

# LOCALISATION AND TYPES OF COSMETIC MEDICAL TREATMENTS – CORRELATION WITH DEMOGRAPHIC CHARACTERISTICS OF SERBIAN CLIENTS

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## LOKALIZACIJA I VRSTE KOZMETIČKIH MEDICINSKIH TRETMANA – POVEZANOST SA DEMOGRAFSKIM KARAKTERISTIKAMA KLIJENATA U SRBIJI

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### ABSTRACT

There is a growing number of cosmetic medical treatments in the Balkan region. Yet, this trend has not been closely observed in terms of the correlation between procedure characteristics and clients' sociocultural and psychological characteristics.

The aim of this cross-sectional/retrospective research is to establish the correlation of types of cosmetic procedures with basic sociodemographic characteristics of clients in Serbia. Each of 144 study subjects underwent a cosmetic treatment (320 in total) within the first three months of 2014, while the study was being conducted. The sample included 5 male and 139 female subjects, with the age range of 17–71 (38.87±10.722).

Peaks of interventions have been detected in subjects aged 31–35 and 36–40; more frequently those were individuals with a higher level of education and their motive most commonly was of aesthetic nature. The majority of the subjects (44.44%) underwent only one intervention, while the average number of interventions per subject within the period of three months was 2.21±1.40. Face interventions were considerably higher in number than others, with a rising trend with age. The number of procedures in the area of the abdomen, breasts and thighs, rose with the increase of a body mass index. The most popular treatments included removal of stretch marks and fillers, mesotherapy and botulinum toxin.

Due to ever-growing sociocultural pressure and a modern concept of life, women often decide on cosmetic therapy at the first sign of ageing and hormonal changes, with a downward age trend especially with respect to minimally invasive procedures, as well as the most visible body parts, the face in the first place.

**Keywords:** body image, cosmetic medical treatments, minimally invasive procedures, sociodemographics, Serbia.

### SAŽETAK

Broj kozmetičko-medicinskih tretmana na području Balkana sve više raste. Ipak, ovaj trend nije detaljnije ispitan u vezi sa povezanošću tipova procedura sa sociokulturnim i psihološkim karakteristikama klijenata.

Cilj ove retrospektivne studije preseka je utvrditi povezanost određenih vrsta kozmetičko-medicinskih intervencija sa osnovnim sociodemografskim karakteristikama klijenata u Srbiji. Svaki od 144 ispitanika je bio podvrgnut nekoj od kozmetičkih intervencija (320 ukupno) u periodu od prva tri meseca 2014. godine, kada je istraživanje i bilo sprovedeno. Uzorak je obuhvatio 5 ispitanika muškog i 139 ženskog pola, uzrasta od 17 do 71 godina (38.87 ± 10.722).

Najveći broj intervencija zabeležen je kod ispitanika sa oko 34. i 40. godine; najčešće kod visoko obrazovanih, a motiv za intervenciju je uglavnom bio estetske prirode. Najveći deo ispitanika (44.44%) bio je podvrgnut jednoj intervenciji, dok je prosečan broj intervencija po ispitaniku u periodu od tri meseca iznosio 2.21 ± 1.40. Najveći broj primenjenih intervencija je na licu, sa rastućim trendom sa uzrastom. Broj procedura na abdomenu, grudima i butinama raste sa povećanjem indeksa telesne mase. Najpopularniji tretmani su uklanjanje strija i fileri, mezoterapija i botoks.

Uслед rastućeg sociokulturnog pritiska i modernog koncepta života, žene se sve češće odlučuju za kozmetičku terapiju već kod prvih znakova starenja i hormonalnih promena. Takođe, uočen je trend da se sve više mlađe osobe odlučuju za minimalno invazivne procedure, naročito na vidljivim delovima tela, pre svega na licu.

**Ključne reči:** slika tela, kozmetičko-medicinski tretmani, minimalno invazivne procedure, sociodemografija, Srbija.



## INTRODUCTION

Body image is regarded as a psychological representation of a personal experience one has with their body. It represents a life process that is constantly changing, a permanent process of differentiation and integration of life experiences (1). In the last few decades, the ideal of female beauty has changed many times. If we take into account the fact that beauty standards are often inapplicable to every individual because beauty cannot be measured objectively, it becomes clear why women's experiences with these changes induce stress. The constant drive to achieve the beauty ideal and the conflicting demands on what an ideal female body is lead not only to greater stress but also to further frustration and anxiety. Moreover, this drive and the accompanying conflicting demands may also result in a negative body image and other psychological problems relative to physical appearance, such as unhealthy dieting and eating disorders (2, 3). Recent studies indicate that men also suffer from negative health and psychological consequences because of body dissatisfaction (3).

The growing popularity of cosmetic medical treatments over the past decade is attributable to several factors, including the development of safer, minimally invasive procedures with less recovery time; increased media attention; and an increased willingness of people to undergo cosmetic procedures as a means to enhance their physical appearance (3, 4). The increased importance of physical appearance and the intense sociocultural pressure to achieve ideals of body image in contemporary culture combined with higher incomes among clients and lower costs for procedures further reduce clients' anxiety over cosmetic interventions (5). Cosmetic non-invasive or minimally invasive treatments, such as botulinum toxin injections, collagen injections, and laser skin resurfacing, have exceeded the traditional surgical treatments in popularity (6). Little is known, however, about the body image concerns of these clients, as they have not yet been studied in isolation (4).

In the last two years, thirteen million minimally invasive procedures have been performed in the US, an increase of 144% compared to those in the year 2000 (6). In European countries, the number of procedures varies from 100 to more than 300 thousand per year (7). A growing number of cosmetic treatments and interventions have been detected in Serbia as well. However, no comprehensive examination of the correlation between characteristics of these treatments and clients' sociocultural and psychological characteristics has been conducted. As the decision to undergo an aesthetic procedure is conditional on three components, namely, perceptive, developmental and sociocultural (8), it is essential to investigate the clients' motivations for such aesthetic interventions as well as the level of self-confidence and similar psychosocial characteristics of those clients who opt for such interventions. It is important, for example, to determine whether there are recurrent aesthetic interventions that provide short-term satisfaction with respect to personal body image, after

which a recurrent and continual dissatisfaction follows, as well as an urge for repeated interventions that have no real physical foundation. In such cases, a psychological evaluation of the client prior to the intervention is necessary so that clients with certain psychological problems be advised that there are other forms of treatments available that could help them resolve such problems.

The current literature indicates that a considerable number of clients wishing to undergo cosmetic medical procedures have some psychological problem (9) and that problems such as anxiety, depression, low appearance evaluation, and body area dissatisfaction also have an impact on dissatisfaction with the performed intervention (10). Client preoperative assessments and standardised tests identify psychosocial aspects, emotional profiles and the existence of potential psychological disorders (e.g., body dysmorphic disorder), all of which represent a relative contraindication to aesthetic interventions (11). However, until there are set standards and final protocols for the preoperative selection of clients, it is vital that further information collected from doctors of all specialties within aesthetic medicine to define this process as clearly and precisely as possible. Furthermore, postoperative assessments would also be significant in terms of monitoring potential improvements of the client's psychosocial condition after cosmetic medical interventions have been performed.

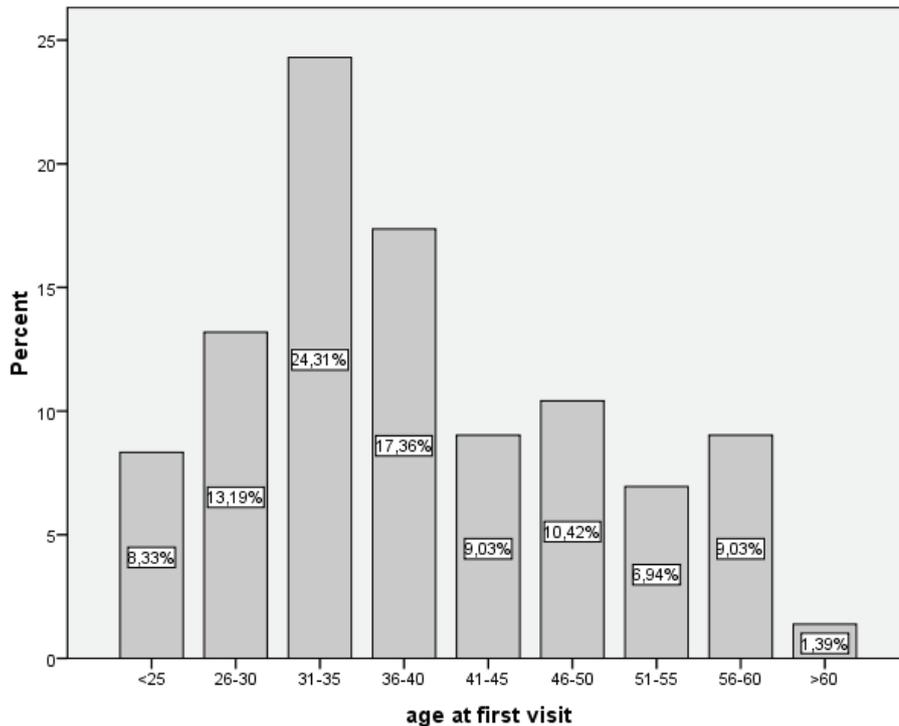
The aim of this cross-sectional research is to investigate the interrelatedness between certain types of cosmetic medical treatments and some of the basic demographic characteristics of clients in Serbia. Our study provides a starting point for the selection of important demographic variables, which would serve as control variables in a follow-up study that will be investigating the relationship between the characteristics of cosmetic medical treatments and psychosocial traits.

## METHODS

The sample recruited for this cross-sectional retrospective research included randomly chosen clients who underwent at least one cosmetic intervention (non-invasive procedures such as laser skin care treatments, chemical peelings or minimally invasive procedures such as fillers and botulinum toxin) at one of several aesthetic clinics in Belgrade within a testing period of three months (at the beginning of 2014).

Of 172 study subjects, 144 provided all required information and thus were included in the final sample. Hence, the final analysis included 320 conducted procedures as some of the subjects had undergone more than one procedure during the testing period<sup>1</sup>. Of the 5 male

<sup>1</sup> The calculation of an adequate sample size for estimating the proportion of the population of clients who have undergone a certain non-surgical cosmetic intervention in Serbia is a complex task. Data gathered from throughout the world on this type of intervention always include the number of conducted procedures, but they do not always include the number of people who have undergone these procedures. Second, there are no official records of the aggregate number of such procedures in Ser-



**Figure 1.** Distribution of the clients according to the age categories

and 139 female subjects who ranged in age from 17 to 71 ( $38.87 \pm 10.72$ ), 43% had completed secondary school and 59.7% held university degrees.

All subjects provided informed consent prior to their participation in the study. The research project was approved by the Committee of the Faculty of Medical Sciences at the University of Kragujevac, where this study was conducted.

The subjects completed a list of questions regarding demographic data (sex, age, level of education, region, satisfaction with economic circumstances, knowledge of the specific intervention). Moreover, through a semi-structured interview conducted by the authors, data regarding the client's body mass index, reasons for visiting the doctor, history of chronic diseases, use of medications and other chemical substances (such as alcohol), other medical interventions, information regarding childbirth (female clients), etc. were obtained. Expert staff at the aesthetic clinics provided information about clients' surgical procedures.

Statistical analyses (descriptive and analytical) of the data were conducted using the statistical programme PASW Statistics, version 18. Correlations were determined using Pearson's coefficient of correlation. The difference in values was analysed by an  $\chi^2$ -test, an independent sample t-test and ANOVA, with a significance level of 0.05.

bia. Consequently, based on existent data on the number of procedures conducted in surrounding countries (7), we estimated the number in Serbia during 2013 to be approximately 60,000. Accordingly, with an acceptable confidence interval of 3%, confidence level of 95%, and  $\beta$ -0.80, the appropriate number of conducted medical treatments per year would be somewhat over 1,000. Because the testing period covered three months, the appropriate number of interventions would be over 250.

## RESULTS

The first finding is that there was a significant difference in sex, as male subjects constituted less than 1% of the sample. Mean values of the age variable ( $38.87$ ) indicate that the sample represents the middle-age population. Peaks in interventions were most frequent with subjects between 31 and 35 and between 36 and 40 years of age (Figure 1.).

The majority of the subjects (61%) stated that the reason for their visit was aesthetic in nature, whereas 15% claimed the reason for their visit was health-related, and 24% failed to provide an explanation for their visit. Approximately two-thirds of the subjects (65.3%) had no chronic discomfort or disease, 16.6% had skin problems, 6.9% had cardiovascular issues, 7.6% suffered from respiratory issues, and 9% claimed to have endocrine issues. Furthermore, 14.6% had two or more chronic problems or diseases.

The most common source of information was electronic media (49%), followed by recommendations/suggestions of friends and acquaintances who often had already undergone some intervention (23.6%), doctor recommendations (9.4%), and print media (9.7%).

According to the BMI category, the distribution of the subjects was as follows Table 1. Nearly half of the subjects were currently, or had recently been, dieting (47.3%). This group significantly differed in BMI values ( $t(86) = -5.278$ ,  $p < 0.000$ ) compared to the group that had never dieted.

Ten per cent of the sample used some form of tranquilisers or sleeping tablets, 46.1% of them smoked, and 25% consumed alcohol to some extent.



**Table 1.** Distribution of the clients according to the body mass index (BMI) categories

	Frequency	Valid Percent
<18.5 Underweight	10	8.5
18.5–24.9 Ideal range of BMI	85	72.0
25–29.9 Overweight	18	15.3
30–34.9 Moderately obese	3	2.5
35–39.9 Severely obese	2	1.7
M=22.57, SD=3.73; Min = 17.37; Max = 35.59		

**Table 2.** Distribution of cosmetic interventions according to localisation on the body

Localisation of interventions	whole face	upper face	mid face	low face	belly	breasts	gluteus	legs	other
	16.67%	9.03%	9.90%	14.11%	10.42%	6.94%	6.25%	15.97%	9.72%

**Table 3.** Cosmetic intervention areas according to the age categories

age (%)	face	body	extremities
<30	38.7	35.5	25.8
31-45	45.2	34.2	20.5
>45	<b>70.0</b>	22.5	7.5

**Table 4.** Cosmetic intervention areas according to the BMI categories

BMI categories (%)	face	body	extremities
underweight	50.0	30.0	20.0
ideal BMI	50.6	28.9	20.5
excess weight	28.0	<b>52.0</b>	20.0

**Table 5.** Cosmetic intervention areas according to the diet criterion

being on a diet (%)	face	body	extremities
no	54.2	31.2	14.6
yes	25.6	41.9	32.6

**Table 6.** Distribution of different types of cosmetic interventions according to the age categories

Intervention (%)	sample	<30	31-45	>45
Fillers	22.5	32.4	20.5	38.9
Botox	10.3	5.9	12.5	18.5
Stretch marks	23.4	44.1	30.7	5.6
Face mesotherapy	12.5	2.9	15.9	22.2
Body mesotherapy	25.9	14.7	20.5	14.8

### Number of interventions

The majority of the subjects (44.44%) underwent only one intervention, 23.61% had undergone two, while others had undergone three, four or five interventions (9.72%, 11.11% and 11.11%, respectively). The average number of interventions per subject within the period of three months was  $2.21 \pm 1.40$ . No correlation was found between the number of interventions and age ( $r=0.10$ ,  $p=0.26$ ) or between the number of interventions and BMI ( $r=0.09$ ,  $p=0.33$ ). The difference in the number of interventions with regard to education exhibited border significance ( $t(142)=-1.95$ ,  $p=0.05$ ).

No difference was detected relative to whether they consumed alcohol, tranquillisers or sleeping tablets or relative to whether female subjects had given birth.

### Localisation of interventions

If we take into account only the first visit (Table 2), the majority of the administered interventions were in the area of the face (the whole face or different face parts, most frequently lips and wrinkles around the lips). This was fol-

lowed by procedures on the legs (knees, shins, thighs). If we roughly classify the interventions under face, torso and extremities, the results show that face interventions were the most frequent ( $\chi^2(2)=23.29$ ,  $p<0.01$ ), with 50.7% of the procedures being performed on the face in comparison to 31.2% on the torso and 18.1% on the extremities (Table 2).

Of the subjects who underwent more than one intervention during the course of the three months of observation, 34% had interventions performed on different parts of their bodies.

Because the great majority of the sample was female, we could not analyse the distribution of intervention types relative to the sex variable<sup>2</sup>. However, an analysis of the age categories was performed (Table 3) and revealed a significant difference ( $\chi^2(4)=9.82$ ,  $p=0.04$ ). For example, among the youngest age group, intervention areas were equally distributed, whereas intervention frequencies on other body parts increased significantly with an increase in age (Table 3).

The subjects who reported that the main reason for their visit was health-related (66.7%) had undergone torso interventions significantly more than persons who reported that they were seeking aesthetic improvement ( $\chi^2(2)=10.20$ ,  $p=0.02$ ). Of the latter group, the focus of the interventions was the face (46%).

Differences in areas of intervention were not found among those subjects with the most frequent chronic diseases ( $\chi^2(6)=2.50$ ,  $p=0.87$ ).

Somewhat different findings were found when analysing the body mass index category. When all subjects who had some form of excess weight were merged into one category, it was noted that this group exhibited a tendency to have more interventions performed on the torso than did other subjects ( $\chi^2(6)=10.31$ ,  $p=0.05$ ). More specifically, subjects with excess weight had more interventions performed on the abdominal area (27%), breasts (17%), extremities and thighs (18%), as well as the lower part of the face and neck (20%) (Table 4).

<sup>2</sup> Although the number of male subjects in the sample was insignificant, the sex variable was employed as a control variable in further analyses. As a result, all other data relative to demographic characteristics and types of interventions refer mainly to the female subjects.



The subjects who had dieted also underwent interventions on the torso and on the extremities more often than did subjects who had never dieted ( $\chi^2(2)=8.44$ ,  $p=0.02$ ). The former subjects more frequently (30%) had interventions performed on the extremities (especially thighs), followed by the abdominal area (28%), breasts (12%), and the lower part of the face and neck (14%). The most prominent types of interventions in the group of subjects who were dieting were the removal of stretch marks (42%) and body mesotherapy (26%) (Table 5).

No differences were detected with respect to the body areas on which the interventions were performed and the consumption of alcohol, tranquillisers, sleeping tablets, or smoking. However, there was a tendency for smokers to have interventions performed more frequently on the face ( $p=0.06$ ).

### Types of interventions

During the three-month observation period, 320 interventions were performed on our sample. Though most of the subjects underwent one intervention, there were those who had up to five interventions. According to the types of interventions, the most popular included the removal of stretch marks and fillers. These were followed by body mesotherapy and facial mesotherapy as well as the use of botulinum toxin (Table 6).

As we noticed some regularities indicating that some interventions were more frequently repeated than others, we analysed this phenomenon and established that botulinum toxin interventions were repeated two or more times in 30% of the subjects, fillers were repeated in 35% of the subjects, and stretch mark removal was repeated in 43% of the participants.

The results also showed significant differences in percentage relative to intervention types in three age categories ( $\chi^2(8)=26.66$ ,  $p<0.01$ ). The most prominent and evident differences were found with botulinum toxin and facial mesotherapy, whose numbers of interventions increased with age, while the number for stretch mark removal declined with age (Table 6).

## DISCUSSION

The available evidence suggests that the likelihood of the willingness to undergo various cosmetic procedures is greater in women than it is in men (5, 12, 13) due to a greater perceived sociocultural pressure for women to live up to idealised images of physical perfection (6). This perceived pressure has resulted in a strong gender bias with up to 90% of cosmetic surgery procedures (7, 14) and 92% of minimally invasive procedures being performed on females (6). In our study, this difference is even greater in favour of the female population, a finding that may denote a distinct quality of the Serbian region, wherein aesthetic interventions for men are still regarded as unacceptable.

Nevertheless, some demographic variables of the typical client have changed in recent years, for instance, the age

of clients has declined. In 2002, almost 70% of the clients who underwent cosmetic medical treatments were within the age range of 19 to 50 (4), whereas in our sample, 82.6% fell within this age range. As previously stated, peaks in interventions were noted among subjects aged between 31 and their early 40s, which is concordant with the existing data. In the study of Ishigooka and associates, for example, the most frequent interventions were reported in individuals between their late 20s and early 40s (15), a finding that supports our results.

The younger age may be explained by the occurrence of the first signs of aging, a sign that women want to erase. They also want to prevent the occurrence of new signs. Due to the perception that aesthetic beauty is imperative in today's society, individuals often seek cosmetic therapy at the very first signs of aging. The older age corresponds with the earliest hormonal changes in women (pre-menopause), at which time, a deep nasolabial fold (frown) and wrinkles become visible even when the face is motionless (16). Additionally, the so-called frown line appears in the glabellar region, the volume of the cheekbones and lips are reduced, and the corners of the mouth droop down. Combined, these changes result in a fatigued and sad face expression that not only changes the woman's appearance but also negatively affects her emotional state due to the self-perception of an altered appearance, which is further intensified by reactions from their surroundings to the stated changes. The data suggest that the greatest number of clients seeking botulinum toxin interventions was in their early 40s and that the majority (87.7%) were women (17).

A difference that bordered on significance was found in the number of interventions relative to the level of education. A possible interpretation of these results may be the connection between educational level and a better living status and/or potential better knowledge and an awareness of various forms and types of interventions.

There is a growing body of research that compares individuals who have undergone interventions and are exclusively driven by a physical need or by aesthetic reasons. In the current study, the percentage of those who underwent interventions for aesthetic reasons is significantly higher than the percentage of those who did so due to a physical need. Therefore, the characteristics of those who are seeking aesthetic enhancement should be further analysed in the future. For example, those seeking elective cosmetic surgery for aesthetic reasons exhibited only moderate psychosocial dysfunction, and the level of function was (negatively) related to the client's preoccupation with the abnormality rather than with either their perceived or their objective abnormality (18).

The media (music videos, television shows, reality series, magazines) are increasingly becoming a more frequent means whereby people evaluate their own physical qualities through social comparison processes (19). As there is not a sufficient number of unbiased criteria for the evaluation of physical beauty, fashion models establish, through



mass media, the parameters of physical beauty. Thus, it can be argued that the mass media have likely been instrumental in the expansion of cosmetic medicine as images of beauty and advances in cosmetic medicine are regularly promoted in the health and beauty magazines, on television shows and on Internet sites (4). Research on female subjects suggests that the relationships between depressive mood, low self-esteem, BMI and sociocultural pressures (family, media, etc.) on the one hand and body dissatisfaction on the other may be at least partially mediated by the frequency of body comparisons with the models displayed in the media (3).

Considering the frequency and dynamics of these contents in the media, it is not unusual that the media are normally not only the most frequent source of information regarding treatments, but they also establish the parameters of beauty, a fact supported by our study. However, it is important to emphasise that in the context of media, electronic media is prolific in contrast to news media.

In one study, subjects who reported favourable views of reality television shows featuring cosmetic surgery were more likely to indicate an interest in undergoing such surgery. In addition, subjects who watched a television programme about cosmetic surgery makeover wanted to change their appearance by means of cosmetic surgery more than those who were not exposed to the programme (12).

### Localisation

Physical appearance is a significant part of body image because it is the primary source of information that people use to create first impressions, and it leads to further social interactions with others. Because the face is the most expressive part of the body and is in the centre of our field of vision when we communicate with other people (20), it is the most revealing and thus the most important part of body image (21). Accordingly, it is not surprising that the majority of interventions (50.7%) are performed in the area of the face. In the past, approximately 90% of clients wanted facial plastic surgery, while other body parts were of far less concern (15). Recent data from the Serbian region suggest that facial interventions remain the most popular of procedures at approximately 66%), whereas the remaining 44% are performed on other areas of the body (1).

Our results also indicated that the number of facial interventions increases with age. Because the face is vigorous and firm in young women, alterations are normally performed when clients become dissatisfied with their natural physiognomy. In older clients, body interventions are not uncommon, and the need for facial enhancements intensifies because changes resulting from the physiological process of aging become visible, changes in the papillary and reticular layers of the dermis occur, structural changes in aging skin become evident, and changes in the hypodermis are noted as the absorption and migration of fat pads occur. Though changes also occur in the muscles and the bones, they

are less notable. Nonetheless, all of these changes cause wrinkles, the loss of youthful contours of the face, and an obvious decline in skin freshness.

The number of interventions performed on the body and its extremities in the younger population is considerable, which may be explained by increased obesity in this population (22), which is then followed by sagging skin and cellulite. This is further supported by our findings regarding the types of interventions, which show that the removal of stretch marks and cellulite as well as general body mesotherapy are becoming increasingly more common among the younger population. In addition, individuals with higher BMIs, as well as those who are dieting, are more likely to have interventions performed on their bodies and extremities. Nevertheless, with respect to the connection between BMI and interventions, it is important to stress that more caution be urged because being satisfied with one's own appearance is not necessarily dependent on objective BMI values. In our study, for instance, 72% of the subjects had the ideal BMI score, yet they still expressed the need to undergo specific interventions, and almost half of them expressed the need to diet or take slimming products.

With regard to repeated visits and interventions, our data, which indicate that 55% of the subjects had more than one intervention over the course of three months, are consistent with data from other countries, which report that 51% of their procedures are not first-time treatments (6). It is interesting to note that individuals who have had two or more interventions tend to choose different body parts, a finding that we intend to explore in future studies by examining these populations. Within that population, it would be particularly important to focus on those clients who initially had a deep dissatisfaction with only one part of their body but who then project this dissatisfaction onto other body parts due to certain psychological issues, such as body dysmorphic disorder, social anxiety, etc., despite the success of the initial treatment (9).

### Types of interventions

With regards to the frequency of certain interventions, our data partially differ from the data reported by other countries. In the US, for example (6), botulinum toxin is a highly preferred intervention, with 47% of subjects opting for this method of cosmetic enhancement, compared to only 10% of the subjects in our study. Similar to the US, the average percentage worldwide of those electing botulinum toxin intervention is approximately 43% (7). Fillers are the second most frequent treatment, with 16% of those seeking enhancement in the US choosing fillers, 26% worldwide opting for fillers, and 22% of our sample preferring fillers. Body mesotherapy is estimated to be approximately 24% in the US compared to 31% in our sample and approximately 30% worldwide. Not surprisingly, ratings for youthful appearance and facial attractiveness are highly correlated, though they both decline with age, particularly among women (23).



This decline in their importance seems to influence the decision for minimally invasive cosmetic behaviours, such as botulinum toxin, fillers and mesotherapy, which are becoming known as anti-aging treatments.

Certain interventions, however, reinforce the repetitive nature of their use, which is why 40% of the responses in studies involving clients who underwent botulinum toxin interventions elected to undergo more frequent administrations (17). In the current study, botulinum toxin was administered two or more times in 30% of the subjects within the three-month period, fillers were applied in 35% of the cases and stretch marks were removed in 43% of the subjects, thus confirming the aforementioned statements regarding the repetitive nature of certain types of interventions. Thus, it is concluded that future studies should seek to identify a more refined solution.

## CONCLUSION

It is widely known that those judged to be attractive are also more likely to be rated as intelligent, amusing, confident, sexy, strong, friendly and successful in contrast to those who are considered to be unattractive (24). That is why there has been an unusual increase in interventions aimed at improving physical appearance. The rise in cosmetic medical treatments, which is expected to continue in our region, emphasises the need for subsequent studies to examine the psychological characteristics of clients who are seeking such procedures and the resultant psychological outcomes of the interventions. This will be the subject of the follow-up study that will pivot on a more thorough investigation into the interrelatedness of the characteristics of cosmetic medical treatments and certain psychosocial traits based on the importance of extracted demographic variables identified in the present study.

The aesthetic client of the present time has changed greatly. At a younger age, they want only non- or minimally invasive procedures to retain a good figure. Moreover, once they have been treated successfully and gained confidence, this aesthetic client will likely continue to be a surgical candidate in the future at the same medical institution and with the same doctor (25).

As methodological problems from previous research have limited the validity and generalisability of the findings, there is a need for methodologically sound investigations. Accordingly, it is important to note the limitations of the current study, specifically, sample size and cross-sectional design. Future studies should include reliable and valid measures, pre- and post-treatment assessments, and appropriate control or comparison groups, which would result in a sufficient number of reliable criteria to serve as a basis for a potential psychological evaluation in medical aesthetic clinics. Such evaluations would be analogous to the taking of case histories and the detection of side effects, thereby promoting the safe medical treatment of the client.

## REFERENCES

- Rubeša, G., Tic-Bačić, T., Sveško-Visentin, H. & Bačić, G. (2011). The Influence of Aesthetic Surgery on the Profile of Emotion. *Collegium Antropologicum*, 35, Suppl. 2, 51–55.
- Freedman, R. (1988). *Bodylove: Learning to like our looks -- and ourselves*. New York: Harper & Row.
- van den Berg, P., Paxton, S.J., Keery, H., Wall, M., Guo, J. & Neumark-Sztainer, D. (2007). Body dissatisfaction and body comparison with media images in males and females. *Body Image*, 4, 257–268. DOI: 10.1016/j.bodyim.2007.04.003
- Sarwer, D.B. & Crerand, C.E. (2004). Body image and cosmetic medical treatments. *Body Image*, 1, 99–111. DOI: 10.1016/S1740-1445(03)00003-2
- Swami, V., Chamorro-Premuzic, T., Bridges, S. & Furnham, A. (2009). Acceptance of cosmetic surgery: Personality and individual difference predictors. *Body Image*, 6, 7–13. DOI: 10.1016/j.bodyim.2008.09.004
- ASPS (2013). *2013 Plastic Surgery Statistics Report*. US: The American Society of Plastic Surgeons.
- ISAPS (2013). *International Survey on Aesthetic/Cosmetic Procedures Performed in 2013*. New York: The International Society of Aesthetic Plastic Surgery. Retrieved January 25, 2015, from <http://www.isaps.org>
- Sarwer, D.B., Wadden, T.A., Pertschuk, M.J. & Whitaker, L.A. (1998). The psychology of cosmetic surgery: a review and reconception. *Clinical Psychology Review*, 18 (1), 1-22. DOI: 10.1016/S0272-7358(97)00047-0
- Malick, F., Howard, J. & Koo, J. (2008). Understanding the psychology of cosmetic patients. *Dermatologic therapy*, 21, 47-53. DOI: 10.1111/j.1529-8019.2008.00169.x
- Honigman, R.J., Jackson, A.C. & Dowling, N.A. (2011). The PreFACE: A Preoperative Psychosocial Screen for Elective Facial Cosmetic Surgery and Cosmetic Dentistry Patients. *Annals of Plastic Surgery*, 66 (1), 16-23. DOI: 10.1097/SAP.0b013e3181d50e54
- Hodgkinson, D.J. (2005). Identifying the Body-Dysmorphic Patient in Aesthetic Surgery. *Aesthetic Plastic Surgery*, 29 (6), 503-509. DOI: 10.1007/s00266-005-5033-6
- Markey, C.N. & Markey, P.M. (2010). A correlational and experimental examination of reality television viewing and interest in cosmetic surgery. *Body Image*, 7, 165–171. DOI: 10.1016/j.bodyim.2009.10.006
- Swami, V., Arteché, A., Chamorro-Premuzic, T., Furnham, A., Stieger, S., Haubner, T., et al. (2008). Looking good: Factors affecting the likelihood of having cosmetic surgery. *European Journal of Plastic Surgery*, 30, 211–218. DOI: 10.1007/s00238-007-0185-z
- ASPS (2009). *Procedural statistics trends: 2008 quick facts*. US: The American Society of Plastic Surgeons. Retrieved January 25, 2015, from <http://www.plastic-surgery.org>



15. Ishigooka, J., Iwao, M., Suzuki, M., Fukuyama, Y., Murasaki, M. & Miura, S. (1998). Demographic features of patients seeking cosmetic surgery. *Psychiatry and Clinical Neurosciences*, 52, 283-287. DOI: 10.1046/j.1440-1819.1998.00388.x
16. Piérard, G.E., Hermanns-Lê, T., Gaspard, U. & Piérard-Franchimont, C. (2014). Asymmetric facial skin viscoelasticity during climacteric aging. *Clinical, Cosmetic and Investigational Dermatology*, 7, 111-118. DOI: 10.2147/CCID.S60313
17. Carter Singh, G., Hankins, M.C., Dulku, A. & Kelly, M.B.H. (2006). Psychosocial Aspects of Botox in Aesthetic Surgery. *Aesthetic Plastic Surgery*, 30, 71-76. DOI: 10.1007/s00266-005-0150-9
18. Cook, S.A., Rosser, R., Toone, H., James, M.I. & Salmon, P. (2006). The psychological and social characteristics of patients referred for NHS cosmetic surgery: Quantifying clinical need. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, 59, 54-64. DOI: 10.1016/j.bjps.2005.08.004
19. Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117- 140. DOI: 10.1177/001872675400700202
20. Ekman, P. & Friesen, W.V. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, 17, 124-129. DOI: 10.1037/h0030377
21. Stanulović-Kapor, N., Vrgović, P. & Hinić, D. (2009). *Komunikologija i komuniciranje u organizaciji*. Novi Pazar: Državni univerzitet u Novom Pazaru.
22. Seidell, J.C. (2000). The current epidemic of obesity. In: C. Bouchard (ed.), *Physical Activity and Obesity*, Vol. 2 (pp. 21-30). Champaign, IL: Human Kinetics.
23. Sarwer, D.B., Magee, L. & Clark, V. (2004). Physical appearance and cosmetic medical treatments: physiological and socio-cultural influences. *Journal of Cosmetic Dermatology*, 2 (1), 29-39. DOI: 10.1111/j.1473-2130.2003.00003.x
24. Dion, K., Berscheid, E. & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology*, 24, 285-290. DOI: 10.1037/h0033731
25. van der Lei, B. (2010). Book review. *Cosmetic Medicine & Aesthetic Surgery: Strategies for Success*. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, 63, 376. DOI: 10.1016/j.bjps.2009.11.016