CLINICAL RESEARCH

Preoperative Predictors of Weight Loss Following Bariatric Surgery: Systematic Review

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Abstract

Background Obesity affects 32% of adults in the USA. Surgery generates substantial weight loss, but 20–30% fails to achieve successful weight loss. Our objective was to identify preoperative psychosocial factors associated with weight loss following bariatric surgery.

Methods We performed a literature search of PubMed® and the Cochrane Database of Reviews of Effectiveness between 1988 and April 2010. Articles were screened for bariatric surgery and weight loss if they included a preoperative predictor of weight loss: body mass index (BMI), preoperative weight loss, eating disorders, or psychiatric disorder/substance abuse. One thousand seventeen titles were reviewed, 534 articles screened, and 115 included in the review.

Results Factors that may be positively associated with weight loss after surgery include mandatory preoperative weight loss (7 of 14 studies with positive association).

Factors that may be negatively associated with weight loss include preoperative BMI (37 out of 62 studies with negative association), super-obesity (24 out of 33 studies), and personality disorders (7 out of 14 studies). Meta-analysis revealed a decrease of 10.1% excess weight loss (EWL) for super-obese patients (95% confidence interval (CI) [3.7–16.5%]), though there was significant heterogeneity in the meta-analysis, and an increase of 5.9% EWL for patients with binge eating at 12 months after surgery (95% CI [1.9–9.8%]).

Conclusions Further studies are necessary to investigate whether preoperative factors can predict a clinically meaningful difference in weight loss after bariatric surgery. The identification of predictive factors may improve patient selection and help develop interventions targeting specific needs of patients.

Keywords Bariatric surgery · Predictors · Weight loss · Preoperative · Outcomes

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Introduction

Obesity has risen rapidly in the USA, with 32% of adults having a body mass index (BMI) greater than 30 kg/m² [1]. Surgical intervention has emerged as the most effective method of ensuring significant and sustained weight loss for the morbidly obese, with the added benefits of improving obesity-related comorbidities (i.e., hypertension, diabetes, and sleep apnea) as well as quality of life [2]. Despite these benefits, there are associated risks of surgery, including a mortality of <1% and morbidity rate of up to 20%.

Though the majority of patients achieve a successful degree of weight loss after surgery, typically defined as >50% excess