Association of Patient Self-esteem With Perceived Outcome After Face-lift Surgery

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**IMPORTANCE** It is well understood that optimal psychological health is imperative to success in aesthetic surgical procedures. Self-esteem is a very sensitive psychological factor that can influence patients’ motivations for seeking surgery as well as their perceptions of outcomes.

**OBJECTIVE** To use the Rosenberg Self-Esteem Scale (RSES) to correlate the outcome of rhytidectomy as perceived by the patient to further understand the association of self-esteem and the results of aesthetic facial rejuvenation.

**DESIGN, SETTING, AND PARTICIPANTS** A prospective study was conducted of 59 consecutive patients undergoing rhytidectomy performed by a single surgeon at a private practice from July 1 to October 31, 2013. The RSES was used to establish preoperative baseline scores and scores at a 6-month postoperative follow-up. A paired t test was used to compare statistical data before and after surgery. Change in self-esteem and the patient’s evaluation of the surgical outcome was assessed. Analysis was conducted from July 1 to December 1, 2014.

**MAIN OUTCOMES AND MEASURES** Patients’ change in self-esteem level after rhytidectomy, as assessed by the RSES.

**RESULTS** Of the 59 patients, 50 completed a 6-month postoperative questionnaire; mean age was 58 years (range, 37-73 years); 48 were women; and 44 were nonsmokers. The mean difference between baseline and 6-month scores showed an increase of 0.3 (baseline, 24.3; 6-month follow-up, 24.6), which was not statistically significant (P = .69). Subdivision of patients into groups by self-esteem level showed a statistically significant improvement in self-esteem after surgery in the group with low self-esteem, with a mean difference in the RSES score of 3.7 (P = .01), whereas the group with high self-esteem showed a decrease in the RSES score of –3.1 (P = .03) and the group with average self-esteem showed a nonsignificant increase of 0.5 in the RSES score (P = .59). The perceived change in youthful appearance (mean, 8.9 years) did not correlate with self-esteem changes.

**CONCLUSIONS AND RELEVANCE** Patient’s self-esteem before surgery may partially determine the quality-of-life outcome after surgery. Patients with low preoperative self-esteem saw an increase in self-esteem after surgery, those with average preoperative self-esteem experienced no change, and those with high preoperative self-esteem experienced a decrease in self-esteem after surgery. In our study, self-esteem measurements did not correlate directly with the positive effect of the surgical outcome, as patients showed no mean change in self-esteem, but patients thought that they appeared a mean of 8.9 years younger after their face-lift surgery. These findings underscore the complex nature of the human psyche as it relates to aesthetic surgery and demonstrates that patients exhibit a wide spectrum of psychological reactions after face-lift surgery.

**LEVEL OF EVIDENCE** 2.

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Face-lift surgery has the ability to restore the appearance of youth to the aging face. Results have traditionally been evaluated and reported from the physician’s perspective by reviewing photographic evidence of the reliability and durability of specific anatomical changes, or evaluating safety outcomes such as the rates of specific complications. What may be more difficult to evaluate is the effect of a surgical intervention on the emotional well-being of the patient. As with all cosmetic surgery, psychosocial factors weigh heavily in both the decision to undergo surgery as well as defining the outcome from the patient’s perspective. With the number of face-lift procedures steadily increasing by nearly 30% since 1997, it becomes increasingly imperative to understand the psychosocial effects of this popular procedure. This patient perspective must be incorporated with that of the surgeon to better understand progress and success in the field of aesthetic plastic surgery.

Reporting the outcomes of highly subjective psychosocial parameters inherently leads to difficulty making generalizable conclusions. Several studies have investigated the results of various treatments for the aging face, including face-lift surgery, with a primary focus on patient satisfaction. While these reports offer important insight into the nature of these interventions, it becomes difficult to extrapolate generalizable meaning from the data reported given the diversity of survey instruments, study protocols, patient populations, and surgical techniques, among a multitude of other factors. As a result, the development and use of validated instruments has become an essential focus of outcomes research. Recently, the FACE-Q instrument (FACE-Q.org) has been validated for specific use in assessing the outcome of facial cosmetic procedures. It represents a comprehensive outcomes battery of more than 40 scales encompassing the domains of facial appearance, adverse effects, process of care, and quality of life.

Although closely related, patient satisfaction and self-esteem are not equivalent terms. Self-esteem represents a specific psychometric concept defined as the individual’s concept of self-worth. The Rosenberg Self-Esteem Scale (RSES) is an established validated psychometric battery that has been in widespread clinical use since its publication in 1965. It has been used to evaluate diverse patient populations across multiple disciplines, including cosmetic facial plastic surgery. With respect to the aging face, it has been used to report improvements in self-esteem after both surgery and injectable treatments. Its primary advantages in reporting outcomes include its established validity and simplicity of use.

We aim to contribute to the existing knowledge regarding the psychosocial effects of aesthetic facial surgery by conducting a prospective evaluation of changes in self-esteem using the RSES in patients undergoing face-lift surgery. This evaluation will be correlated with the outcome of the face-lift surgery as perceived by the patient to further understand the association of self-esteem and the result of aesthetic facial surgery.

### Methods

Fifty-nine consecutive patients undergoing rhytidectomy in a private practice (A.J.) were enrolled in the study from July 1 to October 31, 2013. Analysis was conducted from July 1 to December 1, 2014. The study was conducted in accordance with the Declaration of Helsinki. Patient consent was not required as all patient information was deidentified. All patients underwent minimal access deep-plane extended rhytidectomy, a technique that has been previously described. Data from the RSES were prospectively collected on patients undergoing face-lift surgery performed by a single surgeon at 2 time points: a preoperative baseline and a 6-month postoperative follow-up. The RSES is a 10-item survey that evaluates self-esteem (Box). Each item is rated either strongly agree, agree, disagree, or strongly disagree. Responses are scored from 0 to 3 per item, for a total maximum score of 30. Negatively worded items (numbers 3, 5, 8, 9, and 10) are scored in reverse fashion such that a higher score indicates increased self-esteem.

Additional data collected included other concomitant aesthetic treatments being performed at the same time as the face-lift surgery, history of psychiatric illness given by the patient on intake to the practice (eg, depression, bipolar disease), having experienced a recent traumatic event (eg, death of a spouse, divorce) in the last 12 months, body mass index, and smoking status. Any postoperative complications of face-lift surgery were recorded, including hematoma, infection, facial nerve injury, and sloughing of skin.

Data from the RSES were tabulated on a scale of 0 to 30 in accordance with accepted scoring practices, with a higher score representing higher self-esteem. Scores typically range from 15 to 25; however, normative data are best determined by comparing descriptive population data with data of similar study populations.

An additional data point collected 6 months postoperatively was the answer to the question “How many years younger do you think you look after surgery?” Responses to this question were taken as an integer value. This outcome will be correlated with any change in self-esteem score.

A paired t test was used to compare statistical data on patients before and after surgery. Statistical analysis was performed using GraphPad QuickCalcs software (GraphPad Software) and Microsoft Excel (Microsoft Corporation).

### Box. Rosenberg Self-esteem Scale

Each item is rated either strongly agree, agree, disagree, or strongly disagree. Responses are scored from 0 to 3 per item, for a total maximum score of 30. Negatively worded items (numbers 3, 5, 8, 9, and 10) are scored in reverse fashion such that a higher score indicates increased self-esteem.

1. I feel that I am a person of worth, at least on an equal plane with others.
2. I feel that I have a number of good qualities.
3. All in all, I am inclined to feel that I am a failure.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I take a positive attitude toward myself.
7. On the whole, I am satisfied with myself.
8. I wish I could have more respect for myself.
9. I certainly feel useless at times.
10. At times, I think I am no good at all.
Table. Patient Information

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value*</th>
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<tr>
<td>Age, mean (range), y</td>
<td>58 (37-73)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
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<tr>
<td>Male</td>
<td>2 (4)</td>
</tr>
<tr>
<td>Female</td>
<td>48 (96)</td>
</tr>
<tr>
<td>BMI, mean (SD)</td>
<td>23 (3)</td>
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<tr>
<td>Smoking status</td>
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<td>Smoker</td>
<td>6 (12)</td>
</tr>
<tr>
<td>Nonsmoker</td>
<td>44 (88)</td>
</tr>
<tr>
<td>Concomitant procedures</td>
<td></td>
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<tr>
<td>Blepharoplasty</td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>16 (32)</td>
</tr>
<tr>
<td>Lower</td>
<td>16 (32)</td>
</tr>
<tr>
<td>Carbon dioxide laser</td>
<td>15 (30)</td>
</tr>
<tr>
<td>Brow-lift</td>
<td>5 (10)</td>
</tr>
<tr>
<td>Recent traumatic event</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7 (14)</td>
</tr>
<tr>
<td>No</td>
<td>43 (86)</td>
</tr>
<tr>
<td>Previous psychiatric history</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (4)</td>
</tr>
<tr>
<td>No</td>
<td>48 (96)</td>
</tr>
</tbody>
</table>

Abbreviation: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared).

* Data are presented as number (percentage) of patients unless otherwise indicated.

Results

Of the 59 patients enrolled, 50 completed the 6-month postoperative questionnaire; 9 were lost to follow-up. Mean patient age was 58 years (range, 37-73 years); 48 patients were women and 2 were men. Forty-four patients (88%) were nonsmokers (Table). The 50 patients who completed the 6-month postoperative questionnaire had a mean (SD) preoperative RSES score of 24.3 (4.5) (range, 14-30), a median score of 25, and a mode of 30 (Figure). Twenty-four patients (48%) experienced an increase in RSES scores at 6 months, while 15 patients (30%) experienced a decrease and 11 (22%) experienced no change. The mean change for patients whose RSES score increased was 4, while the mean change for patients whose score decreased was −5.5.

The means of the baseline vs 6-month follow-up RSES scores were compared using paired t tests. Overall, the mean difference between the 6-month RSES and baseline scores was an increase of 0.3 (baseline, 24.3; 6-month, 24.6). This difference was not statistically significant (P = .69). Similarly, a linear regression model plotting the change in RSES score as a function of the baseline RSES score did not demonstrate any significant association (R² = 0.26). Patients perceived that they appeared a mean of 8.9 years younger at 6 months after their face-lift surgery.

The postoperative changes in RSES scores were further analyzed by subdividing the group into patients with high self-esteem, average self-esteem, and low self-esteem at baseline, based approximately on our population statistics. High self-esteem was defined as 1 SD above the mean (RSES score, ≥29), average self-esteem was defined as within 1 SD of the mean (RSES score, 21-28), and low self-esteem was defined as 1 SD below the mean (RSES score, ≤20). In the group of patients with low self-esteem, the mean RSES score improved from a baseline mean RSES score of 18.3 to a postoperative value of 22. This change was statistically significant (mean difference, 3.7; P = .01). The group of patients with high self-esteem showed a statistically significant decrease in RSES score from a baseline value of 29.7 to a postoperative value of 26.6 (mean difference, −3.1; P = .03). The group with average self-esteem showed an increase of 0.5 in the RSES score, but this difference was not statistically significant (P = .59).

Multivariable regression analysis was performed on retrospective data incorporating age and body mass index data into the model. In this model, baseline RSES score, age, and body mass index did not have a significant association with change in RSES score (R² = 0.40). Self-reported recent crisis (P = .40), history of psychiatric treatment (P = .10), and smoking history (P = .60) did not show a significant association with change in RSES score. Neither the presence of a concomitant procedure (P = .24) nor type of procedure (upper blepharoplasty, P = .70; lower blepharoplasty, P = .21; brow-lift, P > .99; carbon dioxide laser resurfacing, P = .29) had any significant association with change in RSES score.

There was only 1 patient with a significant complication, a hematoma requiring evacuation in the operating room. There were no infections, sloughing of skin, or facial nerve injuries in this group.

Discussion

Our results of 50 patients showed that nearly half the patients experienced an increase in self-esteem, consistent with other reports in the literature2,3,6,7,12 and with anecdotal experience with the procedure. However, the overall difference between the mean preoperative and postoperative RSES scores was not statistically significant. In our study, self-esteem measurements do not correlate directly with the positive effect of the surgical outcome because patients showed no mean change in RSES scores but believed that they appeared a mean of 8.9 years younger after their face-lift surgery. This finding underscores the complex nature of the human psyche as it relates to aesthetic surgery and demonstrates that patients exhibit a wide spectrum of psychological reactions after face-lift surgery.
The RSES has been used to report self-esteem outcomes in aging patients undergoing facial rejuvenation procedures. Alves et al\(^6\) conducted a prospective evaluation of 32 patients undergoing rhytidoplasty who were followed up at 2 and 6 months after the procedure. In that study, RSES scores showed statistically significant improvement in self-esteem at both postoperative time points. Baseline scores improved at 2 months by a mean RSES score of 3.6 and at 6 months by a mean RSES score of 4.5. They concluded that “changes in this domain were intense, showing that surgery had a direct influence on these patients’ self-esteem, which suffered significant positive impact after surgery.”\(^6\) Another portion of their study identified a statistically significant improvement in mental health subscale scores on the 36-Item Short Form Health Survey, another validated psychometric instrument, particularly with respect to depression and anxiety. Thus, it seems likely that the patients in the Alves et al study underwent a clinically meaningful change in their mental health status and self-esteem during the course of postoperative follow-up. Similarly, in a study of blepharoplasty by Viana et al,\(^13\) baseline RSES scores improved at the 6-month follow-up by an average of 1.5. The self-esteem of 31 patients (62%) improved after the surgery. Similar results have also been reported for nonsurgical interventions such as botulinum toxin and hyaluronic acid filler injection.\(^8\)

The results of these studies support the argument that treatment of the aging face has a significant general health benefit.

We identified divergent trends between subgroups of our study population defined by baseline self-esteem that may partially explain the lack of an overall difference as well as provide insight into the psychosocial changes occurring in our patient population following rhytidectomy. Specifically, patients with high self-esteem preoperatively tended to have a decrease in self-esteem at the 6-month follow-up while patients with lower self-esteem preoperatively tended to exhibit an increase in self-esteem at the same time point. The changes in these groups achieved statistical significance. In addition, patients with baseline RSES scores at or near the mean value did not undergo any statistically significant changes in self-esteem. Almost one-fourth of our population did not experience any change in RSES scores between the 2 time points. We believe that this finding may support the theory that patients with average or above-average self-esteem do not require improvement in their self-esteem and are undergoing face-lift surgery simply to look younger, not feel emotionally more whole; however, patients with lower self-esteem may seek plastic surgery to improve their low self-esteem.

The skewing of the population toward the upper limit of the RSES score may have imposed a ceiling effect, in which changes in self-esteem at the upper end of the spectrum would be more difficult to measure accurately. Nonetheless, the decrease noted in the RSES scores of the patients in the group with high self-esteem achieved statistical significance. The effect sizes in our study are comparable with those seen in other similar studies reported in the literature\(^6\)\(^-\)\(^8\) and seem likely to be clinically meaningful. The mode baseline RSES score of our population was very high (score of 30), suggesting that a significant number of patients undergoing face-lift surgery may have expected to sustain a worsening of self-esteem 6 months after the procedure.

To further understand these trends, we evaluated any psychosocial stressors that may have skewed this group’s results. Neither self-reported recent crisis nor a history of psychiatric illness showed any significant association with a change in RSES score; however, these self-reported data may misrepresent the true incidence of subclinical (or clinical) depression or other psychiatric illness. In 1980, Goin et al\(^12\) published a prospective study of postoperative psychological changes in 50 female patients who had undergone face-lift surgery and identified psychological factors significantly related to worsening of depressive symptoms. Their study revealed a rate of postoperative depression of approximately 30% that was primarily attributed to a subset of patients who experienced an exacerbation of a preexisting depressive syndrome or an unmasking of a subclinical depression. In an attempt to elucidate factors contributing to this reaction, 2 groups of patients were identified who sustained a lasting depression after intervention: those who incurred symptoms a few days after surgery and those who incurred symptoms 2 to 3 weeks after surgery. Psychometric analyses revealed that the former group was composed of women who were independent and controlling and were likely to experience a loss of control related to postoperative restrictions early after surgery. These patients developed an aversion to dependency, as well as frustration about the inability to control the aging process. The latter group was characterized by women who exhibited a passive-dependent personality and found themselves with initial emotional support from family and friends early in the postoperative period but developed depressive symptoms as this early support was withdrawn. This study shed light on the specific role of surgery in unmasking subclinical depressive tendencies as social and physical factors shift during the postoperative period. Other studies have supported commonly held notions that factors, such as unrealistic patient expectations, male sex, gender reassignment procedures, sensory changes, and the presence of body dysmorphic disorder or other personality disorders, are associated with negative outcomes.\(^14\)\(^,\)\(^15\)

Reviews of the literature generally report improvement of psychosocial outcomes after cosmetic surgery of all types,\(^2\)\(^-\)\(^3\)\(^,\)\(^14\)\(^-\)\(^19\) which has helped establish the notion that aesthetic surgery has real and substantive health benefits. However, it is prudent for the surgeon to understand the complexity and potential pitfalls of this reported phenomenon. For example, the literature on this subject is vulnerable to reporting bias. Patients who agree to participate in these types of studies may be more likely to report positive changes while physicians reporting on these studies may unconsciously do the same. In addition, specific types of aesthetic procedures may affect a patient’s psyche differently. Analysis of surgery for the aging face and rhinoplasty has suggested that the 2 procedures affect different psychometric domains of quality of life.\(^16\) A distinction has been made between procedures that are considered restorative and those that create gender reassignment, with the latter requiring a greater psychological adjustment.\(^14\) Surgery for the aging face aims to restore the appearance of youth and therefore may be less psychologically demanding of the patient. When viewed from this perspective, we found that the patients in this series believed that they appeared a mean of 8.9 years younger after their surgery. However, understanding the association of the changed perception of age, itself
a primary goal of face-lift surgery, with eventual changes in self-esteem or other psychosocial factors is invariably a complex and multifactorial issue.

This study has limitations. Many patients included in this study underwent concomitant procedures with rhinodectomy, which were not controlled for. These procedures may affect the measured results compared with patients who underwent face-lift surgery alone. The central concept of the psychological interplay of surgery for the aging face on self-esteem is unchanged. However, further studies to evaluate the subtleties of the effects of undergoing face-lift surgery alone vs face-lift surgery with ancillary procedures would provide further information on this matter.

Conclusions

Changes occurring within the context of human psychology are often more than direct and logical outcomes of a surgical intervention. A sophisticated interplay of psychosocial and physical changes evolves during the postoperative period to influence the individual outcome. We included the RSES in the evaluation of our patients’ outcomes after face-lift surgery as a psychometric adjunct and identified an interesting pattern of change in the postoperative period. Specifically, a patient’s self-esteem before surgery may partially determine the quality-of-life outcome after surgery. We found that patients with low preoperative self-esteem had an increase in self-esteem after surgery, those with average preoperative self-esteem experienced no change, and those with high preoperative self-esteem experienced a decrease in self-esteem after surgery. However, the overall difference between the mean preoperative and postoperative self-esteem scores was not statistically significant. In our study, self-esteem measurements did not correlate directly with the positive effect of the surgical outcome because patients showed no mean change in self-esteem but believed that they appeared to be a mean of 8.9 years younger after their face-lift surgery. This finding underscores the complex nature of the human psyche as it relates to aesthetic surgery and demonstrates that patients exhibit a wide spectrum of psychological reactions after face-lift surgery.

REFERENCEs