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Evaluation of the Effect of Body Image Perception on Patient Satisfaction and Quality of Life in Medical Tourists Undergoing Bariatric Metabolic Surgery

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Abstract

Aim: The aim of this study is to reveal the effect of postoperative socio-demographic characteristics and body image perceptions on patient satisfaction and quality of life of individuals who underwent bariatric metabolic surgery in Turkey within the scope of medical tourism.

Methods: The population of the study consisted of 329 medical tourists who underwent bariatric surgery between 2015 and 2022 in private hospitals having health tourism authorization certificate in Samsun. Data were collected between September 01, 2021 and November 30, 2022 using the Personal Information Form, Body Image Scale, Quality of Life Scale and Patient Satisfaction Scale.

Results: Of the participants, 37.4% were men and 62.6% were women. Their mean age was 39.74±10.063 years. According to the results obtained from the present study, patient satisfaction was affected by the variables such as age, education level, family type, monthly income, income status, exercise status, chronic disease status and perceived body image (p<0.05). On the other hand, the quality of life was affected by the variables such as perceived body image, marital status,

education status, employment status, family type, income status, alcohol use, and exercise status (p<0.05). Patient satisfaction and quality of life were positively correlated with perceived body image of the participants who underwent Bariatric Metabolic Surgery.

Conclusion: According to the results of the study, patient satisfaction and quality of life were affected by socioeconomic characteristics and perceived body image of the participants, and perceived body image, patient satisfaction and quality of life were positively affected in the participants who underwent Bariatric Metabolic Surgery.

Keywords: Medical Tourism, Bariatric Metabolic Surgery, Body Image, Patient Satisfaction, Quality of Life.

INTRODUCTION

Obesity is a significant public health issue that impacts both developed and developing countries globally. It is characterized by an accumulation of excess body fat, which exceeds normal values and adversely affects an individual's health. The weight of a person is influenced by a complex interplay of various factors including dietary habits, environmental influences, genetic predispositions, and numerous psychological factors. The multifaceted nature of obesity highlights the importance of a comprehensive approach to understanding and addressing this condition (Morris et al., 2015).

The incidence of obesity has seen a threefold increase globally from 1980 to 2018. By 2035, it is projected that obesity (BMI ≥30kg/m²) will affect two billion people, encompassing adults, children, and adolescents (Lobstein et al., 2023). Obesity is a primary factor in numerous health conditions closely linked with illness and death. The most significant of these conditions include coronary artery disease, Type 2 diabetes mellitus, and high blood pressure (Berberoğlu & Hocaoglu, 2021). Obesity impacts adversely on individuals' health, as well as their life satisfaction and perception of their bodies. In managing obesity, individuals who do not find success with dietary medical treatment, behavioral interventions, physical activity therapy, and pharmacological approaches often turn to surgical procedures as a last resort.

Based on information from the International Federation for the Surgery of Obesity Metabolic Disorders (IFSO), the recorded figures for bariatric metabolic surgeries were 344,221 in 2008, 340,768 in 2011, 468,609 in 2013, 685,874 in 2016, and 696,191 in 2018 (Angrisani et al., 2021; Hult et al., 2019) . In research involving individuals who underwent bariatric and metabolic surgery, it was found that 77.3% chose treatment abroad primarily due to more

affordable costs. Other significant factors for seeking bariatric surgery outside their home country include substandard quality of healthcare services (40.3%), extended waiting periods for surgery (39.2%), and the absence of available bariatric surgery options (28.3%) (Angrisani et al., 2021; Brown et al., 2020; Parmar et al., 2021)

Over the past decade, Türkiye has emerged as one of the leading ten global hotspots for medical tourism. This prominence is due to the cost-effectiveness of surgical procedures, minimal waiting periods, and a variety of touristic options available to patients visiting the country (Demir et al., 2020; Farrukh et al., 2022; Tosun et al., 2020; Üstün & Demir Uslu, 2022). Consequently, it has become a chosen destination for individuals seeking Bariatric Metabolic Surgery (BMS). Despite its status in the top ten for medical tourism, our research indicates a scarcity of studies in this field, particularly a lack of research involving medical tourists who have undergone bariatric surgery in Türkiye.

The current study aims to address this gap by examining the interplay. The primary aim of the study is to examine the effect of socio-demographic characteristics and body image perception on patient satisfaction and quality of life of obese patients who choose Turkey for Bariatric Metabolic Surgery (BMS) within the scope of medical tourism. For this reason, the dependent variables of the study are patient satisfaction and quality of life, while the independent variables are socio-demographic characteristics and body image perception.

1. RESEARCH METHODOLOGY

Population and Sample of the Study: The population of the study comprised of 329 medical tourists who were over 18 years old, had mental competence and could speak Turkish or English, agreed to participate in the study and underwent bariatric surgery (Sleeve Gastrectomy, Gastric Band, Gastric Plication, Roux-En Y Gastric Bypass, One Anastomosis Gastric Bypass, Duodenal Switch) in private hospitals provided with health tourism authorization certificate in Samsun province between 2015 and 2022. The minimum sample size of the study was determined as 178 (prevalence: 50%, power: 80%, margin of error 5%, confidence level: 95% (Gürbüz & Şahin, 2018).

Data Collection Tools: A questionnaire consisting of 4 parts was used to collect the study data. The questionnaires were administered in English and Turkish. Data were collected between September 01, 2021 and November 31, 2022 online using the face-to-face and drop-collect method.

The following four forms were used to collect the data: The Personal Information Form, Body

Image Scale, Quality of Life Scale and Patient Satisfaction Scale.

Personal Information Form: The 26-item form was developed by the author to determine the socio-demographic characteristics of the patients.

Body Image Scale: The scale, originally called the Body-Cathexis Scale (BCS), was developed by Secard and Jurard in 1953. It is administered to determine how satisfied a person with his or her 40 different body parts or functions of these parts. The validity and reliability study of the Turkish version of the Body Image Scale was performed by Hovardaoğlu (1993). Responses given to the items are scored on a 5-point Likert type scale ranging from 1 to 5 (1 = I do not like it at all, 2 = I do not like it very much, 3 = I am undecided, 4 = I like it much, 5 = I like it very much). While the most positive statement is given five points, the most negative statement is given one point. The highest and lowest possible scores that can be obtained from the scale are 200 and 40, respectively (Secord & Jourard, 1953). In our study, the Cronbach's alpha value of the scale was 0.971.

Quality of Life Scale: The EUROHIS project, which started in 1988, is a project that was aimed at developing scales on quality of life to be used in the field for 8 basic indicators in Europe. The validity and reliability study of the Turkish version of the scale was performed by Eser et al. (2010). Responses given to the items of the scale are rated on a 5-point Likert scale ranging from 1 (not at all) to 5 (much). While the lowest score to be obtained from the scale is 8 and the highest one is 40. No item in the scale is reverse scored. The scale consists of one dimension. It is predicted that the higher the score obtained from the scale, the higher the level of the quality of life (Eser et al., 2010). In our study, the Cronbach's alpha value of the scale was 0.908.

Patient Satisfaction Scale: The English and Turkish validity and reliability studies of the Patient Satisfaction Scale were carried out by Jaapar et al. (2017) and Iranmanesh et al. (2018). Responses given to the items are scored on a 5-point Likert type scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). No item in the scale is reverse scored. The lowest and highest possible scores to be obtained from the scale are 16 and 80, respectively. The higher the score obtained from the overall scale is the higher the level of satisfaction is (Iranmanesh et al., 2018; Jaapar et al., 2017) In our study, the Cronbach's alpha value of the scale was 0.951.

Ethical Approval: Ethical approval of the study was obtained from Alanya Alaaddin Keykubat University Health Sciences Area Scientific Research and Publication Ethics Committee on 25.05.2022 with number 12.

2. ANALYSIS

Of the participants, 35.2% were from Germany, 9.9% from Iraq, 7.1% from France, 6.1% from Kosovo, 5.5% from the Netherlands and 36.2% from other countries. Their mean age was 39.74±10.063 (min: 19, max: 60) years. Of them, 62.6% were women, 65.9% were married, 39.4% were high school graduates, 76.4% had a nuclear family, 41.4% had a monthly income ranging between 0$ and 2000$, 46.2% perceived their income more than their expenses, and 64.8% had children (Table 1).

Table 1. Socio-demographic characteristics of the participants

Socio-demographic characteristics	n	%
Sex		
Men	68	37.4
Women	114	62.6
Age (years)		
19-29	33	18.1
30- 39	71	39
40-49	46	25.3
≥50	32	17.6
Marital status		
Married	120	65.9
Single	62	34.1
Educational status		
Elementary school	7	3.9
High school	71	39.4
Associate degree	39	21.7
Bachelor's degree	53	29.4
Master's degree	10	5.6
Family type		
Extended	22	12.1
Nuclear	139	76.4
Single parent family	21	11.5
Social Status		
Upper class	117	63.2
Lower class	65	36.8
Income level ($)		
0-2000	75	41.4
2001-4000	71	39.2
4001-6000	35	19.2
≥6001	1	0.2
Perceived income status		
Income equal to expenses	40	22
Income more than expenses	84	46.2
Income less than expenses	58	31.9
Do you have any chidden?		
Yes	118	64.8
No	64	35.2
What country are you from?		
Germany	64	35.2
Iraq	18	9.9
France	13	7.1
Kosovo	11	6.1
The Netherlands	10	5.5
Others	66	36.2
Total	182	100.0

Table 2. Health-related characteristics of the participants

	n	%
Presence of a chronic disease		
Diabetes	46	64.7
Hypertension	17	23.94
Heart failure	3	4.25
Others	5	7.11
No	138	75.8
Disability		
Orthopedic disability	12	6.6
No	170	93.4
Presence of a contagious disease		
No	182	100
Smoking status		
Smoker	44	24.2
Non-smoker	138	75.8
Alcohol consumption		
Never	91	50
Rarely	64	35.2
Once or a few times a month	27	14.8
Physical activity (How often do you usually exercise out of breath or until you sweat?)		
4-6 times a week	7	3.8
2-3 times a week	28	16.1
Once a week	45	25.9
Once a month	32	18.4
Less than once a month	20	11.5
Never	42	24.1
Pre-operative weight (kg) (min-max) (84-156)	114.62±16.241	
Height (cm) (min-max) (150-190)	168.93±7.709	
Total	182	100.0

In Table 2, some of the health-related characteristics of the participants are given. Of the participants, 75.8% did not have any chronic disease, 93.4% did not have any disability, 24.2% were smokers, 35.2% rarely drank alcohol, and 25.9% exercised once a week. Before the surgery, their mean weight was 114.62±16,241 kg (min: 84kg, max: 156 kg), mean height was 168.93±7.709 cm (min: 150 cm, max: 190 cm), and mean BMI was 40.39.

Table 3. Eating and drinking habits of the participants

Eating and drinking habits	Never		Sometimes		Every day	
	n	%	n	%	n	%
Breakfast	2	1.1	46	25.3	134	73.6
Lunch	2	1.1	65	35.7	115	63.2
Dinner	2	1.1	38	20.9	142	78
Vegetables	2	1.1	97	53.3	83	45.6
Fruits	19	10.4	132	72.5	31	17
Meat, Chicken, Fish, Eggs	15	8.2	118	64.8	49	26.9
Milk and dairy products such as Cheese, Yogurt and Ayran (drink a mixture of water, salt and yogurt),	9	4.9	111	61	62	34.1
Hamburger, Sandwich, Pizza	51	28	124	68.1	7	3.8
Potato Chips	69	37.9	106	58.2	7	3.8
Carbonated Drinks such as Coke, Soda etc.	57	31.3	116	63.7	9	4.9

Of the participants, 73.6% had breakfast, 63.2% had lunch and 78% had dinner every day, 53.3%

ate vegetables, 72.5% ate fruits, 64.8% ate meat, chicken, fish and eggs sometimes, 61% consumed dairy products sometimes, 68.1% had hamburger, toast and pizza sometimes, 58.2% consumed potato chips sometimes and 63.7% drank carbonated drinks sometimes (Table 3).

Table 4. Scales and Average Scores

Scales	Min-Max	$\bar{X}$	SS	Cronbach's Alpha
Patient Satisfaction Scale	16-80	66,813	8,872	0,951
Body Image Scale	40-200	129,934	24,592	0,971
Quality of Life Scale	8-40	27,011	4,004	0,908

The mean scores and Cronbach's alpha values for the scales were as follows: Patient Satisfaction Scale: 66,813 ± 8.872 and 0.951, respectively; Body Image Scale: 129.934 ± 24.592 and 0.971, respectively and Quality of Life Scale: 27.011 ± 4.004 and 0.908 respectively (Table 4).

Table 5. Multiple regression analysis of quality of life and factors influencing quality of life

Variables	B	SE	β	T	p
Constant	9	2.983		3.041	0.000*
Sex	-0.446	0.395	-0.054	-1.131	0.260
Age	0.821	0.294	0.199	2.797	0.128
Marital status	3.642	0.963	0.431	3.782	0.000
Educational Status	1.166	0.207	0.296	5.630	0.000
Family Type	0.069	0.393	0.008	0.177	0.003
Working Status	-0.261	0.097	-0.157	-2.685	0.008
Monthly Income	0.156	0.299	0.028	0.520	0.603
Income status	0.966	0.315	0.180	3.065	0.003
Having Children	-0.983	1.037	-0.117	-0.948	0.345
Presence of a Chronic Disease	-3.868	0.552	-0.414	-7.013	0.000
Presence of a disability	-3.371	0.889	-0.210	-3.790	0.000
Smoking	-0.714	0.451	-0.083	-1.582	0.116
Alcohol consumption	-0.053	0.451	-0.100	-0.173	0.002
Exercising	0.385	0.512	0.215	2.768	0.000
Perceived Body Image	0.105	0.009	0.647	12.256	0.000
Adjusted R²=0.703	F=31.104		p=0.000		
Dependent Variable: Quality of Life					

Variables included in the model: Marital status (ref: single), Educational status (ref: master's degree), Family type (ref: single parent), Employment Status (ref: upper class), Chronic illness (ref: no), Disability status (ref: no), Income status (ref: $2001-$4000), Alcohol (ref: rarely), Exercising (ref: 4-6 times a week)

We analyzed quality of life and influencing factors using the multiple regression model. According to the results of the analysis, the regression model was statistically significant ($F_{(4,178)} = 31,104$, p<0.001), and the independent variables accounted for 70% of the change in the Quality of Life Scale, and while the quality of life was explained by marital status, education level, family type, employment status, income status, chronic illness, disability, alcohol use, exercise and body image perception, other variables did not have a significant contribution to the quality of life. According to the results of the analysis, after controlling for other variables, when body image perception

increased by 1 point, quality of life increased by 0.105 points. According to the result, the higher the quality of life was, the better the perceived body image was (Table 5).

Table 6. Multiple regression analysis of patient satisfaction and factors influencing patient satisfaction

Variables	B	SE	β	t	p
Constant	63.921	8.462		7.554	0.000*
Sex	-1.969	1.121	-0.107	-1.758	0.081
Age	3.319	1.280	0.175	2.593	0.010
Marital status	4.178	2.732	0.223	1.529	0.128
Educational Status	3.559	0.587	0.408	6.059	0.000
Family Type	-7.644	2.942	-0.411	-2.598	0.010
Working Status	0.412	0.276	0.112	1.495	0.137
Monthly Income	7.264	2.523	0.204	2.879	0.005
Income status	2.315	0.850	0.191	2.725	0.007
Having Children	0.498	1.115	0.027	0.446	0.656
Presence of a Chronic Disease	-7.642	1.565	-0.369	-4.884	0.000
Presence of a disability	-0.331	0.894	-0.028	-0.370	0.712
Smoking	-0.728	0.833	-0.079	-0.874	0.383
Alcohol consumption	-0.142	0.872	-0.012	-0.162	0.871
Exercising	0.282	0.053	0.238	4.267	0.000
Perceived Body Image	0.157	0.024	0.435	6.435	0.000
Adjusted R²=0.513	F=14.392		p=0.000		
Dependent Variable: Patient Satisfaction					

Variables included in the model: Age (ref: 19-29 years). Educational status (ref: high school and below). Family type (ref: single parent). Monthly income (ref: $2001-$4000). Presence of a Chronic disease (ref: no). Income status (ref: income more than expenses).Exercising (ref: 4-6 times a week)

Patient satisfaction and influencing factors were analyzed with the multiple regression model. After the analysis, the regression model was considered statistically significant [F (4.178) = 14.392, p<0.001], and the independent variables explained 52% of the change in the Patient Satisfaction Scale. According to the results of this analysis, patient satisfaction was explained by the variables such as age, education level, family type, monthly income, income status, presence of a chronic illness, exercise and perceived body image, but other variables did not have a significant contribution to patient satisfaction. After controlling for other variables in the analysis, when body image perception increased by 1 point, patient satisfaction increased by 0.157 points. According to the result, the participant's perceived body image improved as his or her satisfaction level increased (Table 6).

Table 7. Perceived body image, satisfaction and quality of life, Pearson correlation analysis

Scales		1	2	3
1. Body Image Scale	r	1	0.438	0.667
	p		0.000*	0.000*
2. Patient Satisfaction Scale	r		1	0.141
	p			0.069
3. Quality Of Life Scale	r			1
	p			

The correlation was significant at the 0.01 level.

According to the results of the correlation analysis, the relationship between perceived body image and patient satisfaction was moderately positive, whereas the relationship between perceived body image and quality of life was highly positive (p<0.01) (Table 7).

3. DISCUSSION AND CONCLUSION

In recent decades, there has been a significant global rise in both obesity rates and the frequency of bariatric surgeries. As a leading location, Türkiye offers bariatric surgery at highly affordable prices, coupled with superior healthcare quality. In our current study, we established the connections and influencing factors between perceived body image, patient satisfaction, and quality of life among patients who had bariatric surgery in Türkiye. Our analysis of the participants' sociodemographic data revealed an average BMI of 40.39, with 62.6% being female, 39% aged between 30-39, and 65.9% married. Parallel to this study, numerous other research findings have shown that the bulk of bariatric surgery patients are female, married, and possess a BMI exceeding 40 (Alotaibi et al., 2022; Angrisani et al., 2017; Iranmanesh P. et al., 2021; Kocaöz et al., 2020; McKenzie J. A. et al., 2022; Zengın Eroğlu et al., 2019).

Body image dissatisfaction is typically linked to an individual's body weight. In multiple research studies focusing on obesity and body perception, it was found that obese patients experienced a low degree of satisfaction with their body image prior to undergoing bariatric metabolic surgery. Nonetheless, their satisfaction with body image saw a notable improvement following the surgical procedure (Dikmen et al., 2022; Geller et al., 2020; Makarawung et al., 2020; Monpellier et al., 2019)

Another finding of our study revealed that patients who had bariatric surgery achieved an average Quality of Life Scale score of 27.011 ± 4.004. The quality of life of these patients was influenced by several factors such as their age, level of education, family structure, monthly income, perceived income, existence of chronic diseases, physical activity, and their perception of body image. In a study conducted in Saudi Arabia by Alotaibi et al. (2022), the post-bariatric surgery quality of life in patients was primarily found to be moderate or average, with this quality of life correlating with various sociodemographic factors like age, gender, nationality, educational attainment, marital status, and a history of chronic diseases or comorbidities (Alotaibi et al., 2022). This finding aligns with results from numerous other studies exploring the link between bariatric

surgery and quality of life (Cordwell et al., 2022; Małczak et al., 2021; Nuijten et al., 2021; Poelemeijer et al., 2020; Santos et al., 2022). From these results, it can be inferred that the quality of life for patients undergoing bariatric surgery generally improves post-surgery.

Another outcome of our research indicated that the average score on the Patient Satisfaction Scale for participants who underwent bariatric surgery was 66.813±8.872. Factors such as age, educational background, family structure, perceived income, chronic disease presence, physical activity, and perceived body image were found to influence patient satisfaction. In a study involving 1991 individuals from 45 different bariatric surgery centers, the relationship between depression, weight reduction, and patient contentment within two years post-surgery was explored. It was observed that while depression rates increased after the first year, there was an improvement in depression symptoms within two years following the surgery (Martens et al., 2021). The study concluded that depression impacts weight loss and patient satisfaction both before and after bariatric metabolic surgery. In another study conducted by Samaan et al. (2021) on post-surgical patient satisfaction, an increase in satisfaction levels was noted following the surgery (Samaan et al., 2021). Furthermore, in various research studies examining patient satisfaction among medical tourists, high satisfaction rates have been consistently reported (Barone et al., 2018; Hult et al., 2019; Mahmud et al., 2021; Rahman, 2019)

Another finding from our study is the presence of a positive correlation between body image perception and patient satisfaction and between body image perception and quality of life in individuals undergoing bariatric metabolic surgery. In their respective research, Hult et al. (2019) (Hult et al., 2019). and Akkayaoğlu and Çelik (2020) identified a positive association between body image and quality of life (Akkayaoğlu & Çelik, 2020), whereas Alotaibi et al. (2022) found a positive link between body image and patient satisfaction (Alotaibi et al., 2022). These results collectively imply that both the quality of life and patient satisfaction tend to improve in tandem with enhancements in patients' perceptions of their body image.

Obesity has emerged as a pressing public health issue worldwide. The implementation of preventive strategies is crucial for both nations and individuals to combat obesity effectively. Concurrently with the increasing prevalence of obesity, there has been a rise in the number of individuals undergoing bariatric metabolic surgery. Our literature review indicates the existence of numerous studies exploring the changes in patients' body image, quality of life, and satisfaction

levels before and after bariatric metabolic surgery. In our current study, we focused on the quality of life, perceived body image, and patient satisfaction among patients who traveled abroad for bariatric metabolic surgery.

The findings from our study reveal that both patient satisfaction and quality of life are influenced by the socioeconomic characteristics and the perceived body image of the participants. Furthermore, it was observed that undergoing bariatric surgery had a positive impact on participants' perceived body image, patient satisfaction, and quality of life.

Based on the results of the study, it can be suggested that awareness trainings should be increased by obesity centers opened within healthy living centers. In addition, it can be suggested that trainings should be given for obesity awareness starting from primary school age.

Limitations of the Study: The fact that the study was conducted with patients undergoing bariatric surgery in only one city can be considered as a limitation of the study.

Conflict of Interest: The authors have no conflicts of interest to declare.

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