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Changes in Desired Body Shape After Bariatric Surgery

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Abstract

Bariatric surgery frequently leads to rapid weight loss post-surgery that may impact participants' ability to gauge a realistic ideal body shape. In the present study, 57 obese participants' perception of their current and ideal body shape pre and post gastric bypass surgery were assessed. Results indicate prior to surgery, participants reported a 4 point difference between current and desired body shape. One year post surgery, as their own body shape decreased, so did the size of their ideal body shape (4.1–3.3). These findings suggest a consequence of rapid weight loss may suggest to participants that unrealistic body shapes are attainable. Implications for patient counseling are discussed.

INTRODUCTION

Distress over body shape is a common concern among the severely obese who seek weight loss surgery (Stunkard, Stinnet & Smoller, 1986). Research has suggested that those seeking

weight loss surgery report significantly low self-evaluation of their appearance on measures of body satisfaction (Dixon, Dixon, & O'Brien, 2002) and self-esteem related to body shape (Kolotkin et al., 2003). The source of this dissatisfaction may be a function of the difference between how they view their current body shape and their idealized shape. Discrepancy between current and ideal body shape has been found to be related to psychological distress such as body dysmorphic disorder, low self-esteem, bulimia nervosa and high dietary restraint (Doll & Fairburn, 1998; Forestell, Humphrey, & Stewart, 2004; McKinley, 1998; Veale, Kinderman, Riley, & Lambrou, 2003).

Bariatric surgery often leads to rapid and substantial reduction of excess body weight (Balsiger, Murr, Poggio, & Starr, 2000), with the first year typically producing the greatest improvement, ranging between 48.9–66.7% of excess body weight. (Reinhold, 1994). Within 2 years of surgery, participants on average no longer meet the criteria for morbid obesity (Pories & MacDonald, 1993). Thus patients may view bariatric surgery as a vehicle to achieve their idealized body shape.

Improved satisfaction with body shape has been reported in those having undergone weight loss surgery (Hrabosky et al., 2006; Neven, Dymek, le Grange, Maasdam, Boogerd, & Alverdy, 2002). In addition, other areas of social functioning have been shown to improve with the combination of weight loss and improved body image such as sexual relationships, marital satisfaction and social functioning (Bocchieri, Meana, & Fisher, 2002). However, while patients are generally more satisfied with their body shape post-surgery, it is not clear how discrepant their new body shape is from an idealized one. Awareness of participants' desired body shapes is of particular interest to professionals involved in both the assessment process and in follow-up. Previous research has indicated some concern as to the degree patients may place on expectation of weight loss and body shape after surgery (Wee, Jones, Davis, Bourland, & Hamil, 2006). Wee and colleagues sampled morbidly obese participants seeking bariatric surgery and found that 91% were willing to risk death to attain their "dream weight" (operationalized as 38% of their pre-surgical body weight).

While previous research has investigated changes in attitude towards one's body shape pre and post bariatric surgery, (Neven et al., 2002) the authors are not aware of research that examined the change in discrepancy between perceived current and desired body shape and in particular, the hypothesis that participants that undergo weight loss surgery idealize a smaller body shape than prior to surgery. The purpose of the present study is to examine over the course of 1 year in a sample of bariatric surgery patients, changes in perceived current body shape, ideal body shape and the discrepancy between the two. Of specific interest is the change in ideal body shape over time. It is hypothesized that once participants experience the rapid weight loss common with bariatric surgery, they in turn will progressively endorse idealized smaller body sizes over time.

METHODS

Sample

Fifty-seven obese patients seeking gastric bypass surgery at a large Midwestern medical center completed a psychological assessment prior to surgery and at 1 year follow-up. The

sample was predominantly female (82%) and two-thirds Caucasian (68%) with the remaining sample African-American (21%), and Hispanic (11%). Mean age was 39 ± 4.3 . At baseline, the mean Body Mass Index (BMI) of the sample was 52.54, indicating a severely obese sample, consistent with those typically indicated for bariatric surgery. At the 1 year follow-up, the mean BMI had decreased to 37.4, still indicating an obese sample, but representing an overall mean decrease of 16.2 % of baseline BMI. All participants in the present sample had undergone the Roux-en-Y gastric bypass surgery.

Measures

Participants completed the Silhouette Figure Rating Scale (SFRS; Stunkard, Sorensen & Schulzinger, 1983) as part of an omnibus assessment protocol. The SFRS is a widely used quantitative measure of degree and direction of body shape disparagement (Grogan, 1999). Patients are presented a series of nine silhouettes, ranging in degree from very thin to very overweight and are asked to choose the silhouette that best indicates both their present body shape and their desired body shape. To assess the degree their ideal shape differed from their current shape, a discrepancy score was calculated by subtracting ideal shape from their current shape (lower numbers reflect smaller shapes). The literature has previously utilized this difference score to infer the degree of satisfaction/dissatisfaction one has regarding their body shape. In the present study, the SFRS was collected at two time points: pre-surgical and 1 year post-operative.

RESULTS

Figures 1 and 2 depict the mean ideal and current body shape indicated by the participants at baseline and one year follow-up. Table 1 presents a repeated measures analysis of variance (ANOVA) with time as a factor on current body shape, ideal body shape and the discrepancy scores. As the data indicates, pre-surgery, the present sample on average perceived their current body shape (mean = 8.12) to be the second to largest available silhouette which was nearly double their desired body shape (mean = 4.13).

Over the course of 1 year, a significant decrease was evidenced in terms of perceived current and ideal body shape and also in the discrepancy between those two constructs. Examination of the silhouettes in Figures 1 and 2 indicate a significant reduction in the perception of excess adiposity depicted in the pictures. Over time, participants selected smaller ideal body shapes, resulting in nearly one full decrease in body size over 1 year (4.1 vs. 3.3).

To further examine the effect of time and significant weight loss on the magnitude of dissatisfaction between current and ideal, a paired-sample t-test was conducted comparing the means of the discrepancy score pre-surgery and at 1-year post-surgery. The data indicates a significant decrease in the difference between the subjects' current body shape and ideal body shape, ($t = 2.63$, $p = .02$) over time.

DISCUSSION

Over the course of 1 year, participants who have undergone weight loss surgery report a significant decrease not only in their perception of their body shape, but also in their ideal

body shape. As a function of this decrease, the discrepancy between these two factors also significantly decreased. Previous research has indicated discrepancy between current and ideal body shape is a proxy for body shape satisfaction in a variety of populations (Cafri & Thompson, 2004; Martins, Tiggerman, & Churchett, 2008; Wood, Becker, and Thompson, 1996). Thus, in the current sample, the decrease in discrepancy may be suggestive of becoming less dissatisfied with their current body shape.

Interestingly, while the reduction in the difference score between ideal and current supports increased satisfaction participants also reported a significantly smaller ideal body shape. That is, as their actual body size was rapidly decreasing, participants shifted downwards their ideal body shape accordingly. Song and colleagues examined a small sample ($N = 18$) of patients who underwent bariatric surgery and later body contouring surgery to correct loose skin as a result of the weight loss procedure (Song et al. 2006). In their sample, utilizing a modified version of the SFRS patients reported a significant decrease in the perception of their current body shape ($4.7 \pm 1.5 - 3.7 \pm 1.5$) and a similar decrease in idealized body shape at 3 months post-contouring surgery (2.6–2.2). However at 6 months post-surgery their desired body shape returned to the pre-surgical mean.

One potential reason for this finding is that participants prior to surgery may not have been prepared for the radical weight loss experienced in a relatively short period of time. As these participants typically have a long term history of unsuccessful dieting (Gibbons et al., 2006), at baseline they may have “hedged their bets” in selecting their ideal body shape, as the mean silhouette selected represented the median body shape offered in the SFRS. Due to the rapid early weight loss commonly experienced with the Roux-en-Y procedure, these participants may have adjusted their schema as to what is a “realistic” ideal body shape that may be attained.

The trend towards endorsing unrealistic desired body shapes is not new (Markus, Hamil, & Sentis, 1987). Because of the rapid weight loss due to bariatric surgery participants may feel that thinner body shapes are possible. Their pre-surgical selection of ideal body shape may in part be driven by a history of failed weight loss attempts resulting in a more conservative selection. Thus, the rapid weight loss may indicate to these participants that a smaller ideal body shape is possible.

The present findings suggest that professionals involved in assessment and monitoring of bariatric surgery patients may want to pay particular attention to issues of body shape goals post-surgery. While discussions of goals and changes in body are common in pre-surgical assessment, these issues may actually be more salient post-operatively, in particular in light of research suggesting for some participants, body image is a primary motivation to have weight loss surgery (Libeton, Dixon, Laurie, & O’Brien, 2004). Additionally, previous research has indicated the relationship in this population of over-evaluation of shape may be a stable marker for body image distress and in turn elevated risk for eating pathology (Masheb, Grilo, Burke-Martindale & Rotschild, 2006). Participants may be discouraged at the inevitable plateau of their weight loss, which in turn may decrease their motivation to remain committed to the nutritional and physical activity regimen necessary postoperatively if they feel they cannot attain the increasingly thin body shapes they idealize.

References

- Balsiger B, Murr M, Poggio J, Starr M. Bariatric surgery: Surgery for weight control in patients with morbid obesity. *Medical Clinics of North America*. 2000; 84:477–489. [PubMed: 10793653]
- Bocchieri L, Meana M, Fisher B. A review of psychosocial outcomes for morbid obesity. *Journal of Psychosomatic Research*. 2002; 52:155–165. [PubMed: 11897234]
- Cafri G, Thompson JK. Measuring male body image: A review of current methodology. *Psychology of Men & Masculinity*. 2004; 5:18–29.
- Dixon J, Dixon M, O'Brien P. Body image: Appearance orientation and evaluation in the severely obese. Changes with weight loss. *Obesity Surgery*. 2002; 12:65–71. [PubMed: 11868302]
- Doll H, Fairburn C. Heightened accuracy of self-reported weight in bulimia nervosa: A useful cognitive "distortion. *International Journal of Eating Disorders*. 1998; 24:264–273.
- Forestell C, Humphrey T, Stewart S. Is beauty in the eye of the beholder? Effects of weight and shape on attractiveness ratings of female line drawings by restrained and nonrestrained eaters. *Eating Behaviors*. 2004; 3:89–101.
- Gibbons L, Sarwer D, Creand C, Fabricatore A, Kuehnel R, Lipschutz P, ... Wadden T. Previous weight loss experiences of bariatric surgery candidates: How much have patients dieted prior to surgery? *Obesity*. 2006; 14:70s–76s. [PubMed: 16648597]
- Grogan, S. *Body image*. Routledge; New York: 1999.
- Hrabosky J, Masheb R, White M, Rothschild S, Burke-Martindale C, Grilo C. A prospective study of body dissatisfaction and concerns in extremely obese gastric bypass patients: 6–12 month postoperative outcomes. *Obesity Surgery*. 2006; 16:1615–1621. [PubMed: 17217638]
- Kolotkin R, Crosby R, Pendelton R, Strong M, Gress R, Adams T. Health-related quality of life in patients seeking gastric bypass surgery vs. non-treatment seeking controls. *Obesity Surgery*. 2003; 13:371–377. [PubMed: 12841896]
- Libeton M, Dixon J, Laurie C, O'Brien P. Patient motivation for bariatric surgery: Characteristics and impact on outcomes. *Obesity Surgery*. 2004; 14:392–398. [PubMed: 15072662]
- Markus H, Hamill R, Sentis KP. Thinking fat: Self-schemas for body weight and the processing of weight relevant information. *Journal of Applied Social Psychology*. 1987; 17:60–71.
- Martins Y, Tiggeman M, Churchett L. The shape of things to come: Gay men's satisfaction with specific body parts. *Psychology of Men & Masculinity*. 2008; 9(4):248–256.
- Masheb RM, Grilo CM, Burke-Martindale CH, Rothschild BM. Evaluating oneself by shape and weight is not the same as being dissatisfied about shape and weight: A longitudinal examination in severely obese gastric bypass patients. *International Journal of Eating Disorders*. 2006; 39:716–720. [PubMed: 16868997]
- McKinley N. Gender differences in undergraduates body esteem: The mediating effects of objectified body consciousness and actual/ideal weight discrepancy. *Sex Roles*. 1998; 39(112):113–123.
- Neven K, Dymek M, le Grange D, Maasdam H, Boogerd AC, Alverdy J. The effects of Roux-en-Y gastric by pass surgery on body image. *Obesity Surgery*. 2002; 12:265–269. [PubMed: 11975226]
- Pories W, Macdonald K. The surgical treatment of morbid obesity. *Current Opinions in General Surgery*. 1993; 2:195–202.
- Reinhold RB. Late results of gastric bypass surgery for morbid obesity. *Journal of the American College of Nutrition*. 1994; 13:326–331. [PubMed: 7963136]
- Song A, Rubin J, Thomas V, Dudas J, Marra K, Fernstrom M. Body image and quality of life in post massive weight loss body contouring patients. *Obesity*. 2006; 14:1626–1636. [PubMed: 17030974]
- Stunkard, A., Sorensen, T., Schulsinger, F. Use of the danish adoption register for the study of obesity and thinness. In: Kety, S., Rowland, L., Sidman, R., Matthysse, S., editors. *The genetics of neurological and psychiatric disorders*. New York: Raven Press; 1983. p. 115–120.
- Stunkard AJ, Stinnett JL, Smoller JW. Psychological and social aspects of the surgical treatment of obesity. *American Journal of Psychiatry*. 1986; 143:417–429. [PubMed: 3513632]
- Veale D, Kinderman P, Riley S, Lambrou C. Self-discrepancy in body dysmorphic disorder. *British Journal of Clinical Psychology*. 2003; 42:157–169. [PubMed: 12828805]

- Wee C, Jones D, Davis R, Bourland A, Hamel M. Understanding patients' value of weight loss and expectations for bariatric surgery. *Obesity Surgery*. 2006; 16:496–500. [PubMed: 16608617]
- Wood K, Becker J, Thompson JK. Body image in dissatisfaction in preadolescent children. *Journal of Applied Development Psychology*. 1996; 17:85–100.

FIGURE 1.

The baseline mean current and ideal body shapes in the present sample as indicated by the Multidimensional Body Self Relation Questionnaire-Appearance Evaluation subscale (MBSRQ-AE). $N = 57$. Reprinted with permission from Stunkard AJ, Sorenson T, Schulsinger F. Use of the Danish Adoption Register for the study of obesity and thinness. In: S.S. Kety, L.P. Rowland, R.L. Sidman, S.W. Matthysse (Eds.) *The Genetics of Neurological and Psychiatric Disorders*. New York: Raven Press, 1983, pp. 115–120.

FIGURE 2.

One year post-operative current and ideal body shapes in the present sample as indicated by the Multidimensional Body Self Relation Questionnaire-Appearance Evaluation subscale (MBSRQ-AE). $N = 57$. Reprinted with permission from Stunkard AJ, Sorenson T, Schulsinger F. Use of the Danish Adoption Register for the study of obesity and thinness. In: S.S. Kety, L.P. Rowland, R.L. Sidman, S.W. Matthysse (Eds.), *The Genetics of Neurological and Psychiatric Disorders*. New York: Raven Press, 1983, pp. 115–120.

TABLE 1

Repeated Measures Analysis of Variance (ANOVA) of Current Body Shape, Ideal Body Shape and Discrepancy Score on the Silhouette Figure Rating Scale (SFRS) With Time as the Factor, $N = 57$

	Pre-surgery	1-year follow-up	F-test
Ideal body shape	4.13 $\pm$ .74	3.39 $\pm$ 1.63	$F = 10.77, df = 2,22, p < .01$
Discrepancy Score	4.16 $\pm$ 1.75	2.39 $\pm$ 1.99	$F = 4.33, df = 2,22, p < .05$
Current body shape	8.12 $\pm$ 1.19	5.78 $\pm$ 1.69	$F = 282.2, df = 2,22, p < .00$