



# Abstract: #PlasticSurgery: Is the Message Reaching the Audience?

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## **The Good, the Bad, & the Ugly: A Quantitative and Qualitative Analysis of Online Plastic Surgery Reviews**

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**INTRODUCTION:** Online review sites have become a modern version of the word-of-mouth recommendation, and prospective patients are increasingly consulting them before making decisions about their medical care. The impact of online reviews will only intensify in the coming years as they continue to affect both aesthetic and reconstructive plastic surgeons. Our purpose was twofold: 1) to identify common reasons for patient satisfaction and dissatisfaction with plastic surgeons cited in online reviews; and 2) to evaluate the usefulness and reliability of these reviews as a methodology for understanding the patient experience. We selected breast augmentation as the primary procedure of interest.

**METHODS:** Data applicable to breast augmentation was obtained from RealSelf and Yelp via a “web crawling” computer program. Data from Google Reviews was obtained manually. The top 10–20 plastic surgeons in each of five large metro areas were evaluated. Duplicate or blank reviews were excluded. Positive and negative aspects of each review, including satisfaction, were recorded. Computerized and manual content analysis was used to qualitatively evaluate each review.

**RESULTS:** 3833 Google, 5618 Yelp, and 437 RealSelf reviews were assessed, with 387, 426, and 234 reviews meeting inclusion criteria, respectively. The utilization of each rating website varied

significantly according to metropolitan area. 86.2% of reviews were positive and 12.2% were negative. “Good aesthetic outcome” (71%), “good bedside manner” (63.3%), “office staff friendly and/or helpful” (57.4%) were the top three most commonly mentioned reasons for patient satisfaction. “Reasonable cost” was only mentioned in 4.1% of positive reviews. “Poor aesthetic outcome” (49.3%), “does not listen to patient” (40.1%), and “not competent” (35.2%) were the top three most commonly mentioned reasons for dissatisfied reviews. Asymmetry (58.7%) and implant malposition (41.3%) were the two most commonly reported reasons for “Poor aesthetic result”. Negative reviews were generally longer ( $207.7 \pm 175.3$  words) than positive ones ( $112.7 \pm 102.1$  words).

**CONCLUSION:** Aesthetic outcome appears to be the largest driver of patient reviews, but surgeon personal factors such as listening skills and bedside manner also play a significant role in determining whether patients leave a positive or negative online review. As online platforms continue to become more popular, surgeons should be cognizant of these factors to improve their online reputation.

## **#PlasticSurgery: Is the Message Reaching the Audience?**

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**INTRODUCTION:** Twitter is one form of social networking that has been recognized as a suitable platform for plastic surgeons to engage in and share information.<sup>1,2,3</sup> A public poll using Twitter found that respondents wanted more links to peer-reviewed articles (79%), patient education (67%) and safety information (47%).<sup>2</sup> The aim of this study is to assess the readability of these articles and analyze differences between non-open full,

open access and patient information articles to see whether the message is reaching the general public. A secondary aim is to analyze the articles based on identity of poster of tweet, specifically for plastic surgeons when compared to non-plastic surgeons.

**METHODS:** All top-rated tweets (as per Twitter algorithm) under #PlasticSurgery in January 2017 were retrospectively reviewed. Data from tweets with links to full, open access and society/institutional patient information articles were extracted. Content and identity of the person tweeting was assessed. Readability was analyzed using established tests: Coleman-Liau, Flesch-Kincaid, Flesch Reading Ease Index, FORCAST Readability Formula, Fry Graph, Gunning Fog Index, New Dale-Chall Formula, New Fog Count, Raygor Readability Estimate, and Simple Measure of Gobbledygook (SMOG) Readability Formula.

**RESULTS:** In total, 234 unique articles were extracted from Twitter in January 2017; 101 (43%) full journal, 65 (28%) open-access journal and 68 (29%) patient information articles. Full and open-access journal articles attained similar mean reading levels of 15.9 and 15.8, respectively ( $p=0.232$ ). In contrast to full and open access journal articles, patient information articles had significantly lower mean readability levels of 12.5 ( $p<0.001$  and  $p<0.001$ , respectively). Of the total unique articles, 128 articles (55%) were posted by plastic surgeons and 106 (45%) were posted by non-plastic surgeons. The distribution of article types tweeted by plastic surgeons and non-plastic surgeons was 38% vs. 48% full journal articles, 24% vs. 33% open access journal articles and 38% vs. 19% patient information articles, respectively. Average readability of plastic surgeon and non-plastic surgeon posted articles attained mean reading grade level of 14.5 and 15.3, respectively ( $p<0.001$ ). All tweeted articles were above the 6<sup>th</sup> grade recommended reading level.

**CONCLUSION:** These results suggest that the readability of open access articles and patient information posted under #PlasticSurgery may not be appropriate for many American adults. Consideration should be given to improving the readability of articles targeted toward the general public.

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## Readability of Aesthetic Plastic Surgeon Websites: Regional and Procedural Variation

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**INTRODUCTION:** Patient resources are increasingly available online and it is important to ensure the educational message is conveyed appropriately. We simulated a patient search of various online educational content on aesthetic plastic surgeon websites to evaluate readability.

**METHODS:** Five cities were chosen for inclusion based on our assessment of high aesthetic surgery volume: New York City, Los Angeles, Miami, Chicago and Dallas. An online search for the term “plastic surgeon [city name]” was performed and the first 20 ASPs board-certified plastic surgeons for each city were identified. User and location filters were disabled and sponsored results were excluded. Four procedures were included: breast augmentation, liposuction, rhinoplasty, and botulinum toxin injection. Patient information from each site was downloaded and readability was assessed using established tests: Coleman-Liau, New Dale-Chall, Flesch-Kincaid, FORCAST, Fry, Gunning Fog, New Fog Count, Raygor Estimate and Simple Measure of Gobbledygook (SMOG). An acceptable reading level is defined as no higher than the sixth-grade reading level by the National Institutes of Health and the American Medical Association.<sup>1-2</sup>

**RESULTS:** A total of 100 unique patient information articles were extracted. Articles derived from