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Original Research

The Impact of Social Media for Hand Surgeons: A Prevalence and Correlation Study With Online and Academic Reputations

Sameer R. Khawaja, BS, [*] Krishna N. Chopra, MA, [*] Musab Gulzar, BS, [*] Ozair R. Khawaja, HS, [*] Shammah E. Udoudo, BS, [*] Joseph G. Monir, MD, [*] Michael B. Gottschalk, MD, [*] Adrian L. Huang, MD, [†] Nina Suh, MD, [*] Eric R. Wagner, MD, MS [*]

[*] Department of Orthopaedic Surgery, Emory University School of Medicine, Atlanta, GA
[†] Department of Orthopaedic Surgery, University of British Columbia, Vancouver, British Columbia, Canada

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Purpose: This study examines the influence of social media use among orthopedic and plastic-trained hand surgeons on patient-reported ratings online and academic productivity.
Methods: The American Society of Surgery of the Hand directory was queried for actively practicing orthopedic and plastic surgeons with a hand surgery fellowship. Each name was searched on various social media platforms. Average ratings, number of reviews, and number of comments were collected from Healthgrades, Google reviews, and Vitals. H-index was searched on Scopus. A summated social media presence score was calculated to identify the top 20% of social media users in each cohort.
Results: A total of 97 orthopedic and 102 plastic surgeons were included. Overall, plastic surgeons were more active on social media compared to orthopedic surgeons. There was a positive association between having active profiles and Healthgrades ratings. When looking within the subgroups, the top 20% of social media orthopedic users were found to have a significantly higher mean Healthgrades rating and a mean number of comments than the rest of the cohort. On Vitals, the top 20% of social media users had higher mean ratings compared to the remaining 80%. The top 20% of plastics social media users had a significantly higher average Healthgrades rating compared to the rest of the plastics group. On Google reviews, the top 20% also had higher mean ratings, as well as mean number of ratings, compared to the rest of the cohort. Plastic surgeons with a Twitter/X account had a significantly higher h-index than plastic surgeons without a Twitter/X account (14.5 vs 9.2, $P < .05$).
Conclusions: Social media involvement is positively associated with surgeon ratings and the number of reviews and comments on physician rating websites. Using web-based marketing tools is still rare in hand surgery, especially among orthopedic surgeons.
Type of study/level of evidence: Economic/decision analysis IV.

Social media is a valuable tool for professionals to build relationships and network while promoting innovation worldwide.[1] In health care, social media provides an opportunity to strengthen the physician-patient relationship and encourage academic collaboration.[2,3] With a rise in social media users in the United States from 5% to 72% between 2005 and 2021, doctors have begun integrating social media into their practice to connect with patients and colleagues alike.[4–6] Platforms such as Instagram, Twitter/X, LinkedIn, YouTube, and Facebook have established themselves as ways to share information, network with colleagues, and advertise services, especially as we enter the post-COVID-19 era.[6–10] TikTok is the fastest growing and arguably most popular social media site today, with the potential for surgeons to reach millions of prospective patients.[11] Each platform serves a specific role for health experts. Facebook and Instagram can be used to share educational information with patients, whereas YouTube can showcase technique videos.[7,8,12] Platforms such as TikTok, YouTube, and Instagram also use a relatable role model approach—regular content with a health expert presenting information in an easy-

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Corresponding author: Eric R. Wagner, MD, MS, Department of Orthopaedic Surgery, Emory University School of Medicine, 21 Ortho Lane, Atlanta, GA 30329.
E-mail address: eric.r.wagner@emory.edu (E.R. Wagner).

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to-understand and casual manner—to foster familiarity and comfort for patients.[7] Additionally, Twitter/X and LinkedIn encourage the promotion of recent literature, physician engagement, and academic collaboration.[10,13]

Social media use among hand surgeons has yet to be studied extensively. With an increasing demand for elective hand and wrist surgeries, surgeons can use social media as a cost-effective and high-reward method to promote patient recruitment, education, and expectations.[14–16] Varying levels of social media engagement occur among orthopedic and plastics-trained hand surgeons and can impact a patient's choice of surgeon. Physician rating websites (PRWs) such as Healthgrades, Google reviews, and Vitals are also increasingly influential in patients choosing a surgeon. Prospective patients place a high value on reviews left by past and present patients, akin to ratings left for restaurants and hotels.[17] Social media is also an effective tool to advance hand surgery literature through sharing novel studies and promoting discussion among researchers. The h-index value has been established as an objective measure of academic productivity and engagement among researchers.[18–20] The h-index is universally used as a measure of a researcher's impact on their academic field, as higher numbers show exponentially greater degrees of impact on their colleagues' work worldwide. Institutions and national societies use this score when considering academic promotion, awards, grants, and leadership opportunities; however, there remains a gap in the literature regarding the influence of hand surgeons' online presence on patient-reported ratings and research productivity.

This study aimed to investigate the effect of social media presence on patient satisfaction ratings and academic productivity among orthopedic and plastics-trained hand surgeons. We hypothesize a positive association between social media utilization and patient-reported ratings on PRWs, as these platforms allow for familiarity with a patient's surgeon, condition, and treatment options. Our secondary hypothesis is that there will be a positive association between online engagement and h-index, as social media platforms can facilitate sharing of academic literature and foster discussions among clinical researchers.

Methods

This study was exempt from institutional review board approval. The American Society for Surgery of the Hand directory was queried in 2024 for all active members, producing a list of 2,801 orthopedic surgeons and 583 plastic surgeons. Individuals were randomly selected from each group to produce a matched list for comparison. Surgeons practicing outside of the United States, in active-duty military service, still in training (residents and fellows), or retired from practice were excluded from the study, producing a final list of 97 orthopedic and 102 plastics surgeons.

The methods of this study are similar to those described by Kerzner et al,[16] Reddy et al,[20] and Narain et al.[21] Demographic information including sex, region of practice, years since fellowship, practice type, and specialty type was recorded for each surgeon. Private practice was defined as employment in a group practice, hybrid academic/private practice, or hospital. Academic practice was defined as employment by a university with or without an associated professorship.[16]

A web search was performed for each hand surgeon including their full name, degrees, and platform of interest.[16] Public platforms of interest included a practice group or personal website, a ResearchGate profile, and professional social media profiles on LinkedIn, Twitter/X, Instagram, Facebook, TikTok, and YouTube. A practice group website was defined as a webpage on a website created by the surgeon's institution at which they practice. Profiles were noted as active if content had been posted within the past 6 months.[16,21] The number of followers was also recorded for each account. YouTube profiles were only included if created by the individual surgeon. A summated online presence score was calculated by giving one point for having a practice group website, personal website, and profiles on ResearchGate, LinkedIn, Instagram, Facebook, Twitter/X, TikTok, and YouTube. An additional point was awarded for each active social media profile. The h-index for each surgeon was found on Scopus. Each surgeon was then searched on Google reviews, Healthgrades, and Vitals, and their average ratings and total number of ratings and comments were recorded. The total number of comments on Google reviews was not recorded, as this value was not provided by the site. After all data was collected, the summated online presence scores were used to identify the top 20% of social media users overall and within each subgroup.

Statistical analysis was performed on International Business Machine SPSS (v 29.0). Descriptive statistics and frequency counts were used to obtain demographic data of the overall cohort and each subgroup. Student t tests were used to compare average ratings, number of ratings, and number of comments based on having a specific social media profile and whether they were active. In addition, t tests were also used to compare average ratings and engagement through the number of ratings and comments based on residency type, having a practice or personal website, and social media percentile rank (top 20% vs remaining 80%).

Results

Surgeon demographics and social media utilization

Summary demographic characteristics can be found in Table 1. Most surgeons had 5–14 years of practice experience since fellowship (35%, n = 70). The distribution of social media profiles and active usage can be found in Table 2 and Figures 1 and 2.

Effects of individual social media platforms on patient-reported ratings

After examining the association between social media platforms and patient satisfaction, surgeons with a Facebook profile were found to have higher mean ratings and number of ratings on Healthgrades compared to those without a profile, 4.1 ± 0.9 versus 3.8 ± 1.5 ($P = .046$) and 31.6 ± 56.4 versus 20.5 ± 29.0 ($P = .045$), respectively. Having a personalized biography on Healthgrades was also associated with a higher mean number of ratings and comments compared to those with a standard template biography, 36.0 ± 36.8 versus 17.4 ± 34.2 ($P < .001$) and 21.4 ± 28.5 versus 11.4 ± 30.6 ($P = 0.02$), respectively.

Effects of social media use on patient-reported ratings

Among all 199 hand surgeons, 40 individuals comprised the top 20% of social media users, nine of whom completed an orthopedic surgery residency, and 31 of whom completed a plastic surgery residency. The top 20% of social media users completed a similar total number of years since fellowship (15.4 ± 11.9 years) compared to the other 80% (16.8 ± 13.0 years; $P = .31$). On Healthgrades, the top 20% of social media users had a higher mean number of comments than the other 80%, 21.7 ± 52.0 vs 12.2 ± 21.2 ($P = .04$), respectively. There were no significant differences in average ratings, number of ratings, and number of comments on Google reviews and Vitals between the top 20% of social media users and the rest of the overall cohort.

Table 1
A Comparison of Orthopedic Versus Plastic-Trained Surgeons' Demographic Data

Specialty	Orthopedic Surgery	Plastic Surgery	Overall
Number of surgeons, n (%)	97 (48.7%)	102 (51.3%)	199
Sex			
Male, n (%)	77 (79.4%)	88 (86.3%)	165 (82.9%)
Female, n (%)	20 (20.6%)	14 (13.7%)	34 (17.1%)
Region			
Northeast, n (%)	19 (19.6%)	26 (25.5%)	45 (22.6%)
Midwest, n (%)	23 (23.7%)	23 (22.5%)	46 (23.1%)
South, n (%)	29 (29.9%)	25 (24.5%)	54 (27.1%)
West, n (%)	26 (26.8%)	28 (27.5%)	54 (27.1%)
Years since fellowship, mean ± SD	15.2 ± 10.5	17.8 ± 14.6	16.5 ± 12.7
Practice type			
Academic, n (%)	28 (28.9%)	43 (42.2%)	71 (35.7%)
Private, n (%)	69 (71.1%)	59 (57.8%)	128 (64.3%)

Table 2
A Comparison of Orthopedic Versus Plastic-Trained Surgeons' Online Presence

Specialty	Orthopedic Surgery	Plastic Surgery	Overall
H-index, mean ± SD	4.9 ± 6.2	9.8 ± 9.7*	7.4 ± 8.5
Group practice website, n (%)	93 (95.9%)*	81 (79.4%)	174 (87.4%)
Personal website, n (%)	11 (11.3%)	16 (15.7%)	27 (13.6%)
ResearchGate profile, n (%)	14 (14.4%)	27 (26.5%)†	41 (27.1%)
Social media presence			
LinkedIn profile, n (%)	55 (56.7%)	62 (60.8%)	117 (58.8%)
Instagram profile, n (%)	4 (4.1%)	24 (23.5%)*	28 (14.1%)
Instagram followers, median	313	596	401
Facebook profile, n (%)	9 (9.3%)	27 (26.5%)*	36 (18.1%)
Facebook followers, median	223	177	190
Twitter/X profile, n (%)	7 (7.2%)	11 (10.8%)	18 (9.1%)
Twitter/X followers, median	69	144	117.5
YouTube profile, n (%)	4 (4.1%)	6 (5.9%)	10 (5.0%)
TikTok profile, n (%)	1 (1.0%)	5 (4.9%)	6 (3.0%)
Summated social media score, mean ± SD	2.1 ± 1.4	2.9 ± 2.4†	2.5 ± 2.0

* $P < .001$.
† $P < .05$.

Effects of social media use on h-index

The top 20% of social media users overall had a higher mean h-index of 10.0 ± 8.9, compared to 6.7 ± 8.3 for the rest of the cohort ($P = .01$). Hand surgeons in an academic practice had a higher median h-index of 11.9 compared to hand surgeons in a private practice with a median h-index of 4.9. The h-indices were also higher among surgeons with Twitter/X (10.9 ± 9.7 vs 7.1 ± 8.4; $P = .03$), Instagram (9.8 ± 7.6 vs 7.0 ± 8.6; $P = .04$), or ResearchGate (11.4 ± 8.9 vs 6.4 ± 8.1; $P < .001$) profiles. There were three active Twitter/X users who had a mean h-index of 20.7 ± 13.6, compared to those without an active Twitter/X profile who had a mean h-index of 9.0 ± 9.2 ($P = .02$). A positive association was found between h-index and the number of followers on Facebook ($P = .01$).

Orthopedic subgroup

Among the orthopedics-trained cohort, the top 20% of social media users were found to have significantly higher mean ratings of 4.7 ± 0.5 ($P < .001$) and mean number of comments (34.6 ± 70.1, $P = .04$) on Healthgrades compared to average ratings of 4.5 ± 0.5 and number of comments of 14.7 ± 22.5 for the rest of the cohort. On Vitals, the top 20% of social media users had a higher mean rating of 4.8 ± 0.5, compared to 4.3 ± 0.7 for the rest of the cohort ($P < .001$). Orthopedic surgeons from academic institutions were found to have a higher median h-index of 4.5, compared to private practice surgeons with a median h-index of 3.0.

Plastics subgroup

Within the plastics-trained cohort, the top 20% of social media users had a significantly higher average Healthgrades rating of 4.6 ± 0.5 ($P < .001$) compared to 4.3 ± 0.6 for the rest of the cohort. On Google reviews, the top 20% also had a higher mean rating of 4.9 ± 0.4 ($P = .003$) and mean number of reviews of 20.2 ± 29.3 ($P = .03$) compared to the rest of the cohort with average ratings of 4.6 ± 1.6 and number of reviews, 8.5 ± 19.7. Academic-based plastic surgeons had a higher median h-index than private surgeons, 12.0 versus 5.0, respectively. Plastic surgeons with Twitter/X accounts also had a significantly higher h-index (14.5 ± 10.7) than plastic surgeons without a Twitter/X account (9.2 ± 9.5; $P = .046$).

Subgroup comparisons

When comparing the top 20% of social media users from both specialties, the plastics cohort had a mean summated social media score of 6.7 ± 2.3, compared to 4.2 ± 1.5 for the orthopedics cohort ($P < .001$). The top 20% in the orthopedics cohort had a higher mean number of ratings on Healthgrades (45.4 ± 74.1) than the top 20% in the plastics cohort (13.0 ± 17.2; $P = .03$). The plastic surgery cohort also had a higher percentage of surgeons with Facebook ($P < .001$), Instagram ($P < .001$), and ResearchGate ($P < .05$) profiles than the orthopedic surgery cohort (Table 2; Fig. 2). The top 20% of plastic-trained surgeons had a higher mean h-index of 13.7 ± 9.0, compared to the top 20% of orthopedic-trained surgeons with a mean h-index of 6.1 ± 6.1 ($P = .002$).

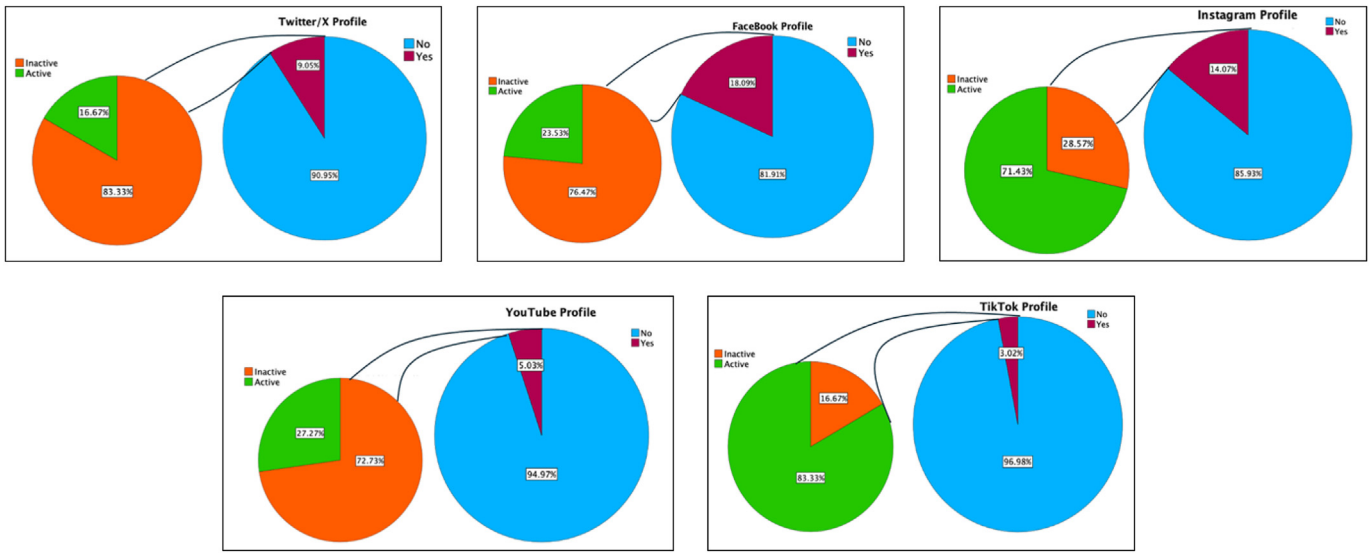

Figure 1. Chart showing proportion of hand surgeons on each social media platform.

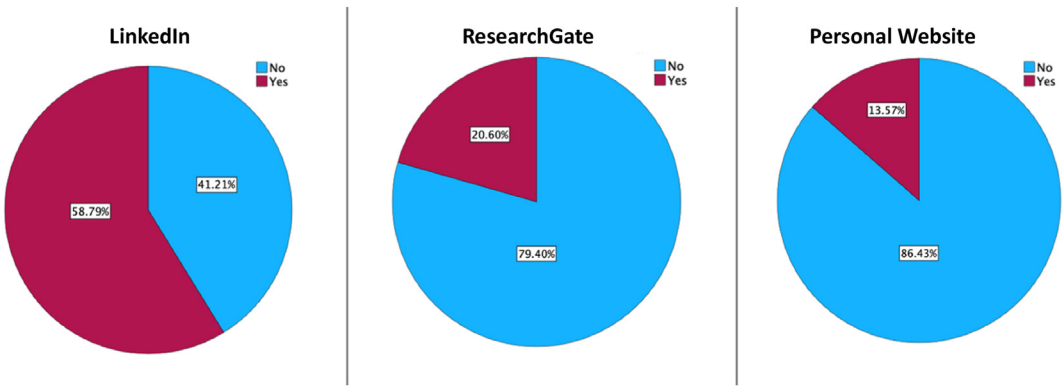

Figure 2. Proportion of hand surgeons on professional websites and whether they have a personal website.

Discussion

The growth of social media has created an avenue for hand surgeons to improve patient satisfaction and recruitment while advancing literature in hand surgery. Although some studies have examined social media use among hand surgeons, few have studied the effect of social media usage on patient ratings, academic productivity, and overall engagement.[19,20] Factors such as online ratings, reviews, and overall reputation play a critical role in how patients select their surgeons.[22,23] The impact of a hand surgeon's research and general academic productivity is also an important contribution to their overall reputation. We aimed to better understand the influence of social media utilization on patient-reported ratings and academic standing.

Social media serves as a way for surgeons to engage with their current and prospective patients, paving the way for an increase in patient ratings and engagement. The top 20% of overall social media users were found to have higher patient-reported ratings on Healthgrades compared to their counterparts who were not as active online. Interestingly, when the group was separated by specialty, the top 20% of social media users in both the orthopedic and plastic surgery cohorts were found to have higher patient-reported ratings and increased engagement on various PRWs compared to those with less social media use. This increase in patient satisfaction can be attributed to increased exposure to the surgeon and their practice, strengthening the patient-physician relationship by humanizing the surgeon and adapting a relatable role model approach.[2,12] Facebook, an older and established social media platform, was specifically found to be associated with increased patient-reported ratings and number of ratings. Facebook has a higher percentage of older users compared to other platforms, which aligns with the typical hand surgery patient population that suffers from chronic conditions, such as carpal tunnel syndrome, arthritis, and other tendinopathies.[24–26] Platforms such as Facebook also allow hand surgeons to promote patient education through multimedia communication to familiarize current and prospective patients with their conditions and possible treatments.[5,27] To our knowledge, we are the first to examine the use of TikTok by hand surgeons, finding only 3% of our overall cohort with TikTok profiles. Surprisingly, those that were active had accounts with large numbers of followers reaching thousands of viewers, showing the potential to expand one's online presence with TikTok. We suspect the number of hand surgeons on TikTok will grow in the subsequent years to match the platform's increasing popularity. Finally, the association between increased social media usage and patient ratings may also reflect surgeons actively engaged in improving their online reputation through multiple modalities.

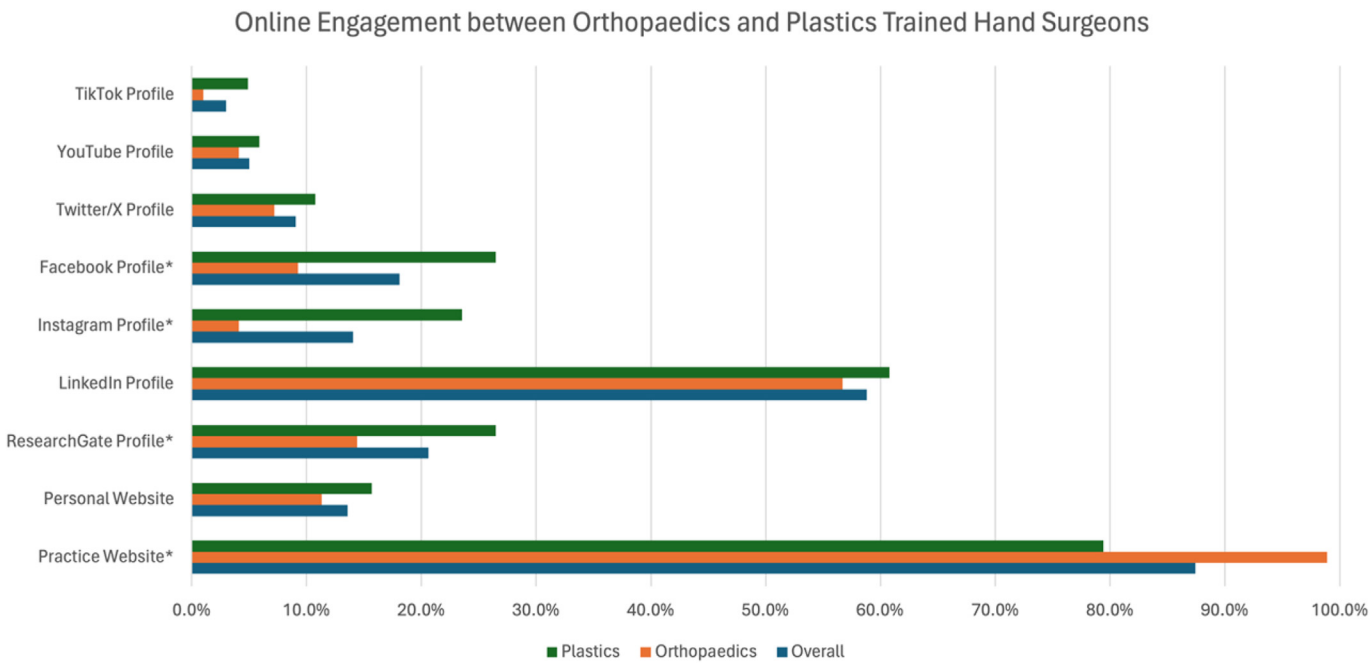

Figure 3. Bar graph showing proportion of hand surgeons on each social media platform, separated by residency training. *Significant difference between groups ($P < .05$).

Although one study found a relationship between social media posts and academic citations, our study is the first, to our knowledge, to examine the association between social media usage and h-index.[28] Our study found a significantly higher mean h-index among the top 20% of social media users; specifically, Twitter/X, Instagram, and ResearchGate users had significantly higher mean h-indices than nonusers. Active Twitter/X usage was also associated with a higher h-index. Twitter/X, Instagram, and ResearchGate provide a low-demand and high-reward way to spread information and promote discussion, a feature lacking among online journals.[16] Social media creates a space for open discussion that promotes exposure of research articles and subsequent citations in published papers, increasing an author's h-index.[29]

This study also examined differences in social media usage between orthopedic and plastic surgery-trained hand surgeons. We found a significantly higher proportion of plastic surgeons using social media compared to orthopedic surgeons (Fig. 3). The top 20% of plastic surgery social media users also had a significantly higher summated social media score compared to the top 20% of orthopedic surgery social media users. These disparities may be attributed to the younger patient population of plastic surgeons and differences in residency training and work cultures between the two specialties.[30] Although social media usage is still greatly underused among hand surgeons, the top 20% of social media users in both subgroups demonstrated increased patient satisfaction and engagement on PRWs compared to their less active colleagues, indicating an area of improvement for surgeons who have yet to establish themselves online. Recent studies have reported that 60% of patients choose a physician based on good online ratings, whereas 61% avoid a doctor for poor ratings.[22,23] Some studies have also found that close to 50% of patients preferred their orthopedic surgeon to be in contact with them online.[31] Therefore, even small differences in physician ratings can sway patient recruitment and the overall success of a surgeon.

Some studies have found an overall underuse of social media by both orthopedic and plastic surgery-trained hand surgeons.[19,20,32] Most recently, Garofolo et al[32] described social media use among hand surgeons in 2020 and found that 26% of hand surgeons had a YouTube page, 22% had a LinkedIn profile, 10% were on Facebook, 2% were on Twitter/X, and no one was on Instagram.[32] In the years since their study, we have found a growth in social media use across all social media platforms, except YouTube (Fig. 1). This discrepancy may be due to differences in what is considered a personal versus institutional YouTube page.[6] We specifically noted a significant increase in Twitter/X users (2% to 9%) and Instagram users (0% to 14%). This growth parallels an exponential increase in Instagram and Twitter/X usage (155% and 43%, respectively) by orthopedic surgery residency programs in the past several years.[33] This positive trend is a continued effect of COVID-19, during which social media platforms, particularly Instagram and Twitter/X, established themselves as a primary resource for socializing, networking, and advertising.[6]

Although this study has thoroughly examined the relationship between social media use, patient ratings, and academic presence, there are limitations that must be considered. Younger physicians tend to gravitate toward social media compared to colleagues toward the end of their careers. Likewise, the association between online presence and patient outcomes is uncertain.[1,34] Certain academic institutions may also discourage or prohibit surgeons from having personal websites or social media accounts. We believe that with a larger sample size, several associations that approached statistical significance would reach that threshold. Any online user can post ratings; thus, we cannot be certain they are actual patients. We must also consider that patients who write reviews may not be the same patients who are interacting with their surgeons on social media.[16] In many cases, patients are more likely to leave highly favorable or unfavorable ratings on PRWs. Furthermore, PRWs provide only a brief overview of a hand surgeon's practice and capability and may not truly reflect a patient's overall experience. One final limitation is that reviews left on institutional or private websites were not included to standardize comparisons, possibly leaving several hundreds of reviews unaccounted.

Social media has established itself as a timely and cost-effective tool for hand surgeons to engage with patients and colleagues. A

strong online presence has a positive association with patient ratings and engagement on PRWs, demonstrating a positive effect on overall patient experience and satisfaction. Platforms like Instagram and Twitter/X may be effective ways to allow hand surgeons to share and discuss their research findings. Active social media participation continues to be underused by hand surgeons, but it has seen a growth in the post-COVID-19 era. These results can serve as a guide for how hand surgeons can use social media to help achieve their clinical and academic goals with the potential to increase engagement with patients and colleagues alike.

Conflicts of Interest

No benefits in any form have been received or will be received related directly to this article.

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