	12 (%6,7)	6 (%13,3)
facebook (n=45)	15 (%33,3)	5 (%11,1)	7 (%15,6)	11 (%24,4)	7 (%15,6)
instagram (n=45)	5 (%11,1)	1 (%2,2)	7 (%15,6)	19 (%42,2)	13 (%28,9)
twitter (n=45)	20 (%44,4)	3 (%6,7)	8 (%17,8)	8 (%17,8)	6 (%13,3)
youtube (n=45)	11 (%4,4)	3 (%6,7)	14 (%31,1)	8 (%17,8)	9 (%20)

Table 2: Distribution of the frequency of using social networks by those who use social media to obtain information

	not imortant	less important	moderately important	important	very important
	n (%)	n (%)	n (%)	n (%)	n (%)
<b>The doctor's fame</b>					
The fact that the doctor is a famous, well known person	8 (%14,8)	1 (%1,9)	9 (%16,7)	26 (%48,1)	10 (%18,5)
The advertisement related to the doctor (tv/radio/nevspaper/ internet and sossial media)	9 (%16,7)	4 (%7,4)	7 (%13)	20 (%37)	14 (%25,9)
Being recommended by another doctor	6 (%11,1)	4 (%7,4)	9 (%16,7)	10 (%18,5)	25 (%46,3)
Being recommended by family members and friends	6 (%11,1)	4 (%7,4)	8 (%14,8)	16 (%29,6)	20 (%37)
Being recommended by the former patients of the doctor	2 (%3,7)	2 (%3,7)	8 (%14,8)	15 (%27,8)	27 (%50)
<b>Attitudes of the doctor</b>					
Devoting enough time to the patient	2 (%3,7)	1 (%1,9)	1 (%1,9)	12 (%22,2)	38 (%70,4)
Good communication skills	2 (%3,7)	-	1 (%1,9)	10 (%18,5)	41 (%75,9)
Respecting to the ideas of the patient	2 (%3,7)	2 (%3,7)	1 (%1,9)	13 (%24,1)	36 (%66,7)
Compansionate attitudes	3 (%5,6)	-	5 (%9,3)	9 (%16,7)	37 (%68,5)
Smiling face	1 (%1,9)	2 (%3,7)	2 (%3,7)	11 (%20,4)	38 (%70,4)
Giving importance to personal care and hygiene	3 (%5,6)	1 (%1,9)	5 (%9,3)	9 (%16,7)	36 (%66,7)
<b>Features of the doctor</b>					
Age	22 (%40,7)	6 (%11,1)	8 (%14,8)	14 (%25,9)	4 (%7,4)
How many years he/she has been a doctor	6 (%11,1)	2 (%3,7)	10 (%18,5)	20 (%37)	16 (%29,6)
The school that he/she graduated	10 (%18,5)	3 (%5,6)	13 (%24,1)	17 (%31,5)	11 (%20,4)
Having an abroad experience	10 (%18,5)	10 (%18,5)	13 (%24,1)	13 (%24,1)	8 (%14,8)
Being a lecturer in a university	8 (%14,8)	3 (%5,6)	18 (%33,3)	15 (%27,8)	10 (%18,5)
Having a surgical competency certificate	2 (%3,7)	-	6 (%11,1)	18 (%33,3)	28 (%51,9)
Not being overweight (looking fit)	26 (%48,1)	4 (%7,4)	7 (%13)	11 (%20,4)	6 (%11,1)
internet/social media					

Having website by the doctor	5 (%9,3)	-	6 (%11,1)	29 (%53,7)	14 (%25,9)
Having social media accounts by the doctor	6 (%11,1)	1 (%1,9)	11 (%20,4)	24 (%44,4)	12 (%22,2)
Making informative posts on social media	1 (%1,9)	1 (%1,9)	14 (%25,9)	19 (%35,2)	19 (%35,2)
Comments on the internet and social media	2 (%3,7)	-	7 (%13)	20 (%37)	25 (%46,3)

**Table 3:** Distribution of the level of importance given to the doctor related factors that are taken into consideration when choosing the doctor to operate

	not important n (%)	less important n (%)	moderately important n (%)	important n (%)	very important n (%)
<b>Other factors</b>					
Presence of an agreement of the doctor with an insurance company	10 (%18,5)	1 (%1,9)	6 (%11,1)	20 (%37)	17 (%31,5)
Easily getting an appointment	1 (%1,9)	2 (%3,7)	3 (%5,6)	20 (%37)	28 (%51,9)
Not waiting for a long time for the operation	-	3 (%5,6)	5 (%9,3)	15 (%27,8)	31 (%57,4)
The hospital where the doctor works	5 (%9,3)	2 (%3,7)	10 (%18,5)	19 (%35,2)	18 (%33,3)
The cheaper cost of the operation	3 (%5,6)	3 (%5,6)	12 (%22,2)	15 (%27,8)	21 (%38,9)
being very elegance of the doctor's office	7 (%13)	4 (%7,4)	18 (%33,3)	14 (%25,9)	11 (%20,4)
<b>Hospital related factors</b>					
The hospital' being a famous, well known hospital	4 (%7,4)	4 (%7,4)	10 (%18,5)	24 (%44,4)	12 (%22,2)
The atmosphere of the hospital	2 (%3,7)	1 (%1,9)	6 (%11,1)	29 (%53,7)	16 (%29,6)
The hygiene of the hospital	2 (%3,7)	1 (%1,9)	6 (%11,1)	10 (%18,5)	35 (%64,8)
The hospital's being close	1 (%1,9)	5 (%9,3)	13 (%24,1)	17 (%31,5)	18 (%33,3)
The hospital's working with an insurance	2 (%3,7)	1 (%1,9)	9 (%16,7)	20 (%37)	22 (%40,7)

**Table 4:** Distribution of the level of importance given to the other factors and the hospital related factors when choosing the doctor to be operated

Indicate your degree of participation in the statements below	I strongly do not agree	I do not agree	occasionally	I agree	I strongly agree
	n (%)	n (%)	n (%)	n (%)	n (%)
the choice of the surgeon has an important effect on the treatment process	1 (%1,9)	2 (%3,7)	2 (%3,7)	17 (%31,5)	32 (%59,3)
I have collected information about the doctor while making the choice. (internet, social media, other hospitals )	4 (%7,4)	4 (%7,4)	8 (%14,8)	15 (%27,8)	23 (%42,6)
the hospital where I will be operated is more important than the doctor	7 (%13)	17 (%31,5)	15 (%27,8)	10 (%18,5)	5 (%9,3)
every doctor has a different treatment approach	2 (%3,7)	1 (%1,9)	12 (%22,2)	24 (%44,4)	15 (%27,8)
I think it is important to get information about the treatment methods before meeting with the doctor	1 (%1,9)	3 (%5,6)	11 (%20,4)	23 (%42,6)	16 (%29,6)
I think it is important to get the opinions of the other doctors before choosing the surgeon	1 (%1,9)	4 (%7,4)	3 (%5,6)	31 (%57,4)	15 (%27,8)
the information I get from the internet is safe	7 (%13)	11 (%20,4)	16 (%29,6)	15 (%27,8)	5 (%9,3)
I think it will be beneficial to watch the surgery videos about the surgery.	6 (%11,1)	8 (%14,8)	14 (%25,9)	15 (%27,8)	11 (%20,4)
I care about patients' experiences shared on social media	4 (%7,4)	2 (%3,7)	10 (%18,5)	27 (%50)	11 (%20,4)

**Table 5:** Distribution of the state of participation in the statements below

## Participants

The questionnaire was sent to 134 patients who underwent bariatric surgery between 2016 and 2020. The fully filled questionnaires of 54 patients, of which 27 (50%) male and 27 (50%) female and aged between 18 and 57 were included in the study. The average age of the cases was  $34.11 \pm 11.74$ . The number of being the doctor to whom the patient consulted their disease ranges between 1 and 9 with average of  $2.04 \pm 1.74$  and the median of 1. While 63% of the cases are under the age of 40, 37% of them are 40 years old and above. 16.7% were primary school graduates, 20.4% were middle school graduates, 37% were high school graduates and 25.9% were university graduates. 57.4% of the patients were working, while 27.8% were housewives and 14.8% are students. The income level was low in 9.3%, moderate in 87% and high in 3.7% (table 1). While 83.3% used social media, 16.7% did not use social media. Among the cases using social media, %13.3 was using web sites, %15.6 facebook, %28.9'u instagram, 13.3 Twitter and %20 Youtube'u to get information (table 2). The distribution of the other uses are as shown in the table 3,4,5.

## Statistical analysis

When evaluating the findings obtained from the study IBM SPSS Statistics 22 (IBM SPSS, Turkey) program was used. The suitability of the study data to the normal distribution was evaluated by the Shapiro Wilks test. In addition to the descriptive statistical methods (mean, Standard deviation, frequency) in the comparison of the quantitative data Kruskal Wallis test was used in the comparison of parameters that did not show normal distribution and Dunn's test was used for the determination of the group that caused the difference. In the two group comparison of the parameters that did not show normal distribution Mann Whitney U test was used. Statistical significance was determined as  $p < 0.05$ .

## Results

The values of giving importance to the doctor related advertisements, social media accounts presence of the doctor, to be recommended by the former patients of the doctor and a website presence of the doctor were found to be statistically significantly higher among patients under the age of 40 years than those aged 40 and over [(p: 0.002;  $p < 0.05$ ), (p:0.026;  $p < 0.05$ ), (p:0.027;  $p < 0.05$ ), (p:0.035;  $p < 0.05$ ); respectively].

The values of giving importance to informative posts of the doctor on social media and the comments made by the doctor on the internet and social media were found to be statistically significantly higher in men than women [(p:0.035;  $p < 0.05$ ), (p:0.022;  $p < 0.05$ ); respectively].

There was a statistically significant difference between job groups of the patients in terms of the level of giving importance to having a website (p:0.017;  $p < 0.05$ ). As a result of the paired comparison made to detect the difference, the level of giving importance by the housewives was statistically significantly lower than those of the working patients and students (p<sub>1</sub>:0.048; p<sub>2</sub>:0.005;  $p < 0.05$ ). There was no statistically significant difference between the working patients and students ( $p > 0.05$ ).

There was a statistically significant difference between educational status of the patients in terms of the level of giving importance to that the doctor is a famous, well known individual (p:0.003;  $p < 0.05$ ). As a result of the paired comparison made to detect the difference, the level of giving importance by the primary school graduates was statistically significantly higher than those of the middle school and university graduates (p<sub>1</sub>:0.006; p<sub>2</sub>:0.023;  $p < 0.05$ ). The level of giving importance by the high school graduates was statistically significantly higher than those of the middle school and university graduates (p<sub>1</sub>:0.003; p<sub>2</sub>:0.015;  $p < 0.05$ ).

There was a statistically significant difference between job groups of the patients in terms of the level of giving importance to that the doctor

is a famous, well known individual (p:0.048;  $p < 0.05$ ). As a result of the paired comparison made to detect the difference, the level of giving importance by the students was statistically significantly higher than those of the working patients (p:0.030;  $p < 0.05$ ). There was no statistically significant difference between the other job groups ( $p > 0.05$ ).

There was a statistically significant difference between educational status of the patients in terms of the level of giving importance to that the hospital where the doctor works (p:0.036;  $p < 0.05$ ). As a result of the paired comparison made to detect the difference, the level of giving importance by the primary school graduates was statistically significantly higher than those of the middle school and high school graduates (p<sub>1</sub>:0.047; p<sub>2</sub>:0.008;  $p < 0.05$ ).

There was a statistically significant difference between job groups of the patients in terms of the level of giving importance to hospital hygiene (p:0.026;  $p < 0.05$ ). As a result of the paired comparison made to detect the difference, the level of giving importance by the housewives was statistically significantly lower than those of the working patients and student groups (p<sub>1</sub>:0.015; p<sub>2</sub>:0.028;  $p < 0.05$ ).

There was a statistically significant difference between job groups of the patients in terms of the patients' level of participation in the statement 'I think it is important to get information about the treatment methods before meeting with the doctor', (p:0.005;  $p < 0.05$ ). As a result of the paired comparison made to detect the difference, was statistically significantly higher in working patients than in the housewives and student groups (p:0.011; p:0.009;  $p < 0.05$ ).

## Discussion

Obesity is a leading public health problem in developed and also developing countries. Obesity which has a significant negative influence on life expectancy increases the risk of many conditions as an independent factor like cancer [4,5]. It is also an independent poor prognostic factor for the current pandemic, the Covid-19 infection [6]. Bariatric surgery is increasingly considered by the patients who had unsuccessful results after trying to lose weight with traditional methods [7]. They consider several factors in the process of preferring their surgeons to be operated. Today, the information and communication technology plays an important role in our preferences and decisions in many aspects of our lives. Social media, which attracts great attention especially by young population is one of the important ways that people benefit from in many decision making processes, even when making their holiday choices since the emergence of social media in 2004. It is known that individuals under the age of 40 pay more attention to social media and communication technologies. In our study, it is seen that the social media and web site presence of the surgeon was the most significantly contributing surgeon related factor for the bariatric surgeon selection especially in patients under the age of 40 years. When considering the gender, it is seen that informative posts and comments by the doctor on social media is significantly important for males. When considering the job, the presence of websites of the doctor is significantly important for working patients and students when compared with housewives.

Advertisements about the doctor and being recommended by the former patients of the doctor are the other important factor especially for the patients under the age of 40.

Amongst the hospital-related factors, hospital hygiene was found as the most significant hospital related factor in the bariatric surgeon selection and was significantly important for students and the working patients.

## Conclusion

Our findings revealed that, obesity patients consider several factors in the process of preferring their surgeons to be operated, however our results particularly emphasize the importance of information technologies

especially the effect of social media in this decision making process. We believe that the results of our study is important in terms of showing the causal role that social media plays in obesity patients' consideration of bariatric surgery and selection of their surgeons.

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