

Cosmetic Surgeon Representation

Ensuring Board Certification Transparency and Patient Awareness

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Background: Previous studies revealed that patients preferred plastic surgeons over cosmetic surgeons for surgical procedures, but few knew that any physician with a medical degree was legally qualified to perform cosmetic surgery. Results also indicated that a primary consideration for patients in selecting a surgeon was board certification. Although patient preferences concerning aesthetic surgery have previously been surveyed, no study examined a consumer's ability to delineate the responses of medical students to questions regarding a cosmetic and plastic surgeon's board certification.

Methods: A total of 4 cosmetic and 5 plastic surgeon Web sites were selected, in a single large city, from a Google search for the following procedures: liposuction, breast augmentation, blepharoplasty, rhytidectomy, and abdominoplasty. Screenshots of the Google search link, the page after clicking on the link, and the about the doctor page were collected to simulate an actual patient search experience. Four randomized surveys were created using screenshots and scenarios through Survey Monkey. Surveys were distributed and collected anonymously. Data analysis was accomplished using a chi-square test of independence ($P < 0.05$).

Results: A total of 474 medical students responded, and the difference between cosmetic and plastic surgeon variables was significant ($P < 0.001$). Upon comparison of different procedures, the cosmetic and plastic groups were found to be statistically different ($P < 0.05$), with some exceptions. On average, when presented with a plastic surgeon, 95.3% thought this was a board-certified plastic surgeon. When presented with a cosmetic surgeon, 54.3% also thought this was a board-certified plastic surgeon. The decline in responses regarding board certification, for the first and second cosmetic surgeons presented, was found to be statistically different ($P < 0.0001$).

Conclusions: Over 50% of medical students had difficulty distinguishing between a cosmetic and plastic surgeon based on Web site advertisements; therefore, patients may have a more difficult experience. Results of this study prove the need for a universal definition, and patient education, relating to board certifications.

Key Words: cosmetic, plastic, surgeon, Web site, advertisement, board certification, Google

(*Ann Plast Surg* 2018;80: S431–S436)

In the field of cosmetic surgery, any licensed physician may advertise as a cosmetic surgeon and perform procedures without board certification acknowledged by the American Board of Medical Specialties

(ABMS).¹ There are 48.6% to 100% of non-American Board of Plastic Surgery (ABPS) surgeons, offering aesthetic procedures, who have been found to be practicing out of their scope.² Barr et al² stated the following in addition to their results, "The purpose of labeling these surgeons as practicing out of scope is not to ostracize or question technical skills or training. Instead, the point is to demonstrate the unregulated manner in which cosmetic surgery is being performed across the country." Confusing advertising, along with the lack of regulations in practices, has made it difficult for patients to understand the true specialty of plastic surgery.

Literature review showed that patients considered there to be a difference between a cosmetic surgeon and a plastic surgeon. Previous studies revealed that patients preferred plastic surgeons over cosmetic surgeons for surgical procedures, but few knew that any physician with a medical degree was legally qualified to perform cosmetic surgery. Results also indicated that a primary consideration for patients in selecting a surgeon was board certification.³ A Cosmetic Medicine Task Force, formed by the plastic surgery governing bodies of the American Society for Aesthetic Plastic Surgery and the American Society of Plastic Surgeons (ASPS), concluded that over 90% of consumers would choose a plastic surgeon to perform invasive procedures, and only 41% to 46% of consumers, who had previously undergone a cosmetic procedure by a non-plastic provider, were satisfied with the outcomes, with decreasing satisfaction associated with increasing degree of invasiveness.⁴

A Web site is a representation of a physician and the procedures one performs, and as such could be considered part of an informed consent. Lack of regulation in cosmetic surgical marketing and patient misconceptions of the differences between plastic and cosmetic surgeons compromise the transparency in choosing a board-certified and qualified surgeon to safely improve one's appearance.⁵ Patient expectations regarding scope of practice and training in physicians, by specialty, have been shown to be influenced by marketing and impart continued importance of truth in advertising. Although patient preferences concerning cosmetic surgery have previously been surveyed, no study has presented a consumer with actual online Web sites and investigated potential patients' ability to delineate between board-certified plastic surgeons and cosmetic surgeons. The purpose of this study was to investigate the responses of medical students to questions regarding a cosmetic and plastic surgeon's scope of practice and board certification. In addition, this study intends to evaluate respondent's previous knowledge and preferences regarding aesthetic surgery.

MATERIALS AND METHODS

A Google (Google Inc, Mountain View, Calif, USA; www.google.com) search was performed on common cosmetic procedures in a distant city to deter any conflicts of interest regarding respondents being familiar with the physician in the Louisiana area. Cosmetic surgeons and plastic surgeons were selected for the following procedures: liposuction, breast augmentation, blepharoplasty, rhytidectomy, and abdominoplasty. These procedures were commonly selected by patients, as being done by a plastic surgeon, in a study that investigated patient perception of surgical specialties and scope of procedures.⁶

Received August 14, 2017, and accepted for publication, after revision January 2, 2018. From the *Department of Surgery, Section of Plastic & Reconstructive Surgery, Louisiana State University Health Sciences Center; †Louisiana State University Health Sciences Center, School of Medicine, New Orleans, LA; and ‡Department of Surgery, Division of Plastic Surgery and Otolaryngology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA.

Conflicts of interest and sources of funding: none declared.

Ethical Disclosure: All aspects of this study conform to the Helsinki Declaration.

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ISSN: 0148-7043/18/8006-S431

DOI: 10.1097/SAP.0000000000001430

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|-------------------|---|
| Question 1 | Do you believe this physician is qualified to perform this procedure? |
| Question 2 | Do you believe this physician is a board certified plastic surgeon? |
| Question 3 | Do you believe this physician has extra qualifications, above general plastic surgery training, for this procedure? |

FIGURE 1. Questions 1 to 3 following each presented scenario.

The lay search terms used, to closely mimic a patient search experience, included the following: liposuction, breast implants, eye lid surgery, neck lift, and tummy tuck. The first Web sites for a cosmetic surgeon and a plastic surgeon that emerged were collected, as these were expected to be the most likely to populate during a patient search engine experience. Choosing the first Web sites to populate was important given that Web site owners can pay for advertisement on Google search results to appear first. A plastic surgeon was defined, in this study, as a physician that advertised himself or herself as board certified by the ABPS and was subsequently confirmed using ABPS Web site's online verification function. A cosmetic surgeon was defined, in this study, as any physician who advertised the ability to perform chosen procedures without being ABPS certified in these procedures. The ABMS-certified surgeons who practice cosmetic surgery within the scope of their practice (ie, facial plastic otolaryngology surgeons) were excluded from this study. A total of 9 physicians were included in the study survey. Five were board-certified plastic surgeons, and 4 were cosmetic surgeons (2 surgeons board certified in dermatology, 1 osteopathic surgeon board certified in general surgery, and 1 family medicine physician). Only 4 cosmetic surgeons were selected because only 1 cosmetic surgeon was found to do advertised abdominoplasties and breast augmentation after sifting through multiple Google search engine page results. A survey was created using screenshots and scenarios, based on Web sites found, using the online program Survey Monkey (SurveyMonkey Inc, Palo Alto, Calif; www.surveymonkey.com). Screenshots included the Google search link, the page after clicking on the link, and the about the doctor page as an attempt to simulate patient experience. In addition, information from the about the surgeon page was extracted and displayed for the respondent to review before answering questions. The survey contained 4 different sequences that were randomly generated to respondents. Each sequence had 3 scenarios used to assess subject responses. Scenarios consisted of a combination of cosmetic and plastic surgeon Web site pages for a procedure. All surveys began with a cosmetic surgeon,

followed by a plastic surgeon, and the final scenario was either a cosmetic or plastic surgeon. No survey form contained the same procedure or physician twice. The survey was distributed to, and collected anonymously from, medical students in Louisiana. Invitees were informed that all responses are completely confidential as the program blinded investigator to all participant identifiers.

Surveys were randomly assigned and respondents were asked to answer questions, after being presented with each scenario, with the intent to determine if respondents thought the physician presented was a board-certified plastic surgeon or not (Fig. 1). Respondents were prevented from going back to previous pages or to change answers after they finished each scenario. At the end of every survey was a series of questions regarding previous knowledge, surgical preferences, and opinion of survey difficulty (Fig. 2). Data analysis was accomplished using a chi-square test of independence (with a significance value of $P < 0.05$) to examine the relationship between responses to cosmetic and plastic surgeon pages. We compared results of each question, between plastic surgeons and cosmetic surgeons, in the following manners: all scenarios, by procedure, first and second scenarios (first cosmetic and plastic surgeon exposure), in addition to first and last scenarios (first and second cosmetic surgeon exposure).

RESULTS

Of 1326 survey invites, 474 medical students responded (Fig. 3), and 93.8% of respondents did not think this survey was difficult. On average, when presented with a plastic surgeon, 95.3% of medical students thought that the physician was qualified to perform the associated procedure, and 92.7% thought this was a board-certified plastic surgeon. When presented with a cosmetic surgeon, 63.2% of medical students thought that the physician was qualified to perform the associated procedures; moreover, 54.3% also thought this was a board-certified plastic surgeon (Fig. 4). Overwhelmingly, 95.6% of respondents preferred a board-certified plastic surgeon to perform the procedures

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|-------------------|---|
| Question 4 | Do you believe these procedures should be performed by a surgeon certified by the American Board of Plastic Surgery? |
| Question 5 | Would you be comfortable undergoing this procedure with a surgeon not accredited in this procedure by an American Board of Medical Specialties (ABMS) certified training program? |
| Question 6 | Before this survey, did you know that any licensed physician with a medical degree is legally qualified to perform cosmetic surgery, regardless of if or how they received cosmetic surgery training, and that board certification (passing an examination) is not a requirement? |
| Question 7 | Before this survey, did you know that if a physician has not been trained and certified in Plastic and Reconstructive Surgery, then that doctor is often not granted privileges to perform cosmetic surgeries at major hospitals? |
| Question 8 | How easy or hard was this survey for you? |
| Question 9 | Were you familiar with any of the surgeons presented before this survey? |

FIGURE 2. End of survey questions 4 to 9 regarding respondent preferences and previous knowledge.

| QUESTION 1 - Do you believe this physician is qualified to perform this procedure? Y=Yes | Cosmetic Surgeon | Plastic Surgeon |
|--|-------------------|-------------------|
| Breast Augmentation | Y=187/349 (53.6%) | Y=104/112 (92.9%) |
| Liposuction | Y=83/114 (72.8%) | Y=109/111 (98.2%) |
| Blephoroplasty | Y=92/109 (84.4%) | Y=130/134 (97.0%) |
| Rhinectomy | Y=104/138 (75.4%) | Y=90/105 (85.7%) |
| Abdominoplasty | Y=66/113 (58.4%) | Y=106/113 (93.8%) |
| QUESTION 2 - Do you believe this physician is a board certified plastic surgeon? Y=Yes | Cosmetic Surgeon | Plastic Surgeon |
| Breast Augmentation | Y=154/349 (44.1%) | Y=107/112 (95.5%) |
| Liposuction | Y=72/114 (63.2%) | Y=102/111 (91.9%) |
| Blephoroplasty | Y=81/109 (74.3%) | Y=132/134 (98.5%) |
| Rhinectomy | Y=98/138 (71.0%) | Y=92/105 (87.6%) |
| Abdominoplasty | Y=56/113 (49.6%) | Y=104/113 (92.0%) |
| QUESTION 3 - Do you believe this physician has extra qualifications, above general plastic surgery training, for this procedure? Y=Yes | Cosmetic Surgeon | Plastic Surgeon |
| Breast Augmentation | Y=166/349 (47.6%) | Y=58/112 (51.8%) |
| Liposuction | Y=31/114 (27.2%) | Y=53/111 (47.7%) |
| Blephoroplasty | Y=67/109 (61.5%) | Y=65/134 (48.5%) |
| Rhinectomy | Y=58/138 (42.0%) | Y=38/105 (36.2%) |
| Abdominoplasty | Y=44/113 (38.9%) | Y=99/113 (87.6%) |

FIGURE 3. Percentage of respondents that replied yes to questions 1 to 3 of each scenario.

presented, and 90.8% were not comfortable undergoing a procedure if the physician was not accredited by an ABMS-certified training program. In addition, 84% had no previous knowledge that any licensed physician with a medical degree is legally qualified to perform cosmetic surgery, regardless of how they received cosmetic surgery training and that board certification (passing an examination) is not a requirement (Fig. 5).

The difference in responses (Fig. 6) to cosmetic and plastics surgeons was significant as a whole for each question ($P < 0.001$). Upon comparison of different procedures, by both plastic and cosmetic surgeons, the groups were found to be statistically different ($P < 0.05$) with some exceptions (Fig. 7). Despite the significant differences in perceptions between cosmetic and plastic surgeon Web site responses, there was an overall drop (Fig. 8) in respondents who thought the second cosmetic surgeon being presented was qualified to perform the procedure (−19.1%) or was a board-certified plastic surgeon (−20.4%). Statistical

analysis demonstrated that responses to the first cosmetic surgeon presented and the cosmetic surgeon presented after exposure to a plastic surgeon were statistically different ($P < 0.0001$). Nevertheless, even after being presented the difference between a cosmetic and plastic surgeon's credentials, based on their Web site, 44.1% of medical students still thought the cosmetic surgeon presented was a board-certified plastic surgeon. Upon removal of the second cosmetic surgeon in all surveys, comparison of the first cosmetic surgeon presented to first plastic surgeon presented was still found to be statistically different ($P < 0.0001$; Fig. 6).

DISCUSSION

Medical students included first-, second-, third-, and fourth-year students. Medical students, although having no formal education on

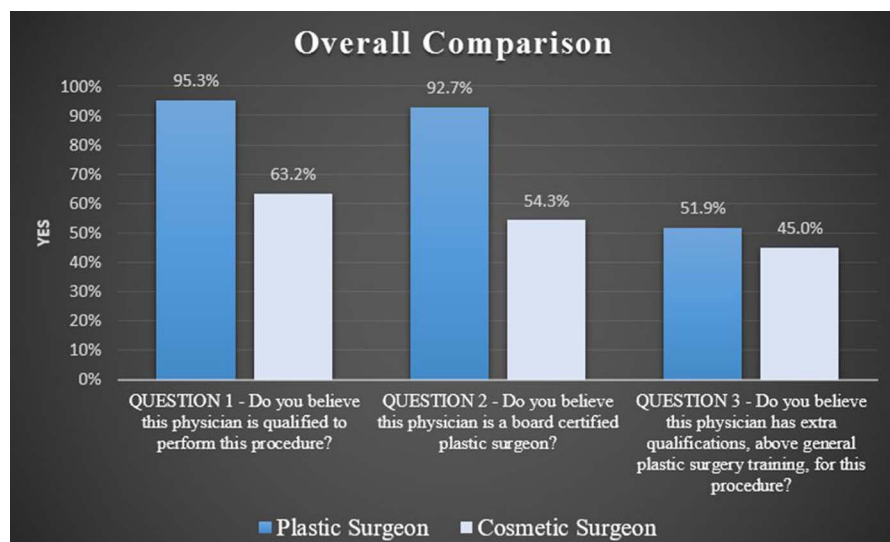


FIGURE 4. Overall comparison of cosmetic and plastic surgeon responses for each question.

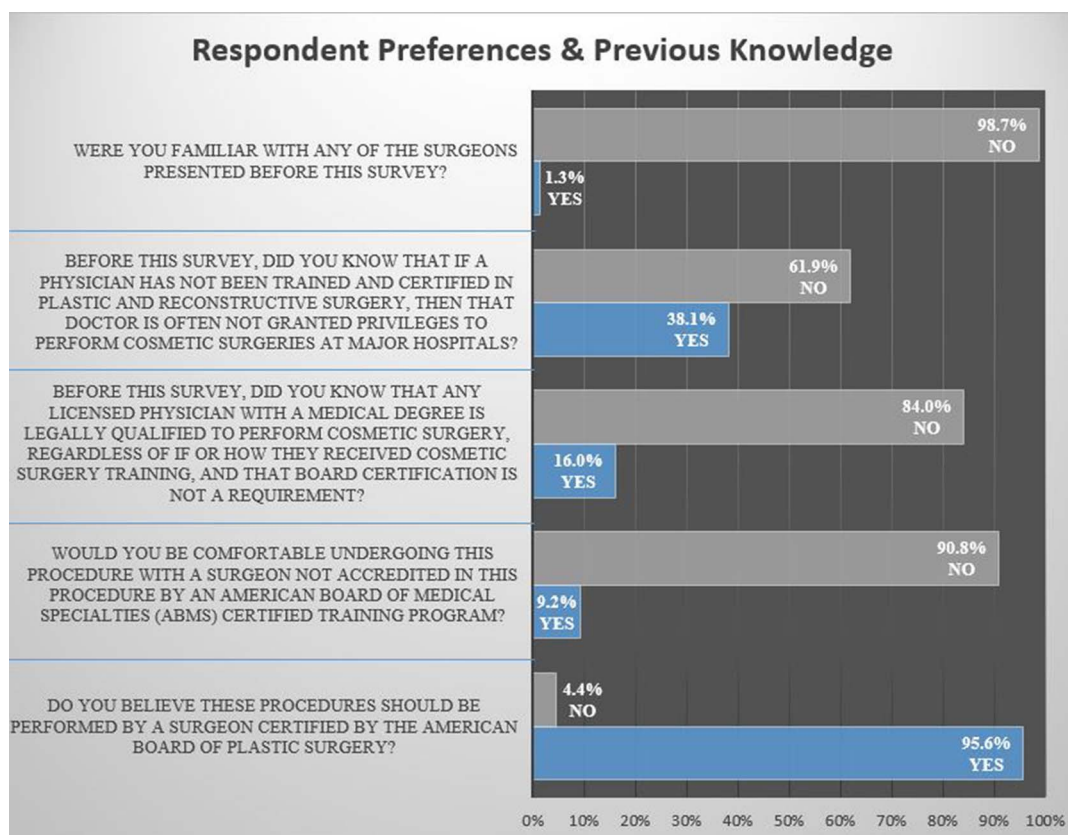


FIGURE 5. End of survey questions regarding preferences and previous knowledge.

board certification, may be seen as a representative sample for the general population. The medical school curriculum director confirmed that because there is no formal class on board certification and that few third- or fourth-year students rotate with plastic surgery, there would be little to no difference in the physician qualification knowledge base between medical student years. Because of the significant variance

found between the cosmetic and plastic surgeon responses, it can be concluded that the medical students noticed a difference between the surgeons presented. When presented with a cosmetic surgeon, 54.3% of medical students incorrectly identified them as a board-certified plastic surgeon, whereas 92.7% of medical students could correctly recognize a plastic surgeon. Collection of any demographical data

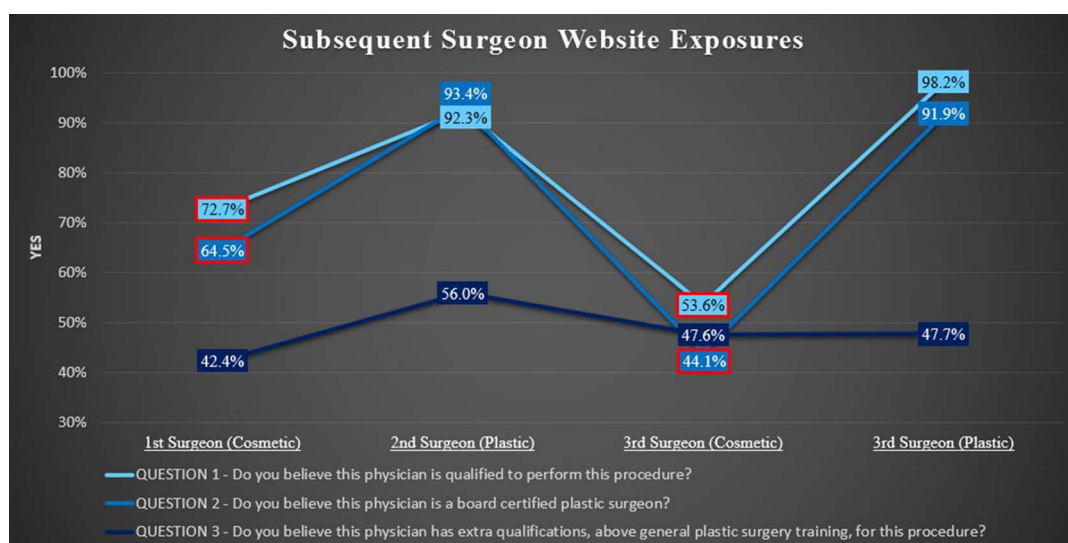


FIGURE 6. Chi-square test of independence for overall yes and no responses of each question (1–3) for cosmetic and plastic surgeons, for the first cosmetic surgeon (scenario 1) to the first plastic surgeon (scenario 2) in surveys 1 to 4, and for the first cosmetic surgeon (scenario 1) and the second cosmetic surgeon (scenario 3) of surveys 1 to 3.

| Chi Square | Cosmetic vs. Plastic OVERALL | 1 st Cosmetic & 1 st Plastic | 1 st Cosmetic & 2 nd Cosmetic |
|---|---------------------------------|--|---|
| Question 1 – Do you believe this physician is qualified to perform this procedure? | $p < 0.0001$ | $p < 0.0001$ | $p < 0.0001$ |
| Question 2 – Do you believe this physician is a board certified plastic surgeon? | $p < 0.0001$ | $p < 0.0001$ | $p < 0.0001$ |
| Question 3 – Do you believe this physician has extra qualifications, above general plastic surgery training, for this procedure? | $p = 0.0002447$ | $p < 0.0001$ | $*p = 0.2443$ |
| * = non-significant value ($p > 0.05$) | | | |

FIGURE 7. Chi-square test of independence for each procedure in questions 1 to 3 for cosmetic and plastic surgeons.

on previous experience with cosmetic or plastic surgeons would have confirmed if there were any differences between the medical students and the general public regarding knowledge of surgeon board certification, which could have affected the number of respondents that had difficulty distinguishing between a cosmetic and plastic surgeon. Any exposure and experience in medicine would make medical students potentially more discerning and astute in examining medical marketing materials, possibly skewing in favor of significant differences. So at a minimum, even if the medical students had no difference in board certification education in comparison to the general public, there was still an overwhelming more than 50% of medical students that thought a cosmetic surgeon was a plastic surgeon based on Web site representation. The concerning alternative is that if there was a considerable knowledge difference, which would mean that the lay person would experience confusion that far exceeded the 54.3% of student respondents. For each second cosmetic surgeon presented, there was an overall drop (Fig. 8) in respondents who thought the cosmetic surgeon being presented was qualified to perform the procedure (–19.1%) or was a board-certified plastic surgeon (–20.4%), and these differences were found to be statistically different. This further supports a change in responses after being presented with a plastic surgeon that overtly advertised board certification and its importance. The changes in medical student responses may be attributed in part to learning after subsequent Web site exposures, and it would be expected that a patient would have results trending similar to those shown in this study. Therefore, the results of this study reveal the need for patient education and cosmetic surgeon clarifications regarding board certification.

The ASPS' "Do Your Homework" patient safety campaign has sparked similar surveys. One survey probed patients regarding who they would prefer to perform surgery to improve their appearance and their thoughts on credentialing of physicians. Based on their results, the team decided to provide an action plan to further educate patients to make an informed and educated decision before undergoing an aesthetic procedure.⁵ We propose a similar means of implementation with 3 main branches of education: legislative, community, and provider.

On a legislative level, an example can be illustrated in Louisiana with the issues surrounding the American Board of Cosmetic Surgery, a

non-ABMS board, attempting to gain "board certified" equivalency to ABMS boards for advertising purposes. The Louisiana Society of Plastic Surgeons, with the aid of ASPS support, played an essential role in appropriately interpreting ABMS equivalency requests submitted to the Louisiana State Board of Medical Examiners.⁷ The board certification issue must not be misconstrued as a "turf battle" between plastic surgeons and cosmetic surgeons. This is a complex medical regulatory issue that should be handled by physicians, tasked by the state, to ensure the safe and competent practice of medicine. The Accreditation Council for Graduate Medical Education (ACGME) is the independent organization responsible for overseeing and regulating postgraduate medical education and training in the United States. A common argument is that other cosmetic surgeon accreditations require a similar number of procedures to be performed as plastic surgeons; however, when a certifying body does not require completion of ACGME-accredited training in the specialty it certifies, the result is a degree of variability in the education and training standards applied to its diplomates. The Louisiana State Board of Medical Examiners has gathered information on the board certification and assembled an ad hoc advisory committee to investigate it further. The committee determined that the methodologies of the ABMS, ACGME, or American Osteopathic Association boards are incomparable to any other means of certification. The committee recommended "board certified" be defined as a physician with successful completion of an ACGME-accredited training program, in that specialty and/or subspecialty, and successful completion and passage of a psychometrically valid examination. Consequently, a universal definition of "board certified" would provide transparency in advertising and clarity to patient misconceptions.

A multidisciplinary group of clinicians founded the San Diego Center for Patient Safety in response to the Agency for Healthcare Research and Quality's Developmental Centers of Education and Research in Patient Safety grant program. A series of Patient Safety Grand Rounds, along with an annual conference focusing on outreach, were held to benefit the San Diego health care community. The program is seen as an important opportunity to provide a community culture of safety.⁸ The community level of education should involve outreach in forms of educational sessions through local hospitals as a patient awareness movement. A comfortable environment allows the

| Chi Square | Abdominoplasty | Blepharoplasty | Breast Augmentation | Liposuction | Rhytidectomy |
|---|----------------|----------------|------------------------|----------------|----------------|
| Question 1 – Do you believe this physician is qualified to perform this procedure? | $p < 0.0001$ | $p = 0.000502$ | $p < 0.0001$ | $p < 0.0001$ | $p = 0.04633$ |
| Question 2 – Do you believe this physician is a board certified plastic surgeon? | $p < 0.0001$ | $p < 0.0001$ | $p < 0.0001$ | $p < 0.0001$ | $p = 0.001903$ |
| Question 3 – Do you believe this physician has extra qualifications, above general plastic surgery training, for this procedure? | $p < 0.0001$ | $p = 0.04368$ | $*p = 0.4367$ | $p = 0.001438$ | $*p = 0.3564$ |
| * = non-significant value ($p > 0.05$) | | | | | |

FIGURE 8. Cosmetic and plastic surgeons presented first, second, and third for each survey for comparison of subsequent exposures.

opportunity to provide educational presentations and informational pamphlets regarding the definition of board certification and differences between physician training and certification. In addition, at plastic surgery conferences, physicians should be educated on the difficulties found in a consumer's ability to differentiate between board certifications and informed on ways to combat the blurred lines patients are witnessing by joining lobby groups in their state.

On a provider level, a plastic surgeon should provide thorough information on credentials and distribute educational pamphlets. With the previously stated patient-reported plastic surgeon preference and the reported degree of dissatisfaction with postoperative outcomes from non-plastic surgeon cosmetic surgeons,⁴ providing clear definitions of board certification and qualification can take place during consultations. This study showed that individual interpretation and responses to a cosmetic surgeon's Web site changed once they were exposed to a plastic surgeon with board certifications and qualifications indicated on their Web sites. The ASPS "Do Your Homework" Web site is an example of a patient safety Web site that ensures patients are properly educated regarding choosing a surgeon, surgical risks, and appropriate questions to ask during consultations.⁵ With regard to physician Web sites, a page should provide information to enable a patient to make an informed choice regarding their aesthetic procedure. Web site pages, business cards, and pamphlets would include education about board certification and physician differences, potential consequences of poor surgical outcomes, and a list of questions that patients should ask during consultation.

CONCLUSIONS

With the growing population of cosmetic physicians performing procedures, commonly done by plastic surgeons, it is important to assess patient knowledge to ensure patient safety and satisfaction. Results of this study demonstrate the need for patient education from physicians regarding the meaning and definition of certifications and qualifications. Patients should have the appropriate understanding of surgeon training that match demonstrated parameters patients find important in their decision-making process for aesthetic surgery. It can be concluded that over 50% of medical students, with the potential to be more educated in board and procedure specialty qualifications than

the general population, had difficulty distinguishing between a cosmetic and plastic surgeon based on Web sites. Therefore, patients could be expected to have a similar or more difficult experience. It is the physician's duty to properly provide preoperative education in order for patients to make informed decisions regarding an aesthetic procedure. With a universal definition and patient education relating to board certifications, reductions in misconceptions regarding cosmetic surgery can be obtained.

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