

Patients' Expectations and Satisfactions Following Bariatric Surgeries: A Mixed Design

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ABSTRACT

Background: Bariatric surgeries have become the preferred option among obese patients worldwide. Knowing the patient's point of view regarding the expected changes and satisfaction with bariatric surgery is necessary for improving care and outcomes. The aims of this study were to examine patients' expectations and their satisfaction with bariatric surgery. As well as explore the factors that affect patients' satisfaction levels after bariatric surgery. **Methods:** Mixed research design was used on a convenient sample of 53 adult male and female subjects who had undergone bariatric surgeries. These tools were utilized to gather data: (a) Demographic and Clinical Data Form (b) Bariatric surgery patients' expectation questionnaire (c) Bariatric surgery satisfaction questionnaire and (d) Face-to-face open-ended semi-structured interviews. **Results:** The findings of this study revealed that 92% of the studied sample rated improved self-esteem as well as a reduction in clothing size as very important expectations. As regards patients' satisfaction level with bariatric surgery; 89.80% of the studied sample were very satisfied with the way they were seen by others as well as improved free physical movement. While 50.40% of the studied sample expressed dissatisfaction with the need for chronic medications. The three themes that emerged described the factors contributing to participants' satisfaction following bariatric surgery included 1) pre-post-surgery comparisons, 2) solving traumatic events; and 3) improved health parameters. **Conclusion:** Based on the results of the current study, the patient's expectations and satisfaction following bariatric surgery were high. Hence, a preoperative education program is necessary to assist patients in developing reasonable expectations for the course of treatment and attaining complete satisfaction after bariatric surgery.

Keywords: Bariatric Surgery; Patients' Expectations; Patients' Satisfaction; Mixed Design

INTRODUCTION

Obesity is a fast-spreading public health issue that is affecting all age groups in both developed and developing countries. With a body mass index (BMI) of at least 30 kg/m², it is a chronic condition (Bassiony *et al.*, 2019). In fact, Egypt ranks 18th with the highest prevalence of obesity worldwide (Aboulghate *et al.*, 2020). Bariatric surgery is the only option left (Opozda *et al.*, 2018; Garcia *et al.*, 2022). The three most common bariatric surgical methods are the Roux-en-Y gastric bypass, sleeve gastrectomy and laparoscopic adjustable gastric banding (Cooiman *et al.*, 2019). Sleeve gastrectomy is the most popular bariatric procedure which includes cutting the stomach in half with a stapler and removing 80–90% of its contents (Carlsson *et al.*, 2020).

Patients believed having bariatric surgery would significantly enhance their physical, psychological, and mental health; this expectation was based on patients' prior experiences with shame and stigma (Graham *et al.*, 2017). Moreover, patients expected extreme and sometimes unrealistic levels of sustained weight loss. In spite of patients having received previous support from health care providers. However, they indicate that their surgical expectations had not been examined and seemed to be exaggerated (Homer *et al.*, 2016; Jumbe *et al.*, 2016).

Whereas some studies used the concept of met expectations as a valid measure of satisfaction with the provided service, suggesting a direct relationship between unmet expectations and dissatisfaction and vice versa (Gaur *et al.*, 2020; Nguyen *et al.*, 2020). Patient satisfaction is defined as an expression of the gap between the expected and perceived characteristics of a service (Gore *et al.*, 2022).

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The nurse plays an active role pre and post BS procedure. Through evaluating the patient's motivation and expectations and talking to them about their expectations for the short- and long-term psychosocial, emotional, and lifestyle issues and changes following surgery (Tiryag, 2022). Especially, if patients' expectations are not realized, this could lead to them not following through on suggested lifestyle modifications, gaining weight again, and relapsing into medical problems in the future (dos Santos *et al.*, 2017).

Even though a growing number of patients undergoing bariatric surgery become a reality in Egypt, there is an obvious lack of research evidence describing patients' expectations and how they could relate to their satisfaction. Consequently, the current study's aims were to examine patients' expectations and their satisfaction. As well, explore the factors that contribute to patients' satisfaction levels following bariatric surgery. To achieve the aims of the current study the following research questions were created:

1. What are the patients' expectations regarding bariatric surgery?
2. What is the degree of patients' satisfaction after bariatric surgery?
3. What factors affect patients' satisfaction after bariatric surgery?

METHODOLOGY

This research used a mixed-methods approach. The researchers integrate both quantitative and qualitative data in the current study to assist in the breadth and depth of understanding and corroboration of the phenomena of interest (Dawadi *et al.*, 2021). This study was carried out at the Obesity Outpatient Clinic of a university hospital connected to Cairo University in Egypt. About 53 adult male and female patients who underwent bariatric surgery were enlisted as a purposeful sample to carry out the study's objectives. To be eligible to participate, participants had to be: (a) Conscious adult who is eligible for and agrees to participate in this study; (b) Undergone bariatric surgery at least 3 months since the time of surgery, as the improved surgical outcomes have been documented as early as 3 months post-surgery (Faria, Santos & Simonson 2017). (c) Able to communicate through talking and free from mental or psychological problems or any cognitive impairments that would prevent them from sharing their own experiences.

The sample size was determined by power analysis using G-power 3.1.1s. A Power of 0.95 ($\beta = 1 - 0.05 = 0.95$) at alpha 0.05 (one-sided tail) and the significance level, $P \leq 0.05$ was utilized (Wood & Haber, 2014). The following tools were used to gather data for the study:

First tool - Demographic and Clinical Data Form: This tool will be developed by researchers. It had two components: (a) A demographic data sheet including information on the patients' age, gender, place of residence, occupation, level of education, and other characteristics. (b) Medical data sheet will cover data related to bariatric surgery, initial BMI and others information.

Second tool - The Adapted Bariatric Surgery: Specific Patients' Expectation Questionnaire: (Based on Fischer *et al.*, 2014). This tool consists of 14 expectations items. The participants were asked to rank the significance of their expectations on a Likert scale with 1 being the least significant, 2 being slightly significant, 3 being moderately significant, 4 being very significant, and 5 being the most significant. Reliability was assessed using Cronbach's alpha, and the result was 0.70.

Third tool - The adapted post-bariatric surgery patients' satisfaction questionnaire based on Garrido *et al.*, (2015). It consisted of two parts: The first part to identify patients' knowledge satisfaction regarding BS; 4 items. The second part had 22 items. A Likert scale with a 1-to-5-point range was used to ask the participants to rate their level of satisfaction, were 1 very dissatisfied, 5 very satisfied. Cronbach's alpha test was used to determine reliability, and the result was 0.75.

Fourth tool - Face to face open-ended semi-structured interviews were conducted by the researchers, employing an interview guide with 5 open-ended questions to help bariatric participants give comprehensive, free, detailed, and deep descriptions about factors that affect the level of satisfaction following bariatric surgery.

Ten patients from the sample participated in a pilot study to determine applicability, clarity, reliability, and feasibility of the study tools and to identify potential challenges during data collection as well as determine how long it

will take to complete each data collection instrument. The pilot research sample was added to the study after a few adjustments.

Procedure: After receiving official approval to move forward with the proposed study, the researchers started collecting data, which takes six months, from March to August 2019. The researchers enlisted eligible patients who attended follow-up visits and met the requirements for inclusion after acquiring the names of the potential patients, their mobile phone numbers and dates of follow-up visits from the deputy of the selected surgical ward. The study's objectives, methodology, and significance were described. Both at the original interview and following the signing of the permission. The researchers started to collect quantitative data by collecting demographic and clinical data, then assessing patients' expectations and satisfaction using the Patients' Expectation Questionnaire and Post-Bariatric Surgery Satisfaction Questionnaire. All interviews began in the vernacular form frequently employed by the patients under study in their mother tongue. Through the use of an interview guide made up of five open-ended questions, the researchers encouraged patients to freely express themselves in their own words.

Ethical Consideration

The research ethics committee of the Faculty of Nursing at Cairo University approved this study on 22nd September 2021 with reference number FWA 00026458.

RESULTS

Table 1: Frequency and Percentage Distribution of Demographic Characteristics among the Studied Sample (N=53)

Socio-demographic Characteristics	No	%
Age		
- 18 <30	9	16.98
- 30 < 42	26	40.05
- 42 ≥	18	33.96
Mean ±SD = 37.35±9.56		
Gender		
Female	47	88.70
Male	6	11.30
Marital status		
Single	9	35.30
Married	41	64.70
Divorced	2	3.80
Widow	1	1.90
Residence		
Urban	41	77.40
Rural	12	22.60
Education		
illiterate	1	1.90
Primary	7	13.20
Secondary	26	49.10
University	18	34
Postgraduate	1	1.90
Occupation		
Work	17	32.10
Not work/ Housewives	36	67.90
Children		
Yes	39	88.63
No	4	9.09

Table 1 indicated that 40.05% of the studied sample; their age group ranged between 30<42 with the mean age of 37.35±9.56 years, 88.70% were female, 64.70% married, 77.40% came from urban area, 49.10% had secondary level of education. It also presented that 67.90% housewives and 88.63% had children.

Table 2: Frequency and Percentage Distribution of Medical Related data among the Studied Sample (N=53)

	No	%	No	%
Severity of Obesity				
- Normal weight (BMI 18.5-24.9)	0	0	8	15
- Over weight (BMI 25.0-29.9)	0	0	10	18.80
- Class 1 obesity (BMI 30.0-34.9)	0	0	14	26.40
- Class 2 obesity (BMI 35.0 - 39.9)	7	13.2	11	20.70
- Class 3 obesity (BMI ≥40)	46	86.80	10	18.80
Type of Surgery				
Sleeve gastrectomy	46	86.80		
Gastric bypass surgery	7	13.20		
Time since Surgery / Months				
3 - < 12	42	79.20		
12 - < 21	9	16.98		
≥ 21	2	3.77		

*This variable is not mutually exclusive

Table 2 displayed that 86.80% had class 3 obesity before bariatric surgery, 86.80% had undergone Sleeve gastrectomy surgery for one year. 15% of the studied sample achieved normal body weight, 18.80% overweight, followed by 26.40% class 1 obesity after BS.

Table 3: Mean Scores and Ranking of Expectations Level about Bariatric Surgery among the Studied Sample (N = 53)

Rank	Items	Mean ±SD	Level of expectation (%)
1	Improved self-esteem.	4.60±0.86	Very important (92)
2	Reduction in clothing size.	4.60±0.63	Very important (92)
3	Improved physical activity.	4.30±0.84	Very important (86)
4	Improved social life.	4.24±1.10	Very Important (84.80)
5	Pain reduction.	4.00±1.28	Very Important (80)
6	Improved work performance.	3.73±1.53	Very Important (74.60)
7	Reduced need for medication	3.35±1.63	Very Important (67)
8	Enhanced mental wellbeing.	3.30±1.56	Moderately important (66)
9	Improved co-morbid diseases.	2.94±1.87	Moderately important (58.80)
10	Increased work chance	2.54±1.73	Not important (50.80)
11	Increased life expectancy.	2.30±1.73	Not important (46)
12	Improved fertility.	2.13±1.69	Not important (42.60)

Table 3 illustrates that 92% of the studied sample rated improved self-esteem as well as reduction in clothing size as a very important expectation items followed by 86% improved physical activity.

Table 4: Mean Scores and Ranking of Knowledge Satisfaction Level about Bariatric Surgery among the Studied Sample (N = 53)

Rank	items	Mean± SD	Level of satisfaction (%)
1	Lifestyle changes following bariatric surgery.	3.86±1.44	Very Satisfied (77.20)
2	Post surgery follows up related information.	3.24±1.67	Moderately satisfied (64.80)
3	Bariatric surgery related medications.	2.98±1.6	Moderately satisfied (59.60)
4	Pre bariatric surgery preparations	2.84±1.65	Moderately satisfied (56.80)

Table 4 showed that 77.20% of the studied sample was very satisfied with the provided knowledge related to lifestyle changes after bariatric surgery. While 64.80% were moderately satisfied with the provided knowledge regarding post BS follows up related information, 59.60% of the studied sample expressed moderate satisfaction related BS related medications followed by 56.80%pre bariatric surgery preparations.

Table 5: Mean Scores and Ranking of Satisfaction Level about Bariatric Surgery among the Studied Sample (N = 53)

Rank	Items	Mean ± SD	Satisfaction level (%)	Rank	Items	Mean ± SD	Satisfaction level (%)
1	Way you are seen by others.	4.49±0.97	Very satisfied (89.80)	11	Improved physical wellbeing.	3.98±0.88	Very satisfied (79.60)
2	Improved free movement	4.49±0.79	Very satisfied (89.80)	12	Improved social life	3.98 ±1.13	Very satisfied (79.60)
3	Improved self-esteem.	4.41±1.0	Very satisfied (88.20)	13	Improved health status.	3.81±1.09	Very satisfied (76.20)
4	Improved self-care activities	4.37 1.02	Very satisfied (87.40)	14	Weight achieved.	3.69±1.16	Very satisfied (73.80)
5	Goals achieved from BS.	4.32±0.93	Very satisfied (86.40)	15	Improved emotion wellbeing.	3.62±1.50	Very satisfied (72.40)
6	Physical appearance when naked.	4.30±0.99	Very satisfied (86)	16	Improved professional life.	3.62 ±1.45	Very satisfied (72.40)
7	Physical appearance when dressed.	4.28±0.90	Very satisfied (85.60)	17	Improved sexual life.	3.03±1.69	Moderately satisfied (60.60)
8	Wearing preferred clothes.	4.20±1.6	Very satisfied (84)	18	Sensation of hunger.	2.98±1.37	Moderately satisfied (59.60)
9	Eating habits.	4.01±1.15	Very satisfied (80.20)	19	Improved giving and receiving love from others	2.83±1.66	Moderately satisfied (56.60)
10	Amount of food.	3.83±1.23	Very satisfied (76.60)	20	Pleasure of eating.	2.83±1.51	Moderately satisfied (56.60)
10	Type of food.	3.83±1.23	Very satisfied (76.60)	21	Need of chronic medications.	2.52±1.60	Not satisfied (50.40)

Table 5 displayed that 89.80% of the studied sample was very satisfied with the way you are seen by others as well as improved free physical movement followed by 88.20% improved self-esteem. While 50.40% of the studied sample wasn't satisfied with the need for chronic medications.

Table 6: Factors affect the Studied Sample Satisfaction after Bariatric Surgery (N=53)

Thematic factors	Subtheme	Sample of participant's quotations
Pre / Post surgery comparisons	Self-esteem and confidence	"It gave me a lot of confidence in myself when I started losing my weight, this gives me a positive energy, in fact, for me, the surgery has more pros than cons." (Participant 3, female, 41 yrs)
	Sense of accomplishing	" I feel that the operation has made an achievement in my life, that is, it put my leg on the right road, because I tried to lose my weight several times with several things, but all did not work with me." (Participant 29, male, 35 yrs)
	Cloth size	"I have clothes since the year of 2013, I couldn't wear before the surgery was done to me, now I can wear all." (Participant 4, female, 41 yrs)
	General appearance	"Frankly speaking, before the surgery, I used to look older than my age, as soon as I saw how different people look before and after the surgery, I told myself; I had to do it." (Participant 7, female, 26 yrs)
Pre / Post surgery comparisons	Physical aspect	"Before surgery, I was 130 kilos, I was lazy and I couldn't move, I couldn't not wear my socks nor I can tie my shoes due to my fatty stomach and it was hard for me to get up the stairs, when my body started to go down and I went down 30 kilos after the surgery, I started moving better than before, so I kept going up the stairs and walking." (Participant 23, male, 41 yrs)
	Mental aspect	"I was sleeping while I was sitting among people, I had no focus and no attention for things around me, but now the matter is completely different with me." (Participant 29, male, 35 yrs)
Pre / Post surgery comparisons	Social aspect	"Indeed, my life has changed, the behavior of people with me has changed, people's words around me, the society itself, the view of me by others has changed." (Participant 13, female, 45 yrs)
	Psychological aspect	"The time before the operation, every problem in my life, every fatigue in my life, anything that happened to me psychologically, I thought it was because of my weight, even if I shouted with my children, I would come back crying and said to myself it happened because they didn't love me looking like this, but after the surgery, the matter is completely different, and I thank God very much." (Participant 52, male, 45 yrs)
Salving traumatic events		"I was always subjected to insults and bullying, especially from the drivers of microbus, one of whom looks like my father in age used to ask me ride, mom, and many times I was told terribly by drivers; "No, you won't be able to ride in this chair", now all these became a memory for me." (Participant 46, female, 40 yrs)
Improved health parameters	Blood sugar	"The most important issue that I'm satisfied with is that; my blood sugar was reaching 200, it disappeared after the surgery was done to me, hence I stopped the tablets of diabetes." (Participant 24, female, 32 yrs).
	Blood pressure	" I used to go to the hospital with a high blood pressure reaching 170/ 120 and it was about to explode, now, my pressure is 90/70." (Participant 48, female, 38 yrs).

DISCUSSION

The current study findings showed that more than two thirds of the study participants; their mean age was thirty-seven and the majority of them was female, married, came from urban area, housewives and had children. This result was consistent with a study carried out by Silva *et al.*, (2015). Their aim was to identify the profile of patients who seek bariatric surgery. Given that, these results may be explained by the fact that married housewives are more likely to put on weight, and potential causes include a decline in energy expenditure and changes to eating habits.

Regarding ranking of patients' expectations about bariatric surgery, improved self-esteem, reduction in clothing size and improved physical activity were ranked as very important expectations among the studied sample. This could be interpreted as around two thirds of this studied sample was at a young age. This age group requires high levels of self-esteem, a sense of belonging and acceptance, confidence, pride in their accomplishments, positive self-talk, and self-belief (Dyussenbayev, 2017). These findings were following in the footsteps of Garrido *et al.*, (2015) who conducted a study entitled "Patients' expectations and post- bariatric surgery satisfaction" the highest percentage of patients' expectations were regarding the items of; improve in health status, loss weight, improve their self-esteem and be able to wear clothes they like respectively. Also, Homer *et al.*, (2016), supported the current study by illustrating that following BS, participants had high hopes and expectations for improvements in their level of motivation, self-assurance, and general enthusiasm for life. However, Hult *et al.*, (2022) conducted study entitled "Women's reasons to seek bariatric surgery and their Expectations on the surgery outcome - a multicenter study from five European countries" revealed that weight loss and improved comorbidity were the two main reasons for having surgery among women in all five countries. Also, they added that there were differences in the expectations of surgery. Hult 's study interpreted it might be due to the patients being significantly older and suffering from co-morbid diseases more frequently.

As regards, patients' knowledge satisfaction about BS; greater than half of the sample under study was moderately satisfied with the provided knowledge received regarding BS. Nevertheless, few studies have examined educational initiatives for potential bariatric surgery patients. In this context, Sherf-Dagan *et al.*, (2018) and Hult *et al.*, (2022) pointed to preoperative educational programs should be designed to assist patients in setting reasonable expectations for their recovery from BS.

In reference to patients' satisfaction after bariatric surgery, the current study revealed that the three top satisfaction items include the way you are seen by others, improved free physical movement and improved self-esteem (Elhag, Lock & El Ansari, 2023). This finding is in line with Hult *et al.*, (2019) who stated that after surgery, better self-esteem was the thing that gave them the most satisfaction. However, weight loss was the main motivation for getting bariatric surgery; however, weight loss and goals achieved from BS items were not chosen by the subjects to be among the 3 top items. A possible explanation is that the majority of subjects were in class 3 obesity before bariatric surgery, the smallest percentage of subjects have achieved the normal body weight while the rest have achieved an improvement in the severity of obesity to be overweight, class 1 and class 2 obesity. These results are in line with Pontiroli *et al.*, (2017), who pointed out that bariatric surgery is not a hit-and-run technical procedure; rather, it is a journey that affects patients' lives, and the success of this journey should not just be determined by weight loss.

The results of the current study discovered three emerging themes, the first one entitled pre - post surgery comparisons. These were totally in line with Andersson (2015) who examined the patient's experiences following bariatric surgery after the initial six-week recovery phase and the results yielded a theme of complete transformation with the subcategories of a changing body, a changing self-image and a changing social life. Salving traumatic events is the second emerging theme extracted from participants' narration of their satisfaction with BS as a magic tool of getting rid of what they exposed to the painful social incidents. Homer *et al.*, (2016) agreed with this by describing the participants of their study were receiving negative and judgmental comments from strangers and from the family members. Improved health parameters are the third emerging theme among the co morbid participants who had diabetes and hypertension, were very satisfied with the returned normal health parameters. Weight regains are reasonably expected after bariatric and metabolic surgery. Weight regains after bariatric surgery remains inconsistent

and their clinical significance unclear and its effectiveness as a comparator metric among patients or procedures needs modifications.

CONCLUSION

It is worth mentioning that the study results declared the subjects under the study demonstrated both high expectations and high satisfactions with bariatric surgeries. However, half of the studied patients feel dissatisfied with the need for chronic medications. Pre-post-surgery comparisons, solving traumatic events and improved health parameters are thematic factors that described satisfaction among participants of the study with bariatric surgery. This study recommends that health care providers should assess patients' expectation and factors affecting patients' satisfactions as well as providing patients with preoperative educational program in order to assist them in developing reasonable expectations for the course of treatment and attain complete satisfaction after bariatric surgery.

Conflict of Interest

The authors declare that they have no conflict of interests.

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