RESEARCH ARTICLE

An Assessment of Online Reviews of Hand Surgeons

William Kirkpatrick, MD; Jack Abboudi, MD; Nayoung Kim, BS; Juana Medina, MD; Mitchell Maltenfort, PhD; Daniel Seigerman, MD; Kevin Lutsky, MD; Pedro K. Beredjiklian, MD

Research performed at Rothman Institute, Philadelphia, Pennsylvania, USA

Received: 13 November 2016 *Accepted: 16 February 2017*

Abstract

Background: The purpose of this study is to evaluate the number of reviews and scores for active members of the American Society for Surgery of the Hand (ASSH) in popular physician rating websites (Healthgrades.com and Vitals.com).

Methods: A total of 433 ASSH active members were searched in two popular rating websites for a total of 866 web searches. Demographic data, overall and subcategory scores, number of reviews, and wait times were scored from each member's webpage.

Results: The average number of reviews per surgeon on Healthgrades.com and Vitals.com were 13.8 (range 1-108) and 9.4 (range 0-148), respectively. The average overall score for physicians was 8.1 out of 10 points. For both websites, the vast majority (80-90%) of active members of the ASSH had 20 or less reviews. Multivariate data analysis revealed no statistical differences in overall score by region (*P=0.24*) or gender (*P=0.38*). Increasing physician age negatively correlated with overall score (*P=0.01*). Wait time was not associated with a negative score (*P=0.38*).

Conclusion: Active members of the ASSH received generally positive reviews. The average number of reviews for active members of the ASSH was exceedingly small, bringing into question the legitimacy and validity of these scores. This is especially important when taking into consideration the increasing popularity of these websites, and the reliance of patients on them to obtain physician information. The clinical implication of this study is that physicians have a vested interest in the legitimacy of the data provided by these websites and other physician rating outlets.

Keywords: Evaluation, Hand, Internet, Patient, Rating, Site, Surgeon

Introduction

There are an increasing number of websites allowing patients to rate physicians. It is estimated that almost one quarter of adults in the United States use these websites to obtain physician information (1). These sites rate physicians by online data acquisition from visitors who wish to complete an evaluation. They also provide physician search by name or location. Once the physician is identified, the visitor is directed to the physician web page, containing details of location, specialty, and the scores by previous presumably patients/evaluators. As web-based rankings become more popular, their results find substantial future implications for physicians (2); however, the quality and impact of these web-based physician rankings remain limited (3).

The purpose of this study was to evaluate the nature and content of reviews and scores for active members of the American Society for Surgery of the Hand (ASSH) in popular physician rating websites. We hypothesized that: a) Considering the overall number of patients seen by a hand surgeon the number of reviews per surgeon would be proportionally low; (b) Overall scores for surgeons would have a bimodal distribution, with scores being either high or low; (c) Wait time would be correlated with overall score.

Materials and Methods

With ASSH permission, all current active members

Corresponding Author: Pedro K. Beredjiklian, Rothman Institute of Orthopedics, Philadelphia, PA, USA
Email: Pedro.Beredjiklian@Rothmaninstitute.com

AB&JS THE ONLINE VERSION OF THIS ARTICLE ABJS.MUMS.AC.IR

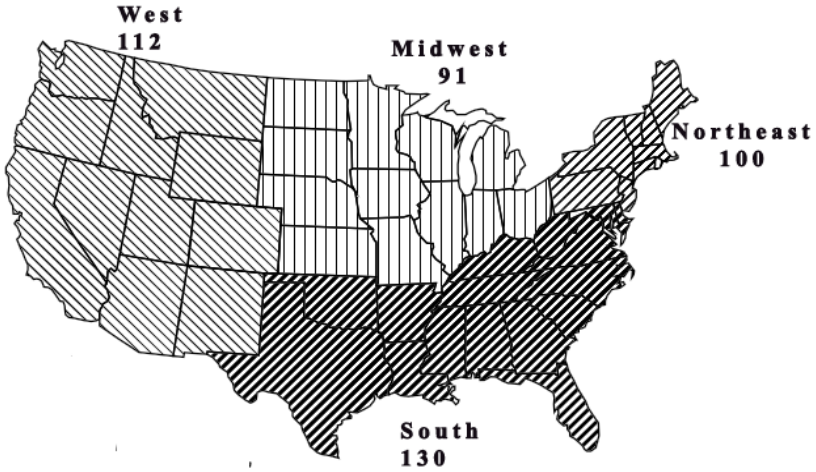

Figure 1. Geographic distribution with number of surgeons.

from the most current directory in the continental United States were identified and divided into four geographical areas (Northeast, South, Midwest, and West) as defined by the United States Census Bureau. A random-number generator was used to create a roster of the members from an alphabetically ordered list. The number of elected members was based on the proportional total number of ASSH members in each geographic region. Between July to September 2014, "www.heathgrades.com" and "www.vitals.com" were used as two of the most commonly visited physician rating websites (1, 2).

The member's first and last name (and state when needed) was searched in website browser for demographic information and scores as well as location of practice. The overall score, number of reviews, and wait times were retrieved from each member's webpage. In addition, scores for similar subcategories in both websites (ease of making appointment, staff courtesy, bedside manner, and listening questions and answering) were recorded. The unique subcategories of each website were excluded from the analysis. The surgeons' name was blinded after data acquisition. Overall and subcategory scores were given on either a five (Heathgrades.com) or four (Vitals.com) point on one to ten scale base.

A total of 433 ASSH active members from a total of 866 web searches formed the final random roster. Geographically sorted, there were 91 members from the Midwest, 130 from the South, 100 from the Northeast, and 112 from the West [Figure 1]. A total of 17 (3.9%) and 31 (7.2%) of the names were not found on Heathgrades.com and Vitals.com, respectively. The average age of the members was 54.1 years (ranging from 34-86 years) and only 40 (9.2%) were women. The geographical distribution of demographic data is presented in Table 1.

Statistical analysis was performed using SPSS XX (Illinois, USA) through a mixed-model linear regression.

Table 1. Geographic distribution with number of surgeons by region

Region	Midwest	Northeast	West	South	Total
Number searched	91	100	112	130	433
Avg. age	52.4	54.3	54	55.6	54.1
Men	80	90	92	117	379
Women	11	9	7	13	40

The Box and Cox method was used to select optimal power transformations (Y^n) to meet the assumptions of linear regression. The weighted overall score was raised to the 2.5 power, and the number of responses was log-transformed. The intraclass correlation coefficient (ICC) calculated from linear mixed model was used to evaluate the agreement between the two websites. An ICC of 0 represents no association between the data, while an ICC of 1 means perfect agreement.

Results

There was a significant difference (*P=0.0005*) between the average number of reviews per surgeon on Healthgrades.com (13.8) (range 1-108, median 11.5, interquartile range 12.25 [lower quartile 6, upper quartile 18.25]) and Vitals.com (9.4) (range 0-148, median 6, interquartile range 8 [lower quartile 3, upper quartile 11]). The ICC between the two sites for number of responses was showing a moderate agreement (0.53).

Grouped by number of reviews, searches on Healthgrades.com revealed that 95 (22.8%) surgeons had four or less reviews, 189 (45.4%) had 10 or less reviews, 339 (81.4%) had 20 or less reviews, and 78 (18.8%) had

Table 2. The average number of reviews by region

	Midwest		South		Northeast		West	
	Healthgrades	Vitals	Healthgrades	Vitals	Healthgrades	Vitals	Healthgrades	Vitals
Average number of reviews per surgeon (range)	12.4 (0-108)	7.9 (0-63)	13.78 (0-74)	10.4 (0-71)	13.9 (0-84)	10.5 (1-148)	15.18 (1-54)	8.7 (1-44)

Table 3. Total number of reviews by region

	Midwest		South		Northeast		West		Percent of total	
	Healthgrades	Vitals	Healthgrades	Vitals	Healthgrades	Vitals	Healthgrades	Vitals	Healthgrades	Vitals
4 or less	29	47	35	41	14	33	17	33	22.8	38.8
5 to 10	14	19	34	45	27	26	19	30	22.6	30.2
11 to 20	37	13	39	23	41	25	33	25	36.1	21.7
> 20	10	7	22	21	14	7	32	7	18.8	10.6

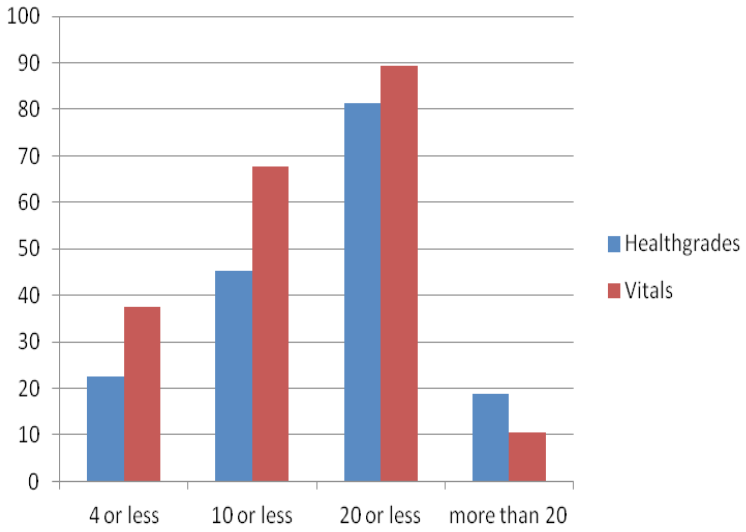

Figure 2. Number of reviews by site.

more than 20 reviews. Searches on Vitals.com revealed that 154 (38.3%) of surgeons had four or less reviews, 274 (68.2%) had 10 or less reviews, 360 (89.6%) had eleven to twenty reviews, and 42 (10.4%) had more than 20 reviews. The details of distribution of reviews along with geographical groupings are given in Tables 2 and 3, and Figure 2.

For the entire group of surgeons evaluated, the average overall score was 8.1 out of 10 points and the average wait time was 18.7 minutes. For the subcategories evaluated, ease of making an appointment was 8.2 out of 10 points, courtesy of the office staff was 8.3 out of 10 points, and bedside manner/listens and answers questions was 8.2 out of 10 points. The details of overall and subcategory scores, as well as the wait times by regions and website are shown in Table 4.

Multivariate data analysis revealed no statistical differences in overall score by region (*P=0.24*) or gender

Table 4. Details of scores by region

	Midwest		South		Northeast		West	
	Healthgrades	Vitals	Healthgrades	Vitals	Healthgrades	Vitals	Healthgrades	Vitals
Overall score	7.9	8.2	8.1	8.16	8.6	8.3	7.75	8.1
Ease of making appointment	8.3	8.4	8.16	8.09	8.4	8.5	7.95	8.29
Staff courtesy	8.4	8.5	8.36	8.45	8.4	8.8	8.06	8.31
Bedside manner	8	7.8	8.25	8.06	8.4	8.3	8.26	8.04
Waiting time	17.1	19.8	20.98	24.25	17.6	19.6	19	20.43

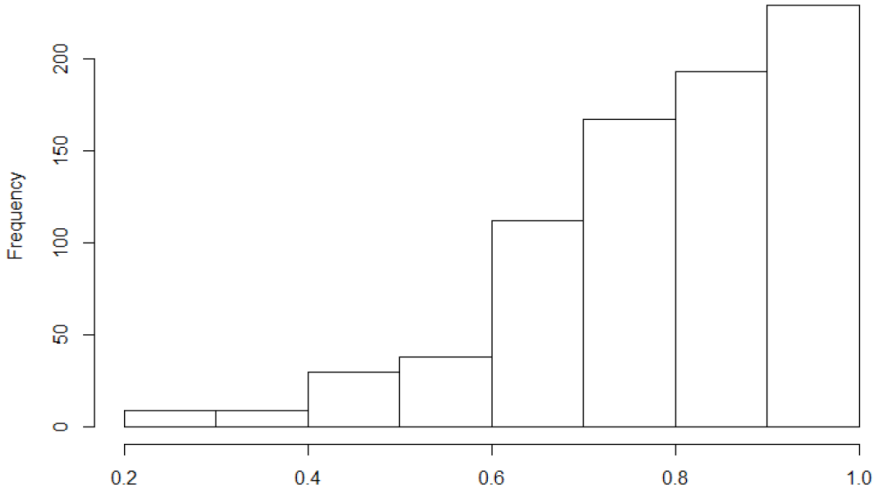

Figure 3. Histogram of responses.

(*P=0.38*). The right shift on the histogram in Figure 3 is indicating that patients were likelier to give positive reviews (*P=0.0001*). Male surgeons had a statistically higher number of reviews than females (*P=0.003*). Increased physician's age negatively correlated with the overall score (*P=0.01*). The ICC between the two websites was 0.42 indicating a moderate agreement between the two websites for overall score. The strongest impact on the overall score was from the bedside manner/listens and answers questions (*P=0.0001*). Staff courtesy (*P=0.0001*) and spending time with the patient (*P=0.0026*) were also significant. Wait time was not associated with a negative score (*P=0.38*).

Discussion

People often use the internet for the purchase of goods and services. Invariably, consumers rely on ratings listed on websites by others who have used or purchased the same products. Until recently, physicians were often chosen based on referrals from their primary care physicians, "word of mouth" recommendations, and insurance participation. The growing popularity of online physician rating websites is reflective of the emergence of internet based doctor reviews, and is becoming an important criterion in the decision making process in the physician selecting process by patients.

It has recently been reported that 65% of Americans are aware of online physician rating websites, 59% of whom believed that information from such websites was either "somewhat" or "very" important (4). While the subjects surveyed felt that word of mouth recommendations and insurance participation was more important, online grading websites played an important role in patients' decision making in choosing their physician.

There are some limitations to our study. First, we only evaluated two websites. While these websites were selected based on popularity and internet traffic data, it is clear there are some other outlets that patients turn to for evaluation or rating of a physician. Second, we evaluated only active members of the ASSH. This data cannot therefore be extrapolated to candidate members or other hand surgeons who do not belong to the ASSH.

Contrary to our initial hypothesis that scores would have a bimodal distribution as patients would evaluate

their physician only if they had a very bad or a very good experience; we found that patients generated mostly positive reviews, with an average overall score of 8.1 out of 10 points. This finding is in line with several other studies examining scores on physician rating websites across a variety of disciplines (3, 5-8). Also, in agreement with our study, evaluation of 2185 reviews of orthopedic surgeons in a different study showed that the scores correlated significantly to the ease of scheduling, the time spent with patient, surgeon proficiency/knowledge, and bedside manner (5). Contrary to the findings of these authors and our own hypothesis, patient wait time did not correlate with the overall score. We did not find any regional differences in overall scores and number of responses.

The inverse relationship between the physician's age and their reviews seems hard to explain. One would expect that older surgeons, by virtue of their experience and stature, would be better at creating a better patient experience and generating positive reviews. It is possible that older physicians are less likely to employ newer, modern, and sometimes trendy techniques such as endoscopy, arthroscopy, and/or limited incision procedures. It may also be that younger physicians have a greater awareness of these online rating sites and are more likely to participate in social media outlets. In addition, surgeons facile with these newer technologies may solicit satisfied or "happy" patients to complete an online survey and raise their scores. Finally, it is possible that less time spent with patients by older physicians, may reflect negatively on their ratings.

In agreement with our hypothesis, we found that most surgeons had a very small number of online reviews. In fact, the vast majority (80-90%) of active members of the ASSH in our study had twenty or less reviews in the two websites we surveyed. This low number of reviews is consistent with a similar study with urologists (6). While it is difficult to determine the number of patients being treated by an "average" hand surgeon, it is clear that the number of patients who submit a review is a small fraction of the total number of patients in a surgeon's practice. Considering the increasing popularity of these websites and their reliance on patients' information, these low numbers are a concern questioning the validity of the scores. In addition, a small number of reviews can heighten to score volatility and a single outlying high or low score can have a significant impact on the average score.

These rating sites have several potential areas of impact in a physicians' practice. First, it is likely that with an increasing popularity, these sites will become a powerful influence in directing patients to a particular doctor's care. Additionally, as outcome and "quality" measures are being considered in physician reimbursement formulas, it is possible that these consumer reviews may become influential in determining physicians' compensation. For example, under the Hospital Inpatient Value-Based Purchasing (HIVBP) program of the Centers for Medicare and Medicaid Services, hospital Medicare reimbursements are being linked to patient satisfaction completed by inpatients (9). While these metrics do not currently apply to outpatient procedures or physicians' compensation, trends in this regard are increasing in popularity. As such, physicians have a vested interest in the legitimacy of the data provided by these websites and other physician rating outlets.

In conclusion, physician rating websites are becoming commonplace and an often used tool for physician selection and evaluation. Patients generated generally positive reviews. The average number of reviews for active members of the ASSH is exceedingly low. These small numbers highlight the problems with the validity of the information and should provide hesitancy on the reliance of the data provided by these websites. While we agree that patients should have a forum to express their opinions and as such are in favor of these websites, we feel that the information contained in them should be viewed with caution. Physicians should be aware of these sites and the information contained within them, and should monitor them for the possibility of negative or biased information.

Each author certifies that he or she has no commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article."

William Kirkpatrick MD
Jack Abboudi MD
Nayoung Kim BS
Juana Medina MD
Mitchell Maltenfort PhD
Daniel Seigerman MD
Kevin Lutsky MD
Pedro K. Beredjiklian MD
Rothman Institute of Orthopedics, Philadelphia, PA, USA

References

1. Lagu T, Hannon NS, Rothberg MB, Lindenauer PK. Patients' evaluations of health care providers in the era of social networking: an analysis of physician-rating websites. J Gen Intern Med. 2010; 25(9):942-6.
2. Emmert M, Meier F. An analysis of online evaluations on a physician rating website: evidence from a German public reporting instrument. J Med Internet Res. 2013; 15(8):e157

3. Emmert M, Meier F, Pisch F. Eight questions about physician-rating websites: a systematic review. J Med Internet Res. 2013; 15(2):e24.
4. Hanauer, DA, Zheng K, Singer DC, Gebremariam A, Davis MM. Public awareness, perception, and use of online physician rating sites. JAMA. 2014; 311(7):734-5.
5. Bakhsh W, Mesfin A. Online ratings of orthopedic surgeons: analysis of 2185 reviews. Am J Orthop. 2014; 43(8):359-63.
6. Ellimoottil C, Hart A, Greco K, Quek ML, Farooq A. Online reviews of 500 urologists. J Urol. 2013; 189(6):2269-73.
7. Kadry B, Chu LF, Kadry B, Gammas D, Macario A. Analysis of 4999 Online Physician Ratings Indicates that Most Patients Give Physicians a Favorable Rating. J Med Internet Res. 2011; 13(4):e95.
8. Sobin L, Goyal P. Trends of online ratings of otolaryngologists: what do your patients really think of you? JAMA Otolaryngol Head Neck Surg. 2014; 140(7):635-8.
9. Menendez ME, Loeffler M, Ring D. Patient Satisfaction in an outpatient hand surgery office: a comparison of english- and spanish-speaking patients. Qual Manag Health Care. 2015; 24(4):183-9.