BARIATRIC SURGERY IN THE OBESITY MANAGEMENT: A SYSTEMATIC REVIEW ON THE EFFECTIVENESS AND SAFETY OF THE MAIN PROCEDURES

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ABSTRACT

Objective: To identify the role of bariatric surgery in the treatment of obesity. **Method:** systematic review of the literature, guided by the question: "*What is the role of bariatric surgery in the treatment of obesity?*". To answer this question, 20 original articles published between 2019 and 2024 were selected from the PubMed, SciELO, and LILACS databases. The descriptors used included "bariatric surgery," "obesity," "weight reduction," "quality of life," "comorbidities," "postoperative complications," and their corresponding English terms, combined with the Boolean operators "AND" and "OR." **Results:** The bariatric techniques Laparoscopic Vertical Gastrectomy (LSG), Roux-en-Y Gastric Bypass (RYGB), and Single-Anastomosis Gastric Bypass (OAGB) resulted in significant weight loss and improvements in quality of life. OAGB was the most effective in long-term weight loss. RYGB provided sustained weight loss and resolution of comorbidities, but with a greater need for nutritional supplementation. LSG had a higher prevalence of esophagitis and GERD (Gastroesophageal Reflux Disease), while OAGB showed fewer serious complications and better metabolic outcomes. **Conclusions:** All techniques proved effective for the management of obesity and its comorbidities, each with advantages and challenges. The choice should be personalized, with continuous monitoring, especially to avoid nutritional deficiencies in RYGB and OAGB and to manage GERD in LSG.
Keywords: bariatric surgery; obesity; quality of life; postoperative complications.

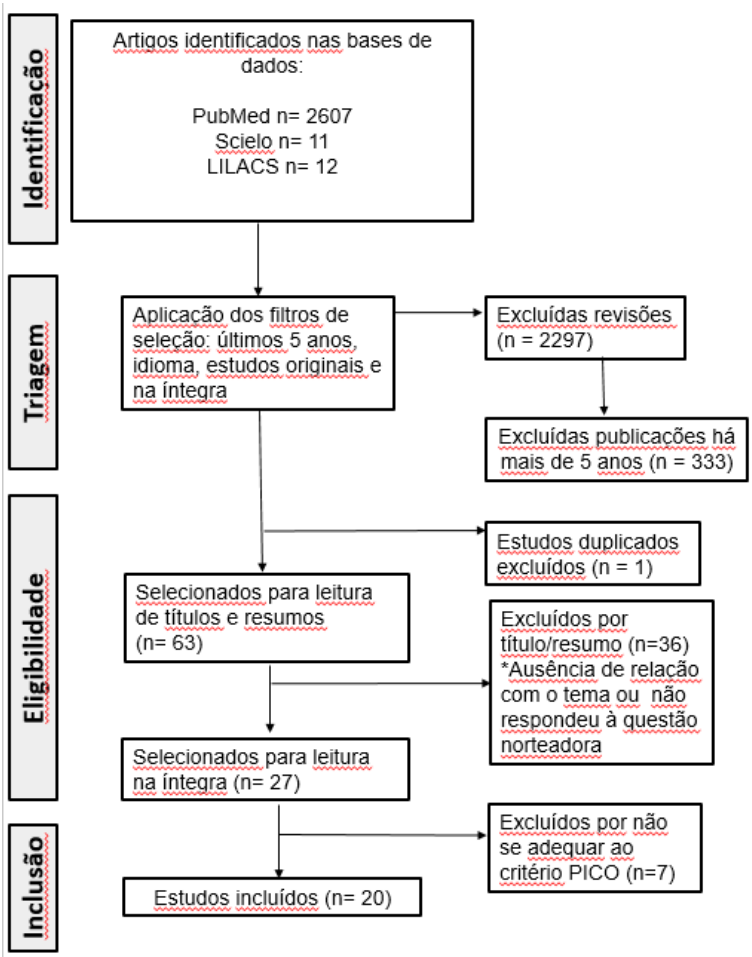
INTRODUCTION

Obesity is a chronic condition associated with several diseases, such as type 2 diabetes and cardiovascular disease. Although lifestyle changes can contribute, low adherence limits sustainable weight loss (IANNONE et al., 2023). Bariatric surgery is the most effective treatment for severe obesity, providing long-term weight loss and reduction of comorbidities. Among the most common procedures are laparoscopic sleeve gastrectomy (LSG) and Roux-en-Y gastric bypass (RYGB) (HEDBERG et al., 2024). This systematic review of the literature seeks to identify the role of bariatric surgery in the treatment of obesity, focusing on the main types of procedures, their efficacy and safety in relation to quality of life, weight loss, control of comorbidities, postoperative complications, and long-term metabolic outcomes.

METHOD

This study consists of a systematic review of the literature that sought to identify "*What is the role of bariatric surgery in the treatment of obesity?"* To this end, 20 original articles published between 2019 and 2024 were selected from the PubMed, SciELO, and LILACS databases. The descriptors used included “bariatric surgery,” “obesity,” “weight reduction,” “quality of life,” “comorbidities,” “postoperative complications,” and their corresponding English terms, combined with the Boolean operators “AND” and “OR.”

Figure 1. Identification of studies from databases and records



Source: PRISMA, 2020 (adapted and translated)

RESULTS

Bariatric surgical techniques (LSG, RYGB, OAGB) resulted in

significant weight loss and improvements in quality of life. OAGB was the most effective in terms of %EWL (Percentage of Excess Weight Lost) and %TWL (Total Weight Lost) on a long-term basis, outperforming LSG in the long term. RYGB also showed sustained weight loss, as well as remarkable resolution of comorbidities such as type 2 diabetes and hypertension, with distal RYGB standing out in reducing BMI (body mass index), despite requiring greater vitamin supplementation due to nutritional deficiencies. Bariatric surgery, regardless of technique, also positively impacted cognitive function and psychological well-being. Specifically, RYGB was associated with activation of the ventral tegmental area (VTA), correlated with greater weight loss. Complications varied between techniques: LSG was associated with a higher prevalence of esophagitis and GERD (gastroesophageal reflux disease), while RYGB, although effective in weight loss and resolution of comorbidities, had a higher incidence of nutritional deficiencies and early postoperative complications. OAGB had a similar complication profile to RYGB, but with a lower incidence of serious complications and more pronounced metabolic improvements. In terms of metabolic outcomes, RYGB stood out in reducing left ventricular mass and glycemic control, with a significant increase in VO_2 max (maximum oxygen volume) maximum. LSG had a less pronounced metabolic impact, while OAGB showed significant improvements in HbA1c (glycated hemoglobin fraction A1c) control and increased HDL (high-density lipoprotein), requiring, however, close monitoring due to the risk of nutritional deficiencies.

Table 1. Summary of Main Outcomes

Main types of bariatric surgery	**%EWL**	**%TWL**	**Complications**	**Metabolic results**
LSG	Significant weight loss	Significant weight loss	Higher prevalence of esophagitis and GERD	Less pronounced metabolic impact
RYGB	Sustained weight loss	Sustained weight loss with improvement in comorbidities	Nutritional deficiencies, early postoperative complications	Reduction in left ventricular mass, improved glycemic control, increased VO2 max
OAGB	More effective in terms of %EWL	More effective in terms of %TWL	Lower incidence of serious complications, similar profile to RYGB	Significant improvements in HbA1c control, increase in HDL

Source: Prepared by the author ( )

CONCLUSION

LSG, RYGB, and OAGB are effective for the management of obesity and its comorbidities, each with specific advantages and challenges. The choice of technique should consider the patient's characteristics and treatment goals, with continuous monitoring for successful outcomes and minimal complications. RYGB and OAGB, although effective, require greater attention to avoid nutritional deficiencies. LSG, while effective and technically less complex, requires monitoring for the management of GERD and esophagitis.

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