Special Topic

A Prospective, Multi-Site Investigation of Patient Satisfaction and Psychosocial Status Following Cosmetic Surgery

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Background: *Although several studies have investigated patient satisfaction and changes in body image following aesthetic plastic surgery, few have investigated more specific dimensions of body image, including dysphoric emotions that occur in specific social situations or body image quality of life. In addition, few studies have investigated changes in body image that may occur in concert with changes in more general areas of psychosocial functioning, such as depressive symptoms and self-esteem.*

Objective: *This prospective, multi-site study investigated postoperative satisfaction and changes in psychosocial status following cosmetic surgery.*

Methods: *One hundred patients recruited from 8 geographically diverse surgical practices completed psychometric measures of body image, depressive symptoms, and self-esteem prior to surgery. Seventy-two patients completed the 3-month postoperative assessment, 67 completed the 6-month assessment, and 63 completed the 12-month assessment. All statistical tests on changes after surgery were conducted using the sample of 72 patients who completed the 3-month assessment. A Last Observation Carried Forward analysis was used to account for patients who did not complete the subsequent follow-up assessments. In addition, they reported their postoperative satisfaction as well as self-rated attractiveness at the 3 postoperative assessment points.*

Results: *Eighty-seven percent of patients reported satisfaction with their postoperative outcomes. Patients also reported significant improvements in their overall appearance, as well as the appearance of the feature altered by surgery, at each of the postoperative assessment points. Patients experienced significant improvements in their overall body image, their degree of dissatisfaction with the feature altered by surgery, and the frequency of negative body image emotions in specific social situations. All of these improvements were maintained 12 months after surgery.*

Conclusions: *These results add to a growing body of literature documenting improvements in body image following cosmetic surgery.* (*Aesthetic Surg J* 2005;25:263-269.)

The popularity of cosmetic surgical and minimally invasive procedures has grown dramatically during the past decade. According to the American Society for Aesthetic Plastic Surgery, nearly 11.9 million cosmetic procedures were performed in 2004, representing an increase of 465% since 1997.[1] Both plastic surgeons and mental health professionals have had a longstanding interest in the psychosocial issues of patients who undergo these procedures. In the past 10 years, a number of studies have investigated the preoperative psychological characteristics of patients and documented postoperative psychosocial changes.[2-4]

Plastic surgeons likely practice under the assumption that most patients experience improvements in their appearance following surgery and are satisfied with their postoperative outcome. Several studies have found that patients report an improved appearance after surgery.[5-8] Similarly, studies have indicated that as many as 90% of

patients report satisfaction with their surgical outcome.[5,8-11] In addition, some empirical studies have found postoperative improvements in quality of life and decreases in depressive and anxiety-related symptoms.[6,12-14]

The psychological construct of body image has received the greatest research attention over the past several years. Dissatisfaction with one's body image is thought to motivate many appearance-enhancing behaviors, such as weight loss and exercise,[3,15] and is also believed to play a central role in the decision to seek cosmetic surgery.[3,16-17] Several studies have found that cosmetic surgery patients report heightened body image dissatisfaction prior to surgery.[18-22] Other investigations have demonstrated improvements in body image postoperatively.[5,7,23-25]

Most of these studies have focused on either changes in overall body image or improvements specifically related to the feature altered by surgery. Few studies have investigated other dimensions of body image, including dysphoric emotions that occur in specific social situations or body image quality of life. In addition, few studies have investigated changes in body image that may occur in concert with changes in more general areas of psychosocial functioning, such as depressive symptoms and self-esteem.

This prospective study was designed to examine postoperative satisfaction, body image, depressive symptoms, and self-esteem in persons who underwent cosmetic surgery. The use of a large sample drawn from 8 surgical practices throughout the country was designed to improve on previous studies in this area and increase the generalizability of the results.

Methods

Participants

Participants were 100 prospective cosmetic surgery patients who were consulting with a plastic surgeon for 1 of 5 surgical procedures: breast augmentation/breast lift, lipoplasty, rhinoplasty, rhytidectomy, and blepharoplasty. These procedures were selected for this study because they are traditionally among the most popular cosmetic surgical procedures.[1] Patients were recruited from the practices of 8 plastic surgeons: Drs. James Baker (Florida), Laurie Casas (Illinois), Paul Glat (Pennsylvania), Alan Gold (New York), Mark Jewell (Oregon), Don LaRossa (Pennsylvania), Foad Nahai (Georgia), and V. Leroy Young (Missouri). These practices were selected in an effort to provide some geographical diversity among the participants and because of the interest of the selected surgeons in collaborating on a patient satisfaction and psychosocial outcomes study.

Patients were invited to participate when they scheduled surgery. Eligible participants were those patients between the ages of 21 and 65 who were willing to complete a questionnaire packet (described below) prior to surgery and again at 3, 6, and 12 months postoperatively. The surgeon, office assistant, or nurse explained the study to eligible patients and asked them to complete a consent form approved by the Institutional Review Board of the University of Pennsylvania. Those who agreed to participate were provided with the baseline questionnaire packet. Completed packets were collected in the surgeon's office and forwarded to the office of the lead investigator (DBS) at the University of Pennsylvania. Postoperative questionnaire packets were both sent from and returned to the lead investigator. Patients were provided with a $20.00 honorarium for completing each assessment packet.

Procedure

Patients were asked to provide information on their age, ethnicity, years of education, marital status, and household income. In addition, they were asked to rate, on a scale from 1 ("Extremely unattractive") to 9 ("Extremely attractive"), their overall appearance and the appearance of the primary feature on which surgery was to be performed.

Patients also completed the following psychometric measures prior to surgery and again at 3, 6, and 12 months postoperatively:

- Multidimensional Body-Self Relations Questionnaire—Appearance Scales (MBSRQ-AS). The MBSRQ-AS is an abbreviated version of the MBSRQ, one of the most widely-used, self-report measures of body image.[26-28] Subscales of the measure have been used in several studies of cosmetic surgery patients.[7,18-24,29] The MBSRQ-AS consists of 4 subscales: Appearance Evaluation, which measures overall feelings of attractiveness or unattractiveness; Appearance Orientation, which assesses investment in, and importance of, appearance; Body Areas Satisfaction, which measures dissatisfaction with certain body areas and attributes; and Overweight Preoccupation, which assesses weight vigilance and eating restraint. Participants respond to questions on a scale of 1 ("Definitely disagree") to 5 ("Definitely agree"). Higher scores reflect greater satisfaction with the specific domain.
- Body Dysmorphic Disorder Examination Self-Report (BDDE-SR). The BDDE-SR is a measure of body

image dissatisfaction focused on a specific physical feature.[30] In the original version, respondents rank the 5 features with which they are most dissatisfied. For purposes of the present study, participants were asked to think about the primary physical feature to be altered by surgery. In reference to that feature, participants answered a series of questions about the feature, on scales from 1 to 6, which assess preoccupation and negative evaluation of appearance, excessive importance of appearance in self-evaluation, avoidance of activities and places, and body camouflaging. Higher scores reflect greater dissatisfaction. The BDDE-SR also can be used to assess the presence of body dysmorphic disorder. It was not used for this purpose in the present study.

- Situational Inventory of Body Image Dysphoria—Short Form (SIBID-S). The SIBID-S is a 20-item questionnaire that assesses the frequency of negative emotions about physical appearance in a variety of situations.[31-32] Example situations include: "At social gatherings when I know few people," and "When I look at myself in the mirror." Respondents are asked to report the frequency of negative feelings on a scale ranging from 0 ("Never") to 4 ("Almost always"). Higher scores reflect greater frequency of negative emotions about body image.
- Body Image Quality of Life Inventory (BIQLI). The BIQLI is a relatively new measure that assesses the effect of body image on more general quality of life.[33-34] Participants respond to 19 items using a 7-point scale ranging from –3 ("Very negative effect") to +3 ("Very positive effect"), with 0 labeled as "No effect." Sample items include: "My basic feelings about myself—feelings of personal adequacy and self-worth," and "How confident I feel in my everyday life." Higher scores on the measure reflect more positive body image quality of life.
- Beck Depression Inventory II (BDI-II). The BDI-II is a widely-used, 21-item self-report measure of the presence and severity of depressive symptoms.[35] Scores range from 0 to 63, with higher scores reflecting greater depressive symptoms.
- Rosenberg Self-Esteem Scale (RSE). Self-esteem was assessed with the RSE.[36] Patients responded to each of 10 statements using a 4-point scale ranging from 1 ("Strongly agree") to 4 ("Strongly disagree"). Scores range from 10 to 40, with lower scores reflecting greater self-esteem.

At 3, 6, and 12 months after surgery, patients also answered several additional questions. They were asked to rate their satisfaction with their surgical result on a scale from 1 ("Extremely dissatisfied") to 5 ("Extremely satisfied"). As in the baseline assessment packet, they were asked to rate the attractiveness of both their overall appearance as well as the appearance of the feature on which cosmetic surgery was performed. Finally, participants were asked whether they would have surgery again and whether they would recommend the procedure to others.

Results

Demographic and descriptive characteristics

The 100 patients who completed the baseline assessment packet consisted of 98 women and 2 men. They had a mean (± SD) age of 42.59 ± 13.44 years, height of 163.63 ± 6.97 cm, weight of 61.49 ± 12.40 kg, and body mass index of 22.98 ± 4.26 kg/m^2. Most (n = 89) were European-American, 6 were Hispanic-American, 2 were Asian-American, 2 were of unspecified ethnic origin, and 1 was African-American. The ethnicity of the sample is similar to that reported in the ASAPS statistics.[1] Most patients (n = 52) were married, 20 were single, 19 were divorced, 4 were living with a significant other, 4 were widowed, and 1 was separated. They reported 15.59 ± 3.02 years of education. Half of the sample reported an annual household income of $100,000 or less, 17 of whom reported an income of less than $50,000. One quarter of the sample reported an annual household income of at least $200,000.

The sample reflected a reasonable geographic distribution. Nineteen patients resided in Illinois, 17 in Florida, 15 in New York, 14 in Georgia, 12 in Oregon, 10 in Pennsylvania, 7 in Missouri, and 6 in other states. Most participants (n = 52) reported living in a major metropolitan area of at least 100,000 persons. Twenty-two reported living in a city with a population between 25,000 and 99,999 inhabitants, while 28 reported living in areas of less than 25,000 persons.

The most common surgical procedure was breast augmentation/breast lift (n = 39), followed by blepharoplasty (n = 29), lipoplasty (n = 23), face lift (n = 23), and rhinoplasty (n = 13). Most participants (n = 74) underwent a single surgical procedure, 25 had 2 procedures simultaneously, and 1 had 3 procedures. There were no significant differences between patients who were interested in multiple procedures and patients undergoing a single procedure on any of the baseline psychometric assessments.

From the initial sample of 100 patients, 72 completed the 3-month postoperative assessment, 67 completed the 6-month assessment, and 63 completed the 12-month

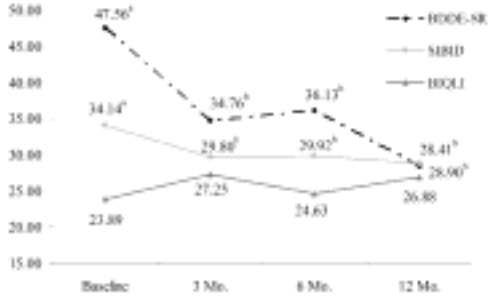

Figure 1. *Self-ratings of attractiveness of overall appearance and attractiveness of features altered by surgery.* a *and* b *indicate significant differences from baseline to all postoperative time points for the attractiveness ratings of respondents' overall appearance as well as the attractiveness of the specific feature altered by surgery.*

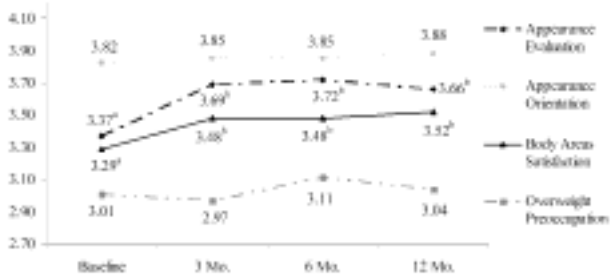

Figure 2. *MBSRQ-AS subscale scores preoperatively and at 3, 6, and 12 months postoperatively.* a *and* b *indicate significant differences from baseline to all postoperative time points on the Appearance Evaluation and Body Areas Satisfaction subscales of the MBSRQ-AS.*

assessment. Individuals who did not complete and return their questionnaire packet within 1 month of a postoperative assessment point were mailed a reminder letter and/or additional packet and contacted by telephone. Despite these efforts, 37 participants from the original sample were lost to follow-up 1 year after surgery.

All statistical tests on changes after surgery were conducted using the sample of 72 patients who completed the 3-month assessment. A Last Observation Carried Forward analysis was used to account for patients who did not complete the subsequent follow-up assessments. A general linear model, repeated measures analysis of variance (ANOVA) was used to investigate changes from baseline to the 3 postoperative assessment points. Subsequent comparisons between specific assessment points were done using the Bonferroni correction ($P < .05$).

Postoperative satisfaction

Participants reported high rates of satisfaction with their postoperative outcomes. At 3, 6, and 12 months after surgery, at least 87% of patients reported being either "Somewhat satisfied" or "Extremely satisfied" with their postoperative results. At 3 and 6 months after

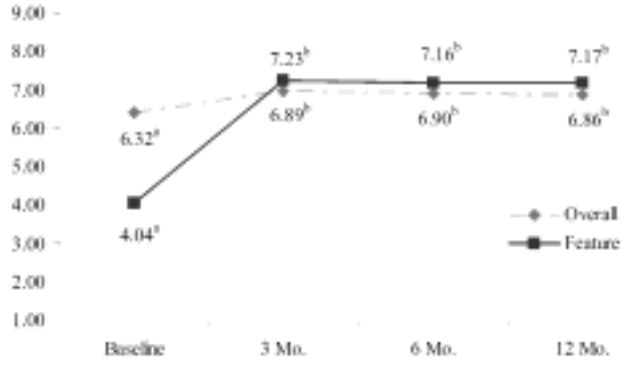

Figure 3. *BDDE-SR, SIBID, and BIQLI scores preoperatively and at 3, 6, and 12 months postoperatively.* a *and* b *indicate significant differences from baseline to all postoperative times on the BDDE-SR and SIBID.*

surgery, 59% of patients reported being "Extremely satisfied." At 12 months, this increased to 64%.

At all 3 postoperative assessment points, more than 90% of patients reported that other individuals had commented on their appearance. No less than 93% of these comments were positive in nature. At 3 months after surgery, 92% of patients reported that they would recommend the procedure(s) to others, and 93% reported that they would have the surgery again. At 6 months, these percentages increased to 97% and 96%, respectively. One year after surgery, 97% continued to report that they would recommend surgery to others, and 93% indicated that they would have surgery again.

Attractiveness ratings

Prior to surgery, patients were asked to rate both their overall appearance, as well as the appearance of the feature on which surgery would be performed, on a scale from 1 ("Extremely unattractive") to 9 ("Extremely attractive"). As can be seen in Figure 1, patients reported significant improvements in their ratings of their overall appearance after surgery, ($F_{3,66} = 5.21$; $P < .003$). These improvements were evident 3 months after surgery (6.38 ± 1.06 vs 6.96 ± 1.09; $P < .002$) and were maintained at both 6 months ($P < .007$) and 12 months ($P < .02$) postoperatively. Patients reported even greater improvements in the self-rated attractiveness of the specific feature altered by surgery ($F_{3,67} = 45.8$; $P < .001$). These rating improved significantly 3 months after surgery (4.04 ± 2.23 vs 7.23 ± 1.48; $P < .001$) and were maintained postoperatively at both 6 months ($P < .001$) and 12 months ($P < .001$).

Body image

Patients reported significant improvements in their body image after surgery, as assessed by the Appearance

Table. Self-esteem and depressive symptom scores

	Baseline	3 months	6 months	12 months
RSE	15.49 ± 4.35	14.45 ± 4.24	14.50 ± 4.31	14.33 ± 4.51
BDI-II	5.84 ± 5.59	4.71 ± 7.15	4.81 ± 6.58	4.79 ± 7.05

RSE, Rosenberg Self-Esteem Scale; BDI-II, Beck Depression Inventory II.
No significant differences across time points.

Evaluation ($F_{3,69}$ = 5.81; P < .001) and Body Areas Satisfaction ($F_{3,69}$ = 5.32; P < .002) subscales of the MBSRQ-AS. These improvements were first evident 3 months after surgery, as compared with baseline (Appearance Evaluation, P < .001; Body Areas Satisfaction, P < .004; Figure 2). They remained significantly different from baseline at 6 months (Appearance Evaluation, P < .001; Body Areas Satisfaction, P < .02) and 12 months (Appearance Evaluation, P < .004; Body Areas Satisfaction, P < .001). Scores on the Appearance Orientation and Overweight Preoccupation subscales did not change postoperatively, suggesting no differences in the degree of appearance investment or concern about body weight.

Patients reported significant reductions in the degree of dissatisfaction with the specific feature altered by surgery, as assessed by the BDDE-SR ($F_{3,69}$ = 24.15; P < .001). As with the more general improvements in body image, these changes were evident at 3 months (P < .001), 6 months (P < .001), and 12 months (P < .001) after surgery, as compared with baseline (Figure 3). Patients reported similar reductions in the frequency of negative emotions about their appearance (as assessed by the SIBID-S) at each postoperative assessment point ($F_{3,69}$ = 5.61, P = .002; 3 months: P < .005; 6 months: P < .02; 12 months: P < .001; Figure 3). Scores on the BIQLI, which assessed body image quality of life, improved after surgery but did not change significantly from baseline.

Self-esteem and depressive symptoms

Patients reported improvements in self-esteem and a decrease in depressive symptoms following surgery, however, neither of these changes was statistically significant (Table).

Discussion

Results of the present study both replicate and extend findings from previous investigations of patient satisfaction and changes in psychosocial status following cosmetic surgery. Consistent with previous studies, no less than 87% of patients reported satisfaction with their postoperative outcome at the 3 assessments points during the first postoperative year. One year after surgery, 97% continued to report that they would recommend surgery to others, and 93% indicated that they would have surgery again.

The results also provide confirmatory and new information on changes in body image following surgery. One of the first empirical investigations of body image in cosmetic surgery found that patients experienced improvements in dissatisfaction with the specific feature altered by surgery.[7] More general body image, as assessed by the Appearance Evaluation subscale of the MBSRQ, improved but did not reach statistical significance. At least 2 subsequent studies that used the Appearance Evaluation subscale found significant improvements in general body image of women who underwent abdominoplasty[24] and breast augmentation.[23] The present investigation also found significant improvements on both the Appearance Evaluation and Body Areas Satisfaction subscales of this widely used measure of body image.

Additional support for the improvement in body image comes from participants' self-ratings of attractiveness. Prior to surgery, study participants rated their overall appearance as more attractive than not (6.38 ± 1.06) on a scale from 1 ("Extremely unattractive") to 9 ("Extremely attractive"). They were more disparaging in their ratings of attractiveness of the feature to be altered by surgery (4.04 ± 2.23). After surgery, however, they reported significant improvements in their overall appearance and the appearance of the feature altered by surgery. As seen in Figure 1, patients' judgments of attractiveness of their overall appearance and the appearance of the feature altered by surgery were in concert postoperatively, but not preoperatively. This result lends further support to the finding that, preoperatively, patients reported heightened dissatisfaction with the specific feature to be

altered by surgery, but not necessarily increased dissatisfaction with their overall body image.[18-21] Nevertheless, patients felt more positively about both specific and general aspects of their appearance postoperatively.

Replicating the findings of Bolton and colleagues[24] with abdominoplasty patients, the present study also found that patients reported a significant decrease in the frequency of negative body image emotions in selected social situations. Somewhat surprisingly, patients did not report significant improvements in body image quality of life. Previous studies of changes in quality of life after cosmetic surgery have been equivocal.[6,24] Clearly, additional research is needed to confirm whether cosmetic surgery is associated with more general improvements in quality of life, or if the psychosocial improvements associated with cosmetic surgery are more specific in nature.

Similarly, the present study found no significant improvements in self-esteem or depressive symptoms postoperatively. This study is at least the second investigation to find no improvements in self-esteem as assessed by the RSE.[24] As with quality of life, the benefits of cosmetic surgery may be more limited in scope and may not influence more general self-esteem, which is clearly comprised of numerous personal attributes beyond physical appearance. Items on the RSE such as, "On the whole, I am satisfied with myself" and "I feel that I have a number of good qualities" speak to the more general nature of the measure. Results of the present study also suggested that patients did not experience a significant reduction in depressive symptoms following surgery. This finding, however, must be interpreted with caution. Study participants clearly were not depressed prior to surgery; their BDI-II scores were well within the range of scores for nondepressed individuals. Together, the lack of significant improvements in general self-esteem and depressive symptoms lend support to the idea that the benefits of cosmetic surgery are greatest in the areas of physical appearance and body image.

Results from the present study have clinical implications. Clearly, cosmetic surgery patients consider themselves to have an improved appearance and report an enhanced body image following surgery. It does not appear, however, that a surgical change in appearance leads to more general improvements in psychosocial functioning. Thus, patients who present for cosmetic surgery with unrealistic expectations about global improvements in their lives are likely setting themselves up for disappointment. Therefore, assessing patients' motivations for and expectations of surgery is an important part of the preoperative consultation.[4,37]

Although the current study adds to the growing literature on the psychosocial outcomes following cosmetic surgery, it has several limitations. One goal was to have a geographically representative sample. Unfortunately, we were unable to secure participation of a practice in the Southwest, thereby somewhat limiting the generalizability of our findings. Even with repeated reminders and a modest honorarium for participation, 37% of the sample was lost to follow-up 1 year after surgery. Similar attrition rates have been found in previous studies. This appears to be an unfortunate reality of research on this patient population, who frequently evidence little motivation to remain in a research investigation over extended periods of time. There were, however, no statistically significant references in the baseline characteristics of those participants who remained in the study and those lost to follow-up.

Finally, this study was limited by its relatively short follow-up. Few studies have documented psychosocial changes beyond the first year of surgery.[2] We have recently received grant support to continue to follow this sample for at least another year. Our hope is that this will provide us with additional information on the psychosocial changes associated with cosmetic surgery. ■

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