SERBIAN ARCHIVES OF MEDICINE Est.1872

Address: 1 Kraljice Natalije Street, Belgrade 11000, Serbia
☏ +381 11 4092 776, Fax: +381 11 3348 653
E-mail: office@srpskiarhiv.rs, Web address: www.srpskiarhiv.rs

Paper Accepted* **ISSN Online 2406-0895**

Original Paper / Оригинални рад

Marina Stolić[1†], Dragana Ignjatović-Ristić[1], Marko Jović[2], Jelena Jeremić[2], Darko Hinić[3,4], Milan Jovanović[2], Dragan Stolić[1]

Body image dissatisfaction, temperament traits and self-esteem in patients with multiple minimally invasive cosmetic procedures

Незадовољство сликом тела, црте темперамента и самопоуздање код пацијената са вишеструким минималним инвазивним естетским захватима

[1]University of Kragujevac, Faculty of Medical Sciences, Kragujevac, Serbia;
[2]University of Belgrade, Clinic for Burns, Plastic and Reconstructive Surgery, Faculty of Medicine, Belgrade, Serbia;
[3]University of Kragujevac, Faculty of Science and Faculty of Philology and Arts, Kragujevac Serbia;
[4]University of Kragujevac, Faculty of Philology and Arts, Kragujevac Serbia

Received: August 16, 2018
Accepted: October 30, 2018
Online First: November 30, 2018
DOI: https://doi.org/10.2298/SARH180861070S

†**Correspondence to:**
Marina STOLIĆ
Dubljanska 23, 11000 Belgrade, Srbija
Email: **drmarinamajkic@gmail.com**

Body image dissatisfaction, temperament traits and self-esteem in patients with multiple minimally invasive cosmetic procedures

Незадовољство сликом тела, црте темперамента и самопоуздање код пацијената са вишеструким минималним инвазивним естетским захватима

SUMMARY

Introduction/Objective The development of safer cosmetic medical procedures lead to an increase in the number of minimally invasive aesthetic procedures. The main aim of the current paper is to examine the connection of number/location of aesthetic procedures with overall body image dissatisfaction, affective temperament traits and the index of self-esteem in persons who have undergone several minimally invasive cosmetic procedures for aesthetic reasons. The subsidiary aim is to compare the predominance of the above mentioned traits in the sample with the results in the general population.

Methods The study included 228 participants, aged from 21 to 73, who had a multiple minimally invasive cosmetic procedures, purely for aesthetic reasons. Data were collected using a socio-demographic questionnaire, medical documentation, the Body Image Assessment Scale-Body Dimensions, TEMPS-A temperament scale, and Rosenberg Self-esteem scale.

Results Overall body image dissatisfaction was moderate in our patients (11.56 ± 11.877). With an increase of dissatisfaction, the number of procedures did not grow (r = .075, p = .263); however, the number of body parts on which the procedures had been performed did. The patients who had their body parts altered most were found to have deeper dissatisfaction with their overall body image (F(2,225) = 4.963, p = .008, η^2 = 0.04), and as the most prominent – hyperthymic temperament (F(2,225) = 3.408, p = .035, η^2 = 0.03), similar to Serbian general population.

Conclusion Through establishing potential relations between physical, social and psychological variables, like body image dissatisfaction, temperament and self-esteem, we could provide a better insight into a mental state of individuals who frequently undergo minimally invasive cosmetic procedures.

Keywords: minimally invasive cosmetic procedures; body image dissatisfaction; temperament; self-esteem

САЖЕТАК

Увод/Циљ Развој безбедних минимално инвазивних естетких захвата довео је до пораста њиховог броја. Главни циљ овог рада је да испита повезаност броја/локализације минимално инвазивних естетских захвата са незадовољством сликом тела, афективним цртама темперамента и индексом самопоштовања, код особа које су се више пута подвргле минималним инвазивним процедурама због естетских разлога. Циљ је и да се упореди доминантност наведених карактеристика у узорку са резултатима из опште популације.

Методе Студија је обухватила 228 учесника, старости од 21 до 73 године, који су били вишеструко подвргнути минимално инвазивним естетским процедурама, искључиво из естетских разлога. Подаци су прикупљани коришћењем социо-демографског упитника, медицинске документације, скале за процену слике тела-димензије тела, скале ТЕМПС-А за процену темпераманта и Розенбергове скале самопоштовања.

Резултати Укупно незадовољство сликом тела било је умерено код наших пацијената (11,56 ± 11,877). Са повећањем незадовољства није растао број процедура (r = .075, p = .263), међутим, порастао је број делова тела на којима су рађене процедуре. Утврђено је да су пацијенти, којима је тело више измењено били незадовољнији укупном сликом тела (F(2,225) = 4.963, p = .008, η^2 = 0.04), а најистакнутији темперамент био је хипертимични темперамент (F (2,225) = 3.408, p = 0.35, η^2 = 0.03), што је у складу са резултатима из српске опште популације.

Закључак Кроз утврђивање потенцијалних односа између физичких, социјалних и психолошких варијабли, као што су незадовољсво телом, темперамент и самопоуздање, могли бисмо пружити бољи увид у ментално стање појединаца који се често подвргавају минимално инвазивним естетским процедурама.

Кључне речи: минимално инвазивне естетске процедуре; незадовољство сликом тела; темперамент, самопоуздање

INTRODUCTION

Minimally invasive cosmetic procedures

Over recent decades minimally invasive cosmetic procedures have become an important and challenging area in the continued expansion [1]. The development of safer cosmetic medical procedures with less recovery time and lower prices for treatments has led to an increase in minimally invasive cosmetic procedures [2, 3, 4]. Intense sociocultural pressure to achieve body image ideals and the increase in media coverage of aesthetic procedures reduce clients' anxiety over cosmetic treatments [5, 6], therefore, these treatments are becoming more and more common. For instance, American Society of Plastic Surgeons [1] reported an increase of 186% from 2000 to 2017 in minimally invasive cosmetic procedures.

Body image dissatisfaction

The core of dissatisfaction with the image of one's own body makes a gap between the body as we see it and what we would like it to be, whether it is our inner ideal or the ideal imposed by society [7]. The majority of disorders pertaining to the perception of physical appearance are based on a negative evaluation of one's own body, which is triggered by information processing about one's own physical appearance and consequent reactions of their social environment [5]. The constant drive to achieve the beauty ideal and the conflicting demands on what an ideal male and particularly female body *is* can lead to greater stress, frustration and anxiety [8]. This evaluation is indisputably modified by subjective mental processes, and is affective and motivational by nature, which results in the fact that the evaluation is not always an objective assessment of one's appearance or else part(s) of the body. Many studies showed that the majority of patients reported higher satisfaction with their overall body image, appearance and a specific body feature altered by surgery [5, 6], as well as that this satisfaction is present years after the surgery [9].

Temperament

Excessive emotionality and attention seeking are also some of the common conditions found in patients seeking cosmetic surgery [10]. Emotional reactivity and affective dispositions can be a predispositions underlying the mood and affective disorders [11], and at the same time a potential factors determining whether a client would be satisfied with the effects of an aesthetic procedure or not.

The temperament concept has been researched in a patient who had cosmetic surgery procedures (rhinoplasty) and the results showed a significant difference between the case and control groups with respect to the temperament traits of novelty, harm avoidance and persistence [12]. In addition, Turhan-Haktanir et al. [13] compared the temperament traits of women admitted for breast reduction surgery with those of healthy volunteers. They found that the persistence subscale was significantly lower for the patients and only the reward dependence subscale was significantly higher for the patients [13].

Effects of cosmetic interventions on psychological outcomes are mixed, some findings indicated that satisfaction and self-esteem were positively associated with the minimally invasive cosmetic interventions [14], while in some studies no change in self-esteem was reported [15].

There is a research gap between a number of studies that examined influence of *cosmetic surgery* on self-esteem and body image satisfaction, and number of papers that examined relation between *minimally invasive procedures*, self-esteem and body image satisfaction [14]. Few studies examined connection between temperaments traits and cosmetic surgery [12, 13], but according to our knowledge there are no researches about relation between temperaments traits and minimally invasive cosmetic procedures.

Therefore, the main aim of the current paper is to examine the relation of number/location of minimally invasive aesthetic procedures with overall body image dissatisfaction, affective temperament traits and the index of self-esteem in persons who have undergone several minimally invasive cosmetic procedures for aesthetic reasons. The subsidiary aim is to compare the predominance of the above mentioned traits in the sample with the results in the general population.

METHODS

This retrospective cross-sectional study included individuals who had two or more minimally invasive cosmetic procedures for aesthetic reasons.

The first *inclusion criterion* was that patients were over 18. The second was that they had undergone those procedures in the last seven years; also, the patients completed the questionnaires at least a month upon their most recent procedure. The third was that they had their treatments performed only at the Centre in which we conducted the study. The last criterion was applied with an aim to have full control over a precise number and type of treatments through the medical data, as reliably as possible. Thus, we did not have to rely on the patients' responses but actual medical records instead.

The *exclusion criteria* were that the procedure had been performed due to health issues, that an individual had some type of eating disorders or body dysmorphic disorder diagnosed, and that they had a similar procedure performed at some other aesthetic medical centre.

Participants

A total of 228 individuals took part in this study (Table 1), 6% male and 94% female, aged from 21 to 73 years (M = 42.80 ± 11.88).

Mean body mass index in study group was 21.98 ± 3.23, with minimum of 16.3 and maximum value of 34.6. According to the BMI category, 9.9% of participants were underweight, 72.8% have normal weight, 4.8% were overweight, while 2.5% have mild obesity. Around a quarter of the patients were or had been on a diet (26%) and they significantly differed in higher values of BMI ($t(162)=-3.42$, $p=.001$, $\eta^2=0.07$).

Measures

Body-Image Assessment Scale (BIAS-BD) measures overall body dissatisfaction (the discrepancy between perceived body image and self-determined ideal body image) [16]. The scale consists of 17 male and 17 female contour-line drawings, ranging from 60 per cent below the known average of body weight to 140 per cent above average. The participants had to mark the drawings which represented their current and their desired appearance. The BIAS-BD showed good test–retest reliability, both by patients' self-evaluation and that of the test administrator [16]. The scale also showed satisfactory concurrent validity with the correlations between the current body image and BMI score of around 0.80.

Temperament Evaluation of Memphis, Pisa, Paris and San Diego - Auto-questionnaire (TEMPS-A), Serbian version [11], measures the prevalence of depressive, cyclothymic, hyperthymic, irritable, anxious-cognitive and anxious-somatic temperament traits (41 true/false items). It has good internal consistency and construct validity ($\alpha=0.83$). The average test-retest coefficient (rho=0.82) suggests a stable reliability over time. External validation of the scale showed a high correlation with the TCI-R temperament scale, and validity with other personality scales (e.g. NEO-PI-R) has also been confirmed [11].

Rosenberg Self-Esteem scale (RSE), a one-dimensional scale measuring global self-esteem or general evaluative orientation of an individual towards themselves [17, 18]. The scale includes 10

items, five of which pertain to a positive and five to negative self-evaluation. A higher score indicates a greater level of self-esteem. A range of studies with a great number of different samples have confirmed good validity and reliability of the scale, ranging from α=0.81 to 0.84 [17, 18].

Socio-demographic questionnaire, The following data were collected from the participants: sex, age, self-reported, height and weight (BMI), level of education, economic status, employment and marriage status, number of children.

Medical history and anamnestic data; the following data were collected: body mass index, menstrual cycle characteristics, use of medications and/or other chemical substances, dietary habits, history of chronic diseases, previous medical procedures, types, number and location of aesthetic treatments.

Procedure

The study was approved by the Ethical Committee of the Faculty of Medical Sciences, University of Kragujevac, Serbia. This study has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki). The study was conducted at the Aesthetic Medical Centre in Belgrade, Serbia, within a testing period of three months, April-June 2017. All the participants had given prior written informed consent to take part in the research, and they had been informed about the purpose of the research through the cover letter. All participants were tested individually. The questionnaire took about 20 minutes to be completed.

Statistical analysis

Normal distribution was calculated by means of the Kolmogorov-Smirnov test. The following analyses were used for determining statistical differences: t-test for independent samples and ANOVA. For the purposes of determining the relation between the variables and its significance, we used Pearson's coefficient of correlation. The stated statistical analyses were conducted in the statistical programme SPSS Statistics, version 20.

RESULTS

Number and location of minimally invasive cosmetic procedures

The number of total treatments per person ranged from 2 to 59 (M=9.26, SD=9.29). Owing to the fact that some patients had just undergone their first procedures, while others had been having

their procedures done in the course of the last seven years, we calculated the average number of procedures per year. During the first twelve months the annual average value equals M=4.76 (SD=3.334), in the second year it slightly lowers at M=4.35 (SD=2.446) per year, and after that period it further reduces at M=3.12 (SD=2.24) a year.

The procedures were most frequently performed in the group of patients aged from 51 to 60 (Table 2), but age groups do not differ by these numbers ($F(4,223)=1.181$, $p=.320$).

The only demographic variable which was singled out was economic status, whereby those with better status had more treatments performed. Nonetheless, this positive correlation was shown to be of weak intensity ($r=.159$, $p=.016$).

With regard to *location of treatments* the most frequent treatments were expectedly performed in the face area ($F(2,225)=32.443$, $p=.000$, $\eta^2=0.22$). Somewhat more than 19% of the patients had treatments in all body areas (Table 3), and those patients had undergone the highest number of treatments as well (M=17.66), followed by the patients who had treatments done in two (M=10.58) and finally one body area (M=6.17).

Body image dissatisfaction

Body image dissatisfaction (i.e. discrepancy between current and ideal body image given in body mass percentage) was moderate in our patients (M=11.56, SD=11.877, $KS(228) = 0.135$, $p= 0.000$), and ranged from a minimum of -15% in persons who would like to gain some weight, to a maximum of +50% in persons who would like to lose weight (Figure 1). A quarter of the sample (25%) did not express any overall body image dissatisfaction (the deviation from the ideal body image was 0%). Four point four per cent of the patients wanted to gain some weight, whereas as much as 50% wanted to lose weight to the extent of 10 to 20%.

With age, body dissatisfaction significantly rose ($r=.179$, $p=.007$), especially with an increase of a BMI ($r=.475$, $p=.000$). Other differences in demographic variables were not significant, except in economic status, whereby those with better status had more treatments performed. Nonetheless, this correlation was shown to be of weak intensity ($r=.159$, $p=.016$).

Temperament and self-esteem

The basic data on the measured types of temperaments and self-esteem index have been presented in Table 4. The mean values for depressive temperament were extremely low, (0.0902) followed by cyclothymic, (0.2218) and irritable (0.2177), slightly higher for anxious types (0.4079), while the values for hyperthymic (0.7657) were grouped towards higher values. The self-esteem index also showed relatively high values.

Since it has been established that temperament traits differ according to sex, and the sample included an insufficient number of male subjects, we have excluded them from further analyses on the temperament subscales. If we compare the mean values of our female patients with the mean values in women belonging to general adult non-clinical population in Serbia [11], we may notice that our sample reported rather lower scores than the general population on depressive ($t(213)=-8.805$, $p<.01$), cyclothymic ($t(213)=-9.185$, $p<.01$), irritable ($t(213)=-4.712$, $p<.01$), and higher on hyperthymic temperament ($t(213)=9.765$, $p<.01$), while there were no differences found on anxious-somatic and anxious-cognitive temperaments ($t_{as}(213)=-0.826$, $p>.05$; $t_{ac}(213)=-1.614$, $p>.05$). The index of self-esteem did not differ from the values reported in adult female population ($t(213)=1.710$, $p>.05$).

Number/location of interventions and psychological features

With an increase of dissatisfaction, the number of treatments did not rise ($r=.075$, $p=.263$). However, with respect to *location of treatments*, i.e. whether the patients repeated procedures in one body area, or different body areas, certain differences were found (Table 5). First of all, the patients who altered all parts of the body were also reported to be dissatisfied with their body image the most ($F(2.225)=4.963$, $p=.008$, $\eta^2=0.04$), and in addition showed hyperthymic as the most prevailing temperament type ($F(2.225)=3.408$, $p=.035$, $\eta^2=0.03$).

DISCUSSION

The results of the present study extend work examine the relation between aesthetic procedures, self-esteem and body image dissatisfaction [15], while also added new findings about temperaments traits in patients with minimally invasive cosmetic procedures.

The results of our study showed that the presence of overall body image dissatisfaction was moderate, that dissatisfaction grows with age and it becomes more prominent with an increase of a BMI, which is in line with numerous previous studies [19]. Body image dissatisfaction is often associated with maladaptive behaviours, such as self-induced vomiting, excessive exercise, psychological distress and social avoidance [20]. In addition, body image dissatisfaction impacts self-

esteem and quality of life, and it is believed to be a motivational catalyst for a range of appearance-enhancing behaviours, including restrictive diets, physical activity and a wide range of body altering procedures [19, 21]. One of this behaviours is positive attitude and acceptance of minimally invasive cosmetic procedures.

The results of our study showed that number of minimally invasive cosmetic procedures does not necessarily rise with an increase of overall dissatisfaction. However, the number of body areas where procedures are performed does, and, on average, clients who have procedures done in all body areas undergo the greatest number of procedures. Available data show that cosmetic surgery patients rather express dissatisfaction with a specific feature being considered for surgery [22], and that those who express general body dissatisfaction normally undergo more procedures in different body areas [23], as it has been confirmed in our study with minimally invasive procedures.

As regards temperament types, the only difference was found with higher level of hyperthymic temperament. The individuals with a high index of hyperthymic temperament are typically said to be outgoing, optimistic, confident, full of ideas, tireless, but also single-minded and prone to risk-taking [11]. If we add proactive forms of behaviour (usually associated with hyperthymic temperament), optimism, and risk-taking to that apprehension, we may easily expect a greater predisposition towards taking concrete and practical steps (e.g. undergoing some cosmetic procedures) in people with more dominant hyperthymic temperament.

There are findings [24] indicating a positive connection between global self-esteem and inner locus of control (persons who regard the life circumstances as being related to their own actions and personal characteristics, and who believe that they can influence events and their outcomes). This may pinpoint why the patients with higher level of self-esteem and higher scores on hyperthymic temperament are more likely to take concrete actions when they do not feel comfortable with some aspect of their physical appearance.

As already stated, the current satisfaction with the effects of some procedures most frequently does not last long in minimally invasive cosmetic procedures. Thus, some clients rather search for some other ways to reduce their ‘core’ dissatisfaction, or simply have the procedures repeated more often, which will most typically be done by persons who are by nature and temperament proactive, outgoing and determined. Moreover, the positive attitude to aesthetic procedures may be connected with social motives and the need for acceptance [6]. It is persons with prevailing hyperthymic temperament who are most open to other people and who have strong social motives [11].

It is important to point to the differences found in temperament traits in our sample and general non-clinical population of women. Namely, when we compared the gathered scores with the results of

our general population, we noticed lower values in depressive, cyclothymic and irritable traits. This finding also supports the previous theses concerning the impact of hyperthymic temperament on the choice of an aesthetic procedure, because this temperament is normally regarded as an opposite to depressive, and characteristics such as apathy, lethargy, delaying decisions etc. Anxiety temperament traits, which are relatively low in our sample and do not deviate from the average in general population, also corroborate the findings that individuals with higher anxiety indices find it more difficult to undergo this type of procedure due to greater concern about its outcomes, as it is the case with surgical procedures [5].

Our research showed the index of self-esteem was the lowest in clients who had been undergoing minimally invasive cosmetic procedures for more than four years. Similar findings have been obtained in other study, in which changes in these indicators of human well-being were monitored postoperatively [9]. In these studies, no significant improvements in patients' general self-esteem or depressive symptoms (postoperatively) were reported. The authors of the studies maintained that the benefits of cosmetic surgery may be more limited to specific body parts, physical appearance and body image, and may not influence more general self-esteem or quality of life [9]. If we take into consideration the transient effects of minimally invasive procedures, it comes as no surprise that clients cannot gain more permanent satisfaction and a change of self-esteem.

In regard to demographic variables, *better financial situation* is also an important factor when it comes to making a decision to undergo procedures *repeatedly* that is why persons with better economic status, had more treatment performed.

Present study has *limitations*. First, majority of patients were female, as is often observed in aesthetic-focused practice. Further, it would be reasonable, in future research to compare a group who has undergone only minimally invasive asethetic procedures, a group who has undergone aesthetic surgery procedures, and those who have never undergone any aesthetic procedures, as well as including body image assessment regarding *specific body parts* and not the whole body.

CONCLUSION

The present study contributes to understanding that increase of dissatisfaction with body image does not rise number of treatment significantly, but increase the number of different body areas that are threated.

Our findings point out that despite the feeling of an enhanced body image that is followed by an aesthetic procedure, changes in appearance do not necessarily lead to more general improvements in psychosocial functioning and self-esteem.

Finally, the present study revealed correlation between different temperament traits and minimal invasive cosmetic procedures. Individuals with hyperthymic temperament trait are persons who are proactive and prosocial, and less prone to depressive reactions, apathy and lethargy, therefore are more likely to be open for some minimal invasive cosmetic procedure.

REFERENCES

1. Jović M, Sforza M, Jovanović M, Jović M. The acceptance of cosmetic surgery scale: Confirmatory factor analyses and validation among Serbian adults. Curr Psychol. 2017; 36(4):707–718. doi: 10.1007/s12144-016-9458-7
2. Hotta TA. Plastic surgical and nonsurgical procedure statistics 2014. Plast Surg Nurs. 2015; 35(2):53-54. doi: 10.1097/PSN.0000000000000089
3. Sarwer DB, Gibbons LM, Magee L, Baker JL, Casas LA, Glat PM, et al. A prospective, multi-site investigation of patient satisfaction and psychosocial status following cosmetic surgery. Aesthetic Surg J. 2005; 25:263-269. doi: 10.1016/j.asj.2005.03.009
4. Sarwer DB, Crerand CE. Body image and cosmetic medical treatments. Body Image 2004; 1:99–111. doi: 10.1016/S1740-1445(03)00003-2
5. Swami V, Chamorro-Premuzic T, Bridges S, Furnham A. Acceptance of cosmetic surgery: Personality and individual difference predictors. Body Image 2009; 6:7–13. doi: 10.1016/j.bodyim.2008.09.004
6. Stefanile C, Nerini A, Matera C. The factor structure and psychometric properties of the Italian version of the Acceptance of Aesthetic Surgery Scale. Body Image 2014; 11:370-379. doi: 10.1016/j.bodyim.2014.06.005
7. Badoud D, Tsakiris M. From the body's viscera to the body's image. Is there a link between interoception and body image concerns? Neurosci Biobehav Rev. 2017; 77:237-246. doi: 10.1016/j.neubiorev.2017.03.017
8. Stolić M, Stolić D, Hinić D, Ignjatović-Ristić D. Localisation and Types of Cosmetic Medical Treatments – Correlation with Demographic Characteristics of Serbian Clients. Ser J Exp Clin Res. 2016; 17(2):117-124. doi: 10.1515/SJECR-2015-0059
9. Sarwer DB, Infield AL, Baker JL, Casas LA, Glat PM, Gold AH. et al. Two-Year Results of a Prospective, Multi-Site Investigation of Patient Satisfaction and Psychosocial Status Following Cosmetic Surgery. Aesthet Surg J. 2008; 28:245-250. doi: 10.1016/j.asj.2008.02.003
10. Malick F, Howard J, Koo J. Understanding the psychology of cosmetic patients. Dermatol ther. 2008; 21:47-53. doi: 10.1111/j.1529-8019.2008.00169.x
11. Ristić-Ignjatović D, Hinić D, Bessonov D, Akiskal SH, Akiskal KK, Ristić B. Towards validation of the short TEMPS-A in non-clinical adult population in Serbia. J Affect Disord. 2014; 164:43-49. doi: 10.1016/j.jad.2014.04.005
12. Sharif F, Anooshehpoor B, Mani A, Zarshenas L, Zare N, Haghighatian A. Comparison of the temperament and character of patients referred to cosmetic nasal surgeon in Shiraz hospitals, 2015. Int J Community Based Nurs Midwifery. 2016; 4(2):137-147. PMID 27218111
13. Turhan-Haktanir N, Geçici O, Murat Emül H, Aşik A, Demir Y, Ozbulut O. Temperament and character traits of women admitted for breast reduction and comparison with body perception. Aesthetic Plast Surg. 2010; 34(3):359-364. doi: 10.1007/s00266-009-9465-2
14. Brunton G, Paraskeva N, Caird J, Bird KS, Kavanagh J, Kwan I, Stansfield C, Rumsey N, Thomas J. Psychosocial predictors, assessment, and outcomes of cosmetic procedures: A systematic rapid evidence assessment. Aesthet Plast Surg. 2014; 38:1030–1040. PMID 24962402
15. Sobanko JF, Dai J, Gelfand JM, Sarwer DB, Percec I. Prospective cohort study investigating changes in body image, quality of life, and self-esteem following minimally invasive cosmetic procedures. Dermatol Surg. 2018; 1121-1128. doi: 10.1097/DSS.0000000000001523
16. Gardner RM, Jappe LM, Gardner L. Development and Validation of a New Figural Drawing Scale for Body-Image Assessment: The BIAS-BD. J Clin Psychol. 2009; 65(1):113-122. doi: 10.1002/jclp.20526
17. Schmitt DP, Allik J. Simultaneous administration of the Rosenberg Self-esteem scale in 53 nations: Exploring the universal and culture-specific features of global self-esteem. J Pers Soc Psychol. 2005; 89(4):623-642. PMID: 16287423

18. Todorović D, Zlatanović LJ, Stojiljković S, Todorović J. Relations of perfectionism to self-esteem and depression in students. Annu Rev Psychol. 2009; 6(8):173-184.
19. Sarwer DB, Polonsky HM. Body Image and Body Contouring Procedures. Aesthet Surg J. 2016; 36(9):1039-1047. doi: 10.1093/asj/sjw127
20. Manjrekar E, Berenbaum H. Exploring the utility of emotional awareness and negative affect in predicting body satisfaction and body distortion. Body Image 2012; 9:495-502. doi: 10.1016/j.bodyim.2012.05.005
21. Strajnić Lj, Bulatović D, Stančić I, Živković R. Self-perception and satisfaction with dental appearance and aesthetics with respect to patients' age, gender, and level of education. Srp Arh Celok Lek. 2016; 144(11-12):580-589. doi: 10.2298/SARH1612580S
22. Nerini A, Matera C, Stefanile C. Psychosocial predictors in consideration of cosmetic surgery among women. Aesthet Plast Surg. 2014; 38:461–466. doi: 10.1007/s00266-014-0294-6
23. Nikolić J, Janjić Z, Marinković M, Petrović J, Božić, T. Psychosocial characteristics and motivational factors in woman seeking cosmetic breast augmentation surgery. Vojnosanit Pregl 2013; 70(10):940-946. doi: 10.2298/VSP1310940N
24. Opačić G. Personality in the social mirror. Belgrade: Institute for Educational Research. 1995.

Table 1. Sample demographics

Education	**%**	**Marital status**	**%**	**Employment status**	**%**	**Economic status**	**%**	**Children**	**%**
secondary education	20.6	married	45.2	working	81.6	lower middle	4.4	none	46.1
students	4.8	with a partner	24.1	unemployed	8.3	middle	28.1	one	19.3
graduates	74.6	single	18.9	students	2.2	upper middle	36.0	two	30.7
		other	11.8	retired	7.9	high	31.6	three +	3.9

Table 2. Differences (Tukey's B) in the number of treatments per year between age groups

age groups	n	Mean
		1
>61	28	3.0683
31-40	82	3.5847
41-50	49	3.9228
21-30	33	3.9361
51-60	36	4.4672

Table 3. Location of treatments

Location	Frequency	%
face	120	52.6
torso	1	0.4
legs	5	2.2
face & torso	29	12.7
face & legs	26	11.4
torso & legs	3	1.3
all areas	44	19.3

Table 4. Descriptive data on temperament types and self-esteem index

Temperament	**Minimum**	**Maximum**	**Mean**	**Std. Dev.**	**α**	**z**
Depressive temperament	0.00	0.71	0.0902	0.162	0.70	0.383**
Cyclothymic temperament	0.00	1.00	0.2218	0.289	0.83	0.275**
Hyperthymic temperament	0.00	1.00	0.7657	0.243	0.70	0.221**
Irritable temperament	0.00	0.75	0.2177	0.191	0.65	0.174**
Anxious-cognitive temperament	0.00	1.00	0.4079	0.355	0.83	0.186**
Anxious-somatic temperament	0.00	1.00	0.3472	0.278	0.70	0.211**
Self-esteem	26	45	38.35	4.02	0.81	0.095**

**p<0.01, z – Kolmogorov-Smirnov

Table 5. Body image dissatisfaction and hyperthymic temperatment in relation to the location of treatments

Body image dissatisfaction			
Body areas	n	Subset for alpha = 0.05	
		1	2
one	125	10.48	
two	59	10.59	
three	44		16.59
Hyperthymic temperament			
Body areas	n	Subset for alpha = 0.05	
		1	2
two	59	0.7094	
one	125	0.7680	0.7680
three	44		0.8344

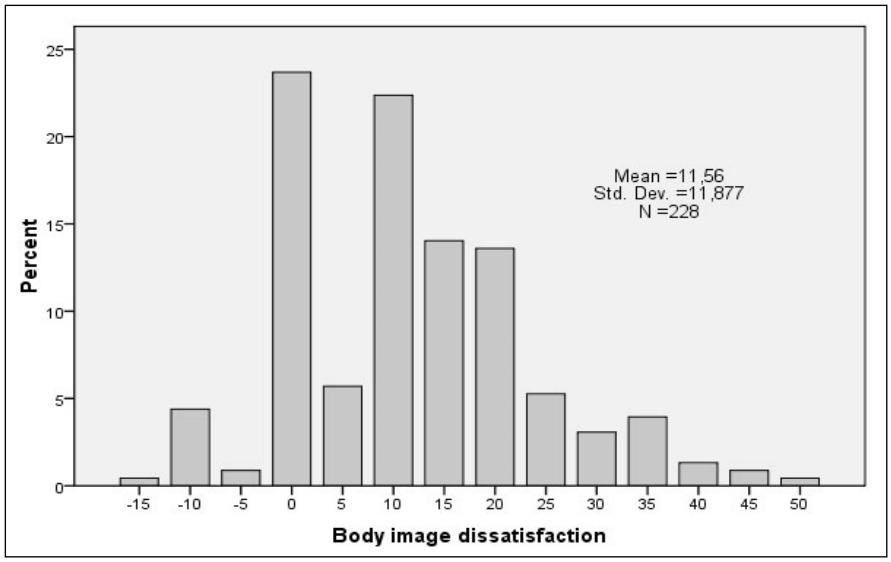

Figure 1. Body image dissatisfaction; figures to the left of 0 – subjects have fewer kilograms than they would want, to the right of 0 – subjects have more kilograms than they would want