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Health Status and Patient's Satisfaction One Year and More After Bariatric Surgery in Karbala City

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Original Article

Summary

Obesity is a worldwide public health problem with serious psychological and social impacts. Bariatric surgery is effective in treating not only obesity but also obesity- related co-morbidities . Health-related psychological and psychosocial variables have been increasingly considered as important outcome variables of bariatric surgery. Patients satisfaction after bariatric surgery represents an important issue for surgeon and clinician. Therefore, we aimed to evaluate the impact of bariatric surgery on psychosocial functioning and quality of life of morbidly obese patients and estimate the satisfaction of patients who underwent bariatric surgery. A Prospective study included 77 obese adults fulfilling selection criteria operated by the same bariatric surgery team at Imam Hussain Medical City and Al- Kafeel Surgical Hospital after more than one year postoperatively. Participants were assessed before surgery and again 1 year later, year one is the primary point of interest because most patients who have undergone bariatric surgery reach maximum weight loss by this time. Results of the study revealed that the mean age of participants was 35.88 ± 8.64 (range: 21-63) years.. Most of our patients were females, 84.4%. A significant improvement of hypertension, diabetes mellitus and depression was reported. There is a reduction in body mass index among participants from 46.24± 6.60 kg/ m² to 29.98 ±5.71kg/ m². Among the 77 patients, 42 , had bad social communication before surgery, after surgery only 10 of 77 patients had bad social communication. Percentage of patient's conviction of the surgery was 84% vs.16% were not satisfied with operation 16%. In conclusion, patients had better medical outcomes after bariatric surgery. Post-operative expectations and conviction in obese patients were satisfactory.

Keywords: *Obesity, Comorbidity, Bariatric Surgery, Outcome, Patients' Satisfaction*

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1. INTRODUCTION

Obesity is a major issue for public health due to weight gain from an imbalance between energy staffing and energy expens (1). A crude population measure of obesity is the body mass index (BMI), a person's weight (in kilograms) divided by the square of height (in meters). A person with a BMI of 30 or more is generally believed obese according to the world health organization. It is a major cause of morbidity and mortality in a commune, via raised rate of ischemic heart disease, stroke, type II of diabetes mellitus, hypertension, osteoarthritis, cancer as well playing a role, gastrointestinal diseases, respiratory diseases, and psychological complications also reported (2). According to the WHO (2018), the worldwide obesity prevalence has increased to almost tripled since the year 1975; as a result, approximately with 650 million being clinically obese (3). When lifestyle changes (diet, behavioral therapy, exercise, and pharmacological intervention) are failed, bariatric surgery should be considered the treatment of choice for severe obesity in 1950 (4). The term 'bariatric' surgery, derived from the Greek word baros meaning "weight" and iatrikos meaning " the art of healing", is synonymous with weight loss surgery. Accordingly, goals of bariatric surgery originally evolved around achieving substantial sustained weight loss (5). Bariatric surgery procedures are roux-en-Y gastric bypass (RYGB), sleeve gastrectomy (SG), and adjustable gastric banding (AGB) being the most commonly performed procedures worldwide, now a day's bariatric surgery is counted for those with class III obesity (BMI equal and more than 40 kg/m2 and class II obesity (BMI more than (35 kg/m2) with comorbid conditions such as hypertension and type II diabetes (6).

Bariatric surgery is typically performed laparoscopically, which is been shown to be safe and effective in terms of achieving sustainable weight loss, documentation the success of surgery not only in obtainin meaningful weight loss but also in correcting obesity-related illnesses (7). Excess body weight is the amount of bodyweight you have over your target weight. Bariatric surgery leads to an average loss of 60-75% of excess body weight with maximum weight loss in the period between 18 and 24 months postoperatively (8) In severely obese patients with type 2 diabetes, bariatric surgery resulted in better glucose control than did medical therapy. Preoperative BMI and weight loss did not predict the improvement in hyperglycemia after these procedures (9).

Fifty one countries from 5 continents contributed a total of 394,431 operation records, over 550 hospitals contributed data either directly or via their national registry submissions and most of the database records fell in the period 2009-2018 (88.5% of the total); 220,348 operations were dated in the calendar years 2014-2018 (55.9%) (10).

The dramatic lifestyle changes experienced by patients who undergo bariatric surgery occur not in a vacuum but within the framework of the social network that surrounds them (11). In recent studies, there are improvements in personality features, psychopathology, depressive symptoms, body image, eating behavior, social functioning, and quality of life in the first 1 or 2 years after bariatric surgery (12).

Psychological health and quality of life were found to improve after bariatric surgery. Weight loss could not be related to any specific psychological condition before surgery, but the presence of more than one psychiatric condition might play a role (13). Morbid obesity has multiple negative sequels for psychological health, the severity of these psychological disorders has been related to the degree of obesity (14).

Accordingly, poor weight loss or medical complications after bariatric surgery are frequently discussed in the context of psychological factors (15). Not all bariatric patients, however, experience mental health gains from weight loss surgery, which is likely attributable to patients' reactions to common undesired physical outcomes postsurgery: lack of weight loss, weight regain, and undesirable skin changes. Patients' expectations that bariatric surgery will undoubtedly change their life may also set them up for psychological failure if expectations are not met (16).

The relationship between obesity and disturbances in sexual function is not well clarified, changes in sexual quality of life and incidence of functional sexual dysfunction after bariatric surgery have only been assessed by a few authors, with conflicting results (17). Obesity and rapid weight loss after bariatric surgery are independent risk factors for the development of cholelithiasis (18), bariatric patients are apt to the formation of gallstones with a postoperative cumulative risk of 30–53 % an observation that still gives rise to concern in the scientific community (19). Physical activity participation has been shown to increase following bariatric surgery, and this increase has been associated with greater weight loss success (20).

2. PATIENTS and METHODS

The original sample consisted of 100 obese patients who underwent bariatric surgery, the study excluded 13 participants fail to follow them, another 10 refused to answer the questionnaire. Seventy- seven obese adults fulfilling selection criteria operated by the same bariatric surgery team at Imam Hussain Medical City Hospital and Al- Kafeel Surgical Hospital after one or more year postoperative.

Inclusion criteria:

1. Patients between 18 and 65 years with an indication for bariatric surgery according to SAGES, ASMBS, and IFSO guidelines 2008 and (21).
2. Submitted either to laparoscopic gastric bypass or laparoscopic sleeve gastrectomy (SG).

Exclusion criteria:

1. Patients with osteoarticular pathology (i.e., osteoarthritis) that makes them unable to assess physical assessment.
2. Less than one year.
3. Patients with any contraindication of bariatric surgery, hormonal disturbance, or patients with psychological problems.

The study was reviewed and approved by the medical ethics committee, all participants completed a demographic questionnaire and a health history checklist. Data were collected by using the telephone, social media ,or via patient's visit to their doctors for follow up.

Statistical analysis:

Data were entered and analyzed using statistical package for social science (SPSS) version 21. Qualitative data were expressed as numbers (N) and percentages, while quantitative data were expressed as mean ± standard deviation (SD). A paired sample t-test was used for the analysis of BMI before and after surgery, while the student test was used to compare means of excess weight reduction. Also, the McNemar test was used for comparing the change in frequencies of some presentations before and after surgery.

A p-value of less than 0.05 was considered statistically significant.

3. RESULTS

The total number of patients is 77, their mean age is 35.88 ±SD of 8.64 and it's ranging 21-63 years. Most of our patients in this study are female 84.4% VS male participants 15.6%. The percentage of patient's working (who have income) vs. not working was 55.8% and 44.2%, respectively, (Table 1). The most common types of bariatric surgery, which performed in this study (according to the decision of the surgeon), were gastric sleeve in comparison to the bypass, (Figure1). There is a significant result regarding the improvement of hypertension, diabetes mellitus ,and depression, as demonstrated in (Figure 2). Changes in BMI and the EWL after bariatric surgery are shown in (Table 2). There is a significant reduction in BMI after bariatric surgery, (Figure 3). Three cases removed gallbladder before the surgery and two cases were removed with bariatric surgery while sixteen cases removed after bariatric surgery out 72 representing 22.2%. (Figure 4). Comparison of the physical and social state of patients before and after bariatric surgery is shown in (Figure 5). Count of intimacy is shown in (Figure 6). Patient's conviction of the operation after surgery are shown in (Figures 7) where percentage of patient's conviction of the surgery was 84% compared to only 16% not satisfied with operation.

Table 1. Gender and working status of the studied group (N = 77)

Parameters		No.	%
Gender	Female	65	84.4
	Male	12	15.6
Job/ fixed income	Yes	43	55.8
	No	34	44.2

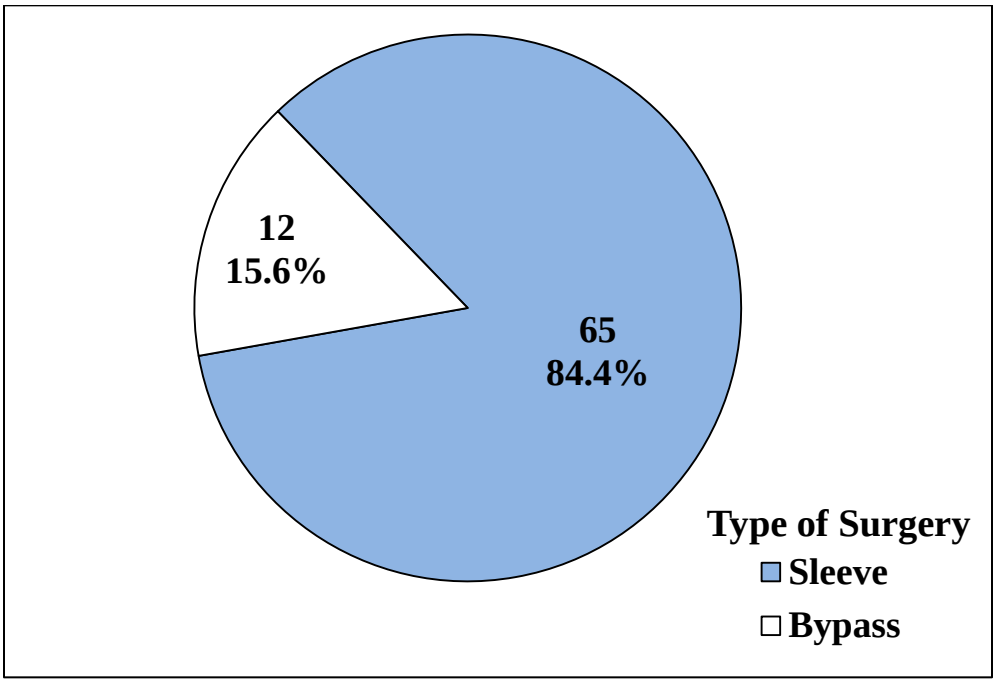

Figure 1. Types of bariatric surgery.

Table 2. Changes in the rates of diabetes, hypertension ,and depression before and after bariatric surgery.

Comorbidity	Before surgery		After surgery		P. value
	No.	%	No.	%	
Hypertension	26	33.8	4	5.2	< 0.001
Diabetes Mellitus	10	13.0	2	2.6	0.017
Depression	48	62.3	10	13.0	< 0.001
In all comparisons, P-value is significant < 0.05, using the McNemar test.					

Table 3. Body mass index (BMI) and excess weight loss(EWL)

	BMI (kg/m²)		
	Minimum	Maximum	mean + SD
Before surgery	34.7	64.3	46.24± 6.60
After surgery	20.2	46.9	29.98 ±5.71
EWL %	8	126	74.43±18
P, value < 0.001, using paired t test			

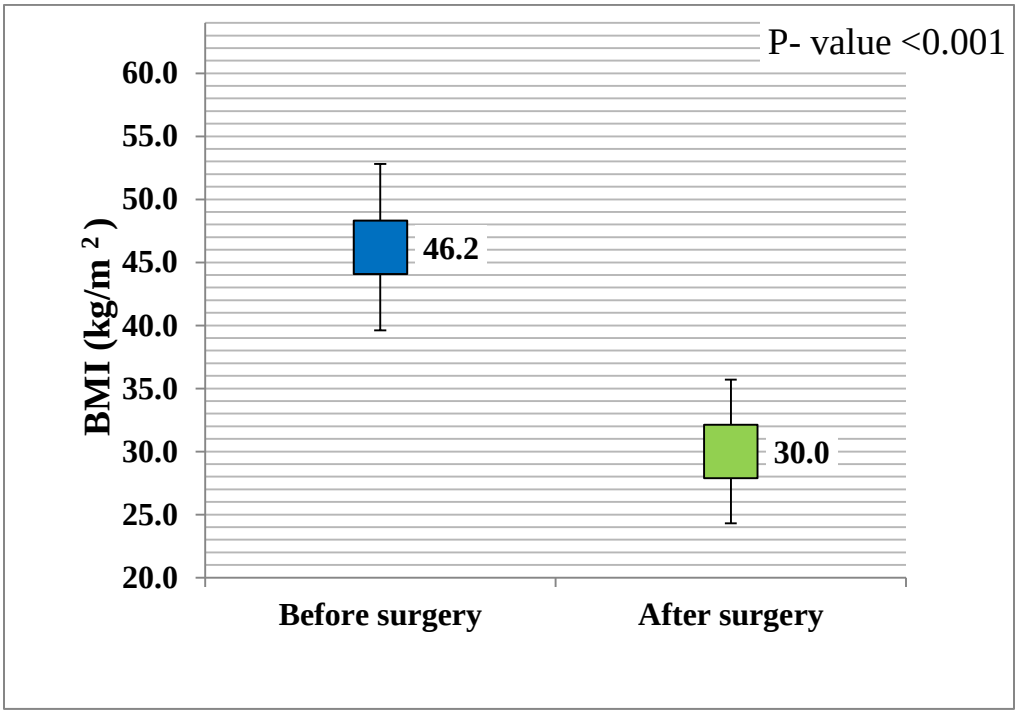

Figure 3. Changes in mean BMI after bariatric surgery

Table 4. Gall bladder state before and after bariatric surgery

Gallbladder status	Number of gallbladders	%
Present and normal	56	72.7
Removed after surgery	16	20.8
Removed before surgery	3	3.9
With bariatric surgery	2	2.6
P- value < 0.001 by using the McNemar test		

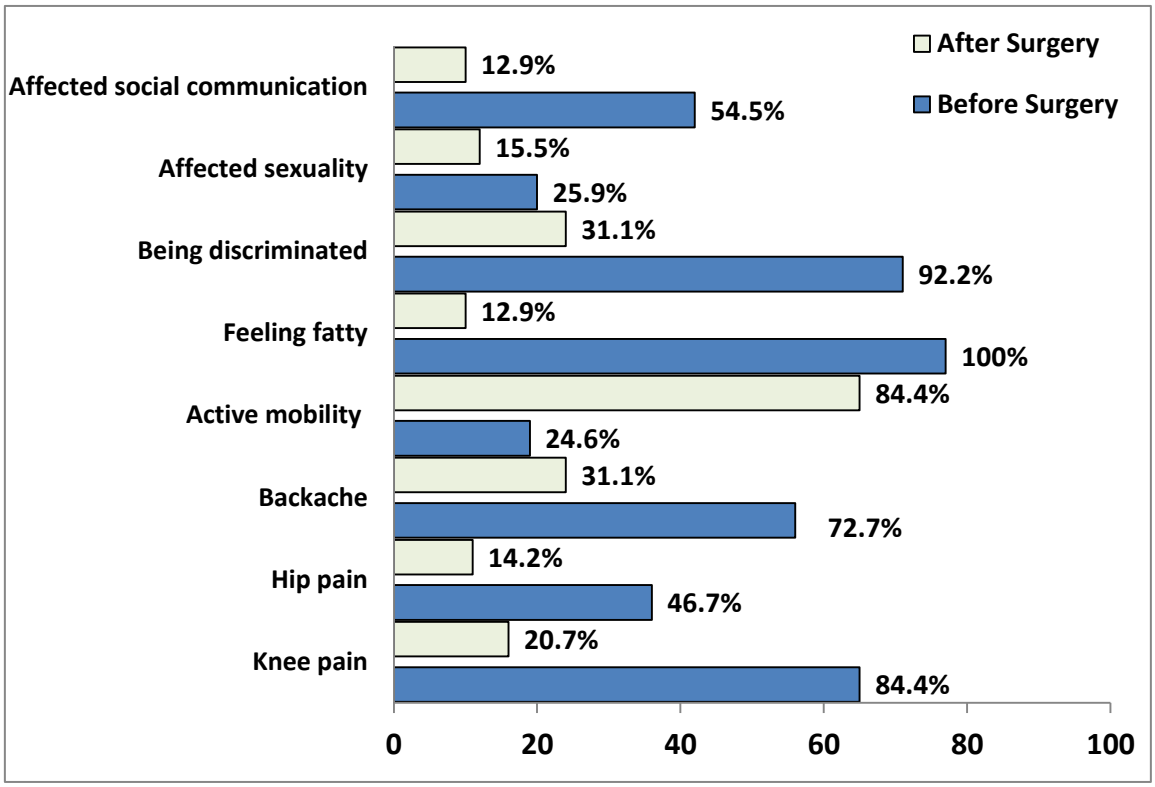

Figure 5. Comparison of the physical and social state of patients before and bariatric surgery P- value < 0.001 for all conditions using the McNemar test

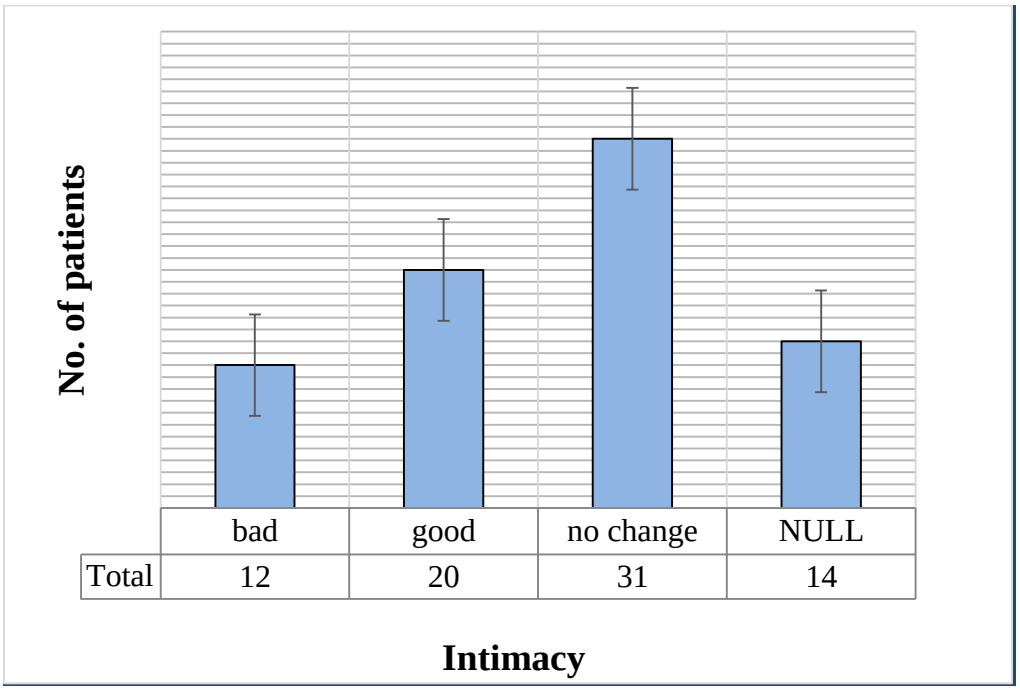

Figure 6. Intimacy after surgery

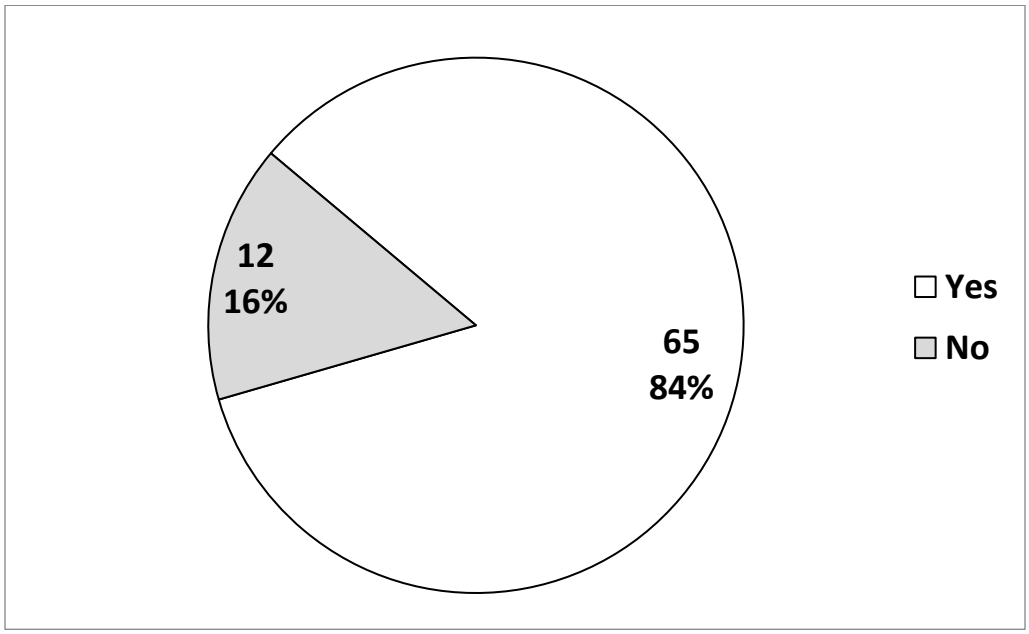

Figure 7. Patient's conviction of the operation

4. DISCUSSION

A number of patients: the number of patients collected in our study is little because this type of operation newly accepted in our city, another cause some of the patients had complications after surgery so refused to participate in our study, and some of them came from outside and we lose connection with them while in another hand the most recent IFSO Worldwide Survey (22) reported that 634,897 bariatric operations were performed worldwide in 2016.

Age of patients: the average age of patients is ± 35.88 SD from 8.64, and this age is considered the peak of their activity and efficiency, DeMaria and his colleagues proved in their research mean age of the study population was 46.65 ±11.77 years, while Capella and his friends proved early surgical intervention should be offered to a greater number of adolescents (13-17 year) to minimize the emotional and physical consequences of morbid obesity (23) , while Susmalian and his team have demonstrated by performing bariatric surgery on elderly patients to improve their health conditions and quality of life (24). The safety and efficacy of sleeve gastrectomy for morbid obesity in patients aged more and equal 60 years, bariatric surgery offers an acceptable outcome to elderly patients since the higher complication rates in elderly patients are attributable to the comorbidities (25). Outcomes and complication rates of bariatric surgery in patients older than 60 years are comparable to those in a younger population, independent of the type of procedure performed. Patients should not be denied bariatric surgery because of their age alone (26).

Sex of patients: most of participant in this study is women (84.4%), may be related to attention about their shape and elegance more than men, also more likely attributable to sociocultural norms about body size that encourage women to seek bariatric surgery out of proportion. This agreement with Durand-Moreau and his friends also Santry and his colleagues proved women more than men in their study (27). Sex and age affect the bariatric-surgery outcome are poorly understood

Job of patients (whether patients have a job or not): patients have fixed income about 55.8% VS have no a fixed income of 44.2%. To know some things, the costs of the operation may not depend on the job of the patients, and there is another source of the operation expenses. These types of operations are expensive and need special care after

surgery so the ability to cover all costs of surgery and related care with the payment source noted (28).

Types of bariatric surgery in our recent study: Sleeve gastrectomy 84.4% while the gastric bypass is 15.6%, types of surgery is related to the decision of surgeon, the simpler surgical technique of SG compared to RYGB, together with the promising long-term weight loss outcomes, our result is agreed with (29 and 30) that proved sleeve gastrectomy is currently the most frequently performed procedure.

Welbourn and his team gastric disagreed with our result that bypass was the most prevalent operation, followed by sleeve gastrectomy and gastric banding (31).

Glycaemic control: bariatric surgery is the most effective obesity treatment and also greatly improves glycaemic control, our study proved there is a significant reduction in the diabetic state of patients, this agreement with (32) , while Phamc and his friends confirm that the efficacy of surgery to treat diabetes is variable among the diverse procedures and sleeve gastrectomy might be an interesting option in this context (33).

Hypertension state: recent study proved improvement in hypertensive patients state, normalized blood pressure has resulted from the control of diet, or maybe to improve in the psychological state and this agrees with (34 and 35) that proved remission of elevated a blood pressure (remission was defined as blood pressure less than 140/90 without medications).

Depression: our study revealed there is a decrease in depression state of patients, this result corresponds to Strain and his team articles that depressive symptoms significantly improvement after surgery. These improvedo not have a differential effect over the wide range of weight changes (36).

Body mass index: there is a reduction in body mass index in our participants from 46.24± 6.60 kg/ m^2 to 29.98 ±5.71kg/ m^2, this result corresponded with Inge and his colleagues proved that mean BMI (95% CI) Baseline 53 kg/ m^2 and after 3 years 38 kg/ m^2 (34).

Excess weight loss: is calculated by the following Equation:

Excess weight lost (%EWL) = [(initial weight – current weight) / (initial weight – ideal weight)] × 100).

In our study we found EWL% is 74%, this agreement with Montero and his team that calculated 12-month %EWL for these was 65-82% for RYGB using the calculation

method (37), while (38) excess weight loss of 87.7% in gastric bypass/ gastric sleeve group. Percentage excessive weight loss (%EWL) was 58.8 % by (39). The peak of this weight loss is usually between 12 and 18 months and generally levels off by 2 years (40).

Gall bladders stones: obesity is a risk factor for the formation of cholesterol gallstones, also rapid and significant weight loss leads to increased risk of gallstone formation. In our study cholecystectomy is done during bariatric surgery 2.59 %, while it is done before bariatric surgery 3.89% of patients lastly after surgery 20.77%.

Melme and his friends illustrate a gallstone formation rate of approximately 20 % detected by ultrasound measures (38). Despite the beneficial effects of bariatric surgery, bariatric patients are prone to the formation of gallstones with a postoperative cumulative risk of 30–53 % an observation that still gives rise to concern in the scientific community (41).

Quality of life : there is a significant reduction in knee pain, hip pain , and backache after bariatric surgery, also there is a significant increase in activity of patient Improvement on the quality of life, besides treatment of obesity and diseases accompanying it, has become one of the main aims of bariatric treatment (39).

Weight loss surgery and marital relationships of patients: in this study after bariatric surgery about 14 patients are still single, 31of them had no change in their relationship, 20 of them had improved in their relation while about 12 of them change to worse, without explanation from them. In this article, the majority of patients had no change in their relation, which may be related to the stability of their marital life. About those with bad relations maybe not be related to the surgery per se but maybe there is bad relation previously or related to the result of operation about body image or skin fold.

Hafner found patient (wife) viewed spouse (husband) as less interesting/less social after surgery and he found husband viewed wife as too social after surgery (42); while Hafner and Rogers found husbands grew more dissatisfied after wives' surgery, especially if the wife became more assertive (43), Kinzl found a majority of patients enjoyed sexual intercourse more (44).

Camps and his team that Frequency of intercourse increased, and they were more attracted to partners (45). Being married significantly improved the mental quality of life after surgery that is improved by Huang and his colleagues (46). Health-related quality of life and depressive symptoms significantly improve after surgery (36).

Social communication: In our study, we found 42 of 77 patients had bad social communication before surgery while after surgery about 10 of 77 patients had bad social communication i.e. there is an improvement in social communication due to improvements in the general health of the patient, this result corresponded with the study of (39).

Patient satisfaction: in our recent study 84% who satisfied with their operation, this is related to getting a reduction in their body weight which is the largest problem, therefore, bariatric surgery is important in the treatment of appropriately selected, morbidly obese patients, and this result agree with Garrido and his friends that said (Patients were satisfied to very satisfied in all items tested, despite having unrealistic expectations (47), also patient satisfaction score remains good despite unfavorable complications (48).

5. CONCLUSIONS

The influence of patient age, gender, insurance status, and functional status on decisions to operate was mitigated by BMI and comorbidities. Patient satisfaction was high after bariatric surgery. Therefore, bariatric surgery is important in the treatment of appropriately selected, morbidly obese patients. Health-related quality of life and depressive symptoms significantly improve after surgery. There is a significant decrease in BMI after Bariatric surgery. We recommend to follow up the patients at 1 month, 6 months and 1 year to demonstrate the psychological state and changes which will be occur, and the long-term complications if occurred and how to manage them. On the other hand, physical activity behavior of individuals who undergo bariatric surgery will enable the development of effective post-surgical exercise guidelines and interventions to enhance weight loss outcomes. Psychological evaluation of patients before bariatric surgery is a critical step, not only to identify contraindications for surgery, but also to better understand their motivation, readiness, behavioral challenges, and emotional factors that may impact their coping and adjustment through surgery and the associated lifestyle changes. Furthermore, the government health agencies should help the patients financially and operations are not considered as plastic surgery, but rather necessary.

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