



Anxiety and depression conditions do not influence postoperative satisfaction in breast reduction patients

Caglayan Yagmur^{a*}, Sertac Ak^b, Murat Sinan Engin^a, Kamil Yildirim^a, Murat Gumus^c, Ismail Kucuker^a, Ahmet Demir^a

^a Department of Plastic, Reconstructive, and Aesthetic Surgery, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey

^b Department of Psychiatry, Faculty of Medicine, Hacettepe University, Ankara, Turkey

^c Department of Plastic, Reconstructive, and Aesthetic Surgery, Samsun Training and Research Hospital, Samsun, Turkey

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ABSTRACT

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* Correspondence to:

Caglayan Yagmur
Department of Plastic, Reconstructive,
and Aesthetic Surgery,
Faculty of Medicine,
Ondokuz Mayıs University,
Samsun, Turkey
e-mail: caglayanagmur@gmail.com

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In literature there are reports on alleviation of depressive symptoms and anxiety levels and increased quality of life in individuals who underwent breast reduction. However, the relation of this improvement with patient satisfaction is unclear. The purpose of our study is to fulfill the aforementioned objective. In this study, A total of 72 female patients who were operated for only reduction mammoplasty between 2011 and 2015 were included. Technical details regarding the surgery were recorded. Patients were applied Beck Depression Scale (BDS) and Beck Anxiety Scale (BAS) preoperatively. In the 6th postoperative month, Beck scales were repeated and patient satisfaction was evaluated via "Visual Analogue Scale "(VAS). Also, surgical outcome has been graded by three other plastic surgeons from one to 10. Data were evaluated statistically. Apparent postoperative alleviation BDS and BAS scores was significant at postoperative 6th month. Average VAS scores for the patients' postoperative satisfaction with their surgical outcome was 8.8. These scores by three other plastic surgeons were found to be 7.6. Individual satisfaction scores and professional evaluation scores were found to yield positive correlation. The tissue amount excised was not found to be correlated with patient age or satisfaction, however it was found to be negatively correlated with professional evaluation. Moreover, regression analyses revealed patient satisfaction was not influenced by anything other than the surgery itself. In other words, preoperative BDS and BAS scores were not found to be predictors of postoperative patient satisfaction. To our findings, although depression and anxiety symptoms improve after breast reduction surgery, patients are not influenced by their preoperative psychological condition when assessing their surgical outcomes. This important finding may be a possible preoperative relief for the surgeon who is dealing with an anxious or depressive breast reduction patient.

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1. Introduction

The breast is of critical importance in a woman's life. Aside from its almost sacred physiological function of nursing, it's also perceived as the paramount sexual

symbol. Macromastia (oversized breasts) is a common concern and its treatment is almost universally surgical reduction. Reduction mammoplasty procedures are commonplace practice amongst plastic surgeons,

yielding high patient satisfaction.

Macromastia ails the individual not only physically, but also via the psychological problems that come along as well. In female population, depression is twice as frequently diagnosed as in its male counterpart (Justo and Calil, 2006). It is common to observe frustration and low spirits in a patient who reports to the plastic surgery clinic complaining from macromastia (Freire et al., 2004; Freire et al., 2007; Kuzbari and Schlenz., 2007; Sabino Neto et al., 2008; Saariniemi et al., 2009; Singh et al., 2010). It has been reported that women scheduled for breast reduction surgery have a negative outlook on their wellness and suffering psychological stress (Klassen et al., 1996; Shakespeare and Cole, 1997). There are articles which report alleviation of depressive symptoms and anxiety levels, and increased quality of life in individuals who underwent breast reduction (Souza Faria et al., 1999; Freire et al., 2004; Cerovac et al., 2005; Iwuagwu et al., 2006; Freire et al., 2007; Kuzbari and Schlenz., 2007; Sabino Neto et al., 2008; Saariniemi et al., 2009; Romeo et al., 2010; Singh et al., 2010). In their study about reduction mammoplasty, Blomqvist et al. (2000) have reported that patient quality of life is restored within the first postoperative year. However, we encountered no study focusing on the relationship between patient satisfaction and alleviation of depression and anxiety symptoms. The purpose of our study is to fulfil the aforementioned objective.

2. Materials and methods

A total of 72 female patients who were operated for only reduction mammoplasty between 2011 and 2015 were included in our study. Mastopexy and revision procedures were not included. The common complaints of the patients were physical symptoms associated with hypermastia (including back pain, strap marks, submammary maceration). None of the patients had any other accompanying medical or psychological condition. Two surgeons (CY, MG) contributed patient data to this study and patients were operated via either inferior, or superomedial pedicled techniques with inverted T-scar (Fig. 1). The operations were undertaken with the understanding and written consent of each patient as authors are aware of the Code of Ethics of the World Medical Association (Declaration of Helsinki) which has been printed in the British Medical Journal (18 July 1964).

Technical details regarding the surgery such as the technique used, geometrical data and amount of tissue excised were recorded. Patients were applied Beck Depression Scale (BDS) and Beck Anxiety Scale (BAS) preoperatively. BAS is composed of 21 questions inquiring the patient's history of anxiety for the past week. Each answer is scored from zero to three (Beck, 1961). Likewise, BDS interprets depressive

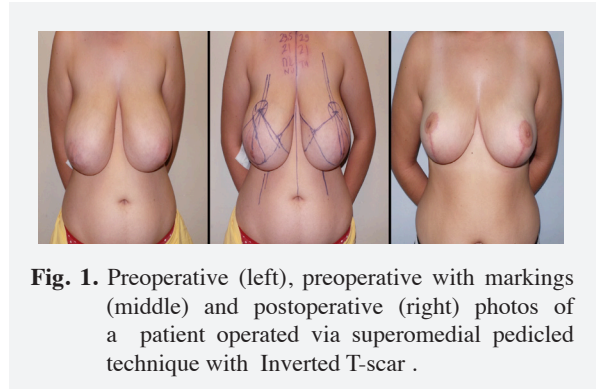


Fig. 1. Preoperative (left), preoperative with markings (middle) and postoperative (right) photos of a patient operated via superomedial pedicled technique with Inverted T-scar .

symptoms. Nineteen points is the cut-off point and scores above that are diagnostic (Beck, 1961). Also, BDS can be used to determine the severity of depression.

In the 6th postoperative month, Beck scales were repeated and patient satisfaction was evaluated via "Visual Analogue Scale" (VAS). Also, surgical outcome has been graded by three other plastic surgeons from one to 10.

Since 11 of the patients did not show up on their 6th month follow up, analyses were carried out using data provided from 61 patients.

Statistical analyses were carried out via SPSS software (Statistical Package for Social Sciences, version 16.0, IBM corporation, United States). For descriptive analyses, chi square test was used for data that conformed normality defaults and Mann Whitney U test was used for those did not. The predictive values of ordinal parameters (patient satisfaction and professional evaluation scores) were determined by linear regression analyses.

3. Results

Average age of the patients was 33.7 (range 19-54). Average preoperative and postoperative BDS scores were 13.40 (± 8.7) and 8.68 (± 5.7), respectively. Apparent postoperative alleviation of depressive symptoms was deemed highly significant ($p < 0.001$) (Table 1). Preoperatively 16 (32%) patients had BDS scores above the cut-off point for clinical depression. In the follow up only 4 (8%) patients scored that high.

Table 1. Significant difference between pre- and postoperative BDS scores ($p < 0.001$). BDS scores decrease postoperatively

Preoperative "BECK depression scale" scores	Postoperative "BECK depression scale" scores
13.40 (± 8.69)	8.68 (± 5.74)

Average preoperative and postoperative BAS scores were found to be 15.58 (± 11.5) and 11.76 (± 8.5), respectively. This decrease in scores was also highly significant ($p < 0.001$) (Table 2).

Table 2. Significant difference between pre- and postoperative BAS scores ($p<0.001$). BAS scores decrease postoperatively

Preoperative "BECK anxiety scale" scores	Postoperative "BECK anxiety scale" scores
15.58 (± 11.47)	11.76 (± 8.46)

Average VAS score for the patients' postoperative satisfaction with their surgical outcome was 8.76. Average score of the surgical outcomes made by three other plastic surgeons was found to be 7.56 (Table 3). Individual satisfactions and professional evaluations were found to yield significant positive correlation as interpreted by Pearson correlation test (correlation coefficient= 0.30; $p<0.05$).

Table 3. Individual satisfactions and professional evaluations were found to yield significant positive correlation as interpreted by Pearson correlation test (correlation coefficient= 0.30; $p<0.05$)

	Average scores
Sixth month follow up patient satisfaction (VAS)	8.76 (± 1.08)
Sixth month follow up professional evaluation	7.56 (± 1.26)

* Since distribution of the average evaluation scores conformed normality defaults, chi-square and pearson correlation coefficient were used. While there was a significant difference between the averages of the parameters ($p<0.001$), analyses yielded a positive correlation ($p<0.05$) with a coefficient of 0.3, which suggests a weak correlation since it's smaller than 0.5.

The tissue amount excised (range 550 grams-4800 grams, ± 921.7) was not found to be significantly correlated with patient age or satisfaction, however it was found to be negatively correlated with professional evaluation (correlation coefficient=-0.32; $p<0.05$). Thus, plastic surgeons gave lower scores to patients with larger excisions.

Preoperative and postoperative DAS and DBS scores were not found to be correlated with neither patient satisfaction nor professional evaluation. Pre- or postoperative anxiety and depression levels did not influence patient satisfaction whatsoever.

Regression models were established in order to prevent a statistical error in evaluation of the relationships between the parameters analysed. Patient age, tissue amount excised and preoperative and postoperative BDS and BAS scores were included in the regression model to determine the predictors

of patient satisfaction. These analyses revealed that patient satisfaction was not influenced by anything other than the surgery itself.

Regression analyses were repeated to determine the predictors of professional evaluation as well, and only tissue amount excised retained its significant negative correlation (beta=-0.37, $p<0.05$). Even when all other parameters are stabilized, professional evaluation scores significantly decreased as the excised tissue amount increased.

4. Discussion

The two main objectives of breast reduction surgery are alleviation of the physical complaints and restore an aesthetically appealing appearance to the breasts. Candidates of breast reduction complain from not only their physical symptoms but also decreased self esteem and overall quality of life as well (Kuzbari and Schlenz, 2007). In addition, psychological problems and diminished sense of well being is common among such patients (Freire et al., 2004; Freire et al., 2007).

A number of studies report that breast reduction yields resolved social bashfulness, restored bodily self image and improved quality of life (Hollyman et al., 1986; Bradbury, 1994; Guthrie et al., 1998; Jones and Bain, 2001). In their prospective randomized trial, Iwuagwu et al. (2006) have reported significant alleviation of anxiety and symptoms of clinical depression following breast reduction.

Our results are consistent with the literature. Our patient series revealed significant decrease in depression and anxiety symptoms following breast reduction surgery.

Concept of satisfaction is a highly subjective one and there are several contributors of it. It is possible to expect postoperative dissatisfaction from an anxious or depressed patient, or attribute her dissatisfaction to her psychological condition. As an interesting finding of our study, pre- and postoperative mental status yielded no correlation with the satisfaction of the surgical outcome. This suggests that patients are not influenced by their preoperative psychological condition when assessing their surgical outcomes. This is a possible relief for the surgeon who's dealing with an anxious or depressive patient. Also, our findings confirm the uplifting effect of breast reduction surgery on an individuals psychological status.

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