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Dermatology and social media

Patient use of social media to evaluate cosmetic treatments and procedures

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Abstract

Background: With a growing sphere of influence in the modern world, online social media serves as a readily accessible interface for communication of information. Aesthetic medicine is one of many industries increasingly influenced by social media, as evidenced by the popular website, “RealSelf,” an online community founded in 2006 that compiles ratings, reviews, photographs, and expert physician commentary for nearly 300 cosmetic treatments.

Objective: To investigate the current preferences of patients regarding cosmetic non-surgical, surgical, and dental treatments on RealSelf and in the documented medical literature.

Methods: On a single day of data collection, all cosmetic treatments or procedures reviewed on the RealSelf website were tabulated, including name, percent “worth it” rating, total number of reviews, and average cost. Patient satisfaction rates documented in the current medical literature for each cosmetic treatment or procedure were also recorded. Statistical t-testing

comparing RealSelf ratings and satisfaction rates in the literature was performed for each category—non-surgical, surgical, and dental.

Results: The top ten most-commonly reviewed non-surgical treatments, top ten most-commonly reviewed surgical procedures, and top 5 most-commonly reviewed dental treatments, along with documented satisfaction rates in the medical literature for each treatment or procedure were recorded in table format and ranked by RealSelf “worth it” rating. Paired *t*-testing revealed that satisfaction rates documented in the literature were significantly higher than RealSelf “worth it” ratings for both non-surgical cosmetic treatments ($p=0.00076$) and surgical cosmetic procedures ($p=0.00056$), with no statistically significant difference for dental treatments.

Conclusions: For prospective patients interested in cosmetic treatments or procedures, social media sites such as RealSelf may offer information helpful to decision-making as well enable cosmetic treatment providers to build reputations and expand practices. “Worth it” ratings on RealSelf may, in fact, represent a more transparent view of cosmetic treatment or procedural outcomes relative to the high satisfaction rates documented in medical literature. Massive online communication of patient experiences made possible through social media will continue to influence the practice of medicine, both aesthetic and otherwise.

Keywords: RealSelf, social media, aesthetic medicine, cosmetic dermatology, cosmetic surgery, cosmetic dentistry

Introduction

The Internet has transformed daily modern life and nearly every industry, including medicine. In 2013, each person spent an average of 66 hours per month using a computer accounting for 11 billion web searches performed per month by the United States population [1]. Although websites such as Facebook and Twitter currently serve as the dominant platforms for massive online communication, other websites also utilize social media to facilitate interactions around the world.

RealSelf is an online community that facilitates the sharing of information about cosmetic dermatology, surgery, dentistry, and other elective treatments. The forum compiles ratings, reviews, photographs, and expert physician commentary for nearly 300 cosmetic treatments. With 36 million unique visitors in 2013, RealSelf is a community in which aesthetic-minded consumers share experiences and seek advice from other consumers as well as expert opinions [2]. The site not only offers an incredible marketing and advertisement opportunity to the medical community, but also serves as a tool for consumer decision-making. All physicians that join the site must be board-certified dermatologists, dermatologic surgeons, plastic surgeons, oculoplastic surgeons, general surgeons, bariatric surgeons, ophthalmologists, oral and maxillofacial surgeons, orthodontists, or cosmetic dentists.

Past studies have investigated RealSelf and other social media tools such as Facebook and Twitter to evaluate plastic surgeon use of social media and consumer satisfaction with plastic surgery procedures [3, 4, 5]. Because the number of social media users continues to grow exponentially and new audiences are reached with ever-changing marketing techniques, the purpose of this study was to investigate the current preferences of patients regarding cosmetic treatments featured on RealSelf and in the documented medical literature, with focus on non-surgical treatments commonly offered by dermatologists.

Methods

Two authors collected data independently on July 11, 2014. The official RealSelf website, <http://www.realself.com>, was used to collect data on all cosmetic treatments reviewed by users of the site since 2006 to date of data collection. For each treatment or procedure, the following metrics were collected: treatment or procedure name, total number of reviews, ratings (“worth it,” “not worth it,” and “not sure”), and average cost. Of note, the site did not indicate whether the average cost per procedure represented actual cost to the patient or costs covered by insurance. However, most of the procedures evaluated were exclusively cosmetic in nature, generally not covered by insurance. Procedures with no reported reviews or ratings were excluded.

Treatments were then grouped by non-surgical, surgical, or dental. Data were organized in a commercially available spreadsheet application (Excel; Microsoft, Inc) and sorted in order of decreasing number of reviews. For the non-surgical cosmetic treatments and surgical cosmetic procedures, the ten treatments or procedures with the most reviews were selected. For the dental cosmetic treatments, which were relatively underrepresented on RealSelf, the five treatments or procedures with the most reviews were selected. The ten most-reviewed non-surgical, ten most-reviewed surgical, and five most-reviewed dental cosmetic treatments were extracted in separate tables and ranked according to consumer-reported RealSelf “worth it” rating.

A PubMed literature search for each of the cosmetic treatments or procedures was conducted to compare the most current documented consumer satisfaction rate in the literature with the “worth it” rating listed for each treatment or procedure on RealSelf. Two authors independently verified literature satisfaction rates. GraphPad, Inc ©2014 free online software was utilized to conduct paired *t*-testing between “worth it” ratings and literature satisfaction rates for each category—non-surgical, surgical, and dental [6]. For the satisfaction rates of cosmetic treatments or procedures for which a range of values was documented in the literature, the mean was utilized in statistical testing.

Results

A total of 278 medical beauty topics were listed on realself.com. Of these, 47 were excluded due to lack of consumer reviews. Combination procedures involving multiple body parts, such as “Mommy Makeover” and “Body Lift,” were also excluded. For instances in which the same or closely-related procedures were listed multiple times on RealSelf using different terminology or brands, the listed procedure(s) with fewer reviews was excluded. Such was the case for the surgical procedures “breast implants” and “breast augmentation” as well as for various dental procedures such as “teeth whitening,” “Brite Smile,” and “Zoom Whitening;” “ClearChoice Dental Implants” and “dental implants;” “Clear Correct,” “clear braces,” and “Invisalign;” “Damon Braces” and “braces;” and “Lumineers” and “porcelain veneers.”

In addition, for the non-surgical procedures, the treatment listed as “filler” reflects a rating based on the sum total of reviews of the top four most commonly-utilized filler brands, including Restylane, Juvederm, Radiesse, and Sculptra. The listed cost for filler is a reflection of the average of these four filler brand prices. The treatment listed as “Botulinum A toxin” reflects ratings based on the sum total of reviews of Botox and Dysport, with listed cost averaged between the two.

Ranked from highest to lowest percent “worth it” rating, the top ten non-surgical cosmetic treatments were: Latisse, Accutane, laser hair removal, Botulinum A toxin, filler, Intense Pulse Light (IPL), Ultherapy, Fraxel, CoolSculpting, and Thermage (Table 1). Ranked from highest to lowest percent “worth it” rating, the top ten surgical cosmetic procedures were: facelift, eyelid surgery, breast augmentation, breast reduction, Tummy Tuck, Smart Lipo, rhinoplasty, breast implant removal, liposuction, and Brazilian Butt Lift (Table 2). Ranked from highest to lowest percent “worth it” rating, the top five dental cosmetic treatments were: dental implants, braces, Invisalign, Zoom Whitening, and porcelain veneers (Table 3).

Table 1. Percent “worth it” ratings for top ten most-reviewed non-surgical cosmetic treatments, compared with satisfaction rates in literature.

"Worth It" Rank	Treatment	RealSelf "Worth It" (%)	Number of Reviews	Average Price (\$)	Search Term Used	Satisfaction Rate in Literature
1	Latisse	72.41	377	125	Latisse	65 [7]
2	Accutane	63.67	278	425	Accutane	84.4 [8]
3	Laser Hair Removal	62.72	346	1,050	Laser Hair Removal	80-84.2 [9-10]
4	Botulinum A Toxin	61.06	1,564	437.50	Botulinum A, Botox, Dysport	68-86.3 [11-12]
5	Filler	59.89	2,731	1,025	Filler, Juvederm, Radiesse, Restylane, Sculptra	70-99.1 [13-15]
6	IPL (Intense Pulse Light)	53.10	403	525	Intense Pulse Light	93 [16]
7	Ultherapy	51.69	443	2,700	Ultrasound Skin Tightening	62.5 [17]
8	Fraxel	49.57	694	1,725	Fraxel	75 [18]
9	CoolSculpting	41.91	871	1,650	Cryolipolysis	73 [19]
10	Thermage	35.59	295	2,400	Thermage Radiofrequency	75 [20]

Table 2. Percent “worth it” ratings for top ten most-reviewed surgical cosmetic procedures, compared with satisfaction rates in literature.

"Worth It" Rank	Procedure	RealSelf "Worth It" (%)	Number of Reviews	Average Price (\$)	Search Term Used	Satisfaction Rate in Literature
1	Facelift	75.88	941	10,925	Rhytidectomy	97.8 [21]
2	Eyelid Surgery	67.97	1,071	4,425	Blepharoplasty	92.8 [22]
3	Breast Augmentation	65.43	4,651	6,450	Augmentation mammoplasty	83 [23]
4	Breast Reduction	64.76	2,239	5,750	Reduction mammoplasty	90.5 [24]
5	Tummy Tuck	64.03	7,498	7,800	Abdominoplasty	84 [25]
6	Smart Lipo	60.25	1,366	4,975	Laser-assisted liposuction	3.78 out of 5 points [26]
7	Rhinoplasty	57.92	2,954	6,875	Rhinoplasty	76.1 [27]
8	Breast Implant Removal	57.33	921	3,875	Breast implant removal	3 out of 5 points [28]
9	Liposuction	55.40	1,370	5,925	Liposuction	90 [29]
10	Brazilian Butt Lift	27.01	5,942	6,725	Buttock augmentation	85 [30]

Table 3. Percent “worth it” ratings for top ten most-reviewed dental cosmetic treatments, compared with satisfaction rates in literature.

"Worth It" Rank	Treatment	RealSelf "Worth It" (%)	Number of Reviews	Average Price (\$)	Search Term Used	Satisfaction Rate in Literature
1	Dental Implants	74.42	86	10,475	Dental implants	8.26 out of 10 points [31]
2	Braces	54.22	83	4,000	Dental braces	55.04 [32]
3	Invisalign	53.11	1,111	4,875	Invisalign, removable orthodontic appliances	89 [33]
4	Zoom Whitening	52.34	342	375	Carbamide peroxide whitening gel	*
5	Porcelain Veneers	51.52	99	7,125	Porcelain veneers	95.4 [34]

*A published satisfaction rate on “Zoom Whitening” or carbamide peroxide whitening gel could not be found.

Comparing RealSelf “worth it” ratings for each of the cosmetic treatments or procedures with the most current satisfaction rates in the accessible published literature, several discrepancies were noted (Tables 1, 2, 3). Paired *t*-testing (Table 4) demonstrated that satisfaction rates documented in the literature were significantly higher than RealSelf “worth it” ratings for both non-surgical cosmetic treatments ($p=0.00076$) and surgical cosmetic procedures ($p=0.00056$). No significant difference was found between satisfaction rates in the medical literature and RealSelf “worth it” ratings for dental treatments ($p=0.1241$). Of note, “Zoom Whitening” was the only treatment or procedure for which a documented satisfaction rate in the medical literature could not be found.

Table 4. Paired *t*-testing comparing RealSelf “worth it” rating with satisfaction rates documented in the medical literature for cosmetic non-surgical treatments, cosmetic surgical procedures, and dental treatments.

	RealSelf "Worth It" Rating (%)	Satisfaction Rate in Literature (%)*
Cosmetic non-surgical treatments (p=0.00076)		
Mean	55.159	77.17
SD	11.00611	9.26017
SE	3.48044	2.92832
N	10	10
Cosmetic surgical procedures (p=0.00056)		
Mean	59.598	83.48
SD	12.92491	10.82382
SE	4.08722	3.42279
N	10	10
Cosmetic dental treatments (p=0.1241)		
Mean	58.3175	80.5000
SD	10.7920	17.7850
SE	5.3960	8.8925
N	4	4

*For medical literature satisfaction rates documented with range of values, the mean was used for paired *t*-testing

Discussion

Easily accessible, constantly updated, and universally available to anyone with an Internet connection, social media sites such as RealSelf have tremendous power to influence consumer decision-making. In 2013, RealSelf users alone spent \$239 million on cosmetic surgery [2]. Successful practitioners of medicine, aesthetic or otherwise, rely on reputation to establish and expand their practice and patient base. Reputations are rapidly created, for better or for worse, via online platforms such as RealSelf, with an undeniable impact on supply and demand of medical services offered by member practitioners. Aesthetic medicine, in particular, is an art in which subjective perception of the outcome of cosmetic procedures drives patient satisfaction. And in the world of social media, perception is everything.

The fusion between social media and aesthetic medicine, such as that which is offered on RealSelf, promotes a certain transparency in which current or potential patients of a physician have easy access to the viewpoints of other patients who have received cosmetic treatment(s) from the physician. Information about patient experiences with a particular physician, which may or may not portray cosmetic procedures accurately, is just a click away. Prospective patients actively seek this information, and RealSelf simplifies the search. In a French study that evaluated cosmetic surgery patients over a two-year period, 69% of the 250 survey respondents stated that the quality of preoperative information was the most important criteria for selecting a cosmetic surgeon [35]. For 65% of patients, the patient-physician relationship was the most important, and for 46% of patients, results seen in relatives and friends were the most important criteria [35]. Patients in search of any or all three of these criteria can easily find their answers in the “Reviews from the Community” section of each cosmetic treatment’s profile on RealSelf. The RealSelf online community offers a support network for current and potential cosmetic patients seeking advice, anecdotes, and recommendations.

The modern emphasis on social media exists within the context of a timeless cultural value of youthful appearance. According to the 2006 Harris Interactive Survey involving nearly 800 women aged 35 to 69 years, conducted on behalf of the American Society of Plastic Surgeons, women consider cosmetic interventions to satisfy a desire to look younger, improve personal relationships,

and increase their confidence [15]. The most common cause for concern with regards to the facial signs of aging included wrinkles (44%) and sagging skin (41%) [15]. To address this problem, 63% of respondents reported that they would much rather have a facial injectable treatment than a surgical treatment [15]. Not surprisingly, our study demonstrated that botulinum A toxin and filler were among the most-reviewed, non-surgical cosmetic procedures and ranked with the fourth and fifth “worth it” ratings, respectively.

Latisse, which is a bimatoprost ophthalmic solution for eyelash growth [7], ranked as the most popular non-surgical cosmetic treatment, with 72% of 377 RealSelf reviewers rating this treatment with an average cost of \$125 as “worth it.” While no significant relationship between cost of treatment and RealSelf “worth it” rating was found, it should be noted that Latisse, with the highest “worth it” rating was the least expensive non-surgical cosmetic treatment in the top ten. In contrast, Ultherapy, a skin firming procedure that utilizes ultrasound [17], was the most expensive non-surgical treatment in the top ten with an average cost of \$2,700, and ranked much lower (7 out of 10) in terms of RealSelf “worth it” rating (52%).

Some of the most common non-surgical cosmetic treatments with lower “worth it” ratings included: Fraxel, fractional photothermolysis for dyschromia, scarring, and texture abnormalities [18] (49.57%); CoolSculpting, cryotherapy for noninvasive fat removal [19] (41.91%); and Thermage, heat-generating radiofrequency treatment for facial laxity [20] (35.59%). These treatments may feature a less favorable profile on RealSelf because of cost, a need for skilled practitioners who can operate new technology, or less drastic aesthetic benefit relative to other cosmetic interventions.

In comparing RealSelf “worth it” ratings with documented satisfaction rates in the literature, it was found that published studies reported significantly higher rates of satisfaction for the most-common non-surgical and surgical cosmetic treatments and procedures. Could this suggest that social media forums such as RealSelf offer greater transparency regarding treatment or procedural outcomes than that which is offered by cosmetic treatment manufacturers or even practitioners themselves? Alternatively, do RealSelf ratings reflect a bias due to dissatisfied reviewers possessing greater motivation to comment on the site about the results of their treatments?

The “worth it” rating is a reflection of feedback from patients from around the world receiving cosmetic treatments from many different private or academic physicians, in contrast to satisfaction rates in the published literature from labs and research groups. Research entities may or may not receive funding from manufacturers or the companies that develop new cosmetic technologies, and many have a vested interest in publishing studies on new technologies with a favorable profile. It is also possible that the patient participants of such studies who receive cosmetic treatments at little to no cost may report higher satisfaction rates. These results suggest that public, open-access social media sites such as RealSelf may present information about cosmetic treatments and procedures in a way that is, in fact, more “real” than published studies.

One important limitation to this study is that “worth it” rating is not necessarily synonymous with patient “satisfaction.” A RealSelf user may rate a cosmetic treatment as “worth it,” relative to the monetary or other costs he or she incurred, or relative to his or her expectations of aesthetic benefit. However, patient satisfaction suggests a favorable subjective assessment of the outcome of a cosmetic treatment, which may or may not take into consideration costs or pre-treatment expectations.

According to a 2014 survey of 354 general public respondents in the United States, dermatologists were the preferred health care providers over plastic surgeons, primary care physicians, general surgeons, and nurse practitioners/physician’s assistants to perform a variety of cutaneous cosmetic laser and surgical procedures [36]. The demand continues to grow for non-surgical, non-invasive cosmetic interventions, such as the ten highlighted in this study. Without a doubt, more treatments will continue to be developed. Dermatologists who provide cosmetic treatments as part of their practices may gain insight from trends featured on social media sites such as RealSelf.com.

Conclusions

RealSelf’s most common non-surgical, surgical, and dental cosmetic treatments are just a small sample of currently available technology for which supply and demand are influenced by many forms of social media. The massive online communication of patient experiences made possible by social media is not unique to aesthetic medicine, and will undoubtedly continue to influence all aspects of modern medicine. Medical practitioners should not only become familiar with popular social media, but also utilize it to reach out to more patients and provide exceptional care.

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