

Consumer Awareness and Comfort with Resident-run Cosmetic Clinics: A Crowdsourcing Study

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Background: Resident cosmetic clinics (RCCs) are the training modality of choice among both residents and faculty and are a mainstay at most residency programs.¹⁻⁴ Despite this, knowledge of RCCs among plastic surgery consumers remains untested. We hypothesize that the public would be aware of and receptive to RCCs.

Methods: Participants with prior cosmetic procedures or interest in future cosmetic procedures were recruited using Amazon Mechanical Turk and asked to complete a survey in September 2020. First, prior awareness of RCCs was assessed. After a brief description of RCCs, perceptions of safety and preferences for care were assessed.

Results: After screening for quality, 815 responses were included. Forty-five percent of consumers were aware of RCCs. Seventy-six percent of consumers believed that RCCs were just as safe as attending clinics and 65% were comfortable receiving care from fourth-year residents or higher. Belief in RCC safety was associated with 4.8 times higher odds of feeling comfortable receiving care at an RCC [95% confidence interval (3.3–7.1), $P < 0.001$]. When given a hypothetical choice between residents and attendings in two scenarios, 46% of consumers chose residents for abdominoplasty and 60% chose residents for Botox injections. Belief in RCC safety was associated with choosing a resident or being indifferent in both scenarios.

Conclusions: Consumer preference regarding RCCs has largely been untested. This study shows that belief in RCC safety influences consumers' perceived comfort with receiving care at an RCC. This knowledge can help guide RCC practice and maximize learning opportunities for surgeons-in-training. (*Plast Reconstr Surg Glob Open* 2021;9:e3681; doi: [10.1097/GOX.0000000000003681](https://doi.org/10.1097/GOX.0000000000003681); Published online 12 July 2021.)

INTRODUCTION

Cosmetic surgery is a core discipline of plastic surgery and the demand for cosmetic procedures continues to grow. Resident training in cosmetic surgery has historically been a challenge.³ Considering most consumers must pay out of pocket, patients have high expectations and little tolerance for complications and revisions.⁵ Patients seeking cosmetic surgery consider surgeon reputation, experience, and board certification status, which cannot be achieved until completion of residency.^{6,7} For these reasons, graduating residents often feel less prepared to perform cosmetic surgery.^{2-4,8,9} In 2014, Kraft et al found

that only 36% of residents felt comfortable integrating aesthetic surgery into their practice after graduation.¹ Later that year, the Accreditation Council for Graduate Medical Education increased the minimum number of required aesthetic cases from 50 to 150 to address resident preparedness. This new requirement prompted programs to enhance cosmetic surgery training using new methods.

Among these modalities, resident cosmetic clinics (RCCs) emerged as the frontrunner and were voted the most useful source of aesthetic surgery training by both resident and program directors.^{1,3,10} As RCCs grew in prevalence, so did resident-reported comfort with aesthetic surgery, from 36% in 2014 to 59% in 2017.^{1,3}

RCCs have been operating for decades and continue to increase in number. Today, an estimated 60%–70% of programs have a dedicated RCC.^{3,11} The structure varies by institution, but most RCCs are held one day a week year-round, and are operated by senior residents [postgraduate year (PGY) 4–6]. Residents conduct the initial patient consult, assemble a plan, and then discuss this plan with a supervising faculty member who either oversees or directly assists residents during the procedure. Postoperatively,

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patients are scheduled to follow up with their resident plastic surgeon, allowing trainees to monitor patient satisfaction and practice longitudinal care.

RCCs offer unique benefits to both patients and trainees. For residents, they enhance cosmetic surgery training with increased autonomy in patient care, which is associated with a higher degree of resident confidence in performing cosmetic procedures.^{9,10,12,13} For patients, they provide cosmetic procedures at discounted rates, oftentimes at 50% of the standard surgeon's fee.^{11,14,15} They also provide high patient satisfaction and have consistently proved to be safe, with complication rates comparable to the national standard.^{9,11,14-17}

Because RCCs have proved invaluable for resident aesthetic education, continuing to grow this learning modality is important. To do so, it is paramount to consider the point-of-view of the consumer. Although many studies have analyzed resident and attending views on RCCs, none have assessed the opinion of consumers.¹⁻⁴ To our knowledge, this is the first study that explores consumer perceptions of RCCs.

As aesthetic surgery is a "buyer beware" market, wherein many nonplastic surgeons, and even nonsurgeons, continue to market invasive and noninvasive aesthetic procedures, consumer attitudes toward RCCs are important to understand.¹⁸ We hypothesize that plastic surgery consumers are largely unaware of RCCs but receptive toward receiving care at them due to their affordability.

METHODS

The primary aim of this study was to assess a priori knowledge of RCCs in a cohort of plastic surgery consumers. After providing a brief description of RCCs, we also assessed consumers' comfort with receiving cosmetic procedures at RCCs and their beliefs about the safety of RCCs when compared with attending clinics. Secondary aims included identifying the minimum percent discount and the minimum PGY resident provider that consumers deemed acceptable.

This study was approved by the Wake Forest School of Medicine Institutional Review Board (IRB00067931). Potential participants were recruited using mTurk, an online crowdsourcing platform that provides quick, efficient, and reliable workers who complete tasks such as surveys for a nominal fee. Using mTurk, many investigators have gained public insight on topics pertinent to the field of plastic and reconstructive surgery.¹⁹⁻²⁵

Amazon Mechanical Turk workers who lived in the United States were 18 years or older, and had an approval rating of 95% or higher were invited to complete a 30-question survey. Participants were screened by whether they had cosmetic surgery in the past or were interested in getting cosmetic surgery in the future. Additionally, participants were asked two attention-check questions about the current month and year. Responses were excluded if participants incorrectly answered attention-check questions, took the survey more than once, or if the survey was incomplete. Following completion, respondents were compensated \$0.15.

Data Collection

Demographic information was obtained, and to assess consumer knowledge and comfort with RCCs, respondents were first asked whether they knew the difference between a resident and attending physician, whether they had ever heard of RCCs before, and the minimum PGY trainee from whom they were comfortable receiving cosmetic care.

Next, we provided a brief description of the pathway to becoming a plastic surgeon, highlighting the difference between a resident and attending physician, and RCCs (Fig. 1). After this information was acknowledged by the respondent, we asked about perceptions of clinic safety; percent discount desired when compared with traditional attending clinics; and level of comfort with five categories of cosmetic procedures: breast, body, face and neck, fat reduction, and noninvasive. These categories aligned with the American Society of Plastic Surgeons' Cosmetic Procedures website, and a link to this website was provided to respondents as a reference.²⁶ Overall comfort with cosmetic procedures at RCCs was determined by averaging each respondent's answer to these five categories.

To further evaluate preferences, consumers were asked to choose between receiving cosmetic procedures from residents versus attending physicians in two scenarios, abdominoplasty and Botox injections, which were made realistic by providing cost and wait times consistent with the authors' institution. All questions were written in Basic English and used laymen terms for cosmetic procedures, as listed on the American Society of Plastic Surgeons Cosmetic website.²⁶

Statistical Analysis

Responses were compared by using Pearson's chi-square and Fisher's exact tests for categorical variables and Mann-Whitney and Kruskal-Wallis tests for continuous variables. Multinomial logistic regression models were then constructed to determine the key predictors of prior knowledge of RCCs, beliefs about RCC safety, comfort with RCCs, and provider preference. All models were adjusted for age, gender, race, education, income, marital status, region of residence, past cosmetic procedures, whether respondent has biological children, and whether respondent works in healthcare. Belief about safety of RCCs was also added as a covariate to models where appropriate. Analyses were performed using R Statistical Software (version 4.0.2; R Foundation for Statistical Computing, Vienna, Austria), and a *P*-value less than 0.05 was considered significant.

RESULTS

After screening for quality, 815 responses were included. On average, consumers were 37.5 years old, predominantly women, White, and graduates of a 4-year or 2-year degree program. Consumers were roughly equally distributed among the five geographic regions of the United States, and the majority earned between \$25,000 and \$49,999. Sixty percent of consumers had biological children, 37% worked in healthcare, and 65% were married or had a partner (Table 1).

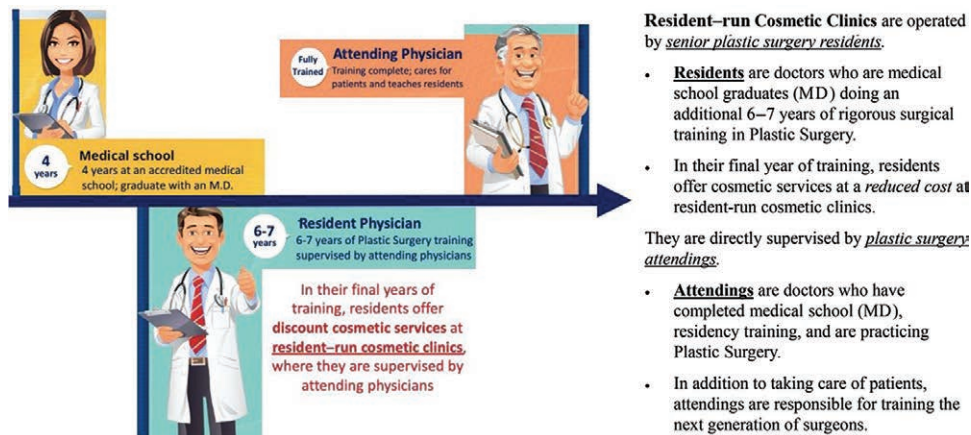


Fig. 1. Infographic for public education. After obtaining data on the respondent’s baseline knowledge of RCCs, this figure was displayed. Once the respondent acknowledged reading through the information, questions regarding preferences for RCCs were asked. Graphic credit: iGrad, “The Road Map to Becoming a Doctor.” <https://www.igrad.com/infographics/a-holistic-approach-to-supporting-a-childs-education>, accessed 14 October 2020.

Experience and Interest in Cosmetic Surgery

As shown in Table 2, 409 (50%) consumers had prior cosmetic surgery. The most common prior procedures involved the face and neck (51%). The remaining 406 (50%) consumers were interested in future cosmetic procedures, with the most common being noninvasive (58%) procedures.

Table 1. Demographics

Characteristic	Total (N = 815)
Age, mean ± SD	37.5 ± 11.3
Gender, n (%)	
Women	468 (57.7%)
Men	334 (41.2%)
Other	9 (1.1%)
Race/ethnicity, n (%)	
White	606 (74.4%)
African American	77 (9.4%)
Asian	46 (5.6%)
Multiracial	39 (4.8%)
Hispanic	27 (3.3%)
Other	20 (2.5%)
Education, n (%)	
High school graduate	47 (5.8%)
Some college	104 (12.8%)
2-year or 4-year degree	467 (57.3%)
Graduate (Master’s or Professional) degree	197 (24.2%)
Geography, n (%)	
Midwest	183 (22.5%)
Northeast	161 (19.8%)
Southeast	242 (29.7%)
Southwest	139 (17.1%)
Northwest	90 (11.0%)
Income, n (%)	
< \$10,000	40 (5.0%)
\$10,000–\$24,999	86 (10.8%)
\$25,000–\$49,999	262 (33.0%)
\$50,000–\$74,999	219 (27.5%)
\$75,000–\$99,000	113 (14.2%)
≥\$100,000	75 (9.4%)
Has children	492 (60.4%)
Works in healthcare	301 (36.9%)
Marital status	
Married	533 (65.4%)
Unmarried	282 (34.6%)

Public Knowledge of RCCs and Their Safety

Overall, 703 (86%) of the total consumers knew the difference between a resident and attending. Consumers with children (89% versus 83%, $P = 0.021$) and those who worked in healthcare (90% versus 84%, $P = 0.012$) were more likely to know the difference. No other demographic characteristics were predictive.

When asked if they had ever heard of RCCs before, 365 (45%) consumers answered yes. After adjusting for all covariates, knowledge of RCCs was found to be higher in consumers who were men [odds ratio (OR), 2.2 (1.5-3.4), $P < 0.001$], married [OR 2.6 (1.6-4.3), $P < 0.001$], had children [OR 1.8 (1.1-3.0), $P = 0.016$], or worked in healthcare [OR 4.6 (3.0-7.1), $P < 0.001$, Table 3]. Additionally, those who had prior cosmetic procedures were more likely to be

Table 2. Past Experience and Future Interest in Cosmetic Procedures

	Procedure type	Total (N = 815)
Past	Ever had cosmetic procedures?	409
	Breast	119 (29%)
	Body	133 (33%)
	Face and neck	207 (51%)
	Fat reduction	120 (29%)
	Noninvasive	115 (28%)
	Other	32 (8%)
Future	Interested in future cosmetic procedures?	406
	Breast	117 (29%)
	Body	130 (32%)
	Face and neck	155 (38%)
	Fat reduction	150 (37%)
	Noninvasive	237 (58%)
	Other	15 (4%)

Categories were defined using the American Society of Plastic Surgeons’ web page on cosmetic procedures, which was available to respondents during the survey.²⁰ The categories were as follows: Breast (augmentation, reduction, implants, lifts); Body (tummy tuck, arm lift, thigh lift, body lift, buttock enhancement, body contouring, mommy makeover); Face and Neck (nose surgery, eyelid surgery, chin surgery, ear surgery, brow lift, face lift, neck lift, cheek reduction or enhancement); Fat reduction (liposuction, nonsurgical fat reduction); Noninvasive (Botox, laser hair removal, dermabrasion or microdermabrasion, chemical peel, dermal fillers, skin rejuvenation, spider vein treatment); and Other (not specified above).

Table 3. Results of Multivariable Logistic Regression

	Multivariable Logistic Regression								
	Knowledge of RCCs*			Safety of RCCs*			Comfort with RCCs†		
	OR	95% CI	P	OR	95% CI	P	OR	95% CI	P
Gender‡									
Men	2.2	(1.5–3.4)	<0.001	1.7	(1.1–2.5)	0.009	1.9	(1.3–2.7)	<0.001
Geography¶									
Northwest	2.5	(1.2–5.3)	0.018						
Income									
>\$100,000				0.3	(0.1–0.8)	0.019			
Past cosmetic procedures	13.3	(8.8, 20.7)	<0.001	1.9	(1.3–2.9)	<0.001			
Has children	1.8	(1.1–3.0)	0.016						
Works in healthcare	4.6	(3.0–7.1)	<0.001	2.1	(1.4–3.4)	0.001	1.6	(1.1–2.4)	0.020
Married	2.6	(1.6–4.3)	<0.001	2.3	(1.5–3.5)	<0.001			
Believes RCCs are safe	—	—	—	—	—	—	4.8	(3.3–7.1)	<0.001

*Demographic and clinical variables entered into multivariate regression were: age, gender, race, education, income, marital status, region of residence, past cosmetic procedures, whether respondent has biological children, and whether respondent works in healthcare.

†All of the above variables and whether respondent believes RCCs are as safe as attendings' clinics.

‡Reference variable: women.

¶Reference variable: Southeast.

||<\$10,000.

OR, odds ratio; CI, confidence interval.

aware of RCCs [OR 13.3 (8.8-20.7), $P < 0.001$]. Geography was also associated with knowledge of RCCs: consumers living in the Northwest were more likely to know about RCCs [OR 2.5 (1.2–5.3), $P = 0.018$].

When asked about safety at RCCs, 616 (76%) of consumers believe RCCs are equally as safe as attending clinics. Consumers who were men [OR 1.7 (1.1–2.5), $P = 0.009$], married [OR 2.3 (1.5–3.5), $P < 0.001$], or worked in healthcare [OR 2.1 (1.4–3.4), $P = 0.001$] were more likely to believe that RCCs are safe after adjusting for all other variables (Table 3). This belief was also shared by consumers who had prior cosmetic procedures [OR 1.9 (1.3–2.9), $P < 0.001$]; however, those who were in the highest income bracket (>\$100,000) were less likely to believe that RCCs are safe [OR 0.3 (0.1–0.8), $P = 0.019$].

Comfort with RCCs

The overall comfort with receiving cosmetic surgery at RCCs was mixed: 215 (26.4%) consumers were comfortable, 318 (39%) were neutral, and 282 (34.6%) were uncomfortable. Using multivariate regression, predictors were identified for those who were comfortable or neutral with receiving cosmetic procedures at RCCs (Table 3). Consumers who were men [OR 1.9 (1.3–2.7), $P < 0.001$] and those who worked in healthcare [OR 1.6 (1.1–2.4), $P = 0.020$] were more likely to feel comfortable or neutral. Unsurprisingly, consumers who believed RCCs are safe were more likely to feel comfortable or neutral [OR 4.8 (3.–7.1), $P < 0.001$]. When asked about the lowest level of training they would receive cosmetic surgery from, 28% of consumers said PGY-3 or lower and 65% said PGY-4 or higher.

Consumers were most comfortable receiving noninvasive and fat reduction procedures at RCCs and least comfortable getting face, body, and breast procedures at RCCs ($P < 0.001$, Fig. 2).

Cost Preference

When asked about the minimum percent discount desired at an RCC, the mean was 54.7% ± 20.6% off an attending clinic's price.

Hypothetical Scenarios

When given a choice between a resident with lower cost and wait time or an attending with higher cost and wait time in two scenarios, consumers predominantly chose residents (Figs. 3, 4). Consumers were more likely to choose residents for noninvasive Botox injections versus abdominoplasty (60% versus 46%, $P < 0.001$).

For abdominoplasty, 46% of consumers chose residents, 37% chose attendings, and 17% were indifferent (Fig. 3). After accounting for all other variables, having biological children or belief that RCCs are safe were predictive of choosing a resident or being indifferent. However, female gender was predictive of choosing an attending.

Level of comfort by procedure type

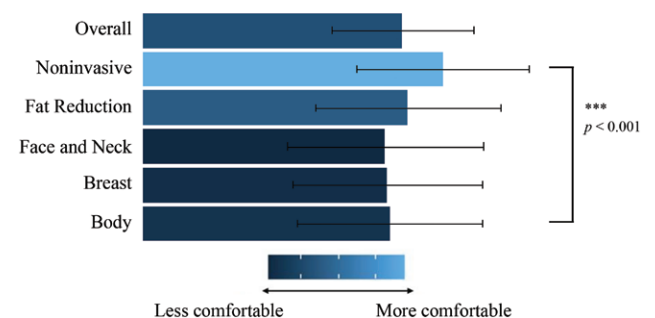


Fig. 2. Level of comfort by different procedure. Mean comfort with receiving different types of cosmetic procedures at RCCs with error bars denoting SD. Kruskal-Wallis test was used to compare the respondent's comfort with receiving care at RCCs by procedure type, $P < 0.001$.

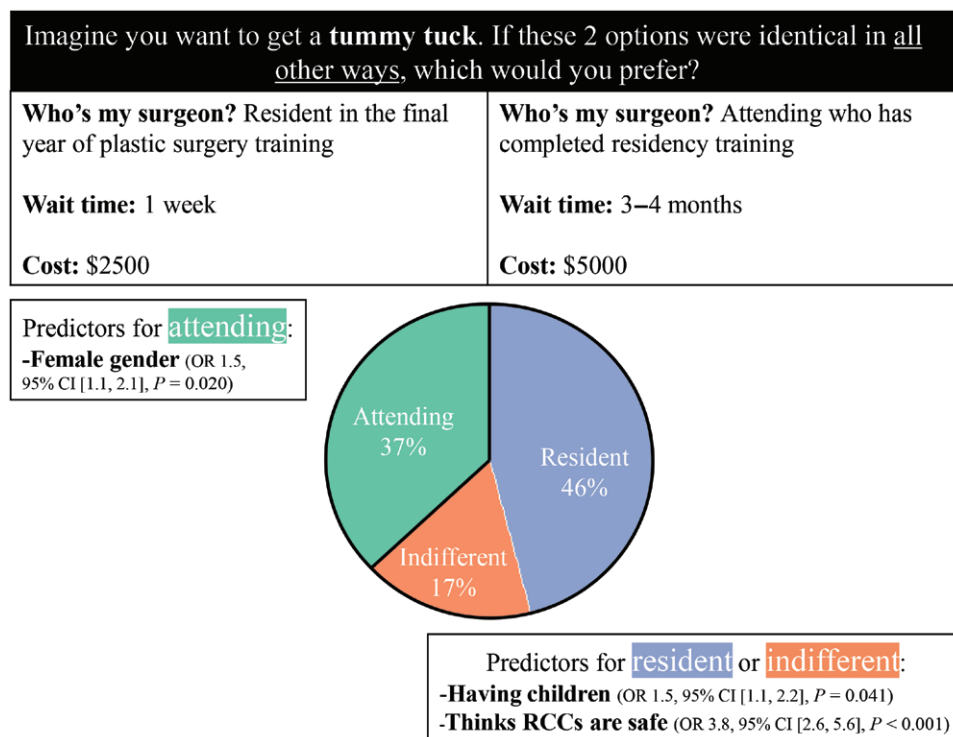


Fig. 3. Hypothetical scenario using abdominoplasty. Results of a hypothetical scenario involving an abdominoplasty. Demographic and clinical variables entered into multivariate regression were: age, gender, race, education, income, marital status, region of residence, past cosmetic procedures, whether respondent has biological children, whether respondent works in healthcare, and whether respondent believes RCCs are as safe as attendings' clinics.

For Botox injections, 60% of consumers chose residents, 26% chose attendings, and 14% were indifferent (Fig. 4). Interestingly, in this scenario, female gender was predictive of choosing residents or being indifferent. Being unmarried and belief that RCCs are safe were also predictive of choosing residents or being indifferent. Having a history of past cosmetic procedures was predictive of choosing an attending.

DISCUSSION

Prior studies show that consumers care most about surgeon reputation, experience, and board certification status, which cannot be achieved until completion of residency.^{6,7} Our results conflict with this finding: while most consumers knew the difference between a resident and attending, nearly two-thirds were still comfortable receiving care from senior residents. Interestingly, this did not translate to overall comfort with RCCs, despite them being run primarily by PGY-6s, as consumers were mostly neutral (39%) and only a minority were comfortable (26%) with receiving care at RCCs.

Despite this low self-reported “comfort” with RCCs, in two hypothetical scenarios, consumers predominantly chose residents over attendings. This demonstrates that lower cost and wait time may be just as, or even more, important to patients than the provider’s level of training. Furthermore, consumers were more likely to choose residents for noninvasive procedures.

Most RCCs offer a variety of invasive and noninvasive procedures. Walker et al showed that 81% of procedures performed at an RCC over a 13-year period were major procedures, with the most common being abdominoplasties, liposuction, and breast augmentation. Less than 20% of procedures were minor.¹⁶ However, minor cosmetic procedures dominate the total case load in the United States: of the 18.1 million cosmetic procedures reported in 2019, 90% were minimally invasive. This was a 2% increase from 2018, and a 237% increase from 2000.²⁷ With minor procedures growing in popularity, it is not surprising that our results show consumers are most comfortable receiving minor procedures at RCCs.

Multiple studies have demonstrated RCC safety, showing complication and revision rates comparable to those of attendings.¹⁴⁻¹⁷ After describing resident clinics and the training process to become a chief resident to our consumers, the majority felt that RCCs are just as safe as attending clinics. Importantly, those who believe RCCs are safe were more likely to feel comfortable or neutral receiving care from RCCs. Better advertising data on the safety of RCCs may help promote consumer confidence and interest in resident clinics. A recent study showed that fewer than 11% of programs have a website for their RCC, and of those, none share before/after photographs, a list of procedures, or prices.²⁸ Because surgeon reputation is important to patients, lack of this

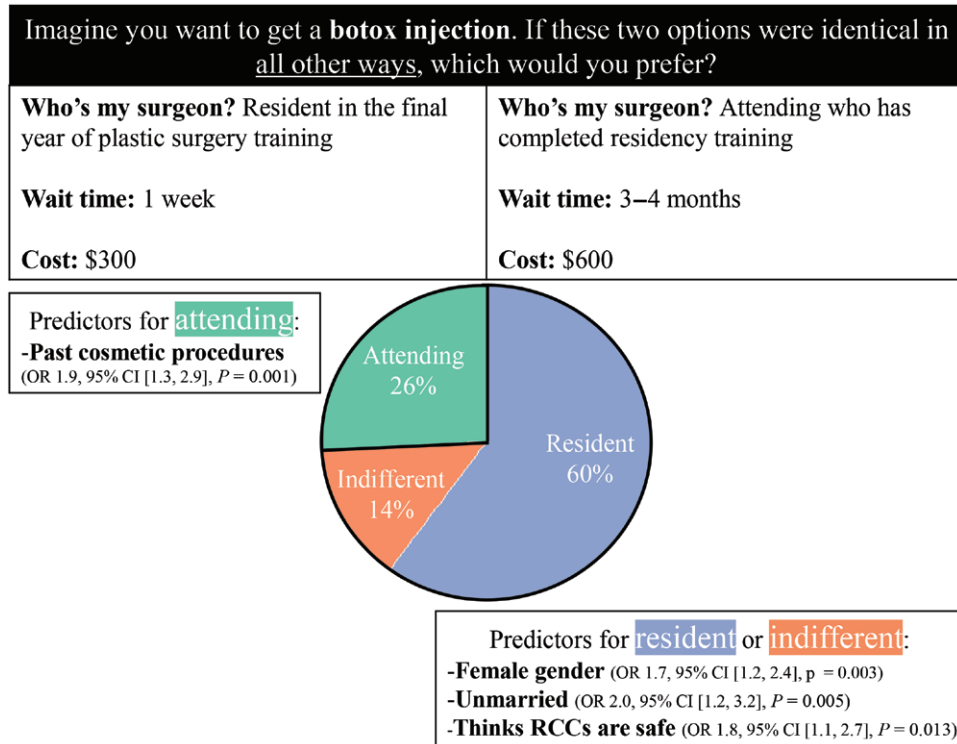


Fig. 4. Hypothetical scenario using noninvasive Botox injections. Results of a hypothetical scenario involving a Botox injection. Demographic and clinical variables entered into multivariate regression were: age, gender, race, education, income, marital status, region of residence, past cosmetic procedures, whether respondent has biological children, whether respondent works in healthcare, and whether respondent believes RCCs are as safe as attendings' clinics.

information may stymie consumer confidence and interest in RCCs.^{6,7}

Most RCCs provide some form of financial incentive to attract consumers. The most frequently reported is a 50% discount from the standard surgeon's fee (\pm cost of facility, anesthesia, and supplies).¹¹ Our study shows that on average, consumers would want a 55% discount to receive cosmetic surgery at an RCC, which is largely consistent with many clinics' existing billing models.

Limitations

Although mTurk is a powerful crowdsourcing tool with results comparable to traditional surveys, this study is not without limitations.^{29,30} First, this study is inherently biased in that the survey was only available to those with internet access and mTurk accounts. Additionally, reports show that mTurk workers are often younger and more educated.³¹ We are also unable to determine how many workers viewed the survey and chose not to participate and whether there were significant demographic differences between those who did and did not participate.

Furthermore, our study did not comment on consumer preferences on other aspects of RCCs, such as clinic organization, level of attending involvement, and payment structure. Further studies are needed to elucidate consumer preferences on these important topics.

CONCLUSIONS

Nearly a third of residency programs do not have an RCC; thus, an understanding of consumer opinion can help those programs design an RCC that is palatable to consumers.^{3,11} For programs with existing RCCs, understanding of consumer opinion can reveal mechanisms for increasing patient volume and improving the delivery of care.

Consumers who believe RCCs are safe are more comfortable with receiving cosmetic procedures at an RCC. For programs who are considering opening RCCs or expanding their influence, emphasizing RCC safety is a must as it shapes consumer behavior. Furthermore, knowing that more than two-thirds of consumers are comfortable receiving care from senior residents, but less than a third are comfortable with junior residents, can help in structuring RCCs. Lastly, that the price point of 55% off standard price is acceptable to consumers can help RCCs decide what prices to offer. The findings of this study can be used to design and improve RCCs to better prepare the next generation of plastic surgeons.

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REFERENCES

- Kraft CT, Harake MS, Janis JE. Longitudinal assessment of aesthetic plastic surgery training in the United States: the effect of increased ACGME case log minimum requirements. *Aesthet Surg J*. 2019;39:NP76–NP82.
- Morrison CM, Rotemberg SC, Moreira-Gonzalez A, et al. A survey of cosmetic surgery training in plastic surgery programs in the United States. *Plast Reconstr Surg*. 2008;122:1570–1578.
- Hashem AM, Waltzman JT, D'Souza GF, et al. Resident and program director perceptions of aesthetic training in plastic surgery residency: an update. *Aesthet Surg J*. 2017;37:837–846.
- Oni G, Ahmad J, Zins JE, et al. Cosmetic surgery training in plastic surgery residency programs in the United States: how have we progressed in the last three years? *Aesthet Surg J*. 2011;31:445–455.
- Herruer JM, Prins JB, van Heerbeek N, et al. Negative predictors for satisfaction in patients seeking facial cosmetic surgery: a systematic review. *Plast Reconstr Surg*. 2015;135:1596–1605.
- Galanis C, Sanchez IS, Roostaean J, et al. Factors influencing patient interest in plastic surgery and the process of selecting a surgeon. *Aesthet Surg J*. 2013;33:585–590.
- Goodman JR. Let the buyer beware: content analysis of cosmetic surgery websites' provider information. *Public Underst Sci*. 2019;28:713–729.
- Silvestre J, Serletti JM, Chang B. Disparities in aesthetic procedures performed by plastic surgery residents. *Aesthet Surg J*. 2017;37:582–587.
- O'Neill R, Raj S, Davis MJ, et al. Aesthetic training in plastic surgery residency. *Plast Reconstr Surg Glob Open*. 2020;8:e2895.
- Weissler JM, Carney MJ, Yan C, et al. The value of a resident aesthetic clinic: a 7-year institutional review and survey of the chief resident experience. *Aesthet Surg J*. 2017;37:1188–1198.
- Ingargiola MJ, Molina Burbano F, Yao A, et al. Plastic surgery resident-run cosmetic clinics: a survey of current practices. *Aesthet Surg J*. 2018;38:793–799.
- Sterodimas A, Boriani F, Bogetti P, et al. Junior plastic surgeon's confidence in aesthetic surgery practice: a comparison of two didactic systems. *J Plast Reconstr Aesthet Surg*. 2010;63:1335–1337.
- Day KM, Scott JK, Gao L, et al. Progressive surgical autonomy in a plastic surgery resident clinic. *Plast Reconstr Surg Glob Open*. 2017;5:e1318.
- Pyle JW, Angobaldo JO, Bryant AK, et al. Outcomes analysis of a resident cosmetic clinic: safety and feasibility after 7 years. *Ann Plast Surg*. 2010;64:270–274.
- Pu LL, Thornton BP, Vasconez HC. The educational value of a resident aesthetic surgery clinic: a 10-year review. *Aesthet Surg J*. 2006;26:41–44.
- Walker NJ, Crantford JC, Rudolph MA, et al. Outcomes analysis of chief cosmetic clinic over 13 years. *Ann Plast Surg*. 2018;80:600–606.
- Qureshi AA, Parikh RP, Myckatyn TM, et al. Resident cosmetic clinic: practice patterns, safety, and outcomes at an academic plastic surgery institution. *Aesthet Surg J*. 2016;36:NP273–NP280.
- Barr JS, Sinno S, Cimino M, et al. Clinicians performing cosmetic surgery in the community: a nationwide analysis of physician certification. *Plast Reconstr Surg*. 2015;135:92e–98e.
- Lee E, Khavanin N, He W, et al. Public perceptions on breast implant-associated anaplastic large cell lymphoma. *Plast Reconstr Surg*. 2020;146:30–37.
- Hooper RC, Hsu J, Duncan A, et al. Breast cancer knowledge and decisions made for contralateral prophylactic mastectomy: a survey of surgeons and women in the general population. *Plast Reconstr Surg*. 2019;143:936e–945e.
- Wu C, Scott Hultman C, Diegidio P, et al. What do our patients truly want? conjoint analysis of an aesthetic plastic surgery practice using internet crowdsourcing. *Aesthet Surg J*. 2017;37:105–118.
- Shammas RL, Mela N, Wallace S, et al. Conjoint analysis of treatment preferences for nondisplaced scaphoid fractures. *J Hand Surg Am*. 2018;43:678.e1–678.e9.
- Shauly O, Calvert J, Stevens G, et al. Assessment of wellbeing and anxiety-related disorders in those seeking rhinoplasty: a crowdsourcing-based study. *Plast Reconstr Surg Glob Open*. 2020;8:e2737.
- Patel V, Mazzaferro DM, Swanson JW, et al. Public perception of helical rim deformities and their correction with ear molding. *J Craniofac Surg*. 2020;31:741–745.
- Ashton-James CE, Costa D, Chemke-Dreyfus AR. Orthognathic surgery has a significant effect on perceived personality traits and emotional expressions. *Plast Reconstr Surg*. 2018;141:966e–967e.
- ASPS. Cosmetic procedures. 2020. Available at <https://www.plasticsurgery.org/cosmetic-procedures>. Accessed October 14, 2020.
- ASPS. Plastic surgery statistics report. 2020. Available at <https://www.plasticsurgery.org/news/plastic-surgery-statistics>. Accessed October 11, 2020.
- Sayegh F, Perdakis G, Eaves M, et al. Evaluation of plastic surgery resident aesthetic clinic websites. *JPRAS Open*. 2020;27:99–103.
- Buhrmester M, Kwang T, Gosling SD. Amazon's Mechanical Turk: a new source of inexpensive, yet high-quality, data? *Perspect Psychol Sci*. 2011;6:3–5.
- Bohannon J. Human subject research. Social science for penies. *Science*. 2011;334:307.
- Ranard BL, Ha YP, Meisel ZF, et al. Crowdsourcing—harnessing the masses to advance health and medicine, a systematic review. *J Gen Intern Med*. 2014;29:187–203.