

Evaluating Public Perceptions of Cosmetic Procedures in the Medical Spa and Physician's Office Settings: A Large-scale Survey

Juliet Gibson, MD,* Charlotte Greif, BA,† and Rajiv I. Nijhawan, MD*

BACKGROUND Medical spa and cosmetic procedure markets have grown substantially in recent years. The lack of consistent medical oversight at medical spas raises safety concerns.

OBJECTIVE To understand how the public views medical spas compared with physician's offices as places to receive cosmetic procedures with a focus on safety.

METHODS 1,108 people were surveyed on an internet platform about their perceptions of the safety of receiving cosmetic procedures at medical spas and physician's offices. Respondents were grouped by their past experiences. Chi-squared and analysis of variance models were used to determine statistically significant differences between groups at the 0.05 level.

RESULTS Respondents who had only received cosmetic procedures at physician's offices or had never received a cosmetic procedure cared more about being treated by a physician ($p < .001$) and rated safety as more important ($p = .03$). Total complication rates were numerically higher at medical spas compared with physician's offices ($p = .41$). Minimally invasive skin tightening (0.77 vs 0.0, $p < .001$) and nonsurgical fat reduction (0.80 vs 0.36, $p = .04$) had higher complication rates at medical spas.

CONCLUSION There were concerns among the public about the safety of cosmetic procedures at medical spas, and some procedures demonstrated higher complication rates in this setting.

The United States has the highest volume of cosmetic procedures in the world and spent more than 9.3 billion dollars on them in 2020.¹ Cosmetic procedures are generally performed at physician's offices or medical spas, which are a combination of a medical clinic and day spa.² The medical spa market is expected to grow from 14.4 billion dollars in 2021 by 15% each year until 2030, and medical spa facilities are already more prevalent than traditional physician's cosmetic practices in major metropolitan centers, such as Houston, Las Vegas, and New York.^{3,4} This trend is concerning from a safety perspective because of widely variable laws regulating medical

oversight of these spas.^{2,5-7} One survey found that almost 30% of medical spas had medical directors who never performed any procedures, and there have been reports of physicians being paid to act as medical directors without any involvement in daily operations.⁸ The American Society for Dermatologic Surgery Association called attention to this concerning trend. In 2019, they published a report stating that physicians cannot serve as the medical director of a practice where cosmetic procedures are performed without owning the practice and highlighted the finding that half of medical spas in the United States do not always have at least 1 physician onsite.⁸

Given the predicted growth of medical spas and cosmetic procedures, the safety of medical spas compared with physician's offices is important to consider.⁹ Variability in medical oversight at these spas may become a more pressing issue as cosmetic procedures become mainstream, and patients may not recognize the potential differences in care and safety.⁹ This study sought to understand how the US public perceives medical spas and physician's offices as places to receive cosmetic procedures with a focus on safety.

Methods

In this IRB approved study, 1,108 people in the US were surveyed about their perceptions of receiving cosmetic procedures at medical spas compared with physician's offices. The survey was hosted online by Survey Monkey and advertised on social media. It included questions about the importance of physical appearance, the safety of

From the *Department of Dermatology, University of Texas Southwestern Medical Center, Dallas, Texas; †University of Texas Southwestern Medical School, Dallas, Texas

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Reviewed and approved by UT Southwestern Medical Center IRB.

J.G. and C.G. should be considered co-first authors given their equal contribution to the development of this manuscript.

Address correspondence and reprint requests to: Rajiv Nijhawan, MD, Associate Professor, Department of Dermatology, UT Southwestern Medical Center, 5939 Harry Hines Blvd, Suite 400 Dallas, TX 75390-9191, or e-mail: Rajiv.Nijhawan@utsouthwestern.edu

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treatments performed at medical spas, the staff performing treatments (physician, nurse, other), the importance of evaluation by trained medical professionals, previous treatments performed at medical spas, and any adverse events or concern for adverse events at medical spas and physician's offices. The survey included participants who had received cosmetic procedures at physician's offices only, at medical spas only, at physician's offices and medical spas, and those who had never had a cosmetic procedure. We grouped respondents by experience with cosmetic procedures and settings where they received these procedures: (1) had a cosmetic procedure at a medical spa only, (2) had a cosmetic procedure at a physician's office only, (3) had a cosmetic procedure at a medical spa and physician's office, and (4) had never had a cosmetic procedure. We calculated summary statistics and used chi squared and analysis of variance models to determine statistical significance between groups at the 0.05 level.

Results

Demographics

A total of 1,108 participants completed the survey. There were 43 respondents who had received a cosmetic procedure at a medical spa only, 80 at a physician's office only, 21 at a medical spa and physician's office, and 494 who had never had a cosmetic procedure. Ages ranged from 17 to 71 years old with 51% of respondents between the ages of 40 and 60 years. States with the greatest portion of respondents were California (11%), Florida (9%), Texas (8%), and New York (6%). Two-thirds of the sample were women and one-third, men. Most respondents (64%) had a college or graduate degree. There were no significant differences in baseline demographics between groups defined based on experience with cosmetic procedures.

Perceptions of Safety

Most respondents reported appearance as important or very important (512/682, 75%). The greatest number of respondents were comfortable with a physician performing their cosmetic procedures (542/1108, 49%), whereas equal numbers were comfortable with a physician assistant (317/1108, 29%) or nurse practitioner (317/1108, 29%), and equal numbers with a registered nurse (255/1108, 23%) or aesthetician (256/1108, 23%).

Respondents who had never had a cosmetic procedure or had only received them at physician's offices had the least confidence in the safety of medical spas compared with other groups ($p < .001$; Figure 1). Those who had never received a cosmetic procedure had the least confidence in the safety of physician's offices, whereas those who had received procedures at physician's offices only had the greatest confidence in receiving cosmetic procedures at physician's offices ($p = .005$; Figure 1). Those who had never had a cosmetic procedure or had them at physician's offices only viewed being treated by a physician as more important than other groups (physician's office only: 4.8 of 5.0 mean importance score, never had cosmetic procedure:

4.2, medical spa only: 3.3, medical spa and physician's office: 3.7; $p < .001$). Those who had received a procedure at a physician's office only were more likely to want a plastic surgeon or dermatologist to perform the procedure rather than another physician or physician assistant compared with other groups when informed of certain procedure risks (blindness: $p < .001$; infection: $p = .002$; scarring: $p < .001$; discoloration of the skin: $p < .001$). Those who received procedures at a physician's office only rated the medical training of the person performing the procedure as 4.9 of 5.0 in mean importance compared with those who had never had a procedure (4.7), those who had received cosmetic procedures at both settings (4.6), and those who had received them at medical spas only (4.5) ($p = .03$). Respondents who received a cosmetic procedure at a physician's office only or had never received a cosmetic procedure rated the importance of the safety of the procedure higher than other groups (physician's office only: 5.0, medical spa only: 4.6, medical spa and physician's office: 4.5, never had cosmetic procedure: 4.8; $p = .003$). Figures 1 and 2 show further results.

Complications by Setting

There was no significant difference in the overall complication rate at medical spas compared with physician's offices, although medical spas had a numerically greater complication rate. 16.4% of respondents receiving cosmetic procedures at medical spas compared with 11.0% at physician's offices experienced at least 1 complication ($p = .42$). Minimally invasive skin tightening had a significantly higher complication rate of 77% at medical spas compared with 0% at physician's offices ($p < .001$), and nonsurgical fat reduction had a complication rate of 80% at medical spas and 36% at physician's offices ($p = .04$). Other procedures did not demonstrate significantly different complication rates between settings.

Consent and Response to Complications

At a physician's office, a physician reviewed the consent form with patients in 27% of cases compared with 18% at medical spas. The type of staff reviewing the consent form was significantly different between settings ($p < .001$). Physicians were more likely to point out risks of procedures before the procedure at physician's offices (69% of cases) compared with medical spas (50% of cases) ($p < .001$). If a respondent had a complication to a procedure, physicians were numerically but not significantly more likely to address and treat the complication (physician addressed complication in 60% of cases) compared with medical spas (physician addressed complication in 16% of cases) ($p = .15$). Registered nurses and aestheticians were numerically, but not significantly more likely to address complications at medical spas (registered nurse 37%, aesthetician 26%) compared with physician's offices (registered nurse 13%, aesthetician 13%) ($p = .15$). There was no significant difference in satisfaction level with how complications were

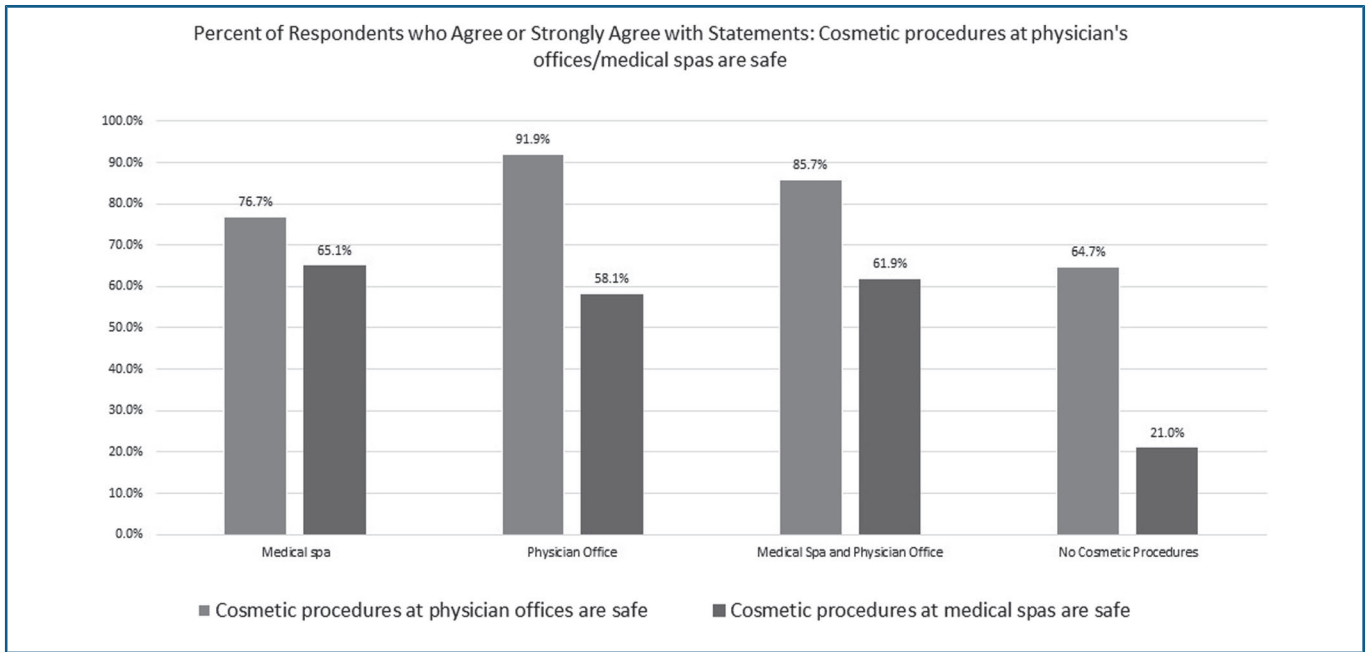


Figure 1. Agreement with statements that cosmetic procedures are safe at physician's offices or medical spas by respondent group.

handled between settings (physician office: 3.16 mean satisfaction score of 5.0; medical spa: 3.14; $p = .99$).

Discussion

This study demonstrated that most of the public and especially the public who had not received a cosmetic procedure at a medical spa believed physician's offices to be safer for cosmetic procedures. A study by Wang and colleagues in 2020 similarly found that most 18 to 38 year olds believed physician's offices to be safer than medical spas (69.7% vs 42.2%, $p < .001$).¹⁰ Our findings also

confirm that there is less physician involvement in procedures and higher complication rates of certain cosmetic procedures, including minimally invasive skin tightening and nonsurgical fat reduction, at medical spas compared with physician's offices. Less physician involvement fits with the findings presented by the ASDSA in their Position on Physician Oversight in Medical Spas that half of medical spas in the US do not have a physician on-site at all times.⁸ It is unclear why minimally invasive skin tightening and nonsurgical fat reduction had higher complication rates at medical spas, but could stem from

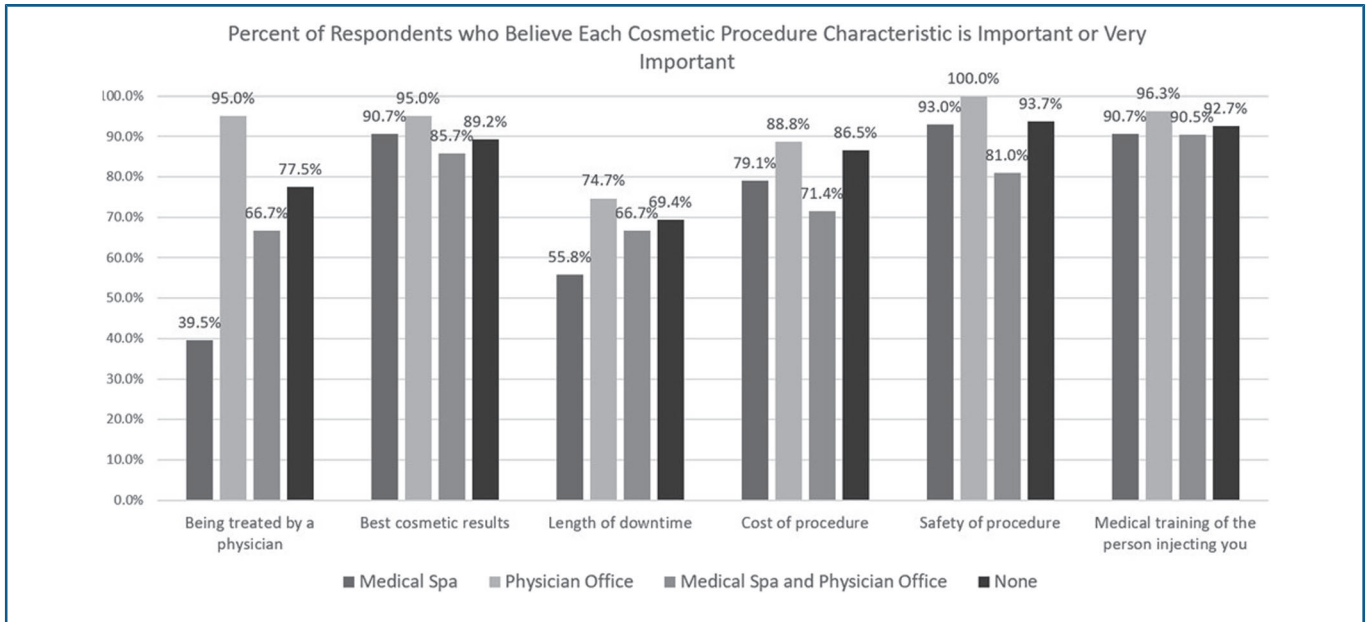


Figure 2. Importance of certain factors related to cosmetic procedures by respondent group.

differences in training or experience with the procedures, use of different medical devices, or differences in patient expectations, including mistaking common side effects for complications. There are few controlled clinical trials evaluating the safety and efficacy of devices used for minimally invasive skin tightening, which may contribute to higher complication rates in a given setting.¹¹ This survey did not ask about the nature of the complication, but it would be helpful to determine this in future studies. Higher complication rates of certain procedures fits with the ASDSA position statement reporting an increase in patient complications connected to nonphysicians practicing medicine.⁸ One study found that procedures performed at medical spas by nonphysicians made up nearly 80% of medical lawsuits, indicating that less physician involvement may result in less safe procedures.⁸ A surprising finding is that there was greater confidence in the safety of medical spas among those who had received at least 1 cosmetic procedure in this setting. Although our study found a numerically higher complication rate in the medical spa setting, this difference was not statistically significant. It is important to perform studies large enough to detect any differences in adverse events going forward so that patients may make informed decisions about their care.

Limitations

Limitations of our study include selection bias, because participants with extreme experiences receiving cosmetic procedures at physician's offices or medical spas may have been more likely to participate. Advertising was performed on social media, which may not have been representative of the general US population. Recall bias was another limitation resulting from the survey design.

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