*REDVET - Revista electrónica de Veterinaria* - ISSN 1695-7504
Vol 25, No. 1 (2024)
http://www.veterinaria.org
Article Received: 08/04/2024 Revised: 20/04/2024 Accepted:1/05/2024

# A Study Assessing the Quality of Life After Bariatric Surgery in Obese Patients: Review Article

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**ABSTRACT:** Obesity has emerged as a pandemic and a serious public health issue due to its high prevalence and detrimental effects on mortality, morbidity, healthcare costs, and quality of life [QoL]. According to estimates by 2030 over one billion people worldwide will suffer from obesity, affecting one in five women and one in seven men. On the other hand Bariatric surgery, also known as weight-loss surgery, refers to a group of surgical procedures designed to aid individuals with obesity in achieving weight loss. The study aim to assess the quality of life after bariatric surgery in obese patients

**METHODS:** Research Studies assessing the quality of life (QoL) of patients who underwent bariatric surgery using various questionnaires, including the Short Form-36 and the Modified-Ardelt Quality of Life Questionnaire II (M-AQoLQII). Additionally, the Bariatric Analysis and Reporting Outcome System (BAROS) scores were included.regardless of sub-type of bariatric surgery

**RESULTS:** Fourteen studies on bariatric surgery's impact on quality of life (QoL) were analyzed. A cross-sectional study of 887 patients found significant QoL and BMI improvements post-surgery. Another study of 2,132 patients showed improved QoL, weight, and comorbidities. The Bariatric Analysis and Reporting Outcome System (BAROS) scores indicated good to very good outcomes up to 10 years post-surgery. Bariatric surgery effectively improves QoL, weight, and health outcomes in obese individuals.

**CONCLUSION:** Bariatric surgery significantly improves quality of life (QoL) and health outcomes for severely obese individuals. The study advocates for increased access to bariatric procedures in public healthcare. Obese individuals who underwent surgery showed substantial improvements in physical health and daily activities. Factors like age, gender, occupation, and BMI level influenced QoL. The study concludes that bariatric surgery provides long-term QoL improvements, making it a recommended treatment for severe obesity and metabolic syndrome.

**KEYWORDS:** Quality Of Life , Bariatric Surgery , Obesity ,Body mass index

## INTRODUCTION

According to the World Health Organization, over 600 million adults worldwide, or 13% of the global adult population are obese with a body mass index (BMI) of 30 kg/m2 or higher. Moreover in most countries, being overweight or obese is more likely to lead to premature death than being underweight [1].Also obesity is a significant health concern that affects both mental and physical well-being, leading to various comorbidities such as diabetes, stroke, and heart disease. According to the CDC, obesity is defined as a Body Mass Index (BMI) of 30 or higher [2,3]. The World Health Organization defines quality of life (QoL) as an individual's perception of their life in relation to their cultural context, goals, and expectations[4]. QoL in obese individuals has been extensively studied, with the Medical Outcomes Study Short-Form Health Survey (SF-36) being a commonly used tool to assess QoL, covering eight domains including general health perception (GH), physical functioning (PF), physical role limitations, bodily pain, vitality, emotional role limitations, social functioning, and mental health, physical functioning, [5].Individuals with severe obesity often face social stigma and discrimination, leading to adverse physical and psychological outcomes. Effective treatments for obesity should address these psychosocial aspects in addition to clinical and metabolic outcomes. The global obesity epidemic, driven by sedentary lifestyles and high-calorie diets, has reached unprecedented levels, with more obese individuals than undernourished ones for the first time in human history.on the other hand bariatric surgery, also known

as weight-loss surgery, refers to a group of surgical procedures designed to aid individuals with obesity in achieving weight loss. It is typically recommended by healthcare providers when other weight-loss strategies have proven ineffective and when the health risks associated with obesity outweigh the potential risks of surgery [6] Bariatric surgery, combined with behavioral changes and dietary management, is the most effective treatment for severe obesity, leading to significant weight loss and improvement in comorbidities like type 2 diabetes.The three main types of bariatric surgeries performed are gastric bypass, sleeve gastrectomy, and adjustable gastric band. Each procedure works differently, involving mechanisms such as food restriction, reduced hunger, and altered gut hormones [7,8,] .Bariatric surgery is the most effective treatment for obesity, allowing for significant and sustainable weight loss, reversal of comorbidities, and a reduction in all-cause mortality. Despite its cost-effectiveness, up to 18% of patients fail to achieve a BMI below 35 kg/m2, and unsuccessful weight loss has been reported in 10-30% of patients.gastric bypass is one of the first approved surgical options for morbid obesity, and has been the procedure of choice since its inception in 1994. The laparoscopic technique has improved quality of life and reduced complications. Despite variations in technique, all Bariatric procedures aim to reduce stomach size and alter gut hormones to promote weight loss [9]Furthermore, patients who are eligible for bariatric surgery but don't undergo it due to personal or insurance reasons have higher mortality rates compared to those who do receive surgery[10].A recent meta-analysis of 97 studies found that people with obesity of all classes have higher mortality rates compared to those with normal weight. However, this association was not significant for mild obesity (BMI 30-34.9 kg/m2), which was actually linked to lower mortality rates. The two most commonly used bariatric surgery procedures, sleeve gastrectomy and gastric bypass Procedure involves the surgeon creates a small pouch at the top of the stomach, isolating it from the rest of the stomach. This pouch, roughly the size of a walnut, can hold only a small amount of food (about 1 ounce) compared to the stomach's normal capacity of about 3 pints. The surgeon then cuts the small intestine and attaches one end directly to the pouch. This allows food to bypass most of the stomach and the first part of the small intestine, instead flowing into the middle part of the small intestine, have similar effects on weight loss and diabetes outcomes, as well as similar safety profiles, for at least 5 years. However, emerging evidence suggests that sleeve gastrectomy may require fewer reoperations, while gastric bypass may lead to more sustainable weight loss and glycemic control. Different types of bariatric surgery have distinct benefits and risks, highlighting the importance of personalized procedure selection and risk-benefit discussions for each patient. Current data indicate that perioperative mortality rates for bariatric surgery range from 0.03% to 0.2%, a significant improvement since the early 2000s. A recent review of 66 health outcomes of bariatric surgery found that 56 outcomes were health benefits, including reduced risk of diabetes, cardiovascular disease, and certain cancers, as well as improved mortality rates. However, 10 adverse outcomes were identified, including increased risk of suicide, fractures, and gastroesophageal reflux. Further investigation is needed to fully understand these risks.Apart from the various health issues mentioned earlier, obesity also significantly impairs an individual's quality of life, particularly in terms of physical well-being.[11-17]Bariatric surgery involves altering the digestive system — typically the stomach and, in some cases, the small intestine — to control the amount of food you can consume and the calories your body absorbs. It may also reduce hunger signals sent from the digestive system to the brain.

These procedures can aid in the treatment and prevention of obesity-related metabolic conditions, such as diabetes and fatty liver disease. However, bariatric surgery is not a simple or quick solution. It requires thorough preparation beforehand and long-term lifestyle changes afterward to achieve and maintain successful results.

Each type of bariatric surgery has its own benefits, risks, and potential for weight loss. Your surgeon can help you choose the procedure that best suits your health needs and weight-loss goals.

Bariatric surgery, like any major medical procedure, carries potential health risks, both in the short term and over the long term.

**Short-term risks** of bariatric surgery may include:

- Severe bleeding
- Infection
- Adverse reactions to anesthesia
- Blood clots
- Respiratory or breathing complications
- Leaks in the gastrointestinal tract
- In rare cases, death

**Long-term risks and complications** depend on the type of surgery performed and may involve:

- Bowel obstruction
- Dumping syndrome, which can cause diarrhea, nausea, vomiting, flushing, and dizziness
- Gallstones
- Hernias
- Low blood sugar (hypoglycemia)
- Malnutrition

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- Stomach ulcers
- Vomiting
- Acid reflux or heartburn
- The possibility of needing additional surgery or a revision procedure
- In rare cases, death [18].

**METHODOLOGY**

Research Studies assessing the quality of life (QoL) of patients who underwent bariatric surgery using various questionnaires, including the Short Form-36 and the Modified-Ardelt Quality of Life Questionnaire II (M-AQoLQII). These tools evaluate multiple aspects of life, such as self-esteem, physical activity, social life, work, and eating habits, providing a comprehensive understanding of post-surgical QoL improvements. Additionally, the Bariatric Analysis and Reporting Outcome System (BAROS) scores have been used to assess the effectiveness of bariatric surgery were included.[19]

SF-36: A generic health status questionnaire evaluating physical and mental health across various medical conditions. It's widely used and endorsed by the International Bariatric Surgery Registry.[20]
M-A Quality of Life Questionnaire II: A tool assessing QoL in six areas: self-esteem, physical activity, social contact, work satisfaction, sexuality, and eating behavior. It's user-friendly, simple, and quick to complete.
BAROS (Bariatric Analysis and Reporting Outcome System): A system evaluating weight loss, improvement in comorbidities, and QoL changes using the Moorehead-Ardelt Quality of Life Questionnaire. It provides a comprehensive outcome score, categorizing results as failure, fair, good, very good, or excellent.[21-22].

**RESULTS**

A total of fourteen published studies were identified with six studies among them analyzed QoL using short form-36 Questionnaire and four using Modified-Ardelt Quality of Life Questionnaire II (M-AQoLQII) and four using Bariatric Analysis and Reporting Outcome System (BAROS) scores. A cross-sectional study of 887 patients who underwent bariatric surgery found significant improvements in quality of life and BMI levels after surgery. The majority of patients were female, married, and had very severe obesity (BMI ≥40 kg/m2) before surgery. After surgery, most patients had a reduced BMI, with only 11.4% remaining severely obese. The study found a statistically significant relationship between the time since surgery and BMI levels after surgery. The most common chronic diseases/symptoms before surgery were arthralgia, hypertension, and sleep apnea. After surgery, two-thirds of patients reported improved general health, with only 3.2% reporting worse health.The study assessed quality of life (QoL) before and after surgery using 18 statements grouped into six domains. The results showed significant improvements in QoL after surgery, particularly in the domains of general health, social interactions, energy and emotions, mental health functioning, limitation of activities, and physical functioning[23] Another study which utilized all three questionnaire The study targeted individuals with a Body Mass Index (BMI) of 40 kg/m² or above who had undergone sleeve gastrectomy or mini gastric bypass surgery using the Roux-en-Y method, also known as the Fobi-Capella technique, between 2017 and 2023. This period allowed for a comprehensive review of patients at least one year post-operation, providing a broad overview of the postsurgical outcomes on patients' quality of life (QoL). From a pool of 95 patients with a mean age of 41.13 years, showcasing a broad age range from 18 to 65 years. who received the surgery within this timeframe, known as the "post-surgery group," 64 consented to participate after providing informed consent. The study also included a "pre-surgery group" of 31 patients from the surgery clinics' waiting lists, who were provided with multidisciplinary care involving a psychologist, nutritionist, and endocrinologist both before and after the surgery. Quality of life changes were meticulously assessed using the Bariatric Analysis and Reporting Outcome System (BAROS) and the Modified-A Quality of Life Questionnaire II (M-A-QoLQII), which evaluated various dimensions of life, including self-esteem, physical activity, social life, work, and eating habits. These measures offer a nuanced understanding of the post-surgical QoL improvements. Additionally, the SF-36 survey was employed to gauge eight health dimensions, addressing both physical and mental health aspects. Given literacy concerns, the survey was administered by a single examiner to ensure consistency and accuracy.with The participants' Body Mass Index (BMI) prior to surgery averaged at 50.11, indicating a severe obesity level among the cohort. Postsurgery, a significant reduction in BMI was observed, with the mean BMI dropping to 32.68. This change highlights the effectiveness of the surgery in reducing obesity levels among participants. Additionally, the average number of comorbid conditions decreased from 2.14 before surgery to 1.13 after, further indicating the positive health outcomes of the procedure.[24]

This multi-centre, retrospective real-world study was carried out at 11 Indian centres. The study was sponsored by the Obesity and Metabolic Surgery Society of India (OSSI) and centres of excellence in metabolic and bariatric surgery were invited to participate. The study analyzed data from 2,132 individuals who underwent metabolic and bariatric surgery (MBS). The study population had an average age of 43.28 years, with 62.57% females and 37.43% males. The mean weight and BMI were 118.86 kg and 45.71 kg/m2, respectively, with over two-thirds of participants having a BMI

of 40 kg/m2 or higher . Common comorbidities included diabetes, hypertension, dyslipidemia, and obstructive sleep apnea. The majority of participants (52.44%) underwent Roux-en-Y gastric bypass (RYGB), while 30.82% and 16.74% underwent sleeve gastrectomy (SG) and one-anastomosis gastric bypass (OAGB), respectively. The mean pre-operative hemoglobin level was 12.44 gm/dL.The demographic characteristics of our study population, including the mean age, the BMI and gender distribution, were consistent with the findings of a previous study The BAROS scoring method in the study showed that individuals with obesity who underwent bariatric surgery scored in the good to very good category at all follow-up visits up to 10 years. [25].

**CONCLUSION:**

Bariatric surgery significantly improves quality of life (QoL) and health outcomes for severely obese individuals. The study advocates for increased access to bariatric procedures in public healthcare. Obese individuals who underwent surgery showed substantial improvements in physical health and daily activities. Factors like age, gender, occupation, and BMI level influenced QoL. The study concludes that bariatric surgery provides long-term QoL improvements, making it a recommended treatment for severe obesity and metabolic syndrome.

**FUNDING INFORMATION**: Nil

**CONFLICT OF INTEREST STATEMENT**: Nil

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