BARIATRIC SURGERY AND OBESITY: A SYSTEMATIC REVIEW ON THE SOCIOECONOMIC AND DEMOGRAPHIC IMPACT

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ABSTRACT

Objective: This study aimed to identify the role of bariatric surgery in the treatment of obesity. Methods: This is a systematic literature review 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 PubMed, SciELO, and LILACS. The descriptors used included “cirurgia bariátrica”, “obesidade”, “redução de peso”, “qualidade de vida”, “comorbidades”, “complicações pós-operatórias” and their English equivalents, combined with the Boolean operators “AND” and “OR”. Results: The bariatric techniques Laparoscopic Sleeve Gastrectomy (LSG), Roux-en-Y Gastric Bypass (RYGB), and One-Anastomosis Gastric Bypass (OAGB) resulted in significant weight loss and improvements in quality of life. OAGB proved to be the most effective for long-term weight loss. RYGB provided sustained weight loss and comorbidity resolution but with greater need for nutritional supplementation. LSG showed a higher prevalence of esophagitis and GERD (Gastroesophageal Reflux Disease), while OAGB presented fewer severe complications and better metabolic outcomes. Conclusion: All techniques are effective for managing obesity and comorbidities, each with specific advantages and challenges. The choice must be individualized, with continuous follow-up, especially to prevent nutritional deficiencies in RYGB and OAGB and to manage GERD in LSG.

Keywords: bariatric surgery; obesity; quality of life; postoperative complications.

INTRODUCTION

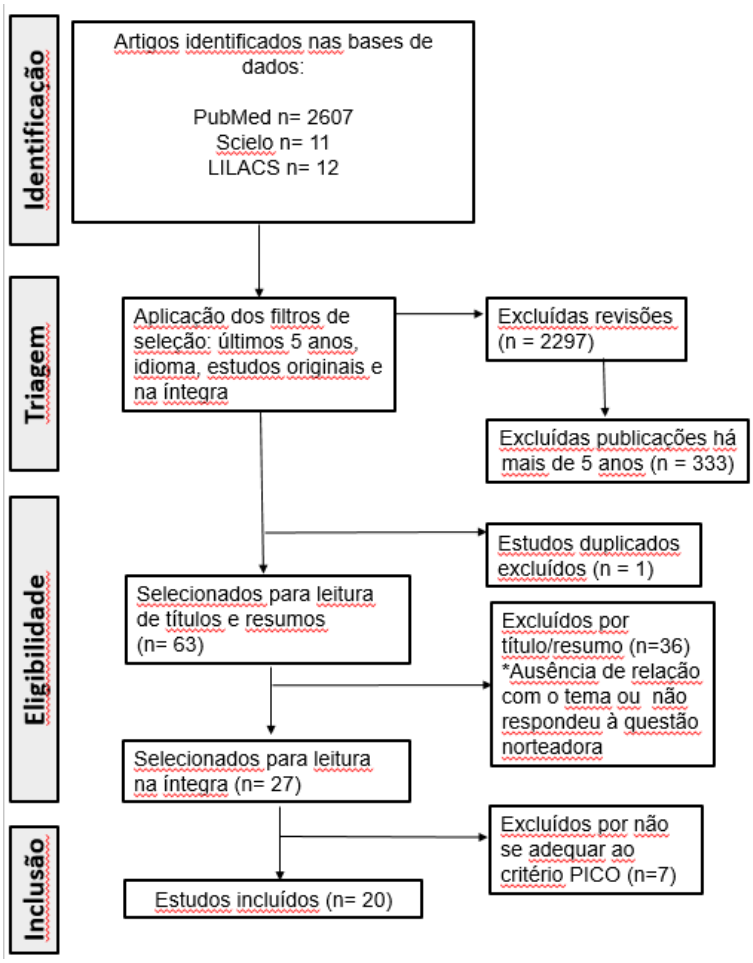
Obesity is a chronic condition associated with several pathologies, such as type 2 diabetes and cardiovascular diseases. Although lifestyle changes may contribute to weight reduction, adherence is low, making sustained results difficult (IANNONE et al., 2023). Bariatric surgery is considered the most effective treatment for severe obesity, offering 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 seeks to identify the role of bariatric surgery in the treatment of obesity, focusing on the main types of procedures and their effectiveness and safety, analyzing quality of life, weight loss, comorbidity control, postoperative complications, and long-term metabolic outcomes.

METHODOLOGY

This study is a systematic literature review, guided by the question: *"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 "cirurgia bariátrica", "obesidade", "redução de peso", "qualidade de vida", "comorbidades", "complicações pós-operatórias" and their English equivalents, combined with the Boolean operators "AND" and "OR".

Figure 1. Identification of studies from databases and registries



Source: PRISMA, 2020 (adapted and translated).

RESULTS

The bariatric surgical techniques (LSG, RYGB, OAGB) resulted in significant weight loss and improvement in quality of life. OAGB proved to be the most effective in terms of %EWL (Percentage of Excess Weight Lost) and %TWL (Percentage of Total Weight Lost), surpassing LSG in the long term. RYGB also showed sustained weight loss and

relevant resolution of comorbidities such as type 2 diabetes and hypertension, with distal RYGB standing out in BMI reduction, despite requiring greater vitamin supplementation due to nutritional deficiencies.

Bariatric surgery, regardless of technique, also positively influenced cognitive function and psychological well-being. Specifically, RYGB was associated with activation of the ventral tegmental area (VTA), which correlated with greater weight loss.

Complications varied between techniques: LSG was associated with higher prevalence of esophagitis and GERD, while RYGB, although effective for weight loss and comorbidity resolution, showed greater nutritional deficiencies and early postoperative complications. OAGB presented a complication profile similar to RYGB, but with lower incidence of severe complications and more notable metabolic improvements.

Regarding metabolic outcomes, RYGB stood out for reducing left ventricular mass and improving glycemic control, with significant increase in maximal VO_2. LSG presented less significant metabolic impact, while OAGB showed important improvements in HbA1c (glycated hemoglobin A1c) control and increase in HDL (high-density lipoprotein), though requiring strict monitoring due to risk of nutritional deficiencies.

Table 1. Summary of Main Outcomes

Principais tipos de cirurgia bariátrica	**%EWL**	**%TWL**	**Complicações**	**Resultados Metabólicos**
LSG	Perda de peso significativa	Perda de peso significativa	Maior prevalência de esofagite e DRGE	Impacto metabólico menos pronunciado
RYGB	Perda de peso sustentada	Perda de peso sustentada com melhora de comorbidades	Deficiências nutricionais, complicações pós-operatórias precoces	Redução da massa ventricular esquerda, controle glicêmico melhorado, aumento do VO2 máximo
OAGB	Mais eficaz em termos de %EWL	Mais eficaz em termos de %TWL	Menor incidência de complicações graves, perfil similar ao RYGB	Melhorias significativas no controle de HbA1c, aumento de HDL

Fonte: Elaborada pelo autora

CONCLUSION

LSG, RYGB, and OAGB are effective in the management of obesity and its comorbidities, each with specific advantages and limitations. The choice of technique should consider patient characteristics and therapeutic goals, with continuous follow-up to ensure success and minimize complications. Although effective, RYGB and OAGB demand greater attention to avoid nutritional deficiencies, while LSG, despite being less complex, requires monitoring to control GERD and esophagitis.

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