Libyan Med J. 2025;17(2):241-246
https://doi.org/10.69667/lmj.2517219
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index *eISSN: 2079-1224*

Original article

Assessment of Bariatric Surgery as an Alternative to Anti-Obesity Strategies

Ibrahim Al-osta[1*], Melad Aldhduh[2], Ayyah Alhanash[2], Bahiya Alkouhah[2], Khadeejah Abu Iqfayfah[2], Nada Tabal[2]

[1]Department of Pharmacy, Libyan Academy for Postgraduate Studies, Janzour, Tripoli, Libya.
[2]Department of Pharmacology and Toxicology, Faculty of Pharmacy, Elmergib University, Alkhoms, Libya
***Corresponding Email**: ibrahimalosta@academy.edu.ly*

***Keywords**:*
Bariatric Surgery, Sleeve Gastrectomy, Psychological Challenges, Obesity, and Depression.

This study aimed to assess bariatric obesity surgery as an alternative to anti-obesity strategies. Forty-five bariatric patients were consecutively selected for participation. Information on each patient's demographics, weight, height, and comorbidities was gathered, followed by the use of the Bariatric Quality of Life Questionnaire. 60% of patients reported feeling exhausted prior to the procedure; however, this percentage dramatically decreased to only 33.33% after bariatric surgery. Furthermore, before surgery, 66% of patients had a history of sleep apnea and breathing cessation during sleep, and 46% of patients had a history of snoring. Following the bariatric procedure, these problems were fixed. The psychiatric assessment section indicated that 53.33% of patients experienced depression following gastric surgery. Additionally, 46.66% of patients reported persistent feelings of anger and anxiety. Post-operative concerns included fears of gastric leaks, loss of happiness, diminished passion, remorse after surgery, sleep disorders, and suicidal thoughts, each occurring at varying rates. Only 33.33% of participants had received psychological support. Patients frequently report significant improvements in their health and quality of life after bariatric surgery, which is the most long-lasting and successful treatment option for morbid obesity. However, a significant minority of patients experience psychological complications, including, but not limited to post post-gastric surgery depression, patients always feel angry and have anxiety.

Introduction

Bariatric surgery, recognized as a prominent intervention for the management of severe obesity, has been extensively studied for its health benefits, including significant weight loss and improvements in obesity-related problems like hypertension and type 2 diabetes [1]. A number of procedures are used in bariatric surgery to change the gastrointestinal tract's structure in order to cause weight loss. Roux-en-Y gastric bypass, sleeve gastrectomy, and adjustable gastric banding are the three most popular forms of bariatric surgery. These methods can either decrease the amount of food that the stomach can hold (restrictive methods), change the digestive process to decrease nutrient absorption (malabsorptive methods), or combine the two [2]. However, there is growing interest in understanding its psychological impacts, particularly its relationship with depression. Obesity and depression are often intertwined, with individuals suffering from obesity being at a higher risk of experiencing depressive symptoms due to factors such as social stigma, low self-esteem, and the physical limitations associated with excess weight. Conversely, depression can contribute to obesity through mechanisms like emotional eating and decreased physical activity [1].

Research indicates that bariatric surgery can lead to improvements in depressive symptoms, likely due to the substantial weight loss and subsequent enhancements in self-image, physical health, and quality of life. Many patients report a decrease in depressive symptoms within the first year following surgery, which is often attributed to the positive psychological effects of weight loss, increased mobility, and a reduction in obesity-related health issues. For example, a study by Dawes et al. (2016) found that patients who underwent bariatric surgery experienced significant reductions in depression and anxiety levels post-surgery [1]. However, the relationship between bariatric surgery and depression is complex and not uniformly positive. Some individuals may experience a resurgence of depressive symptoms or even develop new psychological challenges after surgery. This can occur due to factors such as unrealistic expectations of the surgery's outcomes, difficulties in adjusting to new dietary restrictions, changes in body image, or the emergence of emotional issues that were previously masked by overeating. Additionally, the rapid weight loss and associated hormonal changes can also impact mood regulation [3].

Generally, bariatric surgery is recommended for individuals with a body mass index (BMI) of 40 or higher, or for those with a BMI of 35 or higher who have serious obesity-related health conditions.[4] However, the decision to undergo bariatric surgery is complex and involves a thorough evaluation by a multidisciplinary

***Received**: 04-03-2025 - **Accepted**: 09-05-2025 - **Published**: 20-05-2025*

Libyan Med J. 2025;17(2):241-246
https://doi.org/10.69667/lmj.2517219
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index *eISSN: 2079-1224*

team, including a surgeon, dietitian, psychologist, and other healthcare providers. This evaluation assesses the patient's medical history, current health status, and ability to commit to the necessary lifestyle changes after surgery [4].

Post-surgical success depends largely on the patient's adherence to lifestyle changes, including a healthy diet, regular physical activity, and ongoing medical follow-up. Despite its benefits, bariatric surgery is not without risks, which can include surgical complications, nutritional deficiencies, and potential weight regain. However, for many individuals with severe obesity, the benefits of bariatric surgery far outweigh the risks, offering a viable path to improved health and longevity [5]. Therefore, this study aimed to assess bariatric obesity surgery as an alternative to anti-obesity strategies.

Methods

This prospective study was carried out at the Faculty of Pharmacy, Elmergib University in Alkhoms city, Libya. Forty-five bariatric patients were consecutively selected for participation. To be eligible, patients had to have undergone bariatric surgery at least one year before joining the study. Information on each patient's demographics, weight, height, and comorbidities was gathered, followed by the use of the Bariatric Quality of Life Questionnaire.[6] The Bariatric Quality of Life Questionnaire is a validated instrument used to assess the quality of life in patients post-bariatric surgery. It consists of seven core questions, which are divided into several sections. These sections include personal details, obesity-related comorbidities, the type of bariatric surgery received, sleep disturbances, post-surgery complications, and psychiatric issues following the procedure.

Categorical data were presented as proportions (%). Continuous variables between the two groups were compared using the student's t-test, while Pearson's X^2 test was utilized to compare categorical variables. Univariate linear regression analysis was performed to examine the relationship between bariatric quality of life and variables such as age and BMI before and after surgery. A p-value of 0.05 or lower was considered statistically significant.

Results

Forty-five consecutive bariatric surgery patients were enrolled in the study. The participants comprised 66.67% males and 33.33% females (Figure 1).

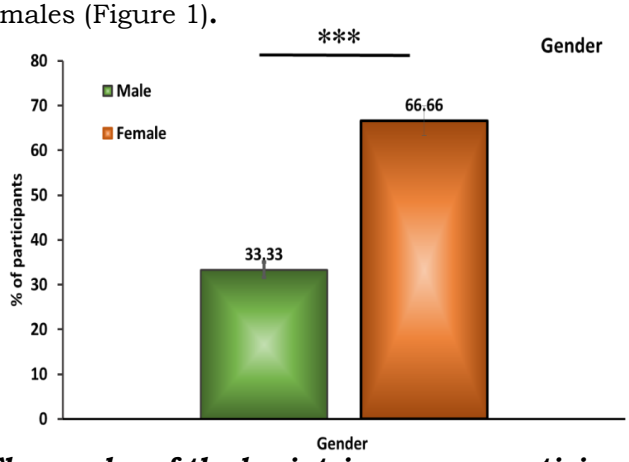

Figure 1. The gender of the bariatric surgery participants

These patients' weight and BMI are compared in the bar chart before and after surgery. Following surgery, both weight and BMI fell significantly ($p < 0.05$), indicating a favorable effect on weight-related health outcomes (Figure 2).

Received*: 04-03-2025 -* ***Accepted****: 09-05-2025 -* ***Published****: 20-05-2025*

Libyan Med J. 2025;17(2):241-246
https://doi.org/10.69667/lmj.2517219
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index eISSN: 2079-1224

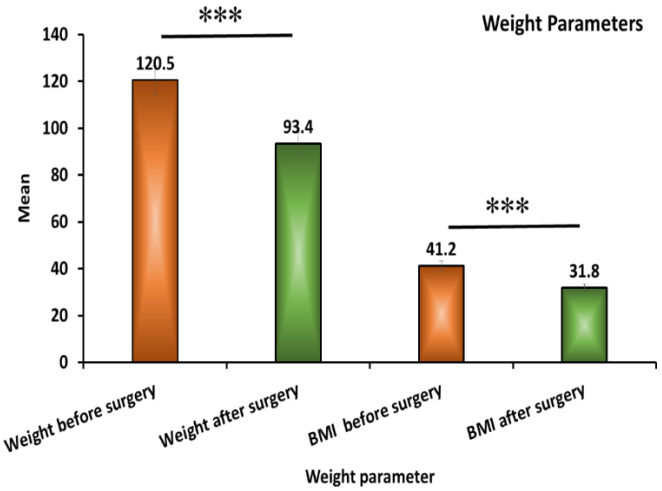

Figure 2. Weight and BMI of the participants, pre- and after the bariatric surgery

Figure 3 showed that 13.33 % of patients had diabetes, back pain, and asthma, 6.66 % had a history of hypertension, and 26.6 % had joint pain (arthralgia) as comorbidities related to obesity. Interestingly, none of the patients had a history of depression or snoring before the procedure.

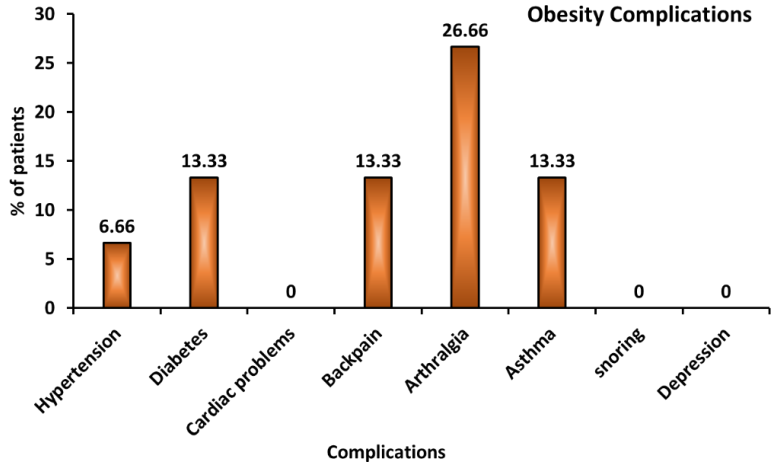

Figure 3. Obesity-related comorbidities of patients

The types of gastric surgeries performed on the participants are depicted in Figure 4. 60% of them had sleeve gastrectomy. While 33.33 % of patients had gastric bypass surgery, only 6.66 % had laparoscopic adjustable gastric banding.

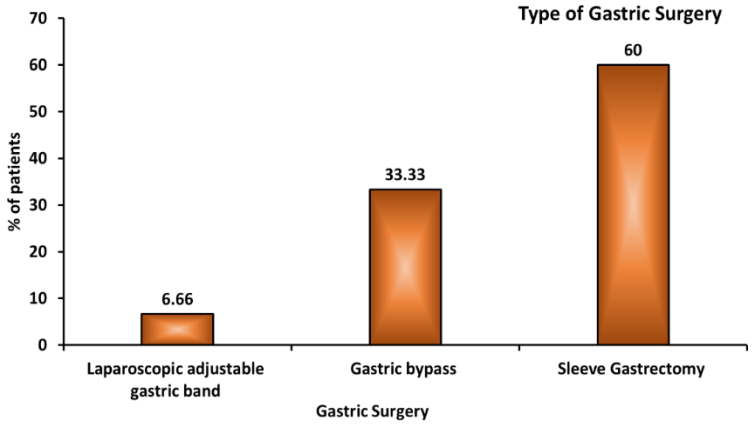

Figure 4. The type of bariatric surgery was performed on the participants.

According to the section on breathing issues, 60% of patients reported feeling exhausted prior to the procedure; however, this percentage dramatically decreased to only 33.33% after bariatric surgery. Furthermore, before surgery, 66% of patients had a history of sleep apnea and breathing cessation during

Received: 04-03-2025 - **Accepted**: 09-05-2025 - **Published**: 20-05-2025

Libyan Med J. 2025;17(2):241-246
https://doi.org/10.69667/lmj.2517219
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index *eISSN: 2079-1224*

sleep, and 46% of patients had a history of snoring. Following the bariatric procedure, these problems were fixed, as shown in Figure 5.

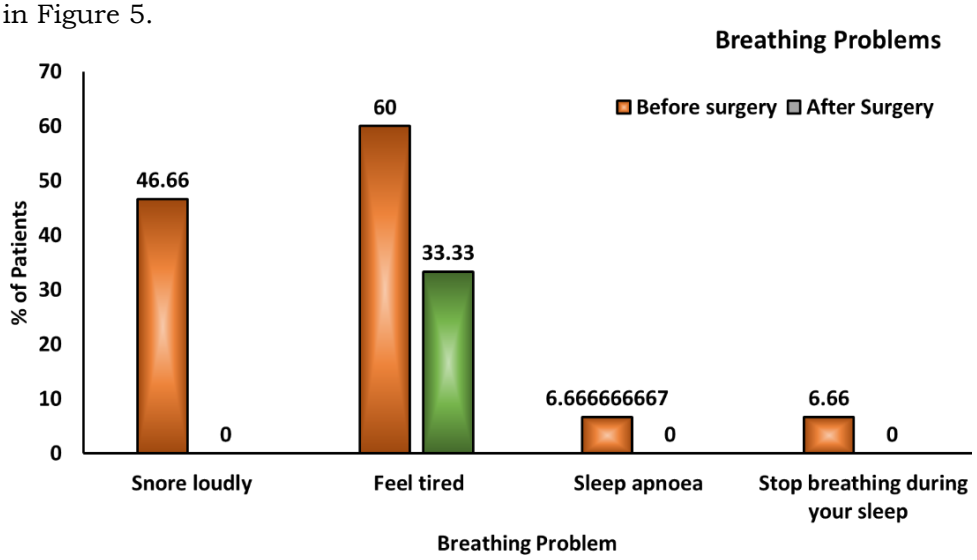

Figure 5. Breathing problems pre- and post-bariatric surgery.

The psychiatric assessment section indicated that 53.33% of patients experienced depression following gastric surgery (see Figures 6 and 7). Additionally, 46.66% of patients reported persistent feelings of anger and anxiety. Post-operative concerns included fears of gastric leaks, feelings of food deprivation, loss of happiness, diminished passion, remorse after surgery, sleep disorders, and suicidal thoughts, each occurring at varying rates. Only 33.33% of participants had received psychological support (Figure 6).

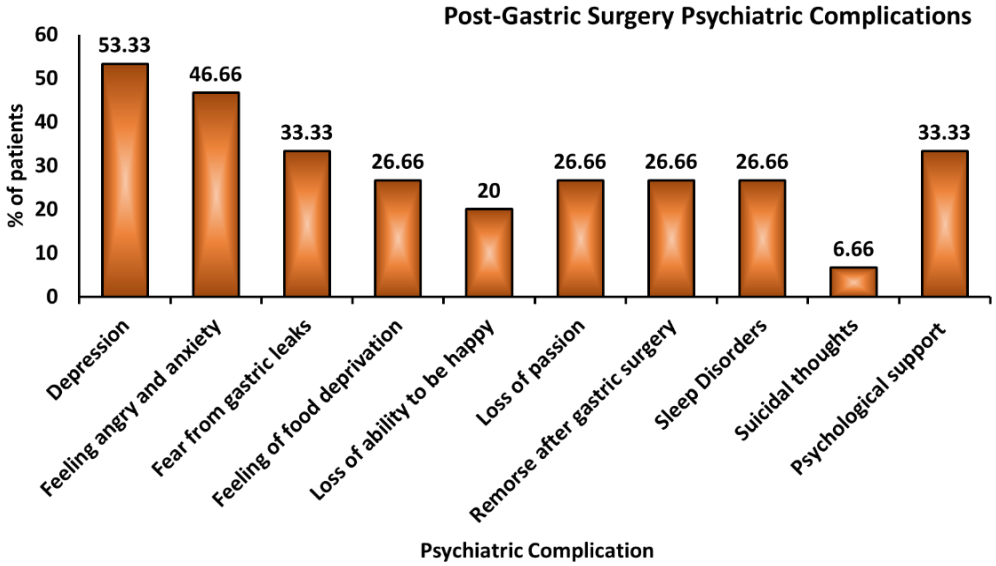

Figure 6. Psychiatric complications post-bariatric surgery

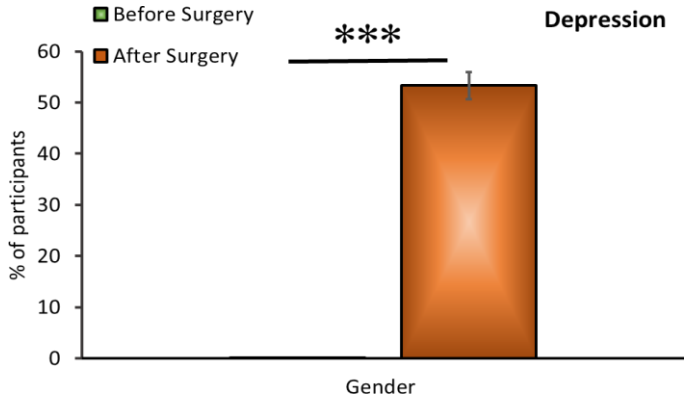

Figure 7. Pre- and post-bariatric surgery depression status.

Received*: 04-03-2025 -* ***Accepted****: 09-05-2025 -* ***Published****: 20-05-2025*

Libyan Med J. 2025;17(2):241-246
https://doi.org/10.69667/lmj.2517219
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index *eISSN: 2079-1224*

Discussion

A comparatively high prevalence of psychopathological conditions is linked to obesity, and these conditions can significantly impair one's quality of life. Although the effects of bariatric surgery on psychological health have not yet been established, it is an effective intervention for morbidly obese individuals to achieve significant weight loss and improve physical comorbidities [7].

A thorough medical assessment is required to identify patients who are obese or at risk for obesity or obesity-related complications. The medical evaluation should entail a complete history (eating patterns, behavioral patterns, physical activity, weight history, attempts at weight loss, and obesity-related risk factors and complications) and physical examination (including a BMI and waist circumference measurement), as well as appropriate laboratory and diagnostic testing [8]. Several antiobesity treatment options in isolation or combination are available to physicians. Selecting appropriate obesity therapy can be guided by BMI and obesity-related complications. The available therapeutic armamentarium ranges from non-pharmacological therapy, such as cognitive and behavioral treatment, physical activity, and diets, to pharmacotherapy, endoscopic and surgical procedures [9].

This study was a prospective study that was conducted at the Faculty of pharmacy-Elmergib University (Alkhoms city-Libya). Forty-five consecutive bariatric patients were enrolled in this study, and the bariatric quality of life questionnaire was then administered. The participants suffered from obesity-related comorbidities like arthralgia, hypertension, diabetes, back pain, and asthma. None of the patients had any depression history before the operation. The pre-bariatric weight and BMI of the patients appeared to be significantly reduced after bariatric surgery at p value < 0.05, indicating a successful weight loss strategy. As a result of that, all breathing problem indicators such as being tired, snoring history, stopping breathing during sleep, and sleep apnea, have totally or partially disappeared after the bariatric surgery. On the other hand, 53.33% of patients suffered from post-gastric surgery depression, and 46.66% of patients always feel angry and have anxiety. They also had post-operation fear from gastric leaks, the feeling of food deprivation, loss of ability to be happy, loss of passion, feeling remorse after gastric surgery, sleep disorders, and suicidal thoughts at variable percentages. Moreover, 33.33% of participants had received psychological support, as a good indicator of mood disorders. Our findings are corroborated by another study that found bariatric surgery improves the majority of outcomes related to mental health. However, we should exercise caution due to the elevated risk of negative mental health outcomes following surgery, including self-harm and suicide.[10] Since the majority of the body's serotonin, roughly 90%, is produced by enterochromaffin cells in the gastrointestinal tract, where it controls intestinal movements, this could be the consequence of a serious serotonin production deficit. Consequently, a significant amount of serotonin stores will be lost by an obese patient undergoing gastric sleeve surgery [11-16].

Conclusion

Patients frequently report significant improvements in their health and quality of life after bariatric surgery, which is the most long-lasting and successful treatment option for morbid obesity. However, a significant minority of patients experience psychological complications, including, but not limited to post post-gastric surgery depression, patients always feel angry and have anxiety. Moreover, a significant number of participants had received psychological support, as a good indicator of mood disorders. This may be connected to issues with serotonin synthesis and absorption.

Conflict of interest. Nil

References

1. Dawes AJ, Maggard-Gibbons M, Maher AR, Booth MJ, Miake-Lye I, Beroes JM, et al. Mental Health Conditions Among Patients Seeking and Undergoing Bariatric Surgery: A Meta-analysis. Jama. 2016;315(2):150-63.
2. Schauer PR, Kashyap SR, Wolski K, Brethauer SA, Kirwan JP, Pothier CE, et al. Bariatric surgery versus intensive medical therapy in obese patients with diabetes. The New England journal of medicine. 2012;366(17):1567-76.
3. Kalarchian MA, Marcus MD. Psychiatric comorbidity of childhood obesity. International review of psychiatry (Abingdon, England). 2012;24(3):241-6.
4. Colquitt JL, Pickett K, Loveman E, Frampton GK. Surgery for weight loss in adults. The Cochrane database of systematic reviews. 2014;2014(8):Cd003641.
5. Sjöström L, Narbro K, Sjöström CD, Karason K, Larsson B, Wedel H, et al. Effects of bariatric surgery on mortality in Swedish obese subjects. The New England journal of medicine. 2007;357(8):741-52.
6. Poelemeijer YQM, van der Knaap ETW, Marang-van de Mheen PJ, Demirkiran A, Wiezer MJ, Hazebroek EJ, et al. Measuring quality of life in bariatric surgery: a multicentre study. Surgical endoscopy. 2020;34(12):5522-32.
7. Kubik JF, Gill RS, Laffin M, Karmali S. The impact of bariatric surgery on psychological health. Journal of obesity. 2013;2013:837989.

Received: *04-03-2025* - ***Accepted***: *09-05-2025* - ***Published***: *20-05-2025*

8. Kaila B, Raman M. Obesity: a review of pathogenesis and management strategies. Can J Gastroenterol. 2008;22(1):61-8.
9. Serdula MK, Mokdad AH, Williamson DF, Galuska DA, Mendlein JM, Heath GW. Prevalence of attempting weight loss and strategies for controlling weight. Jama. 1999;282(14):1353-8.
10. Law S, Dong S, Zhou F, Zheng D, Wang C, Dong Z. Bariatric surgery and mental health outcomes: an umbrella review. Frontiers in Endocrinology. 2023;14.
11. Berger M, Gray JA, Roth BL. The expanded biology of serotonin. Annual review of medicine. 2009;60:355-66.
12. Yano JM, Yu K, Donaldson GP, Shastri GG, Ann P, Ma L, et al. Indigenous bacteria from the gut microbiota regulate host serotonin biosynthesis. Cell. 2015;161(2):264-76.
13. Hamad GG, Helsel JC, Perel JM, Kozak GM, McShea MC, Hughes C, et al. The effect of gastric bypass on the pharmacokinetics of serotonin reuptake inhibitors. American Journal of Psychiatry. 2012;169(3):256-63.
14. Demerdash HM, A. SA, and Arida EA. Role of serotonin hormone in weight regain after sleeve gastrectomy. Scandinavian Journal of Clinical and Laboratory Investigation. 2018;78(1-2):68-73.
15. Roerig JL, Steffen K. Psychopharmacology and Bariatric Surgery. European Eating Disorders Review. 2015;23(6):463-9.
16. Lloret-Linares C, Bellivier F, Heron K, Besson M. Treating mood disorders in patients with a history of intestinal surgery: a systematic review. International clinical psychopharmacology. 2015;30(3):119-28.

Received*: 04-03-2025 -* ***Accepted****: 09-05-2025 -* ***Published****: 20-05-2025*