Impact of Cosmetic Facial Surgery on Satisfaction With Appearance and Quality of Life

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Objectives: To assess perioperative quality-of-life (QOL) changes in a facial plastic surgery patient population and to ascertain factors determinative of QOL changes. A notable paucity of objective scientific measurements of QOL exists within the facial plastic surgery literature.

Methods: A 3-year prospective cohort study. The patient population, which comprised a consecutive series of patients 16 years or older, undergoing cosmetic nasal or facial surgery, was obtained from the senior author’s (P.A.A.) private surgical practice. All patients presenting for surgery were offered participation. The main outcome measure was the 59-item Derriford Appearance Scale (DAS59), a valid and reliable instrument assessing psychological distress associated with self-consciousness of facial appearance. Three patient score subgroupings were established: group 1, the DAS59 scores for all patients; group 2, the DAS59 score according to sex; and group 3, the DAS59 score according to the main surgical procedure. Surveys were administered to eligible patients at the final preoperative clinic visit and at 3 months after surgery. Data from the case-control groups were analyzed by a blinded statistician with appropriate t tests.

Results: A total of 93 patients were enrolled with a 100% response rate (82 females [88%] and 11 males [12%]). The most common procedures were rhinoplasty (49%) and surgery for the aging face (51%). Marked differences in perioperative QOL were noted across all DAS59 domains for group 1 and for all females in group 2. Male patients in group 2 analysis experienced QOL improvement only from DAS59 domain 2 (General Self-consciousness of Facial Appearance). Rhinoplasty and surgery for the aging face improved patients’ QOL but differed with respect to which DAS59 domains were affected.

Conclusions: Quality of life was enhanced by facial plastic surgery in this patient population. Male and female patients seem to have different needs to be met from facial cosmetic surgery and correspondingly different areas of improvement in QOL. Rhinoplasty and surgery for the aging face act on different domains of QOL.

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Cosmetic Facial Surgery is frequently impugned by critics as being frivolous and lacking in substantive benefit. Yet, cosmetic surgeons’ offices are flush with patient testimonials to the contrary, suggesting enormously positive and, in many cases, life-altering outcomes with respect to health-related quality of life (QOL). Quality-of-life–based outcomes assessments are in particular need in cosmetic surgery because patient satisfaction is the predominant factor by which success is defined. Until recently, though, it has been difficult to substantiate these contentions in an objective fashion. The past decade, however, has seen an explosion of interest in QOL assessment tools as a surrogate measure of overall benefit from health interventions. This interest has recently been extended to the cosmetic surgery population, although few studies have been restricted to facial plastic surgery alone.

An array of health-related QOL measures is available. Most of these are generic instruments whose items are not directed specifically toward cosmetic surgery candidates and, as such, may undervalue the appearance-altering effects of cosmetic surgery. In fact, a known limitation of generic QOL instruments is diminished sensitivity to detecting change in healthy individuals. Appropriateness of a scale in selecting out responsiveness to change in the desired study characteristics is as important as internal validity and reliability in obtaining a real and accurate description of patient-centered
A consecutive sample of patients, 16 years or older, undergoing a cosmetic nasal or facial surgical procedure by 1 surgeon (P.A.A.) from December 2002 through January 2005 was eligible for inclusion in the study. All patients presenting for surgery during that time period were offered participation. Patients were routinely screened for psychiatric disorders that could have an impact on both surgical and study outcomes; patients with body dysmorphic disorder, or related psychiatric disorders, were excluded from participation. In total, 93 patients were prospectively enrolled having a mean age of 40 years (range, 16-77 years). There were 82 women and 11 men. Forty-six of the patients underwent rhinoplasty, whereas 47 underwent 1 or more aging-face procedures. Informed consent was obtained from all patients prior to enlisting their participation in the study. Because these patients were from the senior author’s (P.A.A.) private practice, institutional review board approval was not sought for the study.

For all participants, demographic data were obtained. The DAS59 was administered at the last preoperative office visit and, again, on or just after the 3-month postoperative visit. Nonrespondents were given reminders by the study nurse (M.D.) to respond as closely as possible to the 3-month postoperative date. All participants were assured of confidentiality by blinding of the surgeon investigators to both study enrollment and patient responses. All patients completed the survey twice with no study withdrawals. The time interval for repeated measurement was selected for several reasons. This intermediate postoperative time point discourages attrition because a satisfied patient will not always return for later visits. In addition, it was thought to allow sufficient time for early healing and settling so that the patient could assess changes appropriately as he or she began to assimilate an altered body image.

Statistical analysis was performed using the SAS Statistical package (version 8; SAS Institute, Cary, North Carolina). The data were analyzed using within-group paired t tests. Data were also subjected to multiple linear regression models to discern the relative influence of various parameters, including patient sex, age, and feature of concern. These variables were chosen specifically to be analyzed because they were clinically significant in the surgical decision-making process for patients undergoing facial aesthetic surgery.

The full-scale mean baseline score for the entire sample was 81.2 (Table 1). Full-scale baseline scores seemed higher for men, for the intermediate age subgroup, and for those having a primary nasal concern. Those with concerns related to facial aging and those in the highest age subgroup exhibited the lowest baseline scores, indicating the least amount of appearance-related emotional concern.

### METHODS

Surgical outcomes. A review of the English-language literature revealed a dearth of condition-specific scales expressly tailored to cosmetic surgical application to assess concern about physical appearance. These include the Derriford Appearance Scale (DAS59) and a series of similar questionnaires developed for particular facial cosmetic procedures. The DAS59 was selected for our investigation because it has been more extensively studied, demonstrating excellent validity, reliability, and internal consistency in both clinical and general populations.

The DAS59 contains 59 self-report items designed to generate a comprehensive assessment of the disruption of everyday living, reduction in self-esteem, problems with personal relations, and psychological distress associated with a perceived problem of appearance. (Two items measure physical distress and dysfunction and are not included in the scoring.) The items can be further subdivided into 6 domains or factors, as follows:

- Full scale score, 57 items;
- Factor 1, General Self-consciousness of Appearance (17 items);
- Factor 2, Social Self-consciousness of Appearance (20 items);
- Factor 3, Self-consciousness of Sexual and Bodily Appearance (9 items);
- Factor 4, Negative Self-concept (5 items);
- Factor 5, Self-consciousness of Facial Appearance (4 items);
- Factor 6, Physical Distress and Dysfunction (2 items).

A higher score on the DAS59 is associated with a greater degree of image-related distress and dysfunction.
Analysis of postoperative scores revealed significant declines from baseline for the full-scale and for all factor scores (see Table 2 for P values). This corresponds to a substantial postoperative reduction in physical, emotional, and social distress and dysfunction. Regression models were used to ascertain the relative influences of the independent variables of age, sex, and feature of concern (Table 3). The regression models using these variables seemed to be a good fit for the full-scale scores and for factors 1, 3, 4, and 5. Subgroup analysis using t tests revealed that age and feature accounted for a substantial proportion of this variance, whereas sex was a poor predictor within these models.

In the overall clinical population, the greatest mean percentage reduction in factor scores was observed for General Self-consciousness of Appearance, whereas the least improvement was noted for Self-consciousness of Sexual and Bodily Appearance (Figure 1). Although men had higher baseline levels of distress, they also exhibited a greater overall percentage decrease in scores, with scores for General Self-consciousness of Appearance accounting for most of this improvement (Figure 2). Of note, scores related to Self-consciousness of Facial Appearance were slightly higher for men at the 3-month postoperative period.

The influence of patient age was also clearly established, with the greatest mean percentage improvements noted across categories in those older than 50 years (Figure 3). Interestingly, the youngest age group showed a slight deterioration in scores for Self-consciousness of Sexual and Bodily Appearance and of Facial Appearance at the postoperative assessment.
Patients undergoing rhinoplasty had a higher mean percentage reduction in the full-scale score compared with those undergoing aging-face procedures (Figure 4). Most of this difference related to improvements in General Self-consciousness of Appearance and Negative Self-concept. However, patients undergoing aging-face procedures had greater reductions in scores relating to Self-consciousness of Facial Appearance and of Sexual and Bodily Appearance satisfaction.

This study reveals vigorous enhancements within multiple parameters of appearance-related satisfaction in a wide-ranging patient population. As expected, amelioration of perceived deficiencies in appearance can be shown to have a broader impact in the context of physical, emotional, and social well-being. These findings compare favorably with normative data and with those findings from other cosmetic surgical populations.

Patients undergoing cosmetic surgery, like most of the general population, have emotional and social concerns specific to aspects of facial appearance, albeit to a greater degree. Perhaps this greater level of concern is a cause for action to undertake cosmetic surgery. For the most part, these concerns do not represent pathologic states, and, in fact, the incidence of body image psychosocial disorders is quite low in this population. This study validates the fact that a positive change in a feature of concern is accompanied by a resultant lessening of concern related to that feature. This “cause and effect” phenomenon stands in stark contrast to a true body image disorder wherein no amount of surgical alteration will yield the preferred decrease in associated distress.

Compared with the normative data obtained for the DAS59, males in our study demonstrated elevated baseline levels of dysfunction compared with females, especially those males undergoing rhinoplasty. Although definitive inferences cannot be drawn given the relatively small male sample size, overall male scores improved to a greater degree than female scores, indicating that even highly distressed patients may still represent good surgical candidates, after careful consideration. The slight worsening of scores for males for Self-consciousness of Facial Appearance at 3 months after surgery is difficult to explain in light of their overall improvements. Perhaps this is because males heal more slowly or because cosmetic surgery is, as yet, less socially acceptable for males and, so early results in a visible area, such as the

![Figure 1. Mean percentage of change in scores for the entire sample.](image1)

![Figure 2. Mean percentage change in scores by sex.](image2)

![Figure 3. Mean percentage change in scores by age.](image3)

![Figure 4. Mean percentage change in scores by feature.](image4)
face, are cause for more distress in males. Nevertheless, sex proved to be a poor predictor of overall variance in our study, so one should be circumspect in speculating about the relative influences of this parameter. A larger patient sample size, to capture more male patients so as to be able to make more definitive statements regarding sex as it pertains to QOL outcomes in aesthetic surgery, would be useful in future analyses of this type.

Our findings were in accordance with normative data for patient age, showing a relative decline in appearance-related concern with age. However, the greatest relative benefits were derived for the oldest subgroup in our study, suggesting that surgical recommendations should be blind to patient age in the absence of other general health concerns. Of interest, the youngest subgroup was observed to have slightly increased levels of postoperative discomfort in the areas of Self-consciousness of Facial Appearance and of Sexual and Bodily Appearance despite overall improvement on the full-scale scores. This underscores the difficulties in assimilating a changing body image in the context of the sexual and social pressures specific to this age group. Extra care must be taken with these patients in the early postoperative period to ensure a smooth recovery and a positive outcome.

Patients in the rhinoplasty subgroup showed higher baseline levels of distress than the facial aging subgroup. This is consistent with the normative data for the DAS59. Furthermore, our study showed a greater improvement in overall scores for the rhinoplasty subgroup, and specifically those relating to General Self-consciousness and Negative Self-concept. By contrast, the population with aging concerns exhibited the greatest improvement in the areas of Facial and Bodily Appearance Satisfaction. These findings suggest that a sense of nasal disharmony manifests in a more general way with respect to one’s global sense of self-consciousness or self-concept. The tendency of patients undergoing rhinoplasty to express dissatisfaction in a more vague or generic fashion may be understood from the standpoint of these results.

In conclusion, the shifting emphasis of outcomes research in recent times to a patient-centered focus has provided a windfall of opportunities to investigate the effects of cosmetic surgery. There is no question that cosmetic facial surgery has the potential for not only a positive effect on the feature in question but also far-ranging enrichment of global well-being, sense of satisfaction and self-assurance, and QOL. Our study corroborates this statement and adds to the gradually mounting body of evidence in this area. Studies such as ours call attention to the fact that cosmetic surgery is not a superfluous “want” but rather an answer to an important health concern that, in the patients’ eyes, cuts to the very heart of social desirability. It can, therefore, have implications for psychological happiness and QOL equivalent to or, perhaps, greater than any other medical intervention.

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REFERENCES