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Research

Special Topic

The Psychological Impact of Aesthetic Surgery: A Mini-Review

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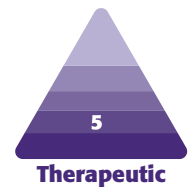
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Abstract

The purpose of this summary is to outline the available research on the psychological factors associated with aesthetic surgery. Aesthetic procedures such as abdominoplasty, breast augmentation, face lift, and rhinoplasty are shown to have unique preoperative and postoperative psychological factors. Depression and anxiety may occur after aesthetic procedures with an increased incidence in patients with certain depression prone personality traits. The pre-existing psychology of patients is also an important contributing factor to consider when evaluating surgical candidates. Pre-existing mood disorders such as depression and anxiety are shown with higher incidence in individuals pursuing aesthetic procedures and can predispose such individuals to worsening mood symptoms postoperatively. This article aims to equip surgeons with a better understanding of the common psychological factors seen in the field of aesthetic surgery, so patients can be better supported throughout all parts of the surgical process.

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THE PSYCHOLOGICAL IMPACT OF AESTHETIC SURGERY

As plastic surgeons, we are not only expected to provide physical improvement for our patients but we are also often expected to help them from a psychological standpoint. This is especially true for aesthetic procedures, where issues such as anxiety, depression, body dysmorphia, and decision regret are not uncommon. Subsequently, we will encounter a wide variety of psychological issues daily revolving around the surgical process. Therefore, it is critical for us to fully understand the patient's psychological status.

Patients who undergo aesthetic operations have been shown to have a higher incidence of pre-existing mood

disorders compared with those pursuing other procedures.^{1,2} Postoperatively, body image and mood may improve; however, some research has shown worsening postoperative depressive and anxiety symptoms highlighting an area of plastic surgery that needs more research.³

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This summary outlines the existing data regarding the presence of pre-existing mood disorders and the impact aesthetic procedures might have on postoperative mood. An understanding of preoperative psychology and postsurgical changes in mood is critical for plastic surgeons to counsel patients effectively, to communicate expectations clearly, and to assist in deciding if patients are appropriate candidates for surgery.

Breast Augmentation

The purpose of augmentation mammoplasty is to increase breast size most commonly by inserting a synthetic implant underneath the breast tissue.⁴ There are a significant number of psychological factors that go into deciding whether to undergo this operation and then handling the recovery process. Prior to the operation, women may suffer from some degree of body image dissatisfaction that if severe, can qualify as a psychological condition termed body dysmorphic disorder.⁵ In addition, it has been demonstrated that breast augmentation patients experience higher rates of suicide.¹ However, it is not well known if patients who undergo breast augmentation have a higher incidence of mental health problems compared with those who do not pursue augmentation procedures. von Soest et al¹ sought to answer this question with a large cohort study consisting of 70,000 women using data from the Norwegian Mother and Child Cohort (MoBa) study. Compared with women who have never had breast operations, women who had breast augmentation reported significantly greater scores of having current mental health issues and lower scores on sense of well-being.¹ Further, breast augmentation patients were also more likely to have a history of pre-existing depression, anxiety, eating disorders, and substance use.¹ Increased preoperative mental health issues were also seen in a retrospective cohort study done by Jacobsen et al⁶ who examined mortality rates and causes in women who underwent breast augmentation procedures. Breast augmentation patients were found to have a 3-fold increase in mortality due to suicide compared with the general population.⁶ The presence of the psychiatric co-morbidities may help explain the increased suicide rate.

The postoperative psychological impact of breast augmentation has not been widely investigated and thus identifies an area of aesthetic surgery in need of more research. However, a related finding is that of chronic pain following other types of cosmetic breast procedures, which is shown by a prospective study done by Spivey et al⁷ using patient-reported outcome measures. Chronic pain is defined as pain lasting 3–6 months after the operation. The operations included in the Spivey et al⁷ study are breast conservation surgery, mastectomy alone, and mastectomy with reconstruction. Psychosocial variables of the patients were measured using questionnaires from the Patient Reported

Outcome Measurement Information System. Pain assessment was done using the Pain Burden Index. The results showed significantly increased patient-reported rates of postoperative pain at 6 months in the cohort with higher baseline anxiety and depression prior to the operation.⁷ It is not known if psychological responses to aesthetic breast procedures play a role in the development of chronic pain. However, the Spivey et al⁷ study suggests a possible association between the presence of preoperative psychological issues and postoperative complications that cannot be attributed to a physical cause. Chronic pain may be a more discrete presentation of a postoperative psychological reaction. More research is needed to investigate this association further.

Abdominoplasty

Abdominoplasty involves the removal of a large section of abdominal skin and adipose tissue down to the level of the lower abdominal wall. This procedure is often done on postbariatric patients who are left with excess skin and subcutaneous tissue.⁴ Overweight and obese patients often have comorbid psychological conditions, most notably depression.⁸ There are few studies on the preoperative psychology of nonobese patients seeking abdominoplasty, so further research is needed to determine if similar trends exist within that cohort.

A prospective randomized controlled cohort study by Nielsen et al⁹ investigated the psychological impact of abdominoplasty on 110 formerly obese patients. The participants completed 3 separate surveys that measured changes in quality of life, experience of having excess skin, and depressive symptoms respectively. The surveys were completed preoperatively and 1 year postoperatively. The patients had significantly fewer depressive symptoms after abdominoplasty; however, quality of life was unchanged.⁹ The reason quality of life did not change despite significant improvement in depressive symptoms might be due to low construct validity of the health survey measuring quality of life.

A study by Papadopoulos et al¹⁰ showed similar changes in depressive symptoms after abdominoplasty.¹⁰ Twenty-two women were surveyed before and 6 months after their abdominoplasty using 4 standardized tests that measured self-esteem, body image, and life satisfaction. Scores were significantly elevated in feeling more comfortable with sexual partners, at social events, and in swimwear.¹⁰ Life satisfaction and body image were also significantly improved postoperatively.¹⁰ The most impressive result is the change in depression scores. Preoperatively, 27% and 37% of patients had mild and moderate depression, respectively. Six months postoperatively, 18% of patients had mild depression, and 9% had moderate depression, a statistically significant finding.¹⁰ This study has the limitation of a small sample size and therefore, lower power. Additionally, the study only included

female patients, so the changes in postoperative mood in male patients cannot be concluded or extrapolated from this study.

Facial Operations

A review by Sarcu and Adamson¹¹ concluded that patients seeking face lift procedures are often burdened by pre-existing psychological challenges with the most common diagnoses being depression, impulsivity, and unstable personality. As with most aesthetic operations, improvement in body image was shown to be the main driving force for those pursuing face lifts, and improvements in quality of life are the common outcome. However, adverse psychological reactions to face lift operations are shown to occur in about 50% of patients, with depression and anxiety being the most common.¹¹

A survey done by Goin et al¹² in 1974 suggested that patients who underwent facelifts presented with early postoperative depression more frequently than patients who underwent other aesthetic operations. To explore this further, Goin et al¹² carried out a prospective study of 50 females who underwent facelifts. The patients were evaluated using psychological interviews and tests preoperatively and again on multiple postoperative timepoints up to 180 days after the operation. Approximately 30% of patients experienced a postoperative depressive reaction at some point during postoperative follow-up. The timing of depressive symptom emergence depended on multiple factors including individual stressors and personality factors. It was concluded that patients with pre-existing depression were more likely to have an intensified depressive reaction postoperatively. In addition, patients with certain depression-prone personality traits such as neuroticism were more likely to experience postoperative depression. However, postoperative depression scores eventually equalized to a level lower than preoperative scores by 6 months.¹² It must be noted that the psychological responses seen in the Goin et al¹² study may not be relevant now 42 years later with several surgical advancements and a new perspective on aging. Further research on the topic would help to discern if similar psychological reactions would still be seen.

Meningaud et al² also examined the psychological factors that impact facial aesthetic procedures and unlike Goin et al¹² did not find that aesthetic operations improved or worsened feelings of depression. Meningaud et al² carried out a prospective multicenter study across 3 public hospitals in Paris. Facial operations included in the study were blepharoplasty, facelift, neck liposuction, rhinoplasty, hair restoration, otoplasty, and chin correction. Patients who underwent facial procedures were found to be more likely to have preoperative anxiety and depression. Anxiety was found to be a consequence of low self-confidence and thus, improved postoperatively.² The marked decrease in

anxiety was the driving force for the perceived improvement in quality of life postoperatively.² A change in depressive symptoms similar to that seen by Goin et al¹² may have also been found if follow-up was done prior to 9 months postoperatively, so it is difficult to conclude that brief postoperative depression did not occur based on this study.

Rhinoplasty

Rhinoplasty is a specific type of facial operation that involves the aesthetic and/or functional correction of the nose.^{13,14} Multiple studies have found that patients pursuing rhinoplasty have increased psychological problems including body dysmorphia, anxiety, and depression.^{13,15,16} One such study done by Naraghi and Atari¹⁷ investigated the incidence of depression in 21 patients who underwent aesthetic rhinoplasty and 21 patients who underwent functional rhinoplasty using a preoperative Beck Depression Inventory (BDI) and Depression subscale of Symptom Check List-90-Revised.¹⁷ The results showed significantly higher scores on the depression scales in the aesthetic rhinoplasty cohort compared with the functional rhinoplasty cohort.¹⁷

Psychological reactions after rhinoplasty were measured in a prospective study done by Goin and Rees.¹⁸ Two hundred patients who underwent rhinoplasty by the same surgeon were asked to complete a Brief Symptom Inventory (BSI) to assess psychological status preoperatively and again at 1 month and 6 months postoperatively. The results showed normal preoperative BSI scores for the cohort as a whole and a significant decrease in depression for women at the 6-month timepoint.¹⁸

DISCUSSION

Aesthetic surgery continues to remain popular as patients look to improve physical attributes and self-perception. According to The Aesthetic Society, breast augmentation and abdominoplasty operations have both increased over 40% from 2020 to 2021.¹⁹ The increase in aesthetic operations is likely in part due to societal pressures on body image and increased usage of social media platforms. Additionally, since the 2020 COVID-19 pandemic, Zoom (San Jose, CA) has become a familiar video tool for occupational and educational communication. Its increasing usage in these settings has created a heightened awareness of appearance, which has increased the incidence and exacerbated symptoms of body dysmorphia.²⁰ The heightened awareness of appearance and self-critiquing associated with all forms of video conferencing is now collectively termed “Zoom dysmorphia” and subsequently has been shown to increase requests for aesthetic procedures.²⁰

Requests for aesthetic operations are clouded by many psychological factors that have also been shown to affect

how patients respond postoperatively. This article summarizes the myriad of psychological factors that impact patients prior to and following aesthetic operations. von Soest et al¹ and Jacobsen et al⁶ both found increased mental health issues in women undergoing breast augmentation operations compared with women who have had other breast operations and women who have never undergone a breast operation. Both studies have many strengths in their design and the large sample sizes give the studies high power. However, neither was completed on an American cohort. Due to differences in societal emphasis on physical appearance and standards of beauty, the psychological effects of breast augmentation and pre-existing mental health issues may be different in the United States. Thus, there is a need for more studies on an American cohort to further examine the common psychological issues that US plastic surgeons may face while treating their patients.

In stark contrast, studies done by Nielsen et al⁹ and Papadopulos et al¹⁰ showed marked improvement in depressive symptoms after abdominoplasty. Increases in self-esteem and body image improved in both studies. This brings about a question of the pre-existing mental status of abdominoplasty patients and how it may differ from that of patients seeking breast augmentation. Further studies into the psychological processes that impact both patients who wish to undergo breast augmentation and abdominoplasty would help to understand the difference in psychological outcomes after these operations.

The most intriguing psychological outcome of all aesthetic operations is that found by Goin et al¹² in their study of postoperative depression after facial procedures. This may be explained by increased bruising and swelling, as well as the nature of the operation being done on the face which cannot be hidden, making the healing process more difficult to endure. However, Meningaud et al² did not find the same depressive reaction. In fact, Meningaud et al² found that anxiety markedly improved after facial operations which would lead one to believe that depressive symptoms should have also improved since the two mental states are often comorbid.

Additionally, Goin and Rees¹⁸ found significantly improved depressive symptoms after rhinoplasty using the BDI. However, preoperative BDI scores were normal which contrasts the findings of Naraghi and Atari¹⁷ that showed rhinoplasty patients have a higher incidence of preoperative depression. This difference may be due to the use of different depression measurement scales. Minimal literature exists on the psychological reactions after facial operations, so further research is needed to obtain the information to thoroughly counsel patients on what to expect after their procedure in this regard.

Despite several differences in postoperative psychological reactions, there seem to be few differences in the

preoperative psychology of patients pursuing a variety of aesthetic operations, with preoperative anxiety and depression being the most common mental health diagnoses. Baseline anxiety and depression were found to be higher in patients pursuing breast and facial aesthetic operations.^{2,5,6,12,15,16} Depression, rather than anxiety, seemed to be more common in patients undergoing abdominoplasty procedures.^{9,10} An increased incidence of body dysmorphia was suggested in patients who pursue rhinoplasty and breast augmentation.^{5,13,15,16} These findings reinforce the statement of Linn and Goldman¹⁵: all aesthetic patients are “in effect, psychiatric patients” which is an important correlation for plastic surgeons to keep in mind.

It is important to mention the limitations of the references discussed. Most research on the topic of psychology in aesthetic surgery dates back many years. The same trends may not still hold true during the current day. In addition, there are few studies available that specifically investigate postoperative psychological reactions in aesthetic surgery, and thus, more research on the topic needs to be done to make any strong conclusions. Many of the studies discussed have the significant limitation of a small sample size which should be kept in mind when interpreting the findings.

CONCLUSIONS AND FUTURE DIRECTION

This review has elucidated the extensive psychological issues that may follow patients into the operating room and how those issues may impact their reactions postoperatively. A concise summary of the research discussed in this article is presented in [Table 1](#).

Many differences were seen in psychological outcomes between different types of aesthetic procedures, and plastic surgeons who perform these operations should be conscious of these findings. The research discussed in this review calls for plastic surgeons to gain a better understanding of their patient's psychological burdens during consultation to maximize mood benefits postoperatively. Doing so will help inform a patient's postoperative expectations and potentially prevent significant morbidity secondary to the exacerbation of prior mental health issues. Discussion of the psychological impact of different aesthetic operations should be a standard part of the informed consent process; however, further research needs to be done to guide such a conversation. Furthermore, it may be beneficial for plastic surgeons to ensure that psychiatric comorbidities are well-controlled preoperatively and that patients have a robust support system for their postoperative recovery period in case transient mood changes occur.

The research discussed in this article suggests a potential benefit of preoperative psychological evaluation. Preoperative completion of a Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder 7-Item, and Body Dysmorphic

Table 1. Summary of Research

Surgery type	Sample size	Psychological issues/major findings	References
Breast augmentation	70,000	Pre-existing depression, anxiety, eating disorders, and substance use.	von Soest et al ¹
Breast augmentation	2761	Higher prevalence of prior psychiatric admission and a 3-fold increase in postoperative suicide seen in women who underwent breast augmentation.	Jacobsen et al ⁶
Other aesthetic breast procedures	259	Significantly increased patient-reported rates of postoperative pain at 6 months in the cohort with higher baseline anxiety and depression prior to the operation.	Spivey et al ⁷
Abdominoplasty	110	The patients had significantly fewer depressive symptoms after abdominoplasty; however, quality of life was unchanged.	Nielsen et al ⁹
Abdominoplasty	22	Preoperatively, 27% and 37% of patients had mild and moderate depression, respectively. Six months postoperatively, 18% of patients had mild depression and 9% had moderate depression, a statistically significant finding.	Papadopoulos et al ¹⁰
Face lift	50	<ul style="list-style-type: none"> • Approximately 30% of patients experienced a postoperative depressive reaction at some point during postoperative follow-up. • It was concluded that patients with pre-existing depression were more likely to have an intensified depressive reaction postoperatively. • Postoperative depression scores eventually equalized to a level lower than preoperative scores by 6 months. 	Goin et al ¹²
Other aesthetic facial procedures	103	Patients who underwent facial procedures were found to be more likely to have preoperative anxiety and depression. Anxiety was found to be a consequence of low self-confidence and thus, improved postoperatively.	Meningaud et al ²
Rhinoplasty	42	The results showed significantly higher scores on the depression scales in the aesthetic rhinoplasty cohort compared to the functional rhinoplasty cohort.	Naraghi and Atari ¹⁷
Rhinoplasty	200	The results showed normal preoperative Brief Symptom Inventory scores for the cohort as a whole and a significant decrease in depression for women at the 6-month timepoint.	Goin and Rees ¹⁸

Disorder Questionnaire would allow for common preoperative psychological issues to be identified and aid in postoperative risk stratification of patients pursuing aesthetic procedures. Patients found to be high risk for adverse psychological responses postoperatively should be screened at each follow-up appointment for symptoms of common psychological disturbances such as anxiety and depression. Postoperative PHQ-9 trends should be followed in all patients and a space for open discussion between provider and patient should be made. Referral to a mental health provider should not be delayed in the setting of new or worsening psychological symptoms. Making the above additions to the practice of aesthetic surgery could significantly reduce possible psychological suffering throughout the surgical process.

Disclosures

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