

Post-Bariatric Surgery Satisfaction and Body-Contouring Consideration after Massive Weight Loss

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Abstract

Background: Following a bariatric surgery and massive weight-loss, the outcome is usually sullied by consequences on the body's contour and redundant skin. **Aims:** We aimed to record the frequency of contour irregularities and quantify patients' satisfaction with appearance and anticipations from body contouring surgery. **Materials and Methods:** The ethical committee at King Abdulaziz University Hospital approved the study, and patients were consented. A cross-sectional study targeting the post-bariatric patients from May 2011 to April 2012 was conducted at our hospital. We used post-massive weight loss Satisfaction Questionnaire. **Results:** The total numbers of patients were 64 (51 women and 13 men), of which 57 patients (89.2%) developed sagging skin. Most patients were dissatisfied with their appearance after weight loss. The most common zones were the upper arms (50%) and abdomen (45%). Considerably more women (36.2%) than men (24%) were dissatisfied with certain body areas. The most noticeable expectation of patients from body contouring surgery was improved cosmetic appearance (65.6%) and self-confidence (64.1%). More women (70.58%) than men (46.15%) expected a better cosmetic appearance after body contouring ($P = 0.003$). **Conclusion:** After bariatric surgery, sagging excess skin is an unsatisfactory problem. Therefore, body contouring surgery must be included in morbid obesity management.

Keywords: Bariatric surgery, Body contouring surgery, Expectation, Satisfaction, Weight loss

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Introduction

Still deemed risky, bariatric surgery remains the most effective solution to weight loss for the morbidly obese.^[1-3] Laparoscopic gastric bypass and adjustable gastric banding have been commonly performed for that purpose and right now laparoscopic sleeve gastrectomy is also performed frequently.^[4] Massive weight loss is defined as a drop of 50% or more of excess body weight.^[5] As a growing number of

patients undergo bariatric surgery, many patients who have experienced massive weight loss are left with the dissatisfying consequences of loose and redundant skin, resulting in contour irregularities.^[6] The development of sagging skin is a recognized complication of weight-loss operations. The sudden change in body mass index (BMI) after rapid weight loss lowers skin tone and leads to a failure of the excess soft tissue to retract, resulting in redundant skin.^[7,8] The surplus skin is commonly located on the abdomen, upper arms, inside of the thighs, and back. Biörserud, *et al.*, concluded in their study that women are more liable than men to have surplus skin over the upper arms, thighs, and flanks.^[9]

No correlation has been recorded between surplus skin and the patient's satisfaction with his/her appearance. Surprisingly, morbidly obese patients become less satisfied with their body image (BI) with increasing weight loss.^[10,11] Quality of life (QOL) and BI are the most

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important aspects of patient satisfaction after aesthetic surgery.^[12] Surgical reduction in weight has been shown to be of some benefit in terms of BI and function.^[13] The change in appearance after massive weight loss is expected to positively alter the patient's BI and QOL. Few people who have experienced a significant change in BI undergo body contouring surgeries. However, this might be because patients continue to have body image dissatisfaction (BID) due to residual feelings of being unattractive and self-conscious. Moreover, opinion is divided on whether body contouring surgery after weight loss is an insignificant additional procedure or a necessary second step after bariatric surgery. Song, *et al.*, found that body contouring after bariatric surgery improves both QOL measurements and BI.^[14]

In Saudi Arabia, there is a high demand for cosmetic body contouring surgeries after massive weight loss, even though the prevalence of these surgeries is very low.^[15] Therefore, in this study, we aimed to evaluate the frequency of development of excess soft tissue and the satisfaction of Saudi patients with their appearance after bariatric surgery and recorded the expectations of Saudi patients from body contouring surgery after massive weight loss.

Materials and Methods

The Ethical Review Committee of the Surgical Department at King Abdulaziz University approved the study, and all patients were consented.

This study reports data on 64 Saudi patients who had undertaken laparoscopic sleeve gastrectomy (18 patients), roux-en-Y gastric bypass surgery (19 patients), and adjustable gastric banding (27 patients) between 2007 and 2010 with a minimum follow-up of 12 months at King Abdulaziz University Hospital (KAUH). These patients were selected when they presented to the outpatient clinic in KAUH. The majority of the participants were women (51 patients, 80%). The mean patient age was 36.4 (SD \pm 8.92) years, and their mean weight before and after bariatric surgery was 126.5 (SD \pm 36.45) kg and 92.31 (SD \pm 27.68) kg, respectively. Their mean height was 1.65 (SD \pm 7.26) cm, and their mean BMI before and after surgery was 56 (SD \pm 7.7) kg/m² and 33 (SD \pm 9) kg/m², respectively.

We presented the Post-Bariatric Satisfaction Questionnaire developed by Kitzinger, *et al.* to our sample of patients. This questionnaire includes data on satisfaction with BI, QOL, and expectations from body contouring surgery.^[16,17] This questionnaire takes about 10 min to complete and focuses mainly on the satisfaction of patients with their appearance after massive weight loss and quantifies patient satisfaction on a five-point

Likert scale (strongly satisfied to strongly dissatisfied). In addition, it records cosmetic and body contouring concerns that originate after bariatric surgery. The questionnaire also includes details about demographic data, type of bariatric procedure, and expectations from body contouring surgery. The study was explained to the patients, and informed consent was obtained from them.

Statistical analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA), version 16.0. Data are presented as the mean and standard deviation for variable quantities. The Chi-square test was used to compare different variables. Differences were considered statistically significant at a *P* value of <0.05.

Results

Only 79.66% of patients completed the questionnaire (64 of 105). Of these 64 patients, 57 (89.2%) developed surplus and sagging skin after weight loss. The abdomen was the commonest area in which surplus skin was located. The frequency with which other body areas were affected is shown in Figure 1. Dermatitis and itching developed in 18 (28.2%) patients. In all, 17 (26.5%) and 22 (34.4%) subjects complained of difficulty in finding clothes that fit properly and performing physical activity (exercising), respectively, because of loose skin.

The majority of patients rated their satisfaction with their appearance as "neutral" on the Likert scale. However, most patients rated satisfaction with specific body parts such as upper arms, breasts, thighs, buttocks, and abdomen, as "dissatisfied" to "very dissatisfied." The most common area with which patients were dissatisfied was the upper arms (50%), followed by the abdomen (45%). In contrast, most patients were relatively satisfied with the buttocks after massive weight loss. Patient satisfaction with the appearance of specific

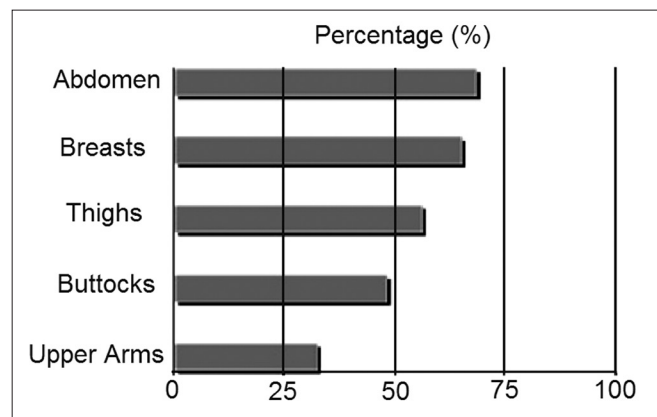


Figure 1: Development of excess skin on different body parts after bariatric surgery

body parts is shown in Figure 2. Compared with men, women were more dissatisfied with their upper arms, breasts, abdomen, and thighs. In addition, a significant difference in BID was noted after different types of bariatric surgery [Table 1].

The most important expectations from body contouring surgery for our patients were improved cosmetic appearance (65.6%) and improved self-confidence (64.1%),

followed by better fitting of clothes (53.1%), improved mobility (45.3%), balanced life (40.6%), improved QOL (23.4%), and reduced rashes and itching (14.1%). More women than men expected to achieve a better cosmetic appearance (70.58% vs. 46.15%; $P = 0.003$) and to be able to find better-fitting clothes (58.82%; $P = 0.01$) after body contouring surgery. The expectations from body contouring surgery reported by male and female patients are shown in Figure 3.

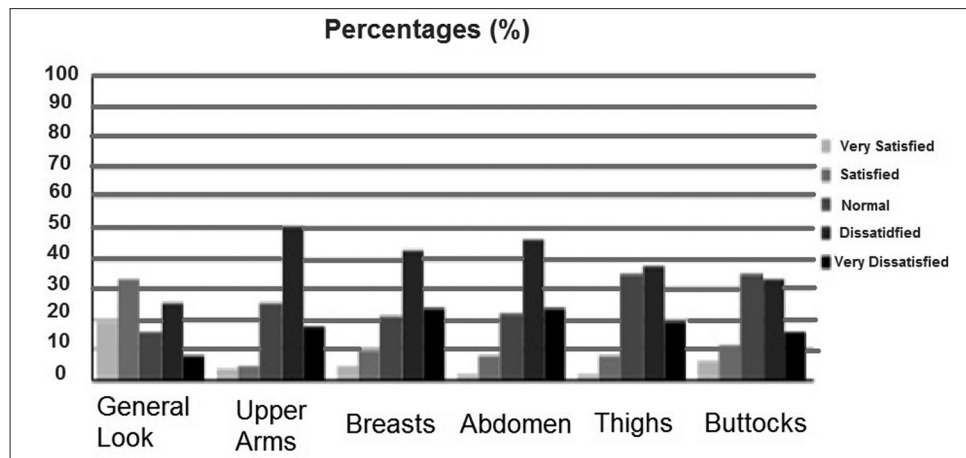


Figure 2: Satisfaction with appearance after massive weight loss rated on a five-point Likert scale. The majority of subjects rated their satisfaction with the appearance of most body parts as “dissatisfied”

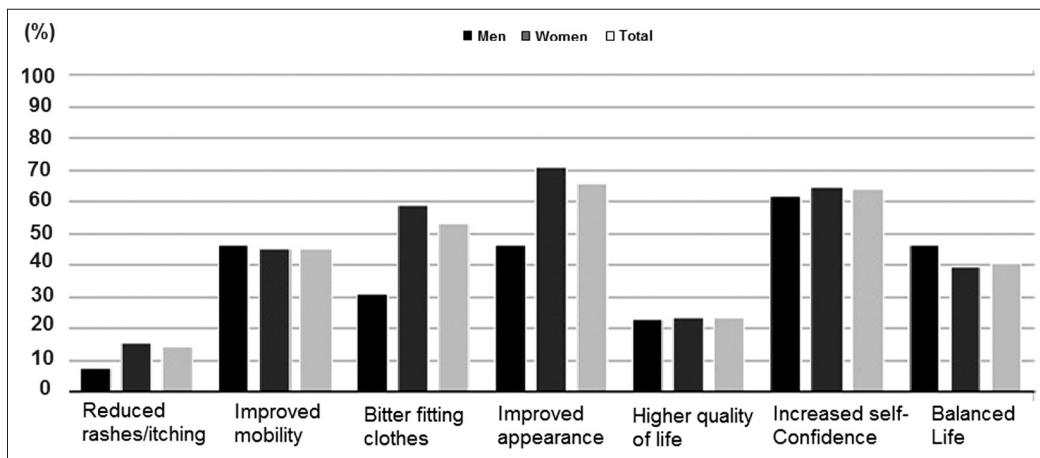


Figure 3: Expectations from body contouring surgery reported by patients after bariatric surgery. Improved appearance was the most common expectation

Body parts after weight loss	Men (n=13) (%)	Women (n=51) (%)	P value	Gastric bypass (n=19) (%)	Sleeve gastrectomy (n=18) (%)	Adjustable gastric banding (n=27) (%)	P value
Entire body	24	36	0.15	26.3	22.2	44.4	0.09
Upper arms	73	74.5	0.000	68.4	61	70.3	0.002
Breasts	53.8	68.6	0.031	73.4	50	70.3	0.000
Abdomen	77	62.7	0.023	63	89	77.7	0.02
Thighs	53.8	56.8	0.02	68.4	55.5	48.1	0.000
Buttocks	46	49	0.30	58	55.5	37	0.27

Discussion

Massive weight loss, succeeding gastric bypass surgery^[17] and other bariatric surgeries, is often associated with the development of redundant, sagging skin in various body areas and consequently contour irregularities. This displeasing consequence continues to negatively impact BI in these patients.

In our study, 89.2% of the participants developed redundant skin after massive weight loss following the three different bariatric surgeries in total. This incidence is consistent with other ones reported after gastric bypass surgery by other authors: 96%, Kitzinger *et al.*,^[17] and 84%, Björserud *et al.*,^[9] In our patients, excess skin most frequently developed in the abdomen, also consistent with the findings of other authors.^[9-11,17] The second most common affected areas were the breasts, followed by the thighs. The second most commonly affected areas in Kitzinger, *et al.*,^[17] were the breasts, but in Björserud, *et al.*,^[9] they were the thighs. This difference might be attributed to the type of bariatric surgery performed, time after the procedure or differences innate to the population of the study.

Most of the subjects rated their general appearance as “neutral,” but were dissatisfied with specific body parts. This finding is in agreement with those reported by Kitzinger, *et al.*,^[17] It is not surprising that women evaluate their body parts (breasts, upper arms, thighs) more critically than men.^[9,17] Consistent with previous studies, the present study found that, compared to Saudi men, Saudi women were more significantly dissatisfied with most body parts. Interestingly, we found noteworthy differences in satisfaction with different body parts between laparoscopic sleeve gastrectomy, gastric bypass surgery, and adjustable gastric banding. Patients who underwent sleeve gastrectomy were more dissatisfied with their abdomen, but less dissatisfied with their breasts. Patients who underwent gastric banding were most discontented with their overall general appearance. However, these results are not consistent with our previously reported data.^[15] A significantly greater number of patients had a very pronounced desire to undergo body contouring procedures after gastric bypass, which indicates that these patients were largely discontented with their appearance.

The most common anticipation our patients had from body contouring surgery was an improvement in aesthetic appearance (65.6%), followed by improved self-confidence (64.1%); these findings are similar to those reported by Kitzinger, *et al.*,^[17] In our study, men and women had identical expectations from body contouring surgery, except that women were more concerned with a better cosmetic appearance and finding

better-fitting clothes, as expected. Sagging, redundant skin, resulting from massive weight loss very often leads to dissatisfaction with the cosmetic outcome of bariatric surgery and to functional impairment that negatively impacts QOL.^[17,18] Therefore, we suggest that patients considering bariatric surgery should be informed about the high probability of developing sagging, surplus skin, so that they develop a fair and realistic expectation of the outcome of such surgeries, and, consequently, their dissatisfaction should be mitigated by fair expectations.

The development of contour irregularities explains the desire of patients to undergo body contouring surgery to improve their appearance. Body contouring of a specific area increases the patient’s satisfaction with that area, but can shift his/her concerns toward other, un-operated areas. Therefore, psychological counseling is crucial in the management of morbid obesity, and it should be aimed at improving QOL, helping patients accept the outcomes of massive weight loss, and educating them about the next step in aesthetic improvement. Moreover, consultation with a plastic surgeon before bariatric surgery may help give patients a clear idea about the available options to improve their appearance, and thus improve patient satisfaction after bariatric surgery.

In the end, it becomes apparent that both bariatric surgery and body contouring surgery should be included in morbid obesity management, which therefore should be undertaken by a multidisciplinary team in order to improve the post-bariatric satisfaction and body image in these patients after the surgery.^[19] In our previous survey in Saudi Arabia^[15], we found that many patients (78.1%) wanted to undergo body-contouring surgery after massive weight loss, but in reality, few of them underwent this procedure (18%). This disparity is consistent with that reported in many other studies worldwide.^[16,20,21] Consequently, to this documented high disparity, the substantial dissatisfaction with BI after bariatric surgery and the high expectations of patients from body contouring surgery, we suggest that body reconstructive surgeries be included in the management strategy for morbid obesity, and the cost of such procedures be covered by governmental hospitals and insurance companies in Saudi Arabia.

Our study had some limitations; first, the study had a low response rate (60.66%). Second, we used a non-validated questionnaire that was developed and used by Kitzinger, *et al.*^[17] Third, our study lacks good randomization of the participants. Despite these limitations and the small sample size of our study, we have demonstrated the current level of satisfaction with BI among Saudi patients who have undergone bariatric surgery and noted their expectations from

body contouring surgery. Few studies in Saudi Arabia have addressed these topics. In addition, some of our results were consistent with those of foreign studies; however, some differences were also present, which may be related to cultural differences. We recommend that further studies be conducted, with a larger sample size and better randomization, in order to address these variations between different populations.

In conclusion, the development of sagging, redundant skin after massive weight loss by bariatric surgery leads to dissatisfaction with the cosmetic outcomes of surgery and to psychological and functional impairment. Therefore, body contouring surgery is required in the management of morbid obesity and more studies are required to address the current status of body contouring surgery in post-bariatric surgery patients.

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