Public Perception of the Terms “Cosmetic,” “Plastic,” and “Reconstructive” Surgery

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Objective: To investigate potential differences in perception of the terms “cosmetic,” “plastic,” and “reconstructive” as descriptors for surgery.

Methods: An anonymous questionnaire was offered to subjects over 18 years of age throughout the United States via the Internet and in person. The multiple-choice survey measured variables including permanence, risk, expense, recovery, reversibility, pain, technical difficulty, and surgeon training. The questionnaire also included several open-ended questions to capture qualitative perceptions. Semantic differential data were analyzed to measure statistical significance.

Results: For most variables—permanence, risk, recovery, reversibility, pain, and surgeon training—the 216 subjects had significantly lower mean responses for cosmetic surgery than those for plastic or reconstructive surgery (P<.002).

Conclusions: Overall, the results of this study support the authors’ hypothesis that there is a significant difference in perception of cosmetic surgery and plastic or reconstructive surgery. Cosmetic surgery is perceived to be more temporary and less technically difficult than plastic or reconstructive surgery. In addition, cosmetic surgery is believed to be associated with less risk, shorter recovery time, and less pain. Subjects also thought that cosmetic surgeons required significantly less training than plastic or reconstructive surgeons.

Arch Facial Plast Surg. 2004;6:315-320

Historically, a thorough preoperative evaluation for cosmetic surgery included routine psychiatric consultation.1,2 A sea change has occurred over the last 40 years regarding the concept of deformity and suitability for surgery, and now most patients seeking cosmetic procedures are considered to be good candidates. This shift in attitude, coupled with the popularity of reality makeover shows, has increased public exposure and demand for cosmetic surgical procedures. By profiling ordinary people, they demystify cosmetic surgery and make it psychologically more accessible. Although this vicarious experience may ultimately result in more sophisticated public perception, the condensed format of the programs minimizes the risks and recovery inherent in this type of surgery. Likewise, marketing materials that emphasize “mini” and “lunchtime” procedures also support a carefree attitude toward elective procedures.

One aspect of elective plastic surgery that makes it unique is how a satisfactory outcome is measured. Unlike surgical treatment of disease, a good outcome in cosmetic surgery is almost wholly dependent on what is mutually agreed upon by the patient and surgeon. Fundamental to this agreement are realistic expectations regarding the risks, recovery, and long-term result. Without this foundation, the most technically perfect outcome may be fraught with patient dissatisfaction and expose the surgeon to litigation.

Some plastic surgeons are voicing concern that the surge in interest in this type of reality programming can undermine an appropriate level of caution in the patient. Rod Rohrich, MD, president of the American Society of Plastic Surgeons, warns that, “With the increasing popularity of plastic surgery, combined with the reality show ‘Extreme Makeover,’ it could be easy for the general public to overlook the serious nature of elective cosmetic surgical procedures.” He adds, “But what the public needs to know is that at the highest level of care, every surgery has risks as well as benefits.”3

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It is our hypothesis that patients have different perceptions of the “brands” of plastic surgery available to them, and that these differences can result in an inaccurate expectation of the experience of surgery and the surgeon’s skills. Specifically, we believe that the term “cosmetic surgery” implies less pain, less risk, shorter recovery, and less time spent in residency or fellowship training.

METHODS

The objective of this study was to investigate potential differences in perception of the terms “cosmetic,” “plastic,” and “reconstructive” as they are used to describe surgery. The questionnaire consisted of 4 parts and 42 items. The first part captured demographic information, including gender; age; education level; geographic location; employment in the medical field; and prior cosmetic, plastic, or reconstructive surgery.

The second part of the survey consisted of multiple-choice items that incorporated a 9-point, semantic differential rating scale. It was calculated that a minimum of 200 participants and 9 options for the responses would provide enough statistical power to identify potentially small differences of opinion. The survey was designed with an emphasis on perception as opposed to “choosing the right answer.” This is why the semantic differential format was preserved, although some of the questions may have been adequately answered with only 2 choices. The intent was that subjects would have more flexibility in answering, in the event they felt more strongly about one of the terms than the other. The 10 characteristics measured by the semantic differential portion of the survey included temporary vs permanent; low risk vs high risk of complications; inexpensive vs expensive; short recovery vs long recovery; medically unnecessary vs medically necessary; reversible vs permanent; painless vs painful; changes form vs changes function; most doctors could do it vs requires specialized training; and simple and straightforward vs technically challenging. These parameters were repeated for each of the terms “cosmetic,” “plastic,” and “reconstructive.” Variables were assigned such that the characteristics supporting the hypothesis were to the left. This was done to make it easier for the participants to complete the survey by having a consistent format and to simplify data interpretation. A portion of the semantic differential is shown in Figure 1.

The third part asked respondents to quantify the amount of post–medical school training required to become a cosmetic, plastic, or reconstructive surgeon. This was also presented in a multiple-choice format.

The final section allowed space for free-text responses to the open-ended statement, “Cosmetic surgery makes me think of . . . ,” which was intended to capture any additional perceptions not covered in the survey. This item was then repeated for plastic and reconstructive surgery.

After approval from the institutional review board at the University of Iowa Hospitals and Clinics, the survey was conducted using both a paper and Internet-based questionnaire. The primary author (G.S.H.) administered 42 of the surveys in person by approaching pedestrians in Iowa City, Iowa, and Schaumburg, Ill. The remaining participants were recruited via an e-mail message that directed them to the questionnaire Web site. They were also asked to forward the e-mail message to other people. The survey had no geographic exclusion criteria, but was limited to people 18 years or older who did not have a close relationship to the authors.

Semantic differential data were analyzed by performing a paired-sample t test analysis to measure statistically significant differences between the responses for “cosmetic,” “plastic,” and “reconstructive.” A Bonferroni adjustment was applied to decrease the chances of making a type I error due to the large number of t tests that were performed. This moved the threshold for significance from $P<.05$ to a more stringent $P<.002$. The responses to the question regarding length of postgraduate training were collected as ordinal data and, as such, were analyzed by performing a $\chi^2$ analysis. Significance was assigned to $P$ values less than .05 for this portion of the study.

The data were also analyzed within various demographic subgroups according to gender; age; history of cosmetic, plastic, or reconstructive surgery; and history of prior work in a medical field. No analysis was made comparing the responses of one demographic group to another. All comparisons were made within the cohorts. For example, no attempt was made to identify a difference between men’s perception of cosmetic surgery compared with women’s perception. The data were then analyzed comparing men’s perception of cosmetic surgery with their perceptions of plastic and reconstructive surgery. Statistical computation was performed using the SPSS statistical software package (version 11.5; SPSS Inc, Chicago, Ill).

RESULTS

There were 222 participants enrolled in April and May 2003. After discarding 5 blank surveys and 1 duplicate, the total number of subjects was 216. Not all respondents completed all the questions. Seventy-three subjects identified themselves as male and 143 as female. One hundred thirty-six were in the 18- to 40-year age group, and 80 were between 41 and 80 years. Twenty-nine respondents reported having had previous cosmetic, plastic, or reconstructive surgery, and 57 stated that they had worked in a medical profession. When reporting the highest level of education, 13 completed high school, 56 had some college, 87 earned a bachelor’s degree, 42 completed a master’s degree, and 18 had a doctorate. Geographically, most respondents (n=178) were from the Midwest, while 10 came from the Northeast, 6 from the Northwest, 11 from the South, and 11 from the Southwest.

Figure 2 shows a typical histogram of the responses provided by all participants to the semantic differential. The cosmetic surgery variables had lower mean responses than those of plastic or reconstructive surgery. The differences were significant, with a confidence interval of 0% to 99.8% ($P<.002$), for the variables measuring temporary vs permanent, low risk vs high, short recovery vs long, medically unnecessary vs necessary, reversible vs permanent, painless vs painful, changes form vs changes function, and surgery is simple vs technically challenging. When measuring the inexpensive vs expensive parameter, there was no significant difference between cosmetic surgery and plastic surgery ($P=.066$) or between cosmetic surgery and reconstructive surgery ($P=.014$). Respondents thought that all of the options were expensive. There was a significant divergence of opinion when subjects were asked if cosmetic surgeons require no specialized training vs specialized training compared with reconstructive surgeons ($P<.001$). No statistically significant difference was measured when comparing cosmetic surgeons with plastic surgeons ($P=.043$).

There was a significant difference ($P<.001$) when subjects were asked how much training was required to become a cosmetic, plastic, or reconstructive surgeon.
The perception was that cosmetic surgeons required less training. Since this part of the study had a 95% confidence interval, this P value is over 50 times smaller than the threshold.

After the responses were disaggregated based on the demographic data, statistical significance was recalculated. When dividing the sample, the decrease in power resulted in some variables losing significance. The trend, however, remained the same. Table 1 details the P values for the semantic differentials and Table 2 shows the P values for the multiple-choice question regarding length of training. Table 3 summarizes the mean values of the responses.

The open-ended portion of the study also showed some differences in perception. Although these cannot be quantified, there was a definite trend. The responses for “Cosmetic surgery makes me think of . . .” tended to include words like “vanity,” “Hollywood,” “rich” and “unnecessary.” Overall, the answers for “Plastic surgery makes me think of . . .” were remarkably similar to the ones for “cosmetic.” Some participants were even slightly surprised by the question. One respondent wrote, “I really always thought of cosmetic and plastic surgery as the same thing. I didn’t realize there was a distinction.” Several participants misunderstood plastic surgery to literally mean that plastic was implanted in the body, while a few others thought that this was an “obsolete term.” Opinions about reconstructive surgery predictably focused on accidents, functional deficits, and medical necessity. One passionate respondent said, “Merciful and necessary as a response to tragedy and dis-
Overall, the results of this study support the authors’ hypothesis that there is a significant difference in perception of cosmetic and plastic surgery. Cosmetic surgery is perceived to be more temporary and less technically difficult than plastic or reconstructive surgery. In addition, cosmetic surgery is believed to be associated with less risk, shorter recovery time, and less pain. Subjects also thought that cosmetic surgeons required significantly less training than plastic or reconstructive surgeons.

Because there is a preponderance of midwesterners (82%) in the sample, there is a possibility that their perceptions do not reflect those of people in other parts of the country. This may compromise the external validity of these results. However, the P values obtained from these data were so small—most were less than .001—that it seems unlikely that geography would have much impact on significance.

Bias was minimized by not offering the survey to those with a close relationship to the authors, since this might have conferred a more sophisticated understanding of the specialty. Additionally, the participants who filled out the paper questionnaire had their questions about the topic deferred until after they had completed their answers.

The importance of these results is perhaps best understood by applying the concept of a brand. Some people define a brand as a name or a symbol identifying a product. A more complete definition would describe it as the embodiment of the consumer’s total experience with a product or company, and it usually represents a shared set of beliefs or lifestyle. A brand is important because it communicates a set of expectations to the consumer. The consumer, on the other hand, uses the brand to guide purchasing decisions and as a template for his or her anticipated interaction with a company. People seeking elective plastic surgery are as much consumers as they are patients, and a major factor influencing purchasing behavior is brand perception.

The significance of a brand is elegantly illustrated by Agnieszka Winkler in her book, Warp Speed Branding: The Impact of Technology on Marketing. In it, she asks,
By using financial data from 2001 and the above formula, the value of Coke's brand name is estimated at US $102 billion. The value of Coca Cola as a company is US $115 billion. The brand accounts for almost 90% of the value!

In medicine, just as in business, a brand is instrumental when establishing the context for the relationship between a patient and a physician. It shapes the patient's expectations and ultimately his or her level of satisfaction. In a broad sense, this is why patients seek more from a “specialist.” Although it is impossible to assign a monetary value to the brand represented by a specialty, its influence is no less important. Our hypothesis is that the brand “cosmetic surgery” communicates an inaccurate anticipated experience. Ultimately, this may foster confusion in the marketplace and lead to patient dissatisfaction. Specifically, cosmetic surgery is perceived to be more temporary and less technically difficult than plastic or reconstructive surgery, and to be associated with less risk, shorter recovery time, and less pain. Additionally, qualified surgeons who identify themselves as cosmetic surgeons are inaccurately underreporting their amount of postgraduate training.

Curiously, the results of this study show little difference in perception between the terms “plastic surgery” and “cosmetic surgery” when asked about expense. Subjects also agreed that plastic surgeons and cosmetic surgeons require specialized training but believe that plastic surgeons have more. Respondents also seemed less likely to underestimate the risks and perioperative discomfort of plastic surgery. From a brand perspective, plastic surgery appears to be the better value in terms of accurately depicting the surgery and surgeon.
In 1980, Jack Anderson, MD, oversaw the merger between the American Academy of Otolaryngology and the American Council of Otolaryngology. This union provided the opportunity for the Academy to change its name to the American Academy of Otolaryngology–Head and Neck Surgery. This recognized the expanded scope of the specialty to include not just the ears, nose, and throat but a “modern regional specialty encompassing otolaryngology and head and neck medicine and surgery.” The new name finally endorsed the otolaryngologist as a qualified surgical specialist. One could argue that this “rebranding” was undertaken to clarify the identity of the otolaryngologist not only among his or her peers but among his or her patients as well. Perhaps it is time for plastic surgeons—whether generalists or specialists in the head and neck—to reemphasize the term “plastic,” as it more accurately defines both the surgery and surgeon.

Accepted for publication May 21, 2004.

The authors extend special thanks to Sarah K. Spilman, BA, for additional statistical consultation.

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REFERENCES