The Role of Psychological Factors in Bariatric Surgery for Morbid Obesity: Identification of Psychological Predictors of Success

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This paper deals with two important questions in the outcome of surgical treatment for morbid obesity. First, what is the impact of bariatric surgery on psychological functioning or quality of life? Second, and perhaps more important, can pre-surgical factors be identified that predict the outcome of surgery? These questions are answered by a systematic review of the current literature in this area. Throughout this paper the need for methodological rigour is stressed, and conclusions are based only on empirically sound findings. It is concluded that surgery is generally associated with improved psychological functioning and quality of life for most individuals. While a significant minority of morbidly obese individuals do not respond positively to surgery, there is no evidence to support the theory that obesity is a psychological defense mechanism, and therefore that bariatric surgery will produce widespread psychological problems. On a less positive note, while some studies identify pre-surgery psychological factors that predict weight loss following surgery, there has been no attempt to systematically replicate findings across studies, and no consistent findings have emerged from the literature. Due to the fact that the predictor variables examined have not been selected on theoretical grounds, the interpretation of isolated findings is difficult. On the basis of this review, however, distress over obesity appears to be a potentially important psychological predictor of the success of surgery. Unfortunately, there currently is no measure to specifically measure distress over obesity. What is needed at this time is a theoretically derived approach to the development of a scale to assess distress over obesity.

Key words: Bariatric surgery, fear of obesity, gastric bypass, gastroplasty, morbid obesity, psychological predictors, quality of life

Introduction

Extreme, or morbid, obesity represents a serious health risk, and the morbidly obese suffer significant bias and discrimination. Morbid obesity is associated with increased mortality, as well as increased morbidity for coronary artery disease, hypertension, Type-II diabetes, and hyperlipidemia, among other diseases. It is unfortunate that, despite the physical and psychological risks, morbidly obese individuals respond poorly to traditional weight loss efforts. As a result, surgery has become common in treating the morbidly obese. Surgery is not without risks, however, and a thorough understanding of factors associated with poor outcome is necessary. In discussing the surgical use of gastric stapling Matin and colleagues (p. 44) suggest that “... the success of the gastric partitioning operation is based on three Cs: commitment, compliance, and continuity ...” Due to the fact that strict behavioural limits are set on eating habits following surgery, psychological factors associated with adherence problems, and poor response to surgery in general, are important to identify.

In reviewing the success of bariatric surgery for morbid obesity, several methodological issues need to be addressed. First, the definition of morbid obesity needs to be specified. Morbid obesity has alternatively been defined as 100 lb (45 kg) or more above ideal weight, or as more than 100% above ideal weight. The latter definition identifies a smaller number of morbidly obese individuals, and either definition might affect outcome. Studies using either criterion were included in this review. Second, the definition of successful weight loss must be clarified. The three most common criteria have been 25% of pre-operative weight lost, 50% of excess weight lost,
or weight loss sufficient to bring the individual to within 50% of his/her ideal body weight. Brolin and colleagues recommend using the third criterion, since it has greater clinical significance in terms of risk reduction. In this review, average weight loss in kg will be reported whenever possible. Third, different surgical procedures have been employed. Bypass surgeries, such as jejunoileal bypass or gastric bypass were the first surgical procedures to be performed. While these procedures were associated with substantial weight loss, and some continue to argue for their outcome superiority with at least some morbidly obese individuals (e.g., excessive sweet eaters), bypass surgery can be associated with serious complications. The second type of surgical procedures involve gastric restriction, either by horizontal-banded or vertical-banded gastric stapling, or gastroplasty. In evaluating the relationship between bariatric surgery, psychological factors, and outcome, studies involving all types of surgery were considered.

The available literature consistently demonstrates that bariatric surgery is effective in producing weight loss in the morbidly obese as a group. It is equally true, however, that not all morbidly obese individuals lose significant amounts of weight. Identification of variables that predict success or failure in weight loss is an essential step in advancing treatment in this area. It is here where psychological factors are relevant. As well, questions have been raised as to the impact of surgery on psychological functioning. Each of these issues requires careful consideration.

**Method**

In an attempt to make this review maximally useful, we have followed Oxman and Guyatt’s guidelines for literature reviews. These guidelines include the following: a comprehensive literature search; explicit methods to determine which articles to include in the review; assessment of the validity of the studies reviewed; assessing studies in a reproducible and non-biased manner; analyzing variability between studies; and combining the findings of multiple studies appropriately.

To identify as many relevant studies as possible, we conducted a computer search, using the Medline and Psychological Abstract systems, of the titles of all published papers from 1977 on. The primary keywords used in this search were gastroplasty, gastric bypass, and psychological. This initial search identified 22 separate papers. From this list, studies not dealing with psychological factors in bariatric surgery were eliminated. The remaining papers were obtained, and the references of these papers were reviewed to yield the final sample of studies. In addition, the journals Obesity Surgery and International Journal of Obesity were perused to identify relevant studies. These studies were then divided into five separate categories: effects of surgery on psychological factors, predictors of surgery outcome, methodological factors in bariatric surgery, matching surgery type to patient type, and other (e.g., nurses attitudes to gastroplasty, general psychiatric assessment, psychological profiles of the morbidly obese). Only the studies in the first two categories were considered for review. A total of 21 studies examining the effects of surgery on psychological functioning were identified, and a total of ten studies examining predictors of success were identified. The 21 studies examining the effects of surgery on psychological functioning were further divided into two groups: those that only assessed psychological functioning after surgery had been performed (n = 9), and those that assessed psychological functioning both before and after surgery (n = 12). In evaluating each study, internal and external validity was evaluated. Attention was paid to how psychological factors were assessed. As might be expected there was a range in how thoroughly psychological factors were assessed, and also in the validity of the psychological measures used. Conclusions were drawn based on the actual data collected to reduce the possibility of bias in interpreting findings. Finally, considerable attention was paid to evaluating the variability in results between studies.

**Results and Discussion**

**The Impact of Surgery on Psychological Functioning**

It is clear that bariatric surgery results in significant weight loss that exceeds the weight loss associated with more standard forms of treatment for the morbidly obese as a group. One of the best demonstrations of the effects of surgery on weight is provided by Anderson and colleagues, who randomly assigned 60 morbidly obese individuals to either diet alone or diet plus gastroplasty. Gastropasty was associated with greater weight loss, a higher proportion of patients reducing excess weight to within 40% of their ideal weight, and less distress, compared to diet alone. Wicklund evaluated jejunoileal bypass patients for up to ten years following surgery. He reported that weight loss continued for up to two years following surgery, and then stabilized for the