Public Perceptions of Plastic Surgery Practice in Brazil

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Abstract The perception of medical specialists by the public has a significant effect on health-care decisions, research funding allocation, and implantation of educational measures. The purpose of this survey was to assess the public's perception of the field of plastic surgery practice. General public members ($n=1290$) completed a survey where they matched nine specialties with 28 plastic surgery-related scenarios. Response patterns were distributed as “plastic surgeon alone,” “plastic surgeon combined with other specialists,” or “no plastic surgeon.” Sociodemographic data and previous plastic surgery contact were also collected. “Plastic surgeon alone” was identified as an expert by more than 70 % of respondents in four (40 %) aesthetic-related scenarios and in one (5.5 %) general/reconstructive-related scenario. “Plastic surgeon alone” was significantly (all $p<0.05$) more recognized as an expert than other response patterns in all aesthetic-related scenarios, except for botulinum toxin for facial wrinkles. There was a significant (all $p<0.05$) poor understanding of the role of plastic surgeons in facial fracture surgery, facial paralysis management, chest wall surgery, hand surgery-related scenarios, and tumor surgery-related scenarios. Age, health-care professional, education level, and prior plastic surgery contact were significant (all $p<0.05$) determinants of “plastic surgeon” as a response pattern, according to bivariate analysis and multiple linear regression analysis. The public has a poor understanding of the broad field of plastic surgery practice.

Therefore, improved public education about the scope of plastic surgery is needed.

Keywords Field · General public · Perception · Plastic surgery · Practice

Introduction

For the first time, Brazil is edging out the USA in terms of the number of aesthetic surgical procedures performed, according to the most recent International Society of Aesthetic Plastic Surgery (ISAPS) Global Statistics [1]. The impressive number of Brazilian aesthetic procedures highlights a profitable market that tends to attract the majority of plastic surgeons to this area. However, plastic surgery is not limited to aesthetic-based practice and should be understood as a constantly expanding and evolving field of medicine, with interventions ranging from complex craniofacial-based reconstructions to aesthetic procedures [2, 3].

In this context, several surveys [4–18] have demonstrated limited understanding and misperceptions of the field of plastic surgery practice among medical and nonmedical communities worldwide. The establishment of the public's knowledge and perception of plastic surgeons may support clinical care, health policy decisions, payer policies, research funding allocation, and educational efforts aimed to inform the public regarding plastic surgeons' expertise and contributions to health care [4–7, 10, 14, 16, 17]. However, to date, there is no such information from a Brazilian perspective.

Thus, the purpose of this survey was to assess the public's perception of the field of plastic surgery practice in Brazil. We hypothesized that the aesthetic-based practice biases the full understanding of the field of plastic surgery by generating massive awareness of aesthetic procedures in the mass media.

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In this scenario, complex reconstructive plastic surgery procedures may be overlooked. Hence, surgical procedures that routinely fit into the plastic surgery armamentarium may not be recognized by the members of the public as part of plastic surgeons' full range of expertise.

Materials and Methods

Study Population

General public members were randomly surveyed at different public places (i.e., shopping centers, coffee shops, parks, busy street corners, and subway stations) in southeastern Brazil from July through August 2014. All participants were blinded from the plastic surgery intent and survey source. Completion of the survey was inferred as implied consent to participate. The study was conducted in accordance with the ethical standards of the 1964 Declaration of Helsinki and its subsequent amendments.

Survey Design

An anonymous, written survey with closed-ended questions was adapted from previous reports [4–18]. In the first part of the survey, respondents were asked to select one or two of nine specialists (ophthalmologist, dermatologist, oral and maxillofacial surgeon, general surgeon, orthopedic surgeon, plastic surgeon, otolaryngologist, neurosurgeon, or head and neck surgeon) that they perceived to be an expert in each question composed by 28 scenarios within the broad scope of the plastic surgery practice. In the second part of the survey, all respondents' indicated sociodemographic data (e.g., gender, age, and education level), source of information reported in the first part, and prior plastic surgery contact (direct consultation or surgery). All scenarios and specialists in the first part were randomly arranged, and respondents could not access a question already answered. Subjects who were younger than 18 years of age or failed to choose at least one response for each question were excluded from this study.

Statistical Analysis

For the descriptive analysis, the mean was used for metric variables, and percentages were given for categorical variables. As multiple response patterns were allowed, a response profile was defined as "plastic surgeon alone" (respondents listing only plastic surgeon as expert), "plastic surgeon combined with other specialists" (respondents listing plastic surgeon and others as experts), or "no plastic surgeon" (no respondents listing plastic surgeon as expert) [8]. All scenarios were also divided into two percentage response patterns: plastic surgeon most frequently chosen and plastic surgeon infrequently chosen (plastic surgeon selected by >70 and <30 % of respondents,

respectively) [12]. A total (frequency distribution) was calculated for each specialist, defined as the number of questions for which specialist had been chosen as one of the responses. The frequency distribution per plastic surgeon was identified as the primary variable of interest. ANOVA (two or more means), equality of two proportions (two proportions), paired Student's *t* (two sets of paired samples), chi-square (categorical variables), and confidence interval for the mean (confidence interval around a sample mean) tests were used for statistical comparisons. A multiple linear regression analysis was also performed to determine which independent variables (sociodemographic data, source of reported information, and prior plastic surgery contact) were significant predictors for the response of plastic surgeon (dependent variable). All analyses were performed using the software program Statistical Package for Social Science (SPSS version 17.0 for Windows, Chicago, IL, USA). Values were considered significant with a confidence interval of 95 % ($p < 0.05$).

Results

A total of 1311 participants responded to the survey. Twenty-one (1.60 %) incomplete surveys were returned, and data were analyzed from 1290 (98.40 %) participants. Most respondents (all $p < 0.05$) were female, non-health-care professionals, between 18 and 30 years of age, with a high school education or higher (university), and no prior plastic surgery contact. Mass media (television, Internet, and magazine) was reported as the main (all $p < 0.05$) source of plastic surgery information (Table 1).

The overall percentage of plastic surgeon ("plastic surgeon alone" and "plastic surgeon combined with other specialists") identified was as follows: 64.31 % for all plastic surgery-related scenarios, 83.14 % for aesthetic-related scenarios, and 53.86 % for general/reconstructive-related scenarios. "Plastic surgeon alone" was chosen by more than 70 % of respondents and less than 30 % of respondents in six (21.43 %) and ten (35.71 %) plastic surgery-related scenarios, respectively. In the aesthetic-related scenarios, four (40 %) procedures were identified by more than 70 % of respondents whereas one (10 %) procedure was identified by less than 30 % of respondents. In the general/reconstructive-related scenarios, one (5.56 %) procedure was identified by more than 70 % of respondents whereas nine (50 %) procedures were recognized by less than 30 % of respondents (Tables 2 and 3).

In the plastic surgery-related scenarios, "plastic surgeon alone" was significantly (all $p < 0.05$) more identified as an expert than other response patterns in 17 (60.71 %) procedures whereas "no plastic surgeon" was significantly (all $p < 0.05$) more recognized as an expert in ten (35.71 %) scenarios. "Plastic surgeon alone" was the main response pattern (all $p < 0.05$) in all aesthetic interventions, except for botulinum toxin for facial wrinkles. In the general/reconstructive-

Table 1 Sociodemographic data, source of reported information, and prior plastic surgery contact of general public members included in the current survey ($n=1290$)

Respondents	<i>N</i> (%)	<i>p</i> value
Gender		
Female/male	695 (53.9)/595 (46.1)	<0.001
Age (years)		
18–30	617 (47.8)	*
31–45	330 (25.6)	
46–95	343 (26.6)	
Education level		
Elementary school	109 (8.4)	**
High school education	577 (44.7)	
Higher education	604 (46.8)	
Health-care professional		
No/yes	1006 (78)/284 (22)	<0.001
Source of reported information		
Mass media ^a	884 (68.5)	***
Personal relationship ^b	343 (26.6)	
General practitioners	63 (4.9)	
Prior plastic surgery contact		
No/yes	980 (76)/310 (24)	<0.001

N number of respondents

^a Composed of television (629 respondents, 41.5 %), Internet (333 respondents, 22 %), and magazines (32 respondents, 2.1 %)

^b Composed of friends (183 respondents, 14.2 %), personal experience (116 respondents, 9 %), and workplace (44 respondents, 3.4 %)

* $p<0.001$, for all comparisons (18–30>31–45=46–95), except for 31–45 versus 46–95 with $p>0.05$; ** $p<0.001$, for all comparisons (elementary school<high school education=higher education), except for high school education versus higher education with $p>0.05$; *** $p<0.001$, for all comparisons

related scenarios, “plastic surgeon alone” was significantly (all $p<0.05$) more identified as an expert in eight (44.44 %) procedures whereas “no plastic surgeon” was the main response pattern in nine (50 %) interventions (Tables 2 and 3).

In the bivariate analysis, all included variables (age, health-care professional, education level, and prior plastic surgery contact) were significant (all $p<0.05$) determinants of the response plastic surgeon, except for gender and source of reported information (all $p>0.05$) (Table 4). In the multiple linear regression analyses, all included variables (gender, age, health-care professional, education level, and prior plastic surgery contact) were significant (all $p<0.05$) determinants of the response plastic surgeon, except for the source of reported information ($p>0.05$) (Table 5).

Discussion

All advances in microsurgery, craniofacial surgery, perforator flaps, transplantation, cell-based strategies, and regenerative

medicine, among others, have had a vigorous effect on the establishment and development of the art and science of plastic surgery, a dynamic and evolving medical specialty that defies definition, not restricted by anatomical boundaries or patient age group, and based on principles rather than limited procedures [2, 3]. However, previous plastic surgery surveys [4–7, 10, 14, 16, 17] have demonstrated that the field of plastic surgery practice is poorly recognized and underestimated by the general public in different countries including Australia, Ireland, UK, USA, and India.

Examining the public’s perception of plastic surgeons is the foundation for identifying opportunities to inform the public regarding the diversity and nature of the plastic surgeon’s expertise [4–7, 10, 14, 16, 17]. Despite this relevance, there is no similar data from a Brazilian plastic surgery perspective although there is an oral and maxillofacial surgery report [19]. Thus, we designed the present survey to elucidate the perceptions of a cross section of Brazilian general public members of the field of plastic surgery practice and to compare the public’s perception of plastic surgeons’ expertise and other overlapping specialists.

Our overall average analysis revealed that plastic surgeon was significantly more identified as an expert than all other overlapping specialists. However, analyses performed on each scenario showed that plastic surgeon was primarily recognized as an expert in aesthetic-related scenarios and less identified in fundamental interventions for plastic surgery as a broad-based medical specialty, mirroring previous data [4–18]. In addition, “no plastic surgeon” was significantly more recognized as an expert in different general/reconstructive-related scenarios. These findings demonstrated that the broad scope of plastic surgery practice is poorly recognized and widespread among the Brazilian public, similar to previously described trends in surveys [4–18] of medical students, medical residents, nurses, and primary care physicians, among others.

In the present investigation, we also sought to statistically correlate independent variables with the public’s response of plastic surgeon, as it has not been fully investigated [4–18]. Our multiple linear regression analysis showed that gender (male), age (18–30 and 46–95 years), health-care professional, education level (high school education and higher), and prior plastic surgery contact were significant predictors of selecting plastic surgeon as experts. In the literature, only one survey [8] evaluated the statistical impact of gender and showed that females had a higher perception of the scope of plastic surgeons’ practice. We and other groups [8] had significantly more females than males; however, similar to other authors [8], we could not offer a rational explanation for the difference between genders and this should be a target of further investigation. We also demonstrated that an increase in the level of education was proportional to an increase in the rate of selecting plastic surgeon as expert. In addition, previous authors [10, 17] hypothesized that respondents with prior plastic surgeon interactions would have a better understanding of the field of plastic surgery

Table 2 Public's perception of the field of plastic surgery practice (aesthetic interventions) ($n=1290$)

Plastic surgery-related scenarios	"PS alone"/"PS+others"/"no PS" <i>N</i> (%)	<i>p</i> value
Aesthetic interventions		
Blepharoplasty	692 (53.6)/259 (20.1)/339 (26.3)	*
Otoplasty	793 (61.5)/217 (16.8)/280 (21.7)	*
Rhinoplasty	867 (67.2)/236 (18.3)/187 (14.5)	**
Botulinum toxin for facial wrinkles	275 (21.3)/413 (32.0)/602 (46.7)	***
Face-lift surgery	683 (52.9)/304 (23.6)/303 (23.5)	****
Breast augmentation with implants	1211 (93.9)/42 (3.3)/37 (2.9)	****
Breast lift surgery	1091 (84.6)/104 (8.1)/95 (7.4)	****
Upper extremity contour surgery	802 (62.2)/230 (17.8)/258 (20.0)	****
Buttock augmentation	1146 (88.8)/113 (8.8)/31 (2.4)	**
Liposuction	1115 (86.4)/134 (10.4)/41 (3.2)	**

"PS alone"=respondents listing only plastic surgeon as expert, "PS+others"=respondents listing plastic surgeon and others as experts, "no PS"=no respondents listing plastic surgeon as expert

N number of respondents

* $p \leq 0.002$, for all comparisons ("PS alone">"no PS">"PS+others"); ** $p \leq 0.009$, for all comparisons ("PS alone">"PS+others">"no PS"); *** $p < 0.03$, for all comparisons ("PS alone"<"PS+others"<"no PS"); **** $p < 0.001$, for all comparisons ("PS alone">"PS+others"="no PS"), except "PS+others" versus "no PS" with $p > 0.05$

Table 3 Public's perception of the field of plastic surgery practice (general/reconstructive interventions) ($n=1290$)

Plastic surgery-related scenarios	"PS alone"/"PS+others"/"no PS" <i>N</i> (%)	<i>p</i> value
General/reconstructive interventions		
Scar management	478 (37.1)/458 (35.5)/354 (27.4)	*
Major burns management	644 (49.9)/125 (9.7)/521 (40.4)	**
Cutaneous melanoma management	161 (12.5)/201 (15.6)/928 (71.9)	***
Skin graft surgery	614 (47.6)/346 (26.8)/330 (25.6)	****
Facial skin cancer surgery	246 (19.1)/290 (22.5)/754 (58.4)	***
Facial paralysis management	106 (8.2)/230 (17.8)/954 (74.0)	***
Facial fracture surgery	272 (21.1)/285 (22.1)/733 (56.8)	*****
Tongue cancer surgery	197 (15.3)/194 (15.0)/899 (69.7)	*****
Cleft lip/palate surgery	560 (43.4)/267 (20.7)/463 (35.9)	**
Congenital skull deformity surgery	526 (40.8)/356 (27.6)/408 (31.6)	**
Congenital eyelid deformity surgery	603 (46.7)/307 (23.8)/380 (29.5)	**
Congenital ear deformity surgery	607 (47.1)/334 (25.9)/349 (27.1)	****
Congenital nasal deformity surgery	604 (46.8)/338 (26.2)/348 (27.0)	****
Congenital hand defect surgery	196 (15.2)/316 (24.5)/778 (60.3)	***
Hand fracture management	0 (0)/181 (14.0)/1109 (86.0)	***
Postmastectomy breast surgery	1013 (78.5)/152 (11.8)/125 (9.7)	****
Pressure ulcer management	359 (27.8)/333 (25.8)/598 (46.4)	*****
Chest wall surgery	266 (20.6)/341 (26.4)/683 (52.9)	***

"PS alone"=respondents listing only plastic surgeon as expert, "PS+others"=respondents listing plastic surgeon and others as experts, "no PS"=no respondents listing plastic surgeon as expert

N number of respondents

* $p < 0.001$, for all comparisons ("PS alone"="PS+others">"no PS"), except "PS alone" versus "PS+others" with $p > 0.05$; ** $p \leq 0.002$, for all comparisons ("PS alone">"no PS">"PS+others"); *** $p < 0.03$, for all comparisons ("PS alone"<"PS+others"<"no PS"); **** $p < 0.001$, for all comparisons ("PS alone">"PS+others"="no PS"), except "PS+others" versus "no PS" with $p > 0.05$; ***** $p < 0.001$, for all comparisons ("PS alone"="PS+others"<"no PS"), except "PS alone" versus "PS+others" with $p > 0.05$

Table 4 Bivariate analysis for plastic surgeon as a response pattern

Respondents	Plastic surgeon <i>M</i> ± <i>SD</i>	<i>p</i> value
Gender		
Female/male	17.8±4.6/18.2±4.7	0.122
Age (years)		
18–30	18.2±4.6	*
31–45	17.1±4.6	
46–95	18.5±4.7	
Education level		
Elementary school	14.9±5.3	**
High school education	17.6±4.4	
Higher education	19.0±4.5	
Health-care professional		
No/yes	17.7±4.8/19.0±4.0	<0.001
Source of reported information		
Mass media	17.8±4.7	0.052
Personal relationship	18.3±4.4	
General practitioners	18.7±5.2	
Prior plastic surgery contact		
No/yes	17.5±4.8/19.7±3.9	<0.001

M mean, *SD* standard deviation

p*<0.01, for all comparisons (18–30=46–95>31–45), except for 18–30 versus 46–95 with *p*=0.559; *p*<0.01, for all comparisons (elementary school<high school education<higher education)

Table 5 Multiple linear regression analysis of possible predictors for plastic surgeon as a response pattern

Independent variables	Plastic surgeon	
	β	<i>p</i> value
Constant	13.475	<0.001
Gender (0=male, 1=female)	−0.567	0.024
Age (years) ^a		
18–30	1.461	<0.001
46–95	1.458	<0.001
Educational level ^a		
High school education	2.502	<0.001
Higher education	3.766	<0.001
Health-care professional (0=no, 1=yes)	0.632	0.041
Prior plastic surgery contact (0=no, 1=yes)	2.082	<0.001
Source of reported information ^a		
Mass media	0.179	0.702
Personal relationship	0.472	0.351
<i>R</i> ² (%) ^b	12.1	
ANOVA	<0.001	

ANOVA analysis of variance

^a Dummy variables (*n*−1)

^b Coefficient of determination

than their peers without prior plastic surgery contact; however, this was not statistically investigated [10, 17]. In our study, health-care professionals and subjects with previous plastic surgery contact were included to assess if exposure to plastic surgery through clinical/surgical encounters may have resulted in a greater understanding of the plastic surgery field. As we showed that prior plastic surgery exposure and health-care professional were independent variables or determinants of plastic surgeon response in both bivariate and multivariate analyses, plastic surgeons may be an import basis for transference of accurate information to the general public, as previously demonstrated in medical students surveys [12, 15].

The reasons to our findings are likely multifactorial. First, work performed by plastic surgeons outside of the aesthetic field can be overshadowed by the historical Brazilian aesthetic surgical culture for several reasons: Brazil is among one of the leading countries regarding the number of aesthetic surgical procedures [1]; aesthetic surgery in Brazil has become a mass phenomenon with important implications for society and individuals [20] and has highlighted the high value assigned to the corporeal self by Brazilians and also identified the body itself as a status symbol, and that recognizes physical appearance as an essential element in the construction of a national, Brazilian identity [21].

Second, we and others [5, 7] showed that the general public obtains its reported knowledge through the mass media. In addition, we demonstrated that mass media was not a determinant of plastic surgeon as a response in both bivariate and multivariate analyses. In fact, the media is poorly informed about the broad scope of plastic surgeons' practice and end up building false expectations and perceptions to the public [5, 7, 9, 22, 23]. Hence, the inability to understand the general/reconstructive role of plastic surgeons is most likely due to the exposure given to aesthetic surgery by pervasive social media and popular "reality television" shows broadcasted worldwide, as highlighted in previous reports [22, 23] that showed the increasingly predominant aesthetic side of plastic surgery in mass media in the UK. In Brazil, mass media has been very positive about aesthetic surgery, viewing the growth of the industry and cosmetic surgery tourism as an indicator of economic health or national pride [21]. Thus, our primary hypothesis has been proven to be right and the wide spectrum of plastic surgery practice is not fully recognized and appreciated by the general public, as the general/reconstructive branch of plastic surgery has been receiving significantly less attention from neither the selective mass media [21–24] nor from members of the Brazilian Society of Plastic Surgery (SBCP). During different regional and national plastic surgery meetings headed by SBCP, reconstructive talks or craniofacial, microsurgery, or hand round tables are rarely seen. This particular behavior, which ignores the reconstructive branch of plastic surgery, has certainly contributed to the spread of a selective and bias view of plastic surgery.

On the other hand, we demonstrated that the plastic surgeon was recognized as an expert in all congenital disorder-related scenarios, except for one scenario (congenital hand defect surgery). We assumed that this particular finding might be an influence of our plastic and craniofacial surgery center on the local population through the multidisciplinary care provided during the last three decades, and actions with the local mass media to generate awareness of reconstructive branch of plastic surgery [24]. We believe that a national survey may not lead to similar data; we hypothesize that non-plastic surgeons would be more recognized as experts in congenital disorder-related scenarios, as has occurred in different proportions in previous surveys [4–19]. Although hand surgery has been an integral part of the scope of plastic surgery and we strive to link it to the plastic surgery field, our data showed that “no plastic surgeon” was mostly identified as an expert in the congenital hand defect surgery. This could be a possibility because the majority of members from the Brazilian Society of Hand Surgery are non-plastic surgeons performing all types of hand operations, as has also been highlighted in previous plastic surgery surveys [8, 12, 15].

Finally, the growth in overlapping specialties can also justify our findings and those of others [4–18]. In fact, the field of plastic surgery practice is so broad that there are overlaps and cross-scope activities among different specialties including dermatology, otorhinolaryngology, and head and neck surgery, among others [3, 8, 17]. Such diversity regarding the role of plastic surgeons within the health-care system can create confusion for those outside of the specialty. In addition, the high proportion of respondents that considered specialists other than plastic surgeons may also be a reflection of increased marketing, promotion, and education by all other overlapping specialties [8, 9]. Different medical and nonmedical specialties have changed of titles and nomenclatures in order to obtain advantages [8, 25]. As in Australia [10], the Federal Council of Medicine in Brazil does not offer/recognize various titles (e.g., breast, cosmetic, or facial plastic surgeons) to physicians who specialize in different fields. Furthermore, there were no laws governing which medical and nonmedical professional can perform plastic surgery-related procedures. Therefore, if a health-care professional has an interest in cosmetic surgery or cosmetic medicine, he/she can give himself/herself a “cosmetic surgeon” title. This whole dilemma is in existence because of a vast number of practitioners who perform cosmetic procedures with inappropriate and inadequate training and of those individuals who may pose a danger to the public [25]. In the particular case of plastic surgery as a specialty, the use of various terminologies to describe different practice arenas (e.g., aesthetic, hand, craniofacial, and micro-surgical surgeons) has further precipitated the confusion of the field of plastic surgery practice. We and others [26, 27] are in favor of the historical naming of specialty/specialist (plastic surgery; plastic surgeon), because this simple, clarified name is much easier to promote.

Our and previous [4–18] distressing findings demand educational measures to be established urgently, because an informed public will potentially make better health-care decisions and gain a renewed understanding of plastic surgeons’ skill sets. Plastic surgeons are characterized as innovators who are willing and ready to introduce and accept new and creative ideas and techniques to correct the multitude of congenital and acquired human body deformities routinely faced by the specialty [3]. Although there are different innovative specialists, plastic surgeons are historically recognized as innovative problem solvers [3], so the public should know all of the fields that plastic surgeons can innovatively address. For this purpose, the Brazilian plastic surgery community should actively participate in the public education process at local and national levels. This education should be brief but includes a broad overview of plastic surgery and focuses on areas that have been poorly associated with plastic surgery, such as hand and tumor surgeries [4–18]. Multiple education pathways (e.g., activity reports by e-mail and local newsletters, publication of plastic surgery articles in popular magazines, journals, social media platforms, and high-quality websites) can be adopted to increase knowledge about the scope of plastic surgery [7, 8, 11, 12]. Efforts should also be made for online/print media and television to transfer real and comprehensive information about the true diversity and nature of plastic surgeons’ expertise and contributions to health-care system [21–23]. Additionally, plastic surgeons may wish to keep their promotional and educational activities commensurate with those of other overlapping specialties [28]. In addition, if plastic surgeons want to continue to be recognized as broad-based surgical specialists, a task force committed to improve aesthetic and reconstructive surgical training among the next generation of plastic surgeons is necessary. Therefore, over time, there will be a possible distinction between well-trained plastic surgeons and overlapping specialists. As other plastic surgery initiatives [29, 30], it will be a long-term journey, but with the support of all plastic surgeons, it is possible to get there.

Some caveats from our study should be addressed. Although our data is a Brazilian viewpoint, we believe that this can guide plastic surgeons toward better educating public about the plastic surgeon’s role in health-care system, and help keep the reconstructive branch as an integral part of plastic surgery practice worldwide. This study is among the largest published surveys of public perceptions of the plastic surgery field [6, 16]. However, as in other studies [4, 7, 12, 14–16], our results may not be a representation of a national perception, because all responses were obtained from a single geographical area, namely southeastern Brazil. Our data is therefore susceptible to regional bias, and any generalization of these findings should be cautioned. In addition, sending this survey to medical students and primary care physicians may provide a better overall understanding of the perceptions of plastic surgery practice in Brazil. Although we have included

more plastic surgery-related scenarios than similar studies [6, 8, 10, 13], we did not assess the entire scope of plastic surgery practice and we did not evaluate the multidisciplinary nature of some scenarios. Furthermore, the list of specialties offered as potential choices for the listed procedures was not exhaustive and using different titles for the specialists would have most likely led to different findings. Finally, although our coefficient of determination for the multiple linear regression model was significant, it was relatively low and, therefore, further independent variables could explain the plastic surgeon response. Further surveys should address our limitations.

Conclusion

The present survey demonstrated the limited understanding of the broad field of plastic surgery practice among a cross section of general public members.

Compliance with Ethical Standards This study was approved by the local institutional research ethics board.

Conflict of Interest The authors declare that they have no competing interests.

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