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Patient-reported quality of life after bariatric surgery: a single institution analysis



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ABSTRACT

Background: Bariatric surgery is an effective weight loss and comorbidity treatment among severely obese patients. However, there are limited data describing its impact on patient-reported quality of life (QoL). We examined patient-reported QoL after bariatric surgery and analyzed variables associated with higher postoperative QoL.

Methods: Patient demographics, comorbidities, and weight loss data were obtained from our institutional database for patients who underwent bariatric surgery from January 2010 to December 2012. QoL scores were obtained during preoperative and postoperative visits (2, 6, 12, 24, 52, and 104 wk) from the Moorehead-Ardelt Quality of Life Questionnaire II. Multivariable logistic regression was performed to generate odds ratios for variables hypothesized *a priori* to be associated with higher postoperative QoL.

Results: A total of 209 patients were included in the study. Patients lost an average of 59.1% (± 19.0) of excess body weight 1 y after surgery. One-year postoperative QoL scores were available for 42% of patients. Mean QoL scores improved from 0.82 preoperatively to 1.66 1 y postoperatively ($P = 0.004$). Patients scored higher in all individual areas of Moorehead-Ardelt Quality of Life Questionnaire II: self-esteem (0.22 versus 0.36), physical activity (0.11 versus 0.31), social life (0.28 versus 0.36), work ability (0.07 versus 0.22), sexual functioning (0.04 versus 0.16), and approach to food (0.11 versus 0.26; all P values < 0.05). On multivariable analysis, higher QoL was associated with private insurance/self-pay versus Medicare (odds ratio 4.20 [95% confidence interval 1.39–12.68]).

Conclusions: Bariatric surgery patients experienced significant improvement in QoL 1 y after surgery. Identifying modifiable predictors of high QoL after bariatric surgery requires additional investigation.

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Introduction

Bariatric surgery is a highly effective treatment option for patients with severe obesity. When compared with medical treatment, bariatric surgery results in significant excess weight loss (EWL) and obesity-related comorbidity resolution, including type 2 diabetes mellitus (Type II DM).^{1–4} Bariatric surgery is also cost-effective, with most studies finding cost savings within several years.^{5–7} Numerous studies have reported improvements in quality of life (QoL) after bariatric surgery, using generic QoL instruments such as the Short-Form 36 or Gastrointestinal Quality of Life questionnaire.^{8–14} Several studies have also reported significant improvements in QoL after bariatric surgery using the Moorehead-Ardelt Quality of Life Questionnaire II (MAQoLII).^{15–19} MAQoLII is a validated six-question survey that focuses on QoL for patients with obesity.²⁰

Despite these positive outcomes, questions remain regarding QoL after bariatric surgery. Several studies have reported that patients recovering from bariatric surgery are at increased risk for exhibiting self-harm behaviors and depressive symptoms.^{21–23} Bhatti et al. recently reported an increase of self-harm incidents after undergoing bariatric surgery, from 2.33 to 3.63 per 1000 patient-years.²² These findings seem to be inconsistent with the positive QoL impact that bariatric surgery typically has on patients. Furthermore, predictors of a higher QoL after bariatric surgery are unknown.

In this study, we sought to characterize postoperative QoL among patients undergoing bariatric surgery at a single institution at different time points within the first two postoperative years. In addition, we aimed to identify predictors of a higher patient-reported QoL postoperatively.

Materials and methods

Study population

QoL scores were reviewed for 209 consecutive patients who underwent bariatric surgery at University of Wisconsin Hospital and Clinics from January 27, 2010, to December 31, 2012. Patients underwent either a laparoscopic Roux-en-Y gastric bypass (LRYGB) or laparoscopic sleeve gastrectomy (LSG). Patients undergoing revisional surgery or gastric bands were excluded.

Study variables

Patient demographics (age, gender, race, insurance type, body mass index [BMI], type of surgery [LRYGB or LSG], smoking history, and the presence of eight comorbidities [Type II DM, obstructive sleep apnea, hypertension, gastroesophageal reflux disease [GERD], hyperlipidemia, coronary artery disease, depression, and anxiety]) were extracted from the electronic health record (Epic, Verona, WI). The presence of a comorbidity was determined by reviewing the preoperative anesthesiology note, the referring physician note, and the bariatric surgery team notes. These processes for comorbidity identification have been applied in our previous bariatric surgery database studies.^{24,25}

Surgical outcomes

Inpatient and outpatient notes were reviewed to determine if patients developed a complication, were readmitted, or had an emergency department visit within 90 d of surgery. “Any complication” was defined as presence of at least one of the following: anastomotic or staple line leak, bleed, intra-abdominal abscess, deep vein thrombosis, pulmonary embolism, myocardial infarction, cerebrovascular accident, acute renal failure, wound infection, pneumonia, or urinary tract infection. Percent excess weight loss (%EWL) and change in BMI 1 y after surgery were obtained from bariatric surgery clinic notes. Patients’ ideal weights were calculated using the Metropolitan life scale.²⁶ These ideal weights were subtracted from their preoperative weights to determine their excess amount of weight. %EWL was then calculated from the amount of weight lost from the predetermined amount of excess weight. Resolution of a comorbidity was recorded if a follow-up note stated the resolution, if the comorbidity was removed from the active problem list, or if medications to treat the comorbidity were discontinued.²⁴ Type II DM was also considered resolved if the patient’s hemoglobin A1c was <6.5%.²⁴

Quality of life

QoL scores were determined by the MAQoLII, which patients were asked to complete at each preoperative and postoperative visit. The MAQoLII questionnaire asks patients about six aspects of QoL: self-esteem, social life, physical activity, work ability, sexual functioning, and approach to food. Approach to food refers to patients’ thoughts on how they view food and meals, judged as “live to eat” or “eat to live.” The cumulative score of MAQoLII ranges from +3.0 (“very good”) to –3.0 (“very poor”), with each individual question ranging from +0.5 to –0.5 as a Likert score. QoL scores were assessed at each preoperative visit and at the 2, 6, 12, 26 (± 8), 52 (± 16), and 104 (± 24) wk postoperative visits.

Statistical analysis

A repeated measures analysis of variance test was conducted to analyze the significance of the trend in QoL scores during visits within 1 y of surgery. A paired t-test was used to compare preoperative and 1-y MAQoLII scores. Bivariate and multivariable logistic regression analyses were performed for variables hypothesized *a priori* to have a significant impact on QoL postoperatively. “High” QoL was defined as a 1-y QoL score within the top tercile of the patient cohort. %EWL was dichotomized at the median in these regression analyses.

Nonresponder analysis

A nonresponder analysis was conducted to assess the differences between patients who responded versus those who did not respond at the 1-y visit. Two-sample t-tests were performed for continuous variables, whereas chi-square tests were used for categorical variables.

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