Comparative Meta-Analysis of Quality-of-Life (QoL) Outcomes Following Roux-en-Y Gastric Bypass (RYGB), Sleeve Gastrectomy (SG), and Duodenal Switch (DS): A 14-Year Review.

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INTRO:

- As obesity continues to be prevalent, bariatric procedures, such as sleeve gastrectomy, Roux-en-Y, and duodenal switch can be done to assist with weight reduction
- Although the main goal of bariatric procedures is to help patients with weight loss and BMI reduction, it is also important to note the effects that surgery has on the patient's quality of life
- Therefore, we reviewed and analyzed the current evidence comparing three different bariatric surgeries: sleeve gastrectomy, Roux-en-Y, and duodenal switch and their effects on patients' quality of life postoperatively

METHODS:

- A literature search was performed using the Preferred Reporting Items for Systemic Review and Meta-analyses (PRIMSA) guidelines. The databases PubMed, Embase, EBSCO, and Web of Science were queried for records between 2010 and 2023 using the following search terms: "sleeve gastrectomy and quality of life", "sleeve gastrectomy and QOL", "Roux-en-Y + gastric bypass and quality of life", "Gastric bypass and quality of life", "Roux-en-Y gastric bypass and QOL", "Gastric bypass and QOL", "Duodenal switch and Quality of life", "Duodenal switch and QOL"
- The following data was extracted from each study: type of surgery compared, number of patients, mean age, mean BMI, BMI loss, weight loss, questionnaire used, and mean questionnaire QoL score
- Timepoints collected varied between studies but included baseline, 1 month, 2-month, 3-month, 6 month, 1-year, 2-year, 3-year 4-year, 5-year, 7-year, and 10-17 years
- The QoL questionnaires used among the collected studies were SF-36, GERD-HRQL, BAROS, GIQLI, and Moorehead-Ardelt questionnaires

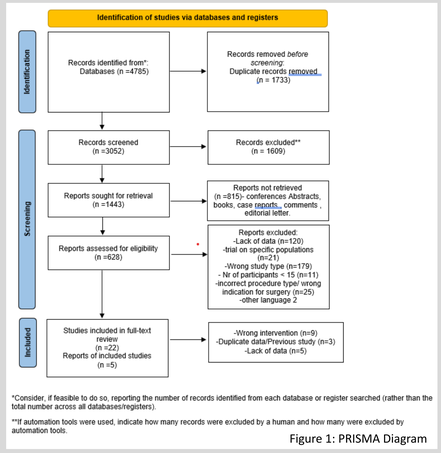


Figure 1: PRISMA Diagram

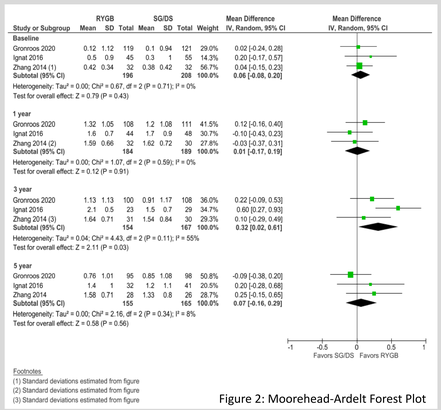


Figure 2: Moorehead-Ardelt Forest Plot

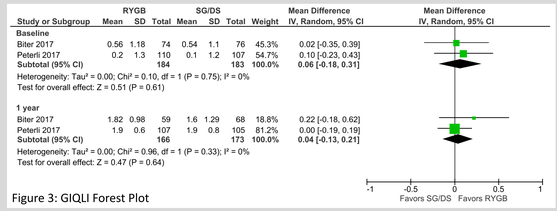


Figure 3: GIQLI Forest Plot

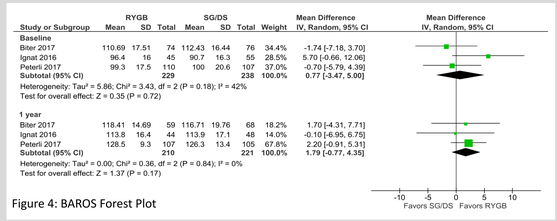


Figure 4: BAROS Forest Plot

RESULTS:

- The initial search found 628 studies. After removing duplicates and screening of abstracts, 22 eligible studies were found. Only five studies were eligible for meta-analysis (Figure 1)
- Among these studies, there was only data comparing RYGB with either SG or DS. Timepoints analyzed for QoL were at baseline, 1-year, 3-year, and 5-year post surgery. There were three studies that used GIQLI or Moorehead and two studies that used BAROS
- In all three questionnaires, there was no significant difference in mean QoL between RYGB and SG/DS at baseline, 1-year, and 5-year post surgery timepoints
- There was a significant difference in mean QoL between RYGB and SG/DS at the 3-year post surgery timepoint in the Moorehead questionnaire, with RYGB having higher QoL (0.32, [0.02, 0.61]) (Figure 2)
- For GIQLI, there was no significant mean difference between RYGB and SG/DS at 1 year (1.79 [-0.77, 4.35]) (Figure 3). For BAROS, there was also no significant mean difference between RYGB and SG/DS at 1 year (0.04 [-0.13, 0.21]) (Figure 4)

DISCUSSION:

- Our total findings show that no specific type of bariatric surgery significantly outperformed another in improving quality of life
- When taking quality of life into account, physicians should utilize their own judgement, comfort, and experience to decide which procedures would be the most beneficial

LIMITATIONS:

- During our literature search, we found few randomized controlled trials comparing post-operative QoL between different bariatric surgeries
- We found difficulties standardizing and analyzing results as studies utilized different questionnaires, while also collecting data at different timepoints

CONCLUSION:

- In our study, post-operative QoL was similar between RYGB and DS/SG, except the 3-year post surgery timepoint with the Moorehead questionnaire
- Further studies with more standardized QoL questionnaires would be beneficial in confirming these findings. Additionally, more future studies comparing SG and DS would be helpful in determining if there is a post-operative QoL difference between the two surgeries
- Our meta-analysis study is one of the first to look at randomized controlled trials evaluating changes in quality of life post bariatric surgery, providing a foundation for future research in this topic
- Our study highlights important points to be addressed in future studies to create more standardized data for more reliable results

Key Takeaway:

Post-operative quality of life is similar between patients who underwent roux-en-y gastric bypass, sleeve gastrectomy, and duodenal switch

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