



Perceptions and knowledge toward cosmetic procedures: A cross-sectional survey

Kozmetik uygulamalara karşı algı ve bilgi düzeyi: Kesitsel anket çalışması

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Abstract

Background and Design: Cosmetic procedures have been increasing recently, and public knowledge on this issue is made available through the internet, television, or social media. However, with the increasing tendency for these procedures, the risk of complications also increases because of practitioners who do not have expertise in this field. This study aimed to determine the perceptions and knowledge toward cosmetic procedures and its complications.

Materials and Methods: A total of 324 patients aged 18 years and over presented to the cosmetology outpatient clinic.

Results: The majority of the participants stated that dermatologists and/or plastic surgeons are the most qualified to perform cosmetic procedures (77.2%). Particularly, female participants and the high-income group answered that they will choose dermatologists and plastic surgeons for performing cosmetic procedures ($p=0.028$ and $p=0.010$, respectively).

Conclusion: While most of the participants perceived that these procedures are performed by dermatologists or plastic surgeons, cosmetic procedures are performed in the skin care center by non-healthcare providers because of socio-economic reasons. However, if complications occur, patients first sought dermatologists for treatment. Therefore, society should be more conscious of this issue when planning to undergo cosmetic procedures by experts and to prevent complications.

Keywords: Cosmetic procedures, dermatology, laser, dermal filler, plastic surgery

Öz

Amaç: Kozmetik uygulamalar son zamanlarda giderek artmaktadır ve bu konuda toplumun bilgisi internet, televizyon veya sosyal medyaya dayanmaktadır. Ayrıca bu konuya olan eğilimin artması ile birlikte konuyla ilgili uzmanlığı olmayan hekimler, bazı sağlık çalışanları ve sağlık çalışanı olmayanların uygulama yapması nedeniyle komplikasyon riski de artmaktadır. Kozmetik işlemler ve komplikasyonları ile ilgili algıların ve bilgilerin belirlenmesi amaçlanmıştır.

Gereç ve Yöntem: Kozmetoloji polikliniğine başvuran 18 yaş ve üzeri 324 hasta çalışmaya dahil edilmiştir.

Bulgular: Katılımcıların çoğu, dermatologlar ve/veya plastik cerrahların kozmetik işlemleri gerçekleştirme konusunda en yetkili uzmanlık olduğunu belirtti (%77,2). Özellikle kadın ve yüksek gelir grubu, kozmetik işlemler için dermatolog ve plastik cerrahları tercih edeceklerini belirtmişlerdir ($p=0,028$ ve $p=0,010$).

Sonuç: Katılımcıların çoğu bu işlemlerin dermatologlar veya plastik cerrahlar tarafından yapılması algısına sahipken olası sosyo-ekonomik nedenlerden dolayı deri bakım merkezinde sağlıklı olmayan kişiler tarafından kozmetik işlemler yapılmaktadır. Komplikasyonların tedavisinde ise ilk olarak dermatoloji bölümüne başvurulmaktadır. Bu nedenle hem kozmetik işlemlerin uzmanlar tarafından yapılması hem de komplikasyonların önlenmesi için toplumun bu konuda daha bilinçli olması gerekmektedir.

Anahtar Kelimeler: Kozmetik uygulamalar, dermatoloji, lazer, dolgu, plastik cerrahi

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Introduction

The number of people undergoing cosmetic dermatology procedures has increased in recent years. According to the American Society for Aesthetic Plastic Surgery, the number of cosmetic procedures in the United States increased by 446% from 1997 to 2006, and minimally invasive procedures grew by 228% from 2000 to 2018; however, cosmetic surgeries decreased by 5% in the same period. People are exposed to cosmetic procedures through the internet, television, and social media, which enhances public awareness of such procedures¹.

Dermatologists or plastic surgeons are the physicians responsible for all procedures performed on the skin. Given the overlap in specialization areas, such as otolaryngology and ophthalmology, many cosmetic procedures can be performed. However, society has mostly perceived that dermatologists or plastic surgeons are more experienced^{2,3}.

Many studies have shown people's knowledge of the most commonly applied cosmetic procedures^{4,8}. There are similar studies on the complications of such procedures⁹⁻¹¹.

However, no study has focused on cosmetic procedures performed in Turkey and the perception of society regarding experts that society regarded as the most experienced. In addition, related studies have not addressed the question of where people should seek complication treatment.

Thus, this study aimed to explore participants' perceptions and knowledge about cosmetic procedures. Also, this study; no matter where the cosmetic procedure is performed; when complications develop, they also investigate which specialty has treated the complication.

Materials and Methods

Participants

A questionnaire-based cross-sectional study was conducted between September 2020 and December 2020 among patients who presented to the cosmetology outpatient clinic in a tertiary hospital. This study approval was obtained University of Health Sciences Turkey, İstanbul Training and Research Hospital Ethics Committee (approval number: 1955, date: 29.08.2019). Written informed consent was obtained from all participants before the study. In total, 324 patients aged 18 years and over who agreed to answer the survey were included in this study.

Survey

Three dermatologists recorded participants' demographic data (age, sex, marital status, incomes, and education). The questionnaire contained nine items, and the participants answered the survey items individually. Five close-ended questions (multiple choice and dichotomous questions) and one open-ended question were included to assess the perceptions and knowledge of respondents.

The first three questions were about the knowledge of participants regarding cosmetic procedures, such as botulinum toxin injections for hyperhidrosis, infraorbital augmentation, nose augmentation, salmon DNA injection, lip augmentation, nasolabial fold augmentation, mesotherapy for hair loss, and platelet-rich plasma (PRP), laser treatment for rejuvenation, botulinum toxin injection for wrinkles, micro needling for acne scars, chemical peeling, laser treatment for dark spot, and laser hair removal, and where they heard these practices

(television medical programs, Google/Internet, friends, social media, skin care centers, hairdressers, dermatologist/plastic surgeon's clinics, private hospitals, and state hospitals). The last question was regarding their opinion about who is the best and qualified to perform such procedures, i.e., dermatologists, plastic surgeons, specialist medical doctors, naturopathic physicians, aesthetic physicians, nurses, and aestheticist.

The remaining six questions asked whether they had undergone cosmetic procedures (dichotomous question). These questions asked which cosmetic dermatology procedures were performed (namely, botulinum toxin injections for hyperhidrosis, infraorbital augmentation, nose augmentation, salmon DNA injection, lip augmentation, nasolabial fold augmentation, mesotherapy for hair loss, PRP, laser treatment for rejuvenation, botulinum toxin injection for wrinkles, micro needling for acne scars, chemical peeling, laser treatment for dark spots, and laser hair removal); where/who the procedures were performed (dermatologists, plastic surgeons, specialist medicine doctors, naturopathic physicians, aesthetic physicians, nurses, aestheticist, and hairdressers) whether they experienced any complication (dichotomous question), what are the complications (open-ended question), and who treated these complications (self-healing, dermatologists, plastic surgeons, internal medicine, and emergency).

Statistical Analysis

SPSS Statistics for Windows, version 15.0 (SPSS Inc., Chicago, Ill., USA), was used for statistical analysis. Regarding descriptive statistics, categorical variables were given as numbers and percentages. In independent groups, rates were compared using chi-square analysis. The significance level was set as $p < 0.05$.

Results

Of the 324 participants, 214 (66%) were female and 110 were male. The mean age of the participants was 35.2 ± 13.3 (range: 18-76) years; however, most of the respondents were between 18 and 24 years old (29.9%). Participants' demographics are summarized in Table 1.

Knowledge of participants regarding cosmetic procedures

The most common cosmetic procedures that the participants knew were laser hair removal (79.6%). Cosmetic procedures had been performed on 96 (29.6%) of the participants, and laser hair removal was the most common cosmetic procedure performed (19.1%). The majority of the participants had heard about cosmetic procedures frequently on television medical program (50.8%) (Figure 1).

Perceptions of participants regarding cosmetic procedures

Most of the participants (77.2%) stated that they will choose dermatologists and/or plastic surgeons to perform the cosmetic procedures. Conversely, in those who had undergone cosmetic procedures, the majority of the cosmetic procedures were performed by aestheticist (13.9%). After the cosmetic procedures, 13.5% of the participants experienced complications such as erythema, itching, stinging, bruising, swelling, and bleeding. In total, 30.8% of the complications regressed spontaneously, but most of the patients with complications preferred treatment by dermatologists (38.5%) and plastic surgeons (15.4%) regardless of where the cosmetic procedures were performed (Figure 1).

Perceptions and knowledge of cosmetic procedures according to age, sex, marital status, and education status

The results of the analysis regarding the perceptions of participants about cosmetic procedures are shown in Figure 2. Laser hair removal ($p<0.001$), lip augmentation ($p<0.001$), laser treatment for dark spots ($p<0.001$), nose augmentation ($p<0.001$), laser treatment for rejuvenation ($p<0.001$), and chin augmentation ($p=0.014$) were known more by the group aged 18-24 years than did the other age groups (Figure 3).

The group aged >55 years were aware of cosmetic procedures through medical television programs ($p=0.019$), friends ($p=0.022$), and state hospitals ($p=0.004$). By contrast, the group aged 18-24 years was aware of them through the social media and skin care centers ($p<0.001$ and $p=0.021$).

All cosmetic procedures, except nasolabial fold augmentation, were known more among women than among men ($p<0.05$; for all). Women were significantly aware of them through medical television programs ($p=0.010$), friends ($p=0.008$), social media ($p=0.004$), and skin care centers ($p=0.003$).

Participants who earned <9000 dollars/year have significantly heard all cosmetic procedures than the other income groups ($p<0.05$; for all); however, the medium-income group was more aware of the cosmetic procedure through the internet ($p<0.001$), friends ($p=0.011$), and social media ($p=0.030$). Interestingly, cosmetic application was more common in the low-to-medium income group ($p=0.007$).

Table 1. Demographics of the participants	
Patients	n (%)
Age groups (years)	
18-24	97 (29.9)
25-34	76 (23.5)
35-44	71 (21.9)
45-54	46 (14.2)
55-64	19 (5.9)
>65	15 (4.6)
Sex	
Female	214 (66.0)
Male	110 (34.0)
Marital status	
Single	150 (46.3)
Married	174 (53.7)
Income (year)	
<4800 dollars (low)	62 (19.1)
4800-9000 dollars (medium)	257 (79.3)
>9000 dollars (high)	5 (1.5)
Education	
No education	13 (4.0)
Primary school	115 (35.5)
High school	70 (21.6)
University	126 (38.9)

Discussion

Beauty standards affect all people. Worldwide, people have always wanted to be more beautiful or to protect their beauty. This behavior gradually turns to aesthetic anxiety¹². Initially, there was an increase in the number of aesthetic surgeries, which were eventually replaced by minimally invasive cosmetic procedures¹³. The rising demand for cosmetic procedures may have increased the application of improper application methods in inappropriate centers, leading to complications and their incorrect management¹⁴. The results of this study showed that Turkish participants prefer dermatologists and/or plastic surgeons over other health care providers in performing cosmetic procedures and treatment of complications.

The present study demonstrates that the perceptions and knowledge of the general public regarding cosmetic procedures were different among the groups with respect to age, sex, and income level. In our country, 3-4 common Fitzpatrick skin types are identified; therefore, people have the most information about laser treatments for hair removal and dark spots¹⁵. We found that medical television programs (58.0%), internet (56.5%), and friends (50.3%) were the most common sources of knowledge. Likewise, Al Doheyan et al.¹⁶ and Adedeji et al.⁴ found television as a source of knowledge (38% and 49.8%, respectively), and Ahmad et al.¹⁷ reported the internet as a source of knowledge (88%)^{18,19}. Crockett et al.²⁰ stated that reality TV programs do not provide sufficient information about the risks and benefits of cosmetic procedures. In Turkey, medical television programs on cosmetic procedures may generate misconceptions; however, such programs are seen as a knowledge source.

According to 53.5% of the participants in a Nepalese study, cosmetic procedures were conducted by dermatologists, whereas in a Nigerian study, 75.1% of the respondents agreed that cosmetic procedures were performed by plastic surgeons^{4,7}. In the present study, most of the participants (77.2%) knew that cosmetic procedures should be conducted by dermatologists or plastic surgeons. However, when asked about the cosmetic procedures that they had gone through, they most frequently went to aestheticist in skin care centers (13.2%) and hairdressers (5.9%). We believe that this attitude is likely due to socio-economic factors. However, our study revealed that cosmetic procedures were much more commonly performed on those with low-to-medium incomes (<9000 dollars/year). Similarly, Darland et al.²¹ reported that people may be willing to spend money for appearance. Remarkably, most of the patients underwent cosmetic procedures performed by aestheticist and hairdressers. However, for a more accurate treatment, patients admitted to dermatology (38.5%), instead of re-applying to those who performed the cosmetic procedure for the treatment of complications. Since they cannot get medical treatment from aestheticist and hairdressers, they frequently apply to dermatologists.

As shown in many studies and as expected, female patients had higher levels of knowledge of and had undergone more cosmetic procedures^{4,7,19,20}. According to Brown et al.²², this result may be due to the sociocultural pressure on women, because they are expected to be constantly attractive and have to attain certain beauty standards^{20,21}. In addition, a study from New York stated that the insufficient experience and training of dermatologists about cosmetic procedures for men may outweigh the rates of cosmetic application to men²².

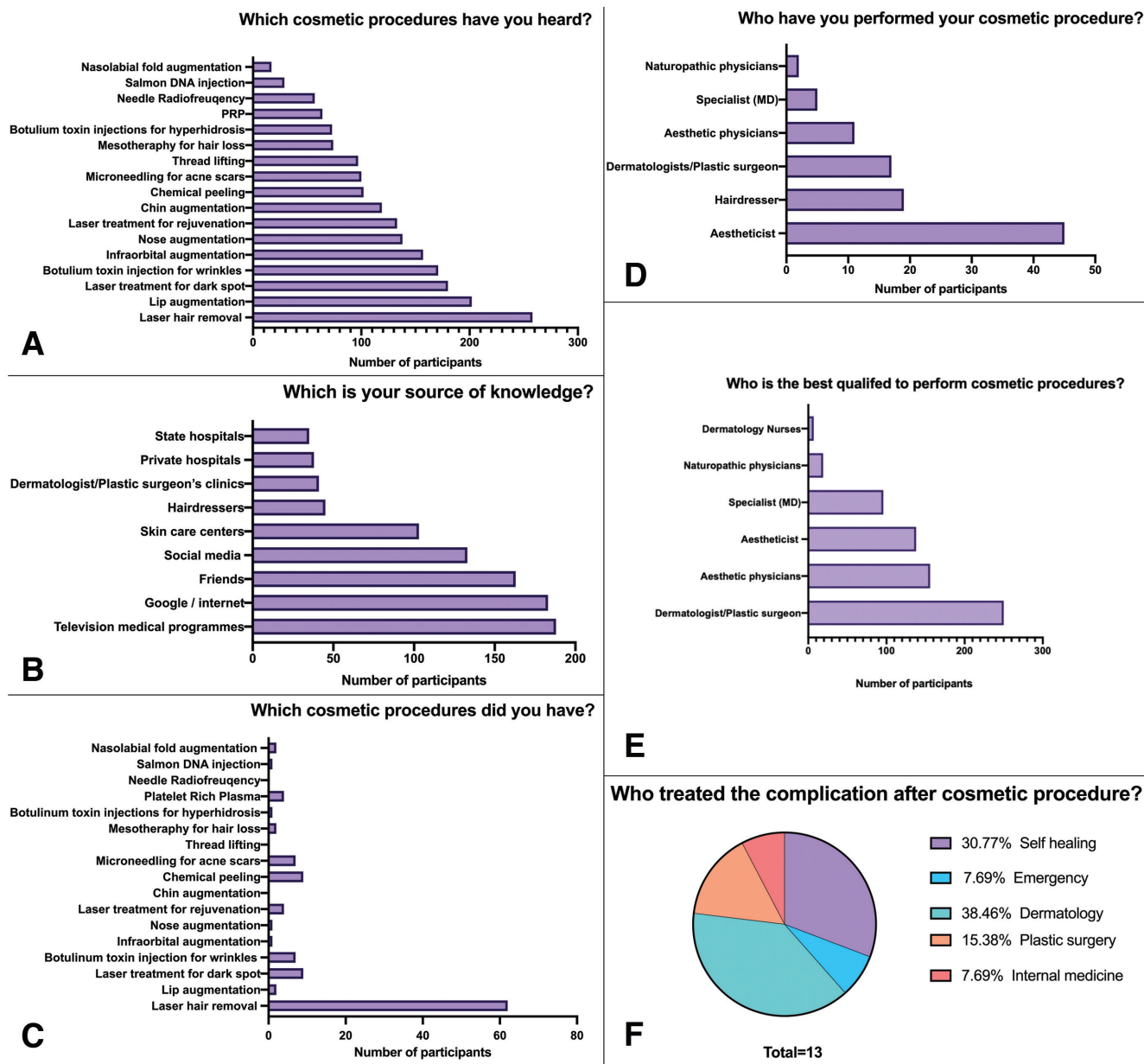


Figure 1. Participants' responses of questions toward cosmetic procedures
Specialist (MD): Otolaryngologist and ophthalmologist

The group aged 18-24 years was aware of many cosmetic procedures, such as lip, nose, and chin augmentations. Simis et al.²³ stated that body image and attitudes improve as teenagers grow; teenagers are mainly dissatisfied about their appearance²⁴. According to Simis et al.²⁴, body dysmorphic disorder (BDD) had a higher prevalence among older adolescents than among younger adolescents. Therefore, concerning BDD, dermatologists and plastic surgeons should be cautious in handling patients aged 18-24 years. Moreover, awareness about botulinum toxin treatment for hyperhidrosis was seen in patients aged 25-34 years. It may be because hyperhidrosis is very common in this age group^{25,26}. PRP was observed in the 55-64 age group; thread lifting and mesotherapy treatments were identified in the ≥65 age group.

Since the aging process starts to become noticeable in these age groups, awareness of anti-aging procedures was higher in participants aged >55 years^{27,28}.

Study Limitations

First, this study could have been conducted with a larger number of participants to reflect the general public. However, as an advantage, the study was conducted in one of the largest tertiary hospital in the country. Therefore, we think that the participants can reflect the general society. Second, participants answered the questionnaire in outpatient conditions. For this reason, they may have had to answer some questions in a short time.



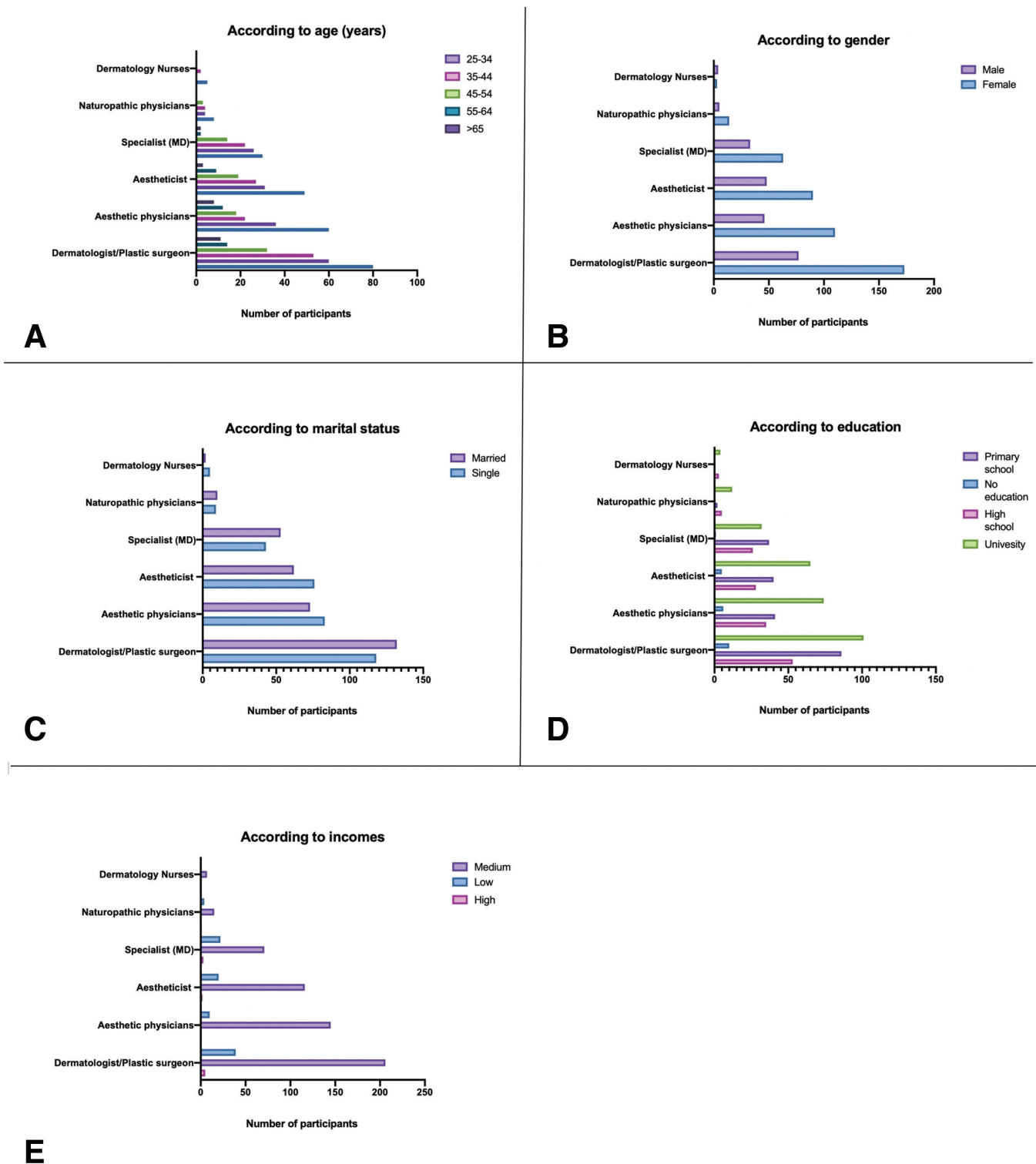


Figure 2. Perceptions of participants about cosmetic procedures: responses for “who is the best qualified to perform cosmetic procedures?”
Specialist (MD): otolaryngologist and ophthalmologist. **(A)** The 18-24 age group stated that they will have chosen aesthetic physicians for the cosmetic procedures ($p=0.002$). **(B)** Females participants stated that they will have chosen dermatologists and plastic surgeons (80.8%) for the cosmetic procedures ($p=0.028$). **(C)** Single participants revealed that they will have chosen aesthetic physicians (55.3%) and aestheticist (50.7%) for the cosmetic procedures ($p=0.016$ and $p=0.006$, respectively). **(D)** The high-income group stated that they will have chosen dermatologists and plastic surgeons, but the medium-income group stated that they will have chosen aesthetic physicians for the cosmetic procedures ($p=0.010$ and $p<0.001$, respectively). **(E)** The group that has completed high school and university education stated that they will have chosen aesthetic physicians for the cosmetic procedures ($p=0.005$)

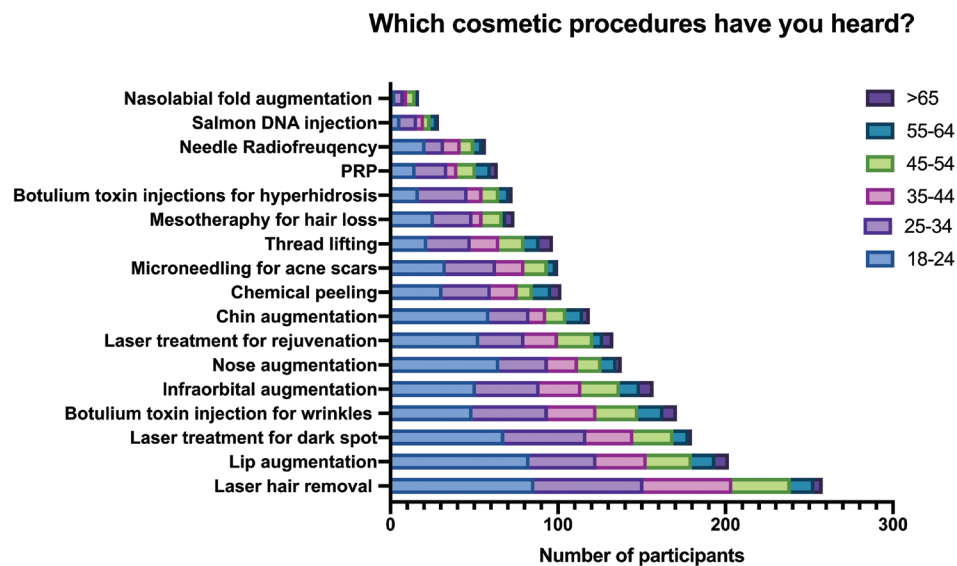


Figure 3. Knowledge of cosmetic procedures according to age groups

Botulinum toxin treatment for hyperhidrosis was known significantly by the 25-34 age group ($p=0.003$). Platelet-rich plasma was known significantly by the 55-64 age group ($p=0.003$). Thread lifting and mesotherapy for hair loss were known significantly by the >65 age group ($p=0.049$, $p=0.013$, respectively)

Conclusion

In recent years, there has been a profound development in cosmetic procedures. Dermatologists and plastic surgeons are specialists authorized to perform cosmetic procedures on the skin. Despite accurately knowing who is allowed to perform cosmetic procedures, Turkish participants often resort to options where they may experience frequent complications because of socio-economic reasons. Nonetheless, dermatologists are the first specialists consulted to treat complications of wrong cosmetic procedures. To avoid such complications, society should be made aware of them.

Ethics

Ethics Committee Approval: This study approval was obtained University of Health Sciences Turkey, İstanbul Training and Research Hospital Ethics Committee (approval number: 1955, date: 29.08.2019).

Informed Consent: Written informed consent was obtained from all participants before the study.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: V.M., E.B.A., A.K.P., Concept: V.M., A.E.K.A., Design: V.M., E.B.A., D.İ., A.E.K.A., Data Collection or Processing: V.M., S.B., Analysis or Interpretation: V.M., A.E.K.A., Literature Search: V.M., D.İ., S.B., D.E., Writing: V.M., A.E.K.A., S.B.

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