

Psychosomatic Dimensions of Rhinoplasty and Their Role in Quality of Life and Self-Care

Aikaterini D. LIANO^{a, b}, Elena DRAGIOTI^a, Stefanos MANTZOUKAS^c, Mary GOUVA^a

^aResearch Laboratory of Psychology of Patients, Families & Health Professionals, University of Ioannina, Ioannina, Greece

^bDepartment of Otorhinolaryngology, Primary National Health Network, Ioannina Health Unit, Ioannina, Greece

^cResearch Laboratory of Integrated Health, Care and Well-being, University of Ioannina, Ioannina, Greece



ABSTRACT

Rhinoplasty, one of the most prevalent facial plastic surgeries, bears both functional and aesthetic import. This literature review examined the psychosomatic dimensions of rhinoplasty and their influence on patients' quality of life and self-care. Rhinoplasty, whether undertaken alone or in conjunction with septoplasty, is intricate and technically demanding, with success being largely contingent upon psychosomatic factors. The popularity of rhinoplasty has burgeoned due to augmented social acceptance and media exposure. Postoperative psychological outcomes vary, with dissatisfaction being frequently linked to pre-existing psychopathology. Men often exhibit higher levels of psychopathology and are less satisfied after surgery comparatively to women. Prudent patient selection, realistic expectations and psychological screening are imperative for successful outcomes. Rhinoplasty affects individuals of all ages, from adolescents to the elderly, with involving unique concerns and benefits. Patient satisfaction hinges on factors such as gender, age, education, culture, ethnicity, occupation, economic profile, psychological profile and expectations. The use of patient reported outcome measures (PROMs) is indispensable for evaluating the health-related quality of life and psychosocial changes following rhinoplasty. Comprehending these dimensions is crucial for enhancing patient satisfaction and ensuring successful outcomes.

Keywords: rhinoplasty, psychosomatic dimensions, quality of life, health-related quality of life, self-care, aesthetic surgery.

Address for correspondence:

Aikaterini D. Lianou, MD, MSc, PhD

Department of Otorhinolaryngology, Primary National Health Network, Ioannina Health Unit, Ioannina, Greece

Research Laboratory of Psychology of Patients, Families & Health Professionals, University of Ioannina, Ioannina, Greece

Email: lianoynikoleta@yahoo.gr

Article received on the 22nd of April 2024 and accepted for publication on the 5th of June 2024

INTRODUCTION

The nose has a significant cultural and symbolic meaning, making it a prominent feature in facial aesthetics and identity. Rhinoplasty, as a surgical intervention, addresses both functional and aesthetic concerns. The nose is a facial prominence composed of a bony nasal pyramid, a fibrocartilaginous skeleton and muscles. It has abundant sebaceous glands with distinct orifices, and the ability to breathe through the nasal passage is a notable feature of health and well-being (1).

The human nose represents identity, dignity, wisdom, pride and phallus. We see it in history, literature and psychology as well as in daily life. In many ways, the nose plays an important role in visual arts, writings, proverbs and everyday sayings. As the most prominent midline structure of the body, it has at times played a role in ceremonial and punitive ceremonies. It is an important structural element of the face, as its shape largely affects the aesthetic appearance. This organ is more or less unique to the human species. Apart from a few species of apes, such as those living in Borneo, man is the only creature that can boast of this new facial development (2).

Over time, it has been associated with various characteristic powers. For the male gender, it is the landmark of male identity. A prominent nose is considered to reveal a strong character, while a "flat nose" is indicative of a weak character or even mental retardation. It is therefore an organ of vital importance for the identity of individuals, and any unattractive (pre-existing or postoperative) change in its appearance may cause unwanted attention. Because of these, the nasal surgeon is often faced with the difficult or even impossible task of alleviating the bothersome symptoms without disturbing the "symbol," the nose (3).

Thus, achieving the surgical goal of rhinoplasty does not automatically guarantee a postoperative improvement in the patient's quality of life (QoL) (4, 5). Its success is determined by the patient's psychosomatic dimensions, which are reflected in the feeling of satisfaction regarding the function of the nose and its external appearance (6, 7). Understanding these dimensions is crucial, as rhinoplasty is one of the most common facial plastic surgeries, and its impact on patients' QoL and self-care is significant. The purpose of

this literature review was to investigate the psychosomatic dimensions of rhinoplasty and their role in patients' QoL and self-care. □

MATERIALS AND METHODS

An extensive review of the international bibliography was conducted to identify published articles on the psychosomatic dimensions of rhinoplasty and its role in patients' QoL and self-care, using PubMed, Google Scholar, ScienceDirect and the Cochrane Library. We used various keywords in English, including "Rhinoplasty", "Psychosomatic dimensions", "Quality of life", "Health-related quality of life", "Self-care", "Aesthetic surgery", and a careful selection of published articles followed, so that we performed a thorough review of the international literature. However, a quantitative statistical analysis of the collected data was not done due to the great heterogeneity in terms of geographic distribution and characteristics of participating patients as well as the variety of methods used in the different explored studies/articles.

Literature review

Prevalence of rhinoplasty

The popularity of both surgical and non-surgical cosmetic procedures is constantly increasing. According to the American Society for Aesthetic Plastic Surgery (ASAPS), more than nine million surgical and non-surgical cosmetic procedures were performed in the United States in 2011, an increase by 197% since 1997 (8). According to a report published by the International Society of Aesthetic Plastic Surgery (ISAPS) in 2020, Greece ranked 13th in the world for the number of rhinoplasty operations performed in 2019, with a total of 5,628 operations (9). This surge is partly due to the widespread social acceptance of plastic surgery and the immediate exposure of the post-surgical result by the social media (10).

Psychological impact of rhinoplasty

Rhinoplasty (primary or revision) alone or in combination with septoplasty is one of the most common surgical procedures in facial plastic surgery. It is a complex, technically demanding plastic surgery (7, 11).

Nasal deformities can arise from a variety of etiologies, each requiring a distinct diagnostic approach. The differential diagnosis of nasal de-

formities includes congenital (cleft lip and palate, choanal atresia) (12, 13), traumatic (nasal bone fractures, septal hematoma/abscess) (14), infectious (syphilis, tuberculosis) (15), inflammatory (Wegener's granulomatosis, sarcoidosis) (16), neoplastic (squamous cell carcinoma, inverted papilloma) (17) causes that lead to deviations, saddle nose deformity, collapsed nasal dorsum and septal perforation. Another cause is iatrogenic nasal deformities. Surgical procedures, such as rhinoplasty (over-resection or under-resection) or septoplasty (scarring and contracture), can sometimes lead to unintended nasal deformities. Furthermore, common idiopathic causes include nasal hump or bump, bulbous tip, drooping or upturned tip, large nostrils and nasal asymmetry (18).

So, the goal of functional and aesthetic rhinoplasty is, on the one hand, to improve the function of the nose, and on the other hand, to change its shape so as to create harmony with the rest of the facial features (forehead, cheeks, eyes, chin) in order to improve the patient's appearance and ultimately relieve his/her social anxiety. The shape of the nose should never be altered if it could compromise its function. The internal nose (diaphragm, sinuses, nasal mucosa) is always evaluated first, and then the external nose (nasofrontal angle, nasolabial angle, tip projection, width and appearance of the base) (19).

Patient selection

Rhinoplasty is not a one-size-fits-all operation. No two noses are the same, and there are an infinite number of variations in nasal appearance. Therefore, choosing the appropriate surgical technique requires a careful analysis of anatomy and facial features (20). In addition to the texture of the skin and consistency of the nasal tissues, gender and age of the patient must be taken into account. Although the majority of rhinoplasty patients are women (64.7%) (21, 22), more and more men are seeking cosmetic surgery. This is due to the widespread acceptance of cosmetic procedures and the psychosexual roles of male and female, which are now less differentiated (3). The goal of nasal surgeons with regard to male patients is not to feminize the nose but to preserve the patient's gender identity (23, 24). Before rhinoplasty, it is necessary to have a detailed discussion with the patient in order to understand his/her preferences, expectations and

personality. Excessive expectations require a very clear and detailed explanation of the limits of the operation, with limiting factors such as specific anatomical details (e.g., thick skin). In general, proper patient selection and a good relationship with the patient help to avoid problems in the postoperative phase (25).

Patient satisfaction

Although the developments in the field of rhinoplasty are great, it is still filled with mystery, myth and legendary symbolism. After all, probably more than any other cosmetic procedure, rhinoplasty is a mental as well as a physical process. The question remains: why are some patients postoperatively very happy with a small to insignificant improvement in the nose, while other patients are unhappy or upset with something that could be considered a dramatic change? This question cannot be answered clearly (3). Possibly, dissatisfaction despite a clinically satisfactory outcome may arise as a result of pre-existing psychopathology (26). These patients usually undergo additional cosmetic procedures at risk of developing further psychological symptoms, including depression, anxiety, social isolation and self-destructive behavior (27).

Psychological outcomes

Most emotional consequences have been noted following rhinoplasty in comparison to other cosmetic surgeries (28). Studies indicate that male patients undergoing rhinoplasty have higher levels of psychopathology compared to female patients (29, 30). However, further research is needed to explore the underlying causes of this gender difference. Additionally, male patients are more prone to engaging in legal conflicts with their surgeon (28, 29, 31). Men's personality traits, such as being poor listeners and having trouble articulating their goals, might make them more demanding patients (32, 33). Features related to anxiety problems and body dysmorphic disorder (BDD) are more prevalent in male rhinoplasty patients (34). Research indicates that men desiring cosmetic surgery are typically more discontent with their appearance than women. They may conceal their actual reasons by claiming to experience nasal breathing issues and nosebleeds (35, 36). Research indicates that postoperative satisfaction was notably higher

among female patients (87.6%) compared to male patients (56.1%) (37).

Psychological screening and counseling

Typically, people seek cosmetic plastic surgery to enhance their appearance in order to boost self-confidence, self-esteem and social relationships. Studies indicate that a significant number of individuals seeking cosmetic surgery exhibit symptoms of psychiatric conditions such as body dysmorphic disorder (BDD), narcissistic personality disorder, or histrionic personality disorder (38). Using a preoperative screening tool is essential to detect patients with underlying psychiatric difficulties, improper motivations, or unrealistic expectations and direct them to psychological counseling to prevent negative outcomes (10). Gorney *et al* recommended that rhinoplasty surgeons avoid patients characterized as "single immature male overly expectant narcissistic" (33), despite the potential risk of oversimplification.

Questionnaires for identifying body dysmorphic disorder

Several validated questionnaires can help identify BDD in patients seeking plastic surgery. These tools are designed to screen for BDD and assist in making decisions about further referrals to mental health professionals.

Body dysmorphic disorder questionnaire (BDDQ)

The BDDQ is a brief self-report questionnaire designed to screen for BDD. It includes questions about preoccupation with perceived defects in physical appearance, the impact on daily functioning, and related behaviors. It includes questions like "Are you very concerned about the appearance of some part(s) of your body which you consider especially unattractive?", "How much time per day do you spend thinking about this body part?" and "Does this concern affect your social, occupational, or other important areas of functioning?" (39).

Body dysmorphic disorder diagnostic module (BDD-DM)

The BDD-DM is a semi-structured clinical interview designed to diagnose BDD according to DSM criteria. It provides a more in-depth assessment than the BDDQ. It includes questions like "Do you feel that these flaws in your appearance

are not noticeable to others or appear slight?" and "Do these concerns cause you a lot of distress or problems in your daily life?" (40).

Dysmorphic concern questionnaire (DCQ)

The DCQ is a shorter self-report questionnaire that assesses dysmorphic concerns. It is less specific to BDD but can indicate levels of concern about physical appearance. It includes questions like "Have you ever felt that you are unattractive?" and "Have you spent a lot of time checking your appearance?" (41).

Quantifying body dysmorphic disorder

The severity and impact of BDD can be quantified using these questionnaires. Each tool has scoring guidelines to interpret the results. In the BDDQ, scores indicate the likelihood of BDD and the severity of symptoms based on the frequency and intensity of preoccupations and behaviors. A detailed diagnostic assessment is provided in BDD-DM, guiding clinical judgment on the severity of the disorder. On the DCQ scores indicate the level of dysmorphic worry, with higher scores suggesting more significant concern.

Implementation in clinical practice

The implementation of the above questionnaires in clinical practice includes three stages: initial screening, detailed assessment and referral. During the initial examination, healthcare professionals (plastic surgeons and otorhinolaryngologists) should administer the BDDQ to all patients seeking plastic surgery. This initial screening can quickly identify individuals who may have BDD (39). This will be followed by a more detailed assessment using the BDD-DM for patients scoring high on the BDDQ (40). If the detailed assessment confirms significant BDD symptoms, nasal surgeons should refer the patient to a psychologist or psychiatrist for further evaluation and treatment. They can provide a comprehensive evaluation and appropriate treatment, including cognitive-behavioral therapy (CBT) or pharmacotherapy. Using these tools systematically ensures that patients with BDD are identified and receive appropriate care, reducing the risk of poor outcomes from cosmetic procedures.

Rhinoplasty across age groups

Rhinoplasty is a procedure that both men and women of all age groups consider. Aesthetic sur-

gery is most commonly performed in the adolescent group. Adolescents are often preoccupied with their body image, which is influenced by various factors like gender, cultural heritage, and surroundings. Adolescent patients typically exhibit increased self-awareness regarding their appearance. Noticing nasal abnormalities might lead to maladaptive behavior patterns that result in sorrow or anxiety (42). Patients and their parents are typically highly delighted with the outcomes of their rhinoplasty because of its established aesthetic and psychological advantages (43). Elderly individuals often exhibit weakened cartilage, drooping of the nasal tip and nasal valve collapse. This age group seeks aesthetic nose surgery because of diminished self-esteem or depression (44, 45). The international scientific community is currently examining the psychological aspects of rhinoplasty to assist nose surgeons in selecting suitable patients. It has been shown that many of these cases are complex and require a multidisciplinary team of ENT surgeons and plastic surgeons (46).

Assessment methods

Objective methods such as rhinomanometry or computed tomography (CT) cannot be used as assessment tools for patient satisfaction because they only focus on functional aspects, and not on the aesthetics of the nose and face (7). The use of PROMs (patient reported outcome measures) is becoming increasingly important in contemporary clinical research on outcomes of facial plastic surgery for evaluating the health-related quality of life (QoL) (47, 48). Patient reported outcome measures allow for the examination of functional and psychosocial changes following medical treatment, from the patient's perspective. Subjective and individual perceptions of a health issue are the fundamental aspects of the concept of QoL. Evaluating PROMs involves concepts such as functional status, symptoms, quality of life, self-care, and self-improvement related to health post-surgery (49). They evaluate the quality of life after rhinoplasty, allowing the measurement of qualitative aspects such as social, emotional, and psychological variables (50). □

CONCLUSION

Rhinoplasty is a highly prevalent cosmetic procedure that addresses both functional and

aesthetic concerns. However, the success of rhinoplasty is not solely determined by surgical outcomes, but rather by the patient's psychosomatic dimensions and their impact on satisfaction and QoL. Evaluating outcomes in aesthetic rhinoplasty is crucial because patient satisfaction and health-related QoL improvement are the dominant determinants of success.

Given the complex interplay between physical appearance, psychological well-being and societal influences, it is crucial for surgeons to carefully select patients, set realistic expectations and consider underlying psychological issues. Male patients often present unique challenges due to higher levels of psychopathology and dissatisfaction compared to female patients, indicating the need for further research to explore the underlying causes of this gender difference.

The importance of psychological screening and counseling cannot be understated, as a significant number of individuals seeking cosmetic surgery exhibit psychiatric symptoms, such as body dysmorphic disorder. Preoperative screening tools are essential for identifying patients with unrealistic expectations or improper motivations and directing them towards appropriate support.

Rhinoplasty affects individuals across different age groups, with adolescents and the elderly showing distinctive concerns and benefits. The use of PROMs has become increasingly important for evaluating the health-related quality of life, as they provide insight into functional and psychosocial changes from the patient's perspective. Patient satisfaction depends on various factors, including gender, age, education level, culture, ethnicity, occupation, economic profile, psychological profile and patient expectations.

In conclusion, understanding the psychosomatic dimensions of rhinoplasty is essential for enhancing patient satisfaction, improving the quality of life and facilitating appropriate self-care, thereby ensuring successful outcomes in facial plastic surgery. □

Authors' contribution: All authors participated in the design, execution and analysis of the present paper, and that they have approved its final version.

Conflicts of interest: none declared.
Financial support: none declared.

REFERENCES

1. Jafek BW. Anatomy and physiology of the nose. In: *ENT Secrets*. Jafek BW, Stark AK, eds. Philadelphia, Pa: Hanley & Belfus. 1996, pp. 77-83.
2. Huizing EH. Nose and Identity. *Facial Plast Surg* 2017;33:367-371.
3. Wright MR. The psychology of rhinoplasty. *Facial Plast Surg* 1988;5:109-113.
4. Strahan EJ, Wilson AE, Cressman KE, Buote VM. Comparing to perfection: how cultural norms for appearance affect social comparisons and self-image. *Body Image* 2006;3:211-227.
5. Brown Z, Tiggemann M. Attractive celebrity and peer images on Instagram: effect on women's mood and body image. *Body Image* 2016;19:37-43.
6. Clancy CM, Eisenberg JM. Outcomes research: measuring the end results of health care. *Science* 1998;282:245-246.
7. Wahmann MS, Bulut OC, Bran GM, et al. Systematic Review of Quality-of-Life Measurement After Aesthetic Rhinoplasty. *Aesthetic Plast Surg* 2018;42:1635-1647.
8. American Society for Aesthetic Plastic Surgery. Cosmetic Surgery National Data Bank Statistics 2011. <http://www.surgery.org/media/statistics>
9. ISAPS Global Statistics 2019: <https://www.isaps.org/wp-content/uploads/2021/01/ISAPS-Global-Statistics-2019-1.pdf>
10. Wildgoose P, Scott A, Pusic AL, et al. Psychological screening measures for cosmetic plastic surgery patients: a systematic review. *Aesthet Surg J* 2013;33:152-159.
11. Ishii LE, Tollefson TT, Basura GJ, et al. Clinical practice guideline: improving nasal form and function after rhinoplasty. *Otolaryngol Head Neck Surg* 2017;156:S1-S30.
12. Posnick JC, Tompson B. Cleft lip and palate: current surgical management. *Clin Plast Surg* 2012;39:213-227.
13. Brown OE, Pownell PH. Congenital nasal deformities. *Otolaryngologic Clinics of North America* 1996;29:231-245.
14. Rohrich RJ, Adams WP. Nasal fracture management: minimizing secondary nasal deformities. *Plast Reconstr Surg* 2000;106:266-273.
15. O'Brien EK, Murphy J. The nose and paranasal sinuses. In: *Infectious Diseases*, 4th ed., Elsevier, 2011.
16. Hoffman GS, Kerr GS. Granulomatosis with polyangiitis (Wegener's): an overview. *Postgraduate Medical Journal* 1992;68:783-792.
17. Dulguerov P, Allal AS. Nasal and paranasal sinus cancer. *Curr Opin Oncol* 2006;18:320-324.
18. Toriumi DM, Ries WR. Innovative surgical management of the crooked nose. *Facial Plast Surg Clin North Am* 1993;1:63-78.
19. Constantinidis J, Daniilidis J. Aesthetic and functional rhinoplasty. *Hosp Med* 2005;66:221-226.
20. Tardy ME Jr. *Rhinoplasty: the art and the science*. Volume I. WB Saunders Company: Philadelphia, Pennsylvania, 1997.
21. Simons RL, Adelson RT. Rhinoplasty in male patients. *Facial Plast Surg* 2005;21:240-249.
22. Sinno HH, Markarian MK, Ibrahim AM, Lin SJ. The ideal nasolabial angle in rhinoplasty: a preference analysis of the general population. *Plast Reconstr Surg* 2014;134:201-210.
23. Rohrich RJ, Janis JE, Kenkel JM. Male rhinoplasty. *Plast Reconstr Surg* 2003;112:1071-1085.
24. Rohrich RJ, Mohan R. Male Rhinoplasty: Update. *Plast Reconstr Surg* 2020;145:744-753.
25. Stambaugh KI. Preoperative evaluation of the aesthetic surgery patient. In: Bailey BJ ed. *Head and neck Surgery – Otolaryngology*. Lippincott Williams & Wilkins: Philadelphia, 2001.
26. Honigman RJ, Phillips KA, Castle DJ. A review of psychosocial outcomes for patients seeking cosmetic surgery. *Plast Reconstr Surg* 2004;113:1229-1237.
27. Goin MK, Rees TD. A prospective study of patients' psychological reactions to rhinoplasty. *Ann Plast Surg* 1991;27:210-215.
28. Goldwyn RM. *The Patient and the Plastic Surgeon*. Boston: Little, Brown. 1981, pp 31-48, 77-85.
29. Jacobson WE, Edgerton MT, Meyer E. Psychiatric evaluation of male patients seeking cosmetic surgery. *Plast Reconstr Surg* 1960;26:35-36.
30. Jacobsen WE, Meyer E, Edgerton MT, et al. Screening of rhinoplasty patients from the psychological point of view. *Plast Reconstr Surg* 1961;28:279-281.
31. Knorr NJ. Feminine loss of identity in rhinoplasty. *Arch Otolaryngol* 1972;96:11-15.
32. Ambro BT, Wright RJ. Psychological considerations in revision rhinoplasty. *Facial Plast Surg* 2008;24:288-292.
33. Gorney M. Cosmetic surgery in males. *Plast Reconstr Surg* 2002;110:719.
34. Simons RL, Adelson RT. Rhinoplasty in male patients. *Facial Plast Surg* 2005;21:240-249.
35. Winkler AA, Downs BW. Aging male rhinoplasty. *Facial Plast Surg Clin North Am* 2008;16:329-335.
36. Wright MR. The male aesthetic patient. *Arch Otolaryngol Head Neck Surg* 1987;113:724-727.
37. Khansa I, Khansa L, Pearson GD. Patient satisfaction after rhinoplasty: A social media analysis. *Aesthet Surg J* 2016;36:NP1-NP5.
38. Ishigooka J, Iwao M, Suzuki M, et al. Demographic features of patients seeking cosmetic surgery. *Psychiatry Clin Neurosci* 1998;52:283-287.
39. Phillips KA. The Broken Mirror: Understanding and Treating Body Dysmorphic Disorder. Oxford University Press. 2005.
40. Phillips KA, Hollander E. Body Dysmorphic Disorder Diagnostic Module. In: *DSM-5 Clinical Cases*. American Psychiatric Publishing. 2008.
41. Oosthuizen P, Lambert T, Castle DJ. Dysmorphic concern: Prevalence and associations with clinical variables. *Aust N Z J Psychiatry* 1998;32:129-132.
42. McGrath MH, Mukerji S. Plastic surgery and the teenage patient. *J Pediatr Adolesc Gynecol* 2000;13:105-118.
43. Chauhan N, Warner J, Adamson PA. Adolescent rhinoplasty: challenges and psychosocial and clinical outcomes. *Aesthetic Plast Surg* 2010;34:510-516.
44. Toriumi DM, Rosenberger E. Rhinoplasty of the aging nose. *Facial Plast Surg* 2016;32:59-69.
45. Cochran CS, Ducic Y, DeFatta RJ. Restorative rhinoplasty in the aging patient. *Laryngoscope* 2007;117:803-807.
46. Vranceanu D, Sarafoleanu C, Kalcioğlu MT, Neagos A. Multidisciplinarity and Transdisciplinarity as Current Trends in Otorhinolaryngology and Head and Neck Pathology. *Medicina (Kaunas)* 2022;58:1661.
47. Lasch KE, Marquis P, Vigneux M, et al. PRO development: rigorous qualitative research as the crucial foundation. *Qual Life Res* 2010;19:1087-1096.
48. Cohen WA, Mundy LR, Ballard TN, et al. The BREAST-Q in surgical research: a review of the literature 2009-2015. *J Plast Reconstr Aesthet Surg* 2016;69:149-162.
49. Reeve BB, Wyrwich KW, Wu AW, et al. ISOQOL recommends minimum standards for patient-reported outcome measures used in patient-centered outcomes and comparative effectiveness research. *Qual Life Res* 2013;22:1889-1905.
50. Esteves SS, Goncalves Ferreira M, Almeida JC, Abrunhosa J. Evaluation of aesthetic and functional outcomes in rhinoplasty surgery: a prospective study. *Braz J Otorhinolaryngol* 2017;83:552-557.