Quality of Life Improvement Following Blepharoplasty: A Prospective Study

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Background: Our previous retrospective study indicates that esthetic surgery in general results in a significant improvement in Quality of life (QoL). This is the first indication-specific prospective evaluation of QoL after blepharoplasty using standardized and validated questionnaires.

Objectives: To report changes in QoL after blepharoplasty prospectively with a 6-month follow-up.

Methods: The same surgical team performed an esthetic blepharoplasty on 50 patients. Participants answered 1 set of questionnaires preoperatively and 6 months postoperatively. The instrument consisted of a self-developed indication-specific part specially designed for blepharoplasty and 4 validated and standardized testing instruments (FLZ, FPI-R, RSES, and PHQ-4) with norm data for German-speaking countries available.

Results: This study reveals a high rate of satisfaction after blepharoplasty. 96% felt better about themselves and 94% would undergo the procedure again. Statistically significant increased values were found postoperatively in the items "income" ($P = 0.016$), "family life" ($P = 0.028$), "partner relationship" ($P = 0.039$), "ability to relax" ($P < 0.001$), "energy" ($P < 0.001$), "hobbies" ($P < 0.001$), and with their outer appearance in general ($P = 0.018$). Blepharoplasty showed a statistically significant improvement in emotional stability ($P = 0.017$) and a reduction in depressive symptoms ($P < 0.001$). Our patients had statistically significantly higher self-esteem before ($P < 0.001$) and after ($P < 0.001$) the intervention.

Conclusion: Our prospective study shows that blepharoplasty increases most aspects of QoL significantly, has a positive effect on emotional and physical well-being, and reduces the incidence of depressive symptoms and anxiety.

Key Words: body image, esthetic blepharoplasty, life satisfaction, quality of life, self-esteem

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Quality of life (QoL) is an indicator of psychological, material, physical and social well-being.[1] Modern medicine has not only dedicated itself to cure diseases but also to increase the QoL of an individual.[2] Complications need to be avoided, but also the patient satisfaction gained more and more importance as a surgical outcome indicator in the last 50 years.[3,4]

Elective esthetic surgery has considerably increased in the past years. 15% more surgical procedures and 24.5% more nonsurgical procedures were performed in the year 2018 compared with 2014 by plastic surgeons.[5]

The patients decide to undergo esthetic surgery, in absence of an illness, in the hope of an increase in physical, psychological, and social well-being.[6] Studies have shown, that a beautiful person is considered to be more intelligent, mentally healthy, sociable, and dominant than unattractive.[7–9] On top of that good-looking persons earn 5 to 10 percent more than average-looking persons.[10]

Various studies have been conducted to demonstrate the gain in QoL after esthetic procedures, mostly with positive outcomes.[11,12] The literature even claims that esthetic surgery is comparable to antidepressants in terms of health-related QoL.[13]

In this context, the judgment of health professionals is essential in deciding, which treatment is reasonable and possible. The outcome should provide substantial and long-lasting benefits to improve an individual's QoL.[14,15]

Our previous study in 2007 showed that a broad spectrum of esthetic surgical procedures improves the QoL in many aspects.[16,17] Furthermore, our retrospective study on transdermal blepharoplasty from 1995 to 2008 strengthens this hypothesis and indicates an increase in personal well-being, satisfaction with appearance (body image), self-confidence, and attractiveness postoperatively compared with standardized norm data.[18] The importance of prospective data collection was pointed out. It was not possible to determine whether the

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differences could be attributed to the patient sample (selection bias) because no preoperative data were collected in our retrospective study.[18] In this prospective study, the aim is now to compare the data between pre to postoperatively and also to analyze the data with standardized norm data.

METHODS

This prospective outcome study was conducted from November 2014 to January 2019. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study was approved by the ethics committee of the Munich Technical University, Munich, Germany (approval number 252/14 TUM).

To avoid possible human biases that could be caused by different surgeons, only patients who underwent a transdermal blepharoplasty by the same surgical team were selected. Of these 60 patients who fulfilled the criteria, 50 gave their informed consent and participated in this study.

The exclusion criteria were medical indications for blepharoplasty such as tumors and reconstructive reasons, myasthenia gravis patients, and noninvasive lasers. The used operation technique has widely been described.[19–25]

A questionnaire was sent to the patients preoperatively (T0) and 6 months postoperatively (T1) following our protocol. If the questionnaire was not sent back in time, we contacted the participants after 14 and 30 days by phone to enhance the response rate. There was no financial interest for our patients to take part in this study.

Both questionnaires (preoperative and postoperative) consisted of 5 parts. A self-developed indication-specific questionnaire, which analyses the demographic data, social surroundings, and the patient's subjective opinion if the surgical procedure was a success, followed by 4 validated and standardized tests: Questions on Life Satisfaction (FLZ = Fragebogen zur Lebenszufriedenheit),[26] Freiburg Personality Inventory-Revised (FPI-R),[27] Rosenberg Self-Esteem Scale (RSES),[28] and the Patient Health Questionnaire-4 (PHQ-4).[29]

Self-Developed Indication-Specific Questionnaire for Blepharoplasty

This part includes questions considering demographic details, patient's pre and postoperative condition, age, weight, civil status, school graduation, profession, and health status. The preoperative situation was also reviewed in terms of previous surgeries, satisfaction with their outcome, sources of information, the intention for surgery, and satisfaction with the body part to be operated on. Postoperative consequences such as pain, swelling, complications, and the subjective impression of the outcome were evaluated as well as the influence of the surgical result on everyday life and well-being.

Questions on Life Satisfaction

This questionnaire evaluates the subjective QoL [weighted satisfaction (WS)]. It has been validated and standardized for the German-speaking population and was developed at the Department of Psychosomatic Medicine of the University Hospital Rechts der Isar, Munich Technical University, by Herschbach and Henrich. It contains 3 modules "general life satisfaction" (n = 2534), "health satisfaction" (n = 2218), and "satisfaction with the appearance" (body image).[26] For the body image, no norm data is available yet, therefore the results were compared with our evaluation from 2007 involving 228 patients.[16]

The items were rated according to their subjective importance and their subjective satisfaction on a 5-tier scale (scales 1–5). The WS was calculated using the following formula: WS = (importance −1) × (2 × satisfaction −5), resulting in scores from −12 up to +20 for each item.[26] To compare the global satisfaction in the respective area of life a sum score for each module was calculated.

Freiburg Personality Inventory-Revised

In esthetic surgery, the psychological aspect should not be underestimated.[30,31] Therefore we used the "Freiburg Personality Inventory-Revised"[27] which is a multidimensional, psychological testing instrument, that enables the self-assessment of personality traits and has been validated and standardized for German-speaking countries (n = 3740).[32] This questionnaire was developed in 1970 by Fahrenberg and Selg[33] and the revised version was proposed in 2001.[34] Out of 12 scales with a total of 138 questions, we focused on the subscale "emotionality" (consisting of 14 items). Each question can be answered with "correct" (1 point) or "not correct" (0 points). The sum scores were converted into stanines using 14 standardized age and sex-specific tables. A low overall score means high life satisfaction, emotional stability, and self-esteem.[34]

Rosenberg Self-Esteem Scale

The RSES is a widely used tool for assessing self-esteem.[28] It is a standardized and validated questionnaire for 53 nations (total: n = 16998, Germany: n = 782).[35]

It contains 10 items, which are rated with a 4-point response scheme from 1 (strongly disagree) to 4 (strongly agree). The rating can range from 10 to 40, with 40 indicating the highest possible score. Scores above 30 are a strong indicator of high self-esteem.[35]

Patient Health Questionnaire-4

The PHQ-4 was used to assess mental health with available German norm data (n = 5003).[29] It consists of a depression scale (PHQ-2)[36] and an anxiety scale (GAD-2)[37] and participants have to rate how they have been impaired by certain feelings in the last 2 weeks. The frequency of each feeling is given on a 4-point scale from 0 (not at all) to 3 (almost every day). The sum allows a prediction of the presence of none (value between 0 and 2), mild (between 3 and 5), moderate (between 6 and 8), or severe (from 9 to 12) mental depression.

Statistical Analysis

The statistical evaluation was done with the software SPSS 24.0 for Windows (SPSS Inc.). The data distribution of each variable was evaluated with the "unpaired *t* test" and for all tests, the level of significance was set at $P < 0.05$.

RESULTS

Self-Developed Indication-Specific Questionnaire for Blepharoplasty

Fifty patients underwent transdermal blepharoplasty without any other cosmetic surgery and gave their consent to participate in this study. Eight patients were males and 42 were females. The minimum age of the patients was 25 years, whereas the maximum age was 79 years, with an average of 54.7 years. The average weight of the patient was 70.6 kg and the average height was 165 cm, which corresponds to an average body mass index of 25.7. Ten participants were smokers (20%). The

reflection period to undergo the operation was on average 3 years (ranging from 1–10 y). 95% of the patients had the impulse to undergo the surgery by themselves and 98% expected a benefit for their well-being. 11% were afraid of complications and 60% had concerns about an unsatisfying result (with partially overlapping answers).

Twenty-seven of the participants were preoperatively very dissatisfied or rather dissatisfied with their eye area, and 34 responded that the appearance of their eye area made them look tired preoperatively. None of the patients were very dissatisfied or rather dissatisfied with the postoperative result. 95% of the operations were without complications. 5% reported sensitivity disorders and/or postoperative pain. None of the patients had to be operated again due to complications. Forty-two of the patients were satisfied or very satisfied with the symmetry of the result.

Finally, 79% of patients would recommend the operation to friends and 94% would undergo the procedure again. The participants felt better (96%), were more satisfied with their body/eye area (84%), and recovered (84%). Self-confidence (60%) and attractiveness (76%) also improved and 8% of patients felt easier to spend time in public. 86% of the patients stated that the outcome was definitely worth the effort.

After surgery, the patients reported significantly looking less tired or exhausted ($P < 0.001$) and less sad or unappealing ($P < 0.001$) because of their eyelids. They also felt significantly younger ($P < 0.001$), fresher ($P = 0.003$), more confident ($P < 0.001$), and more attractive ($P < 0.001$).

Questions on Life Satisfaction

As shown in Supplemental Table 1, (Supplemental Digital Content 1, http://links.lww.com/SCS/E692) the patients are significantly more satisfied with the item "partner relationship/sexuality" ($P < 0.001$) postoperatively compared with German norm data.

Postoperative scores for the items "income", "family life", and "hobbies" increased so much that there was no longer any significant difference to the German norm data whereas these values were evaluated significantly below the German norm data preoperatively ("income" ($P < 0.001$), "family life" ($P < 0.001$), and "hobbies" ($P < 0.001$).

When comparing pre and postoperative satisfaction, a significant increase in "income" ($P = 0.016$), "family life" ($P = 0.028$), "partner relationship/sexuality" ($P = 0.039$), and "hobbies" ($P < 0.001$) were observed. Furthermore, our patients had a significantly higher score in general life satisfaction postoperatively ($P = 0.018$).

As shown in Supplemental Table 2, (Supplemental Digital Content 2, http://links.lww.com/SCS/E693) the second module "satisfaction with health" showed scores for the items "ability to relax" ($P < 0.001$) and "energy" ($P < 0.001$) below the German norm data. After blepharoplasty, there was no significant difference anymore due to improvement.

Compared with German norm data, statistically significantly higher satisfaction with the items "mobility" ($P < 0.001$) and "independence from assistance" ($P < 0.001$) remained before and after surgery. Statistically significant improvement in the items "ability to relax" ($P < 0.001$), "energy" ($P < 0.001$), "freedom from anxiety" ($P < 0.001$), and "freedom from aches and pains" ($P < 0.001$) was found postoperatively when compared with the preoperative state.

In the third module "satisfaction with body image", as shown in Supplemental Table 3, (Supplemental Digital Content 3, http://links.lww.com/SCS/E694) our results demonstrated a statistically significant improvement in the following items: "hair" ($P < 0.001$), "ears" ($P = 0.032$), "eyes" ($P < 0.001$), "nose" ($P = 0.044$), "breast" ($P = 0.014$), and "skin" ($P < 0.001$). Furthermore, our patients were significantly more satisfied with their outer appearance in general after blepharoplasty ($P < 0.001$).

Freiburg Personality Inventory-Revised

The Supplemental Table 4 (Supplemental Digital Content 4, http://links.lww.com/SCS/E695) shows when comparing our patients to the German-speaking norm data (value of 5.8), a statistically significant better emotional stability both preoperatively (value 4.6, $P < 0.001$) and postoperatively (value 3.1, $P < 0.001$) was achieved. The comparison of the pre and postoperative state of our participants showed a further statistically significant improvement in emotional stability after surgery ($P = 0.017$).

Rosenberg Self-Esteem Scale

The outcomes of the RSES revealed significantly higher self-esteem of our patients compared with German-speaking norm data both pre ($P < 0.001$) and postoperatively ($P < 0.001$), as shown in Supplemental Table 5 (Supplemental Digital Content 5, http://links.lww.com/SCS/E696).

An improvement in self-esteem preoperatively (value 34.9) to postoperatively (value 35.3) with no statistically significant alteration ($P = 0.467$) was detected. High self-esteem is present in the patient collective as well as in the norm data (values > 30).

Evaluation of the Patient Health Questionnaire-4

Before undergoing blepharoplasty our patients reached an average score of 1.59, which has no significant difference ($P = 0.451$) to the German-speaking norm data (1.76), as shown in Supplemental Table 6 (Supplemental Digital Content 6, http://links.lww.com/SCS/E697). After surgery, patients scored an average of 0.46 points, which represents a significant difference ($P < 0.001$) to the German norm data and a statistically significant reduction from pre to postoperative scores ($P < 0.001$). Of our 50 patients, only 3 patients suffered from mild depression preoperatively whereas the remaining had no depressive symptoms. After blepharoplasty, all patients showed no signs of depressive symptoms.

DISCUSSION

Esthetic surgery is becoming increasingly common[5] and is therefore gaining more and more importance. The improvement in the QoL that we were able to identify for a wide range of different esthetic plastic surgery procedures[16] was also confirmed for esthetic blepharoplasty and matched the results of our previous retrospective study.[18]

There are different studies[23,24,38,39] that evaluate the outcome of blepharoplasty, but none of them takes into account the patient's perception of improved QoL. Also, many studies examine blepharoplasty only after medical indication,[21,23,24,40,41] which were excluded in our study.

98% of our study participants hoped for an improvement in personal well-being and 96% said they noticed an improvement in their external appearance and well-being after surgery. This positive change in physical appearance results furthermore in an improvement in their psychological and psychosocial well-being, including their self-confidence and self-esteem.[42–44] Meta-analysis about cosmetic surgery showed that people are generally happy with the outcome[45] and show an increase in self-esteem.[46]

Blepharoplasty was very well tolerated by our patients and rarely lead to complications (95% without complications), which corresponds with the current literature.[47,48]

Preoperatively, there was no difference in partner relationship/sexuality compared with the norm data, which changed to a significantly better satisfaction postoperatively. The current literature comes to similar conclusions, where higher sexual self-esteem, more satisfaction with the body, and more well-being were found after cosmetic surgery.[49,50]

Interestingly, the patients had high emotional stability even before blepharoplasty compared with the norm data, which improved significantly further after the operation. This indicates that our patient collective had an above-average level of emotional stability before any intervention. Results similar to these were found after liposuction[51] and abdominoplasty.[52] In contrast, von Soest, Kvalem, and Wichstrom[53] showed in a population-based follow-up study that females who underwent surgery had higher symptoms of depression and anxiety.

We were able to demonstrate that esthetic blepharoplasty led to a significant reduction in depressive symptoms. This was shown to a greater extent for abdominoplasty.[17] Barone et al[54] found that psychological problems are present in 67% of patients undergoing esthetic abdominoplasty and in 25.4% of patients under other procedures, which include mainly rhinoplasty and blepharoplasty.

As far as we know, no other study has examined to that degree, the QoL and psychological effects with standardized and validated questionnaires after elective facial surgery with pre and postoperative data. Another quality of this study is that we did not compare our study participants with other patients who had undergone other esthetic surgeries, but to German-speaking norm data, which makes our results more comparable to the vast majority of people.

A weakness of this study is that a double-blind trial is not possible as all patients underwent blepharoplasty. Prospective studies with longer follow-up periods and larger sample sizes would be desirable in the future.

CONCLUSION

Blepharoplasty is a widely performed, well-tolerated procedure with a low complication rate, and positively influences the patient's QoL postoperatively. The participants felt better about themselves, were more satisfied with the eye area, felt more attractive, and were more self-confident. They look less tired, less sad, or unappealing and felt younger, fresher, more confident, and more attractive. They showed significantly higher results pre compared with postoperatively with the outer appearance in general, more energy, better partner relationship, better ability to relax, better family life, and more satisfaction with the income.

Our participants had a statistically significant improvement in emotional stability. The patients showed statistically significant higher self-esteem before and after the intervention compared with the norm data. Blepharoplasty leads to a statistically significant reduction in depressive symptoms.

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