Original Article

Self-esteem and quality of life in patients undergoing plastic surgery

Autoestima e qualidade de vida em pacientes submetidos a cirurgia plástica

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■ **ABSTRACT**

Introduction: Self-esteem is defined by the value people place on themselves. It is an evaluative component of self-knowledge. Plastic surgery has been an alternative for people to improve their vision of themselves, feeling more confident and satisfied with their body aspects. Therefore, by increasing self-esteem in these people, surgery is capable of positively interfering not only with body self-assessment but also in the psychosocial dimension. **Method:** A prospective longitudinal descriptive and analytical observational study was carried out in which the impact of plastic surgery on self-esteem and personal and professional relationships was assessed. We applied a sociodemographic questionnaire, the Rosenberg Self-Esteem Scale, in addition to the abbreviated WHO Quality of Life Questionnaire (WHOQOL-bref) in patients in the preoperative period and who will undergo plastic surgery at least 3 months after surgery. surgery, thus determining whether or not self-esteem and quality of life improve. **Results:** 52 patients participated in the research, 48 of whom were women (92.3%), with a mean age of 37±11 years. Through the application of the Rosenberg Self-Esteem Scale, we were able to notice an evolution in self-esteem, in which patients presented an average of 29.87±2.10 points in the preoperative period score, rising to 34.92±1.84 points in the postoperative period ($p<0.001$). In the WHOQOL-bref, an improvement in self-esteem was obtained through the scores of the 4 domains. **Conclusion:** Through this study, an increase in self-esteem and quality of life was evidenced.

Keywords: Surgery, plastic; Self Concept; Psychosocial impact; Quality of life; Plastic surgery procedures; Surveys and questionnaires.

■ **RESUMO**

Introdução: A autoestima é definida pelo valor que as pessoas dão a si mesmas. É um componente avaliativo do autoconhecimento. A cirurgia plástica tem sido uma alternativa para as pessoas melhorarem a visão de si mesmas, sentindo-se mais confiantes e satisfeitas com seus aspectos corporais. Dessa forma, com a elevação da autoestima nessas pessoas, a cirurgia é capaz de interferir de forma positiva não somente na autoavaliação corporal, mas também na dimensão psicossocial. **Método:** Foi realizado um estudo observacional descritivo e analítico longitudinal prospectivo no qual foi avaliado o impacto da cirurgia plástica na autoestima e nos relacionamentos pessoais e profissionais. Aplicamos um questionário sociodemográfico, a Escala de Autoestima de Rosenberg, além do Questionário de Qualidade de Vida da OMS abreviado (WHOQOL-bref) em pacientes no pré-operatório e que serão submetidos a cirurgia plástica com, pelo menos, 3 meses de pós-operatório, graduando, desta forma, a melhora ou não da autoestima e qualidade de vida. **Resultados:** Participaram da pesquisa 52 pacientes, sendo 48 mulheres (92,3%), apresentando idade média de 37±11 anos. Através da aplicação da Escala de Autoestima de Rosenberg, pudemos

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notar uma evolução da autoestima, em que os pacientes apresentaram uma média de 29,87±2,10 pontos no escore do período pré-operatório, passando para 34,92±1,84 pontos no período pós-operatório. ($p<0,001$). Já no WHOQOL-bref, foi obtida uma melhora da autoestima através dos escores dos 4 domínios. **Conclusão:** Através deste estudo, foi evidenciado um aumento da autoestima e qualidade de vida.

Descritores: Cirurgia plástica. Autoimagem; Impacto psicossocial; Qualidade de vida; Procedimentos de cirurgia plástica; Inquéritos e questionários.

INTRODUCTION

Plastic surgery is the branch of medicine whose objective can be defined as the recovery of function, and restoration of some body regions, in addition to improving shape and beautification aiming to achieve balance in the body structure.

Currently, Brazil is in second place in the ranking of countries with the highest number of surgical procedures in plastic surgery, with 1,306,906 surgeries, representing 12.9% of the total number of surgeries performed in the world, second only to the United States, with 1,485,116 surgeries (14.7%). The rest of the ranking is completed, respectively, by Germany, Japan, and Turkey[1].

In Brazil, the five most performed plastic surgeries are liposuction (173,420 cases, representing 13.3%), breast augmentation (172,485 procedures; 13.2%), blepharoplasty (143,037 procedures; 10.9%), abdominoplasty (112,186 procedures; 8.6%) and mastopexy (105,641 procedures; 8.1%)1procedures; 8.1%)[1].

In the United States, the country with the highest number of plastic surgeries according to the International Society of Aesthetic Plastic Surgery (ISAPS), the most performed surgeries are, respectively, breast augmentation, liposuction, abdominoplasty, mastopexy, and blepharoplasty. When comparing the two countries, we noticed that the most performed surgeries are the same, only changing their positions in the ranking1.

The increase in the search for plastic surgery can be explained by the collective imagination of a standard of beauty, stimulated by globalization and the use of social networks, permeated by a narcissistic culture in which the desire for personal success can be personified in the materialization of the body.

Plastic surgery has been an alternative for people to improve their vision of themselves, feeling more confident and satisfied with their body aspects. Therefore, by increasing self-esteem in these people, surgery is capable of positively interfering not only with body self-assessment but also in the psychosocial dimension[2].

The World Health Organization (WHO), in 1946, defined health as a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity. Thus, mental and social well-being are increasingly valued, leading us to understand the importance of self-esteem in people's lives.

Self-esteem is literally defined by the value people place on themselves[3]. It is the evaluative component of self-knowledge. High self-esteem refers to a highly favorable global evaluation of oneself. On the other hand, low self-esteem, by definition, is an unfavorable interpretation of one's self.

Plastic surgery is the medical specialty that allows to shape and alter the silhouette of the human body. Procedures related to this specialization can improve aesthetic appearance and, consequently, self-esteem and self-confidence. In the last 20 years, much of the research on the psychological aspects related to aesthetic plastic surgery has focused on the psychological construction of body image[4].

Therefore, high self-esteem can refer to an accurate, justified, and balanced assessment of their value as a person, their successes, and competencies. Following the same logic, low self-esteem can be an accurate and well-founded understanding of someone's deficiencies as a person or a distorted and even pathological feeling of insecurity and inferiority[5].

In 1965, with the aim of grading and evaluating self-esteem, Morris Rosenberg created the Rosenberg Self-Esteem Scale, a one-dimensional instrument capable of classifying self-esteem as low, medium, and high.

Quality of life can be defined as the individual's perception of their insertion in life, in the context of the culture and value systems in which they live and concerning their objectives, expectations, standards, and concerns[4,6].

With this aim, the WHO developed a questionnaire aimed at evaluating the quality of life and personal relationships in different social groups regardless of the level of education called World Health Organization Quality Of Life 100 (WHOQOL-100), consisting of 100 questions divided into 24 groups. In addition to this, the WHO also developed an abbreviated questionnaire for greater ease of application called WHOQOL-Bref.

The idea that the patient's perception of their health must be considered when evaluating the effectiveness of medical treatment is widely accepted,

especially in plastic surgery, in which there is an important psychological factor for evaluating post-surgical results[2,7].

The positive impact of plastic surgery on patients' self-esteem is something that is noticeable daily, whether in the better acceptance and appreciation of bodily characteristics, as well as in the aspect of better personal and professional relationships. This evolution in an aspect of global relationships, whether personal or professional, leads to a better quality of life and a better perception of positioning and importance in society[7].

The search for plastic surgery by the Brazilian population is often due to discomfort or bodily complaints[8], problems in intimate relationships, as well as difficulties in starting or maintaining personal and professional relationships, leading these people to perform worse in their activities, including which can trigger depressive disorders[9].

Through these epidemiological data, we can note that in addition to the surgical result, the relevance of plastic surgery in a social aspect is highlighted, so that it is a medical specialty capable of also acting in the psychosocial sphere of patients.

In a case-control study that evaluated the importance of plastic surgery for the elderly[7], high levels of personal satisfaction and social life were evidenced in this group of patients. However, it did not demonstrate significant differences in self-esteem in elderly patients who underwent plastic surgery and those who did not (control group).

A prospective cross-sectional study[8] evaluated 49 patients aged between 30 and 40 years who underwent periorbital plastic surgery (blepharoplasty). Applying the Rosenberg Self-Esteem Scale in the preoperative period, 30 and 90 days after surgery, an improvement in self-esteem was observed in patients undergoing this procedure.

Another research in this line was carried out in Nicosia (Cyprus)[5], which investigated through a cross-sectional and prospective descriptive study whether plastic surgery affects an individual's body image, body satisfaction, and general self-esteem in the population of Cyprus. The majority of participants were women (81.9%), with 47.6% undergoing breast augmentation. The conclusion of this study provides evidence of improvement in individuals' satisfaction with their body image and self-esteem after cosmetic surgery.

OBJECTIVE

This study aims to understand the sociodemographic and clinical characteristics of patients undergoing plastic surgery, in addition to analyzing the effect and impact of plastic surgery on these patients' self-esteem and quality of life.

METHOD

An observational, prospective cohort study was carried out with descriptive, analytical, and quantitative elements.

The study was carried out from September 2021 to July 2022 with patients from the research author's private plastic surgery clinic in the city of Fortaleza/Ceará. The study population was patients who underwent some type of plastic surgery. A convenience sample (non-probability sampling) was carried out with patients who underwent plastic surgery and who agreed to participate in the research.

Inclusion criteria: patients undergoing aesthetic plastic surgery aged 18 years or over; patients with at least 3 months post-surgery.

Exclusion criteria: Patients under 18 years of age and patients with a postoperative period of less than 3 months were excluded.

Patients were recruited at two stages: 1. pre-operatively (before surgery) and 2. post-operatively - three months after the surgical procedure, a period that is the minimum expected to obtain the final result of the procedure.

Three instruments were used for data collection:

1. A sociodemographic and clinical questionnaire developed by the research author, containing questions about age, sex, race, education, profession, and type of procedure, among other questions;
2. Rosenberg Self-Esteem Scale, version translated and adapted into Portuguese9,10, which consists of 10 statements to grade the patient's self-esteem. Statements 1, 2, 4, 6, 7, 8, and 9 portray high self-esteem. Statements 3, 5, and 10 have a characteristic that reports low self-esteem. In all statements, 4 possible answers are arranged on a Likert scale (strongly disagree, disagree, agree, and completely agree), with a minimum score of 1 and a maximum of 4 in statements 1, 2, 4, 6, 7, 8 and 9 (positive attributions), the opposite being the case for the rest of the statements (negative attributions). The score obtained with the Scale can vary from 10 to 40, being calculated by adding the scores obtained through the answers given to the 10 statements. Self-esteem considered satisfactory is defined with a score equal to or greater than 30 on the Rosenberg Scale and unsatisfactory with a score less than 30[9,10].
3. World Health Organization Quality Of Life - Bref (WHOQOL-Bref), version translated into Portuguese[10], consists of 26 questions divided into four domains (physical, psychological, social relationships, and environment) aiming to assess the quality of life and social relationships. The

answers are arranged in five alternatives on a Likert scale[10].

The sociodemographic questionnaire, the Rosenberg Self-Esteem Scale, and the WHOQOL-Bref were applied in the preoperative period and, subsequently, reapplied after at least 3 months postoperatively, in person by the same professional trained by the researcher or in an isolated environment in the private plastic surgery clinic or through an online instrument (Google Forms), the second alternative being of great value due to the COVID-19 pandemic, thus avoiding crowds.

Categorical data were expressed as absolute counts and relative frequency in percentages. Continuous data were assessed for normal distribution using the Shapiro-Wilk test, kurtosis analysis, histograms, and Q-Q plots.

Data considered normal were expressed as mean ± standard deviation and non-normal data as median and interquartile range. For comparisons of continuous data between 2 dependent groups (before vs. after plastic surgery), the paired t-test was used, depending on data normality. For comparison between paired groups regarding the difference in the frequency of categorical data, the McNemar test was used. Data were analyzed using SPSS software for Macintosh, version 23 (Armonk, NY: IBM Corp.) Values of $p<0.05$ were considered statistically significant.

RESULTS

Fifty-two patients (n=52) who underwent plastic surgery participated in the research, the majority of whom were women (92.3%), with an average age of 37±11 years.

Regarding ethnicity, the most prevalent group of patients reported being white (33; 63.5%). The majority reported having an income range of 4 to 10 minimum wages (15; 28.8%).

Most patients stated that they had University education (36; 69.2%).

The majority of patients (36; 69.2%) reported having undergone more than one plastic surgery throughout their lives, with the last surgical procedure, that is, belonging to this research, being more present as an association of plastic surgeries (22; 61.1%) (Table 1).

Seventy plastic surgeries were performed on patients participating in this research, the three most prevalent being: mastopexy (12; 17.1%), breast augmentation (18; 25.7%), and abdominoplasty (16; 22.8%). If we consider breast surgeries (mastopexy, reduction mammoplasty, and augmentation mammoplasty) as a single group, we will have a very important prevalence of surgery, with a total of 34 surgeries, representing 48.5% of the total surgical procedures performed.

There was a significant increase in self-esteem when comparing the values of the general component preoperatively (29.87±2.10 points) and postoperatively (34.92±1.84 points). When issues related to self-esteem were assessed separately, a significant increase was also evident in the postoperative period, when compared to the preoperative period (Table 1).

An important increase in quality of life was observed when comparing the values of the general score in the preoperative period (91.59±12.68 points) and postoperative period (108.22±9.26 points) using the WHOQOL-Bref.

The results of the four domains were evaluated, and we evidenced a significant impact of plastic surgery on the results of these domains. The physical domain

Table 1. Assessment of the impact of surgery on self-esteem parameters using the Rosenberg scale with comparisons between the periods before and after surgery.

	Rosenberg (Self-esteem)		
	Before surgery	After surgery	*p*
I feel that I am a person of value at least as much as other people	3.23±0.7	3.6±0.69	0.012
I think I have several good ones qualities	3.3±0.64	3.73±0.45	<0.001
3) All things considered, I think that I am a failure	3.34±0.65	3.67±0.47	0.002
4) I think I am capable of doing the things as well as most people	3.15±0.61	3.63±0.49	<0.001
5) I think I do not have much to be proud of	3.19±0.79	3.52±0.75	0.031
6) I have a positive attitude towards myself	2.78±0.96	3.42±0.72	<0.001
7) Overall, I am satisfied with me	2.44±1.07	3.48±0.67	<0.001
8) I wish I could have more respect for myself	2.33±1	2.88±1	<0.001
9) Sometimes I feel useless	2.94±0.83	3.42±0.8	<0.001
10) Sometimes I think I am no good at anything	3.17±0.83	3.57±0.72	0.002
Rosenberg total	29.87±2.10	34.92±1.84	<0.001

Categorical data are expressed as absolute counts and percentages in parentheses. Quantitative data is expressed as mean ± standard deviation.

presented a score of 3.70±0.47 preoperatively, evolving to 4.29±0.4 points postoperatively (p<0.001). The psychological, personal relationships, and environment domains also showed increases in their scores, all with important statistical significance (Table 2).

When we reached the results of the Rosenberg Self-Esteem Scale and the WHOQOL-Bref quality of life questionnaire, a correlation was also made between the results of the two questionnaires, arriving at an interpretation that the increase in self-esteem provided by the surgery Plastic surgery has a significant impact on the quality of life of participating patients.

We were able to observe that the physical, psychological, and social relationship domains presented the highest levels in the Pearson coefficient, leading to the interpretation of a significant correlation between the growth of self-esteem and quality of life after plastic surgery. The environment domain presented the lowest index in the aforementioned coefficient, but still with statistical significance (Table 3).

DISCUSSION

The average age of patients in this research is 37±11 years, similar to data from the census carried out by the *Sociedade Brasileira de Cirurgia Plástica* in 2018, in which the majority of patients were aged between 36 and 50 years[11].

The majority of patients in this study are female (92.3%), similar to the research carried out in 2018 by SBCP, which also showed a majority of this gender (79.4%)[11].

The most prevalent surgeries in this research were, respectively: mammoplasties, liposuction, and abdominoplasty. These surgeries coincide exactly with the data referred to by the SBCP as the most performed surgeries in Brazil, with mammoplasties coming first, followed by liposuction and, later, abdominoplasty[11].

The Rosenberg Self-Esteem Scale is a specific instrument, with psychometric properties, that assesses patients' self-esteem when applying the questionnaire. It is an objective way of quantifying the results of a procedure, avoiding being subject to subjective or examiner-dependent assessments[9].

These data corroborate the research by Santos et al.[2], which showed results of increased self-esteem in patients undergoing mammoplasty through the evolution of scores applying the Rosenberg Self-Esteem Scale.

Likewise, Ishizuka[7], also using the aforementioned scale, demonstrated in their research an increase in self-esteem in patients undergoing blepharoplasty, whether the technique used was superior or inferior.

The present study demonstrated that plastic surgery is capable of improving patients' self-esteem, whether in the sample group used for all procedures performed, or in the sample groups for the three most frequently performed procedures (mammoplasty, liposuction, and abdominoplasty). In all groups of patients evaluated, there was an evolution in scores from pre-operative to post-operative, with important statistical significance.

In the case of evaluating the impact of plastic surgery on the quality of life of patients participating in

Table 2. Assessment of the impact of surgery on quality of life domains using the WHOQOL-BREF with comparisons between the periods before and after surgery.

WHOQOL-BREF	Before surgery	After surgery	*P*
Physical domain	3.70±0.47	4.29±0.4	<0.001
Psychological domain	3.30±0.68	4.14±0.46	<0.001
Social relationship domain	3.48±0.87	4.15±0.64	<0.001
Ambient domain	3.57±0.41	3.97±0.48	<0.001

Quantitative data is expressed as mean ± standard deviation.

Table 3. Correlation between the variation in self-esteem caused by the surgery with the quality of life and respective post-operative domains in the patients evaluated.

	ROSENBERG variation		
	n	r*	*P*
WHOQOL sum	52	0.471	<0.001
Physical domain	52	0.460	<0.001
Psychological domain	52	0.496	<0.001
Social relationship domain	52	0.432	0.001
Ambient domain	52	0.275	0.049

*Pearson r coefficient.

this research, we used the WHOQOL-Bref. The results demonstrated by this research show us the importance of plastic surgery for the biopsychosocial development of patients, which directly affects the quality of life of patients.

The WHOQOL must be interpreted through its four domains (physical, psychological, social relationships, and environment). However, it is important to note the great evolution in the scores of isolated questions regarding acceptance of physical appearance, improvement in sleep quality, personal satisfaction, and also sexual life. All of these topics are important aspects sought by patients when undergoing plastic surgery, in addition to being significant for a better quality of life.

In any case, evaluating the evolution of scores in the WHOQOL-Bref domains, we can see in this research that there was an increase in the scores of all domains with statistical significance, reflecting plastic surgery as an important external factor that triggers an improvement in the quality of life of patients.

When evaluating the groups of patients who underwent the most prevalent surgeries, we also found an increase in postoperative scores compared to preoperative scores with important statistical significance, demonstrating the uniformity of results found, even when we evaluated the results of all patients.

Some limitations were noticed. The research was carried out during the COVID-19 pandemic, a period in which, due to safety protocols, elective surgeries were limited, which resulted in a decrease in the number of participants.

These data are important, as they reinforce the biopsychosocial health model suggested by the World Health Organization (WHO) in which holistic treatment is more important than simply focusing attention on the disease alone. In this way, psychological and social care is extremely valuable for the patient's health.

CONCLUSION

Through this study, we can analyze and grade the impact of plastic surgery on the self-esteem and quality of life of patients undergoing a surgical procedure.

There was a significant increase in self-esteem when comparing the results of the general score preoperatively and postoperatively through the results of applying the Rosenberg Self-Esteem Scale, as well as concluding the improvement in the quality of life of patients undergoing plastic surgery, whether through interpretation of the general WHOQOL-Bref result, as well as the four domains of this questionnaire demonstrated significant evolution.

With this research, we were also able to learn about the sociodemographic characteristics of the participating patients, such as age, most prevalent sex, social class, and skin color. Very important information to better understand the characteristics of patients who intend to undergo plastic surgery.

Using the Rosenberg Self-Esteem Scale and the WHO Quality of Life Questionnaire (WHOQOL-Bref), both validated and important in the medical literature, we were able to quantify the improvement in these subjective topics reported above.

With the results achieved, we conclude that plastic surgery is an important medical specialty that, through its surgical procedures, is capable of increasing patients' self-esteem. And not only that. Since in this study, a statistically significant correlation was found between self-esteem and quality of life in the postoperative period of plastic surgery, we can, with great possibility, influence an improvement in the quality of life of these patients.

Assessment of patients' physical and psychosocial well-being should be routine among health professionals. Thus, through this study, we conclude how plastic surgery itself can be in an important position in the therapy of improving self-esteem, therefore resulting in a better quality of life.

COLLABORATIONS

HFMF Analysis and/or data interpretation, Conception and design study, Conceptualization, Data Curation, Final manuscript approval, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Realization of operations and/or trials, Resources, Software, Validation, Visualization, Writing - Original Draft Preparation, Writing - Review & Editing.

OAACB Project Administration, Supervision.

NSM Data Curation.

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