Objective: To identify demographic and psychological factors that predict satisfaction or dissatisfaction with outcomes among patients undergoing facial plastic surgery.

Methods: All patients presenting to the Center for Facial Cosmetic Surgery at the University of Michigan between January 1, 2007, and January 1, 2008, were asked to participate. Patients answered an initial baseline survey consisting of demographic information and an assessment of their baseline level of optimism/pessimism in addition to a surgery-specific outcome questionnaire both preoperatively and 4 to 6 months postoperatively.

Results: Fifty-one patients (mean [SD] age, 53 [13.0]; 69% female; 98% white) participated. Patients over the mean age of 53 years were more satisfied with their results than those under the mean age (P = .01). Patients currently being treated for depression were more satisfied with surgical outcomes than those not being treated (P = .05). No correlation was identified between baseline optimism/pessimism or other baseline factors and patients’ perceived surgical outcomes. Surgeons were decidedly less positive in their assessment of the outcome than patients.

Conclusion: Despite a priori hypotheses that patients treated for depression might be more pessimistic and rate their satisfaction lower than other patients, patients treated for depression show a trend toward greater satisfaction from facial plastic surgical procedures than those not treated for depression.

Arch Facial Plast Surg. 2010;12(3):192-196

Early 12 million cosmetic procedures were performed in 2007, according to the American Society of Aesthetic Plastic Surgery. This is an increase of 457% over the previous 10 years. Because more patients choose to undergo cosmetic surgery, improvement of surgical outcomes becomes increasingly important. Currently, there is an emphasis in the plastic and facial plastic surgery literature on surgical techniques to improve surgical results. A relative improvement in surgical outcomes, however, tends to be subjective and patient and/or surgeon satisfaction can be highly unpredictable.

In the context of such subjectivity, the psychological health of patients is an important consideration in the preoperative assessment for any cosmetic surgical procedure. Previous research indicates that cognitive predispositions such as optimism/pessimism, or the ways an individual generalizes positive and negative experiences to predict future outcomes, may influence how a patient perceives his or her health status and quality of life. Optimism/pessimism has been shown to play a significant role in the ways a person copes with chronic illness and assesses his or her symptoms. In a study of chronic hepatitis C patients, researchers found that even when health status was controlled, pessimists had worse self-assessed health-related quality-of-life scores than optimists or so-called “realists.” The health-related quality-of-life scores of optimists with hepatitis closely mirrored the scores of the general US population.

Several studies suggest that optimism/pessimism may influence more than perceived health, but also health outcomes. For example, Kubzansky and colleagues found that optimistic explanatory style appeared to reduce significantly the risk of coronary heart disease death and nonfatal myocardial infarction among men in the Veterans Affairs Normative Aging Study.

The impact of the psychological concept of optimism/pessimism has not been explored in the context of elective surgical procedures, in which considerable subjectivity is in play with regard to the outcome evaluation. We therefore undertook this study to evaluate the role that the base-
line optimism/pessimism of patients has on perceived outcome after facial plastic surgery. If predictive, optimism/pessimism could aid in selection of appropriate surgical candidates and proper preoperative discussions or counseling prior to surgery.

The primary goal of this study was to identify if there are baseline factors, such as optimism/pessimism, that predict which patients will be satisfied with their surgical results. We also sought to identify factors that can predict dissatisfaction, with the hypothesis that patients with a history of depression might be more likely to be dissatisfied with surgical outcomes. In addition, we sought to examine whether patients and physicians were in agreement with regard to the assessment of the surgical result.

All patients who presented to the Center for Facial Cosmetic Surgery at the University of Michigan for facial plastic surgery from January 1, 2007, to January 1, 2008, were asked to participate in this study. All surgeons who conducted facial plastic surgery at the center were asked to participate as well. This study was approved by the University of Michigan Institutional Review Board, and informed consent was obtained from all study participants.

PATIENT ASSESSMENTS

Upon enrollment, preoperative patients answered a study-specific demographic questionnaire to identify baseline characteristics that could be associated with perceived surgical outcome. These characteristics included age, sex, marital status, educational level, medical conditions, current and previous treatment for mental health problems such as depressed mood or anxiety, perceived overall health status, and previous cosmetic procedures.

Patients also completed the Life Orientation Test–Revised (LOT-R) to evaluate optimism/pessimism. The LOT-R is a revision of the original Life Orientation Test devised to determine individual differences in optimism/pessimism. This instrument has been widely validated, and its 10 items generate an overall score and 2 possible subscales: affirmation of optimism and affirmation of pessimism. Each item is rated on a 5-point Likert scale from “strongly agree” to “strongly disagree,” with highest scores as indications of optimism on the overall optimism subscale, and pessimism on the pessimism subscale.

Finally, patients completed one of the Facial Plastic Surgery Outcomes Questionnaires (FPSOQ). These questionnaires include four validated instruments specific to various areas of cosmetic surgery: the Rhinoplasty Outcomes Evaluation, the Facelift Outcomes Evaluation, the Blepharoplasty Outcomes Evaluation, and the Skin Rejuvenation Outcomes Evaluation. Each instrument consists of 6 items. An additional instrument, called the Mohs Reconstruction Evaluation was created and modeled after the framework of the four validated instruments. Each patient received one of the above targeted questionnaires.

At the 4- to 6-month follow-up visit, patients completed a second LOT-R and FPSOQ assessment that was specific to their surgical procedure. This interval was chosen to allow sufficient time for healing and resolution of edema and to capture the greatest number of subjects who might otherwise be lost to follow-up at a more distant assessment point. Two additional questions were included at follow-up, a 10-point visual analog scale that assesses overall satisfaction with the result and a 5-point Likert-scale question that addresses the likelihood of the patient referring a friend or family member to the same surgeon.

PHYSICIAN ASSESSMENTS

Baseline physician characteristics were collected, including age, sex, specialty training, and years out of training. Physician satisfaction with surgical outcomes was assessed by means of a 10-point Likert scale at the 4- to 6-month follow-up visit for study patients.

DATA ENTRY, CODING, AND ANALYSIS

All data were entered into a Microsoft Excel spreadsheet and cleaned (Microsoft, Inc, Redmond, Washington). Cleaned data were imported into SPSS V 14.0 (SPSS, Inc, Chicago, Illinois) for analysis. Frequencies and descriptive statistics were calculated for all variables. Kruskal-Wallis tests, t tests, and Pearson correlations were calculated to determine relationships between key variables. A P value of 0.05 was considered to be statistically significant.

RESULTS

Fifty-one patients were enrolled and completed preoperative and postoperative assessments. Mean age was 53 years, with a range from 19 to 78 years. Patients were predominantly women (69%) of mostly higher educational backgrounds (Table 1). Most were married (75%) and worked outside of the home (73%). Of note, 39% of the patients reported a history of depression, and 20% were currently being treated for depression. In addition, 38% had a history of previous cosmetic surgery.

Life Orientation Test–Revised (LOT-R) scores indicated overall optimism scores of 18.6 (range, 10-24; SD =3.5), with pessimism subscales of 2.6 (range, 0-7; SD =2.3) and optimism subscales of 9.3 (range, 4-12; SD =2.0). Baseline LOT-R scores were not significantly different than follow-up LOT-R scores, which is consistent with reports in the literature that suggest that optimism/pessimism is a relatively stable construct.

The majority of patients were satisfied with the outcomes of their surgeries. On a 10-point Likert scale, with 1 being extremely dissatisfied and 10 being extremely satisfied, the mean score was 7.6 (range, 1-10; SD =2.4). Eighty-two percent indicated a satisfaction level of 5 or higher, 66.6% indicated a satisfaction level of 8 or higher, and 23.5% indicated a satisfaction level of 10. Eighty-two percent of patients reported they would definitely recommend their surgeon to a friend, and an additional 10% said they would most likely recommend their surgeon to a friend.

In addition to the global measure of satisfaction, the scores on the FPSOQ universally increased between the initial and follow-up surveys (Table 2). The scores related to rhinoplasty, blepharoplasty, rhytidectomy, and Mohs reconstruction all increased significantly (all P <.01). Scores for patients who underwent rhytidectomy increased, but did not reach statistical significance. Life Orientation Test–Revised scores, with the inclusion of the overall scores and the optimism and pessimism subscales, did not correlate with satisfaction.
or the likelihood of patients recommending their surgeon to a friend.

None of the following background variables assessed was significantly associated with satisfaction with outcomes: sex, race, education, current marital status, having been divorced, having had children, working outside the home, participation in volunteer activities, previous treatment for depression, previous surgeries, previous cosmetic surgeries, the seeking of revision of previous surgeries, knowledge of others who have had plastic surgery, and potential embarrassment if others knew they were seeking cosmetic surgery.

Increasing age was significantly associated with higher satisfaction scores on the 10-point Likert scale of global satisfaction ($P = .01$), but not on the FPSOQ (Table 3). Current treatment of depression was significantly associated with satisfaction with the outcome on the FPSOQ ($P = .05$), but not on the 10-point Likert scale, with those patients currently being treated for depression having higher levels of satisfaction with the outcome than those not being treated. The two separate metrics used to determine satisfaction with outcomes are illustrated in Table 3, together with their relationship to background variables.

Finally, we sought to examine whether patients and physicians were in agreement with regard to assessment of surgical result. The scores obtained from the patient surveys were highly correlated with the scores independently obtained from the physicians (Pearson range $= 0.506, P < .001$). However, the satisfaction of physicians with outcomes scores tended to be lower than that of patients ($6.39$ vs $7.60, P = .001$).

Only four physicians participated in this study; thus, their demographic data are not reported here. Note that neither patient nor physician ratings of satisfaction varied by individual physician.

**COMMENT**

Objective measures of success after facial plastic surgery are not only dependent on the effective execution of surgical technique, but also on subjective perceptions of surgical outcome by the patient as well as the surgeon. The ability to preoperatively identify patient characteristics (psychological, social, or demographic) that might impact the subjective perception of surgical outcome and predict dissatisfaction with facial plastic surgery could be highly useful to surgeons. This study sought to prospectively identify psychological and demographic variables in a population of facial plastic surgery patients that might be helpful in the prediction of satisfaction or dissatisfaction with facial plastic surgery procedures.

The results of this prospective study had several surprising and interesting findings. First, optimism/pessimism did not appear to be associated with the satisfaction of patients with the outcomes of their cosmetic surgery. Second, a history of depression or currently being treated for depression did not appear to predispose a patient toward dissatisfaction with surgical results. On the contrary, patients treated for depression were likely to be more satisfied than patients not being treated for depression. Third, in this study sample, older patients (older than 53 years) appeared to be more satisfied with their outcomes than younger patients. This may reflect more realistic expectations among older patients, and therefore higher satisfaction, than among patients who seek surgery at a younger age.

This study population had LOT-R scores of 18.6 (overall), with pessimism subscales of 2.6 and opti-
mism subscales of 9.3. Relative to other normative data, this population appears to be inherently more optimis-
tic along with having relatively lower pessimism scores.
In contrast, healthy college-student control individuals
have overall LOT-R scores closer to 15.0.10 These obser-
vations are consistent with previous reports describing
effective “life-coping strategies” for patients who seek
cosmetic surgery.11

No statistically significant association was observed
with any of the patient factors aside from age and treat-
ment for depression. There were, however, some inter-
esting trends worthy of further exploration in studies
with larger sample sizes. For example, male patients ap-
ppeared to experience a greater degree of satisfaction
with the outcome of their surgery compared to female
patients. Highly educated patients, those who were
single and/or widowed, and those who had never had
cosmetic surgery before, also showed trends toward
greater satisfaction. And although it was not statistically
significant, those patients in the top quartile for LOT-R
scores (eg, those who were the most optimistic) had
higher satisfaction scores than those in the bottom
quartile (eg, the least optimistic). Future studies with
larger sample sizes need to verify these findings and de-
terminate whether true differences exist across these
groups.

Finally, the finding that patients and physicians gen-
erally agreed with regard to satisfaction with outcomes
is noteworthy. However, the surgeons in this study were
more critical of their work than were their patients. Uni-
versally, participating surgeons rated their satisfaction with
outcomes lower than their patients did.

This study has several limitations worth mentioning.
First, our sample size was smaller than anticipated,
which limited the power to detect true differences.
Thus, in cases where no differences were seen, we were
unsure if our finding was a true null finding or, rather,
if it was due to an absence of sufficient data to see a dif-
fERENCE. Second, selection biases may have influenced
the types of respondents included in this sample. We
asked all patients who presented for cosmetic surgery to
participate; however, there was an unidentified number
who refused to participate owing to time concerns, not
wanting to divulge personal information, or not want-
ing to be bothered with a survey. It is possible that, had
those individuals been included in this study, the re-
sults may have been different. A third limitation is that
we were unable to corroborate the reports of patients of

<table>
<thead>
<tr>
<th>Table 3. Associations Between Demographic and Psychological Factors and Perceived Surgical Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Age, y</td>
</tr>
<tr>
<td>≤53</td>
</tr>
<tr>
<td>≥54</td>
</tr>
<tr>
<td>Sex</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>High school graduate</td>
</tr>
<tr>
<td>Some college</td>
</tr>
<tr>
<td>College graduate</td>
</tr>
<tr>
<td>Some graduate school</td>
</tr>
<tr>
<td>Graduate degree obtained</td>
</tr>
<tr>
<td>Current marital status</td>
</tr>
<tr>
<td>Single</td>
</tr>
<tr>
<td>Married</td>
</tr>
<tr>
<td>Divorced</td>
</tr>
<tr>
<td>Widowed</td>
</tr>
<tr>
<td>Ever divorced</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Have children</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>History of depression</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Currently treated for depression</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Previous cosmetic surgery</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Optimists vs pessimists</td>
</tr>
<tr>
<td>Top LOT-R quartile</td>
</tr>
<tr>
<td>Bottom LOT-R quartile</td>
</tr>
</tbody>
</table>

Abbreviations: FPSOQ, Facial Plastic Surgery Outcomes Questionnaires; LOT-R, Life Orientation Test–Revised.
having a history of depression beyond their self-reported history or self-reported use of antidepressant medications. We did not conduct independent assessment of depression, which could have elucidated whether patients self-described as “not being treated for depression” might have indeed been in need of treatment, or whether the actual treatment of depression improved satisfaction scores and indeed equalized mental health scores across our sample.

In summary, this study attempted to identify demographic and psychological factors that may be associated with satisfaction or dissatisfaction with outcomes among patients who undergo facial plastic surgery. Although preliminary, our observations provide insight into these relationships and identify potential associations, which establish a basis upon which future studies can be built. In particular, it will be interesting to design larger scale studies to examine the potential associations between perceived surgical outcomes and sex, education, marital status, depression, and/or inclination toward optimism/pessimism.

Accepted for Publication: May 15, 2009.

Correspondence: Jeffrey S. Moyer, MD, Division of Facial Plastic and Reconstructive Surgery, University of Michigan Medical Center, 1500 E Medical Center Dr, TC1904, Ann Arbor, MI 48109 (jmoyer@umich.edu).


Financial Disclosure: None reported.

REFERENCES


Visit www.archfacial.com. As an individual subscriber, references are more useful to you. References within the text are linked to the reference list, and vice versa, for easy browsing and navigation. Journal references are linked whenever possible to at least 1 of 3 locations to permit accessing the abstract and/or full text: (1) references to articles published in journals posted on HighWire are linked to free full text of articles (shown as FULL TEXT); (2) references to MEDLINE-indexed articles are linked to the free PUBMED abstract (PUBMED); and (3) references to articles published in journals that participate in CrossRef or ISI’s Web of Science link to the full text (CrossRef or ISI). Articles linked through CrossRef or ISI may require you to log in for access.