

Patient Perception of Social Media Use by Orthopaedic Surgeons

A Pilot Study

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Background: Social media (SM) use by orthopaedic surgeons is becoming increasingly common; nonetheless, it needs to be clarified how patients perceive the content posted by physicians.

Purpose: To characterize SM content posted by orthopaedic surgeons while investigating patient perceptions of this content and how it may influence their health care decisions.

Study Design: Cross-sectional study.

Methods: Posts on SM outlets by orthopaedic surgeons were reviewed and categorized. A survey to assess patient perception of these categories was administered between December 2021 and February 2022 in the clinics of 3 orthopaedic surgeons. Survey results were analyzed for differences in patient SM use and perception of SM content types.

Results: There were 250 completed surveys. SM use was high among all age groups; however, the 18 to 24 years (87.1%) and 25 to 34 years (86.4%) age groups were more likely than older age groups to report daily use ($P = .002$). Overall, 17% of patients reported using SM to see information about their health care at least once per month, 21% reported reviewing the SM account of a physician at least once per month, 19% reported that they were likely or very likely to view the SM account of their physician, and 23% reported that SM content was likely or very likely to influence which physician they see. Patients held the most consistently positive view of posts that educated patients, discussed sports team coverage, and provided patient testimonials. Patients had consistently neutral views of posts educating colleagues, discussing presentations at national meetings, displaying aspects of surgeons' personal lives, and supporting marginalized groups. Several post categories elicited highly polarized responses—including those discussing research publications and showing surgical techniques or pictures/videos taken during surgery. Respondents had a consistently negative response to posts making political statements.

Conclusion: SM is likely a useful tool to help physicians interact with patients. Physicians who wish to interact with patients should consider posting content viewed most positively—including posts educating patients, discussing sports team coverage, and providing patient testimonials. Content that is viewed less favorably should be posted sparingly or with a sensitive tag.

Keywords: economic and decision analysis; education; practice building; practice management; social media

Social media (SM) use has increased rapidly over the past decade, with most adults consuming SM content of some kind.¹⁷ Regarding SM in health care, patients and physicians have increased their production and consumption of health care-related content on SM.^{4,6,14,24,26} The

prevalence of SM use in health care is challenging to quantify; nevertheless, a 2021 review article⁸ provided an excellent overview of the wide-ranging strategies that health care providers have used to incorporate SM into their practice. With this increased use, SM-related publications have also increased rapidly. Available studies have focused on several different aspects of the patient/physician relationship in the framework of SM. Still, limited literature is available on examining patient perception of SM content

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created by physicians.⁸ Most studies in this area examined how SM influences patient perception of certain procedures^{11,19,21}; nonetheless, only 1 study sought to understand how patients view SM as a tool used by medical professionals.¹⁶ Medical school and residency graduates poised to enter the physician workforce in the coming years represent the first generation raised entirely within the internet era, having SM available throughout their education and training. Further understanding how patients and physicians interact online through SM—particularly from the patient's viewpoint—will be an important step in guiding the effective use of SM as both a marketing tool and a patient care tool.

Patient perception of SM use by orthopaedic surgeons remains unclear. This information would improve the understanding of how patients use and view SM in terms of their health care and provide useful information to physicians interested in incorporating SM into their practice. Therefore, this study aimed to characterize SM content posted by orthopaedic surgeons and determine how patients perceive the SM use of their orthopaedic surgeons.

METHODS

Institutional review board approval was deemed exempt for this study. Posts on the active professional Instagram and Twitter accounts of 20 orthopaedic surgeons were reviewed by 2 independent reviewers (A.J.J., B.R.W.) and assigned to descriptive categories to gain a broad understanding of the types of content currently being produced. Accounts were identified by searching for orthopaedic surgeons on Instagram and selecting the first 20 professional orthopaedic surgeon accounts with at least 500 followers and at least 1 post in the month before the search. Fifteen of these surgeons also had active Twitter accounts that were reviewed. This method of searching was not intended to capture every possible type of content produced by orthopaedic surgeons but rather to provide a broad sample of accounts that patients may encounter via a similar search. Reviewing 20 accounts with at least 500 followers and recent posts would achieve this goal while focusing on active

accounts. Instagram and Twitter were utilized because these are the 2 platforms on which we are most active, and we felt that posts from these platforms would provide a broad overview of the content created by orthopaedic surgeons.

After reviewing the SM accounts, we identified the following frequently posted content categories: patient education; colleague education; research publications; academic presentations; personal life—including family, pets, and recreational activities; sports team coverage; patient testimonials; support for diversity of marginalized groups; and political statements. A survey was written by the same reviewers (A.J.J., B.R.W.) and examined by the entire research team to assess patient perception of these categories and provide patient characteristics and levels of patient SM use (see the Supplemental Material, available separately). The survey, which required a mean of 5.5 minutes to complete, was administered to patients in the clinics of 3 separate board-certified sports medicine orthopaedic surgeons via the quick response code links accessed on patients' cell phones or tablets. A total of 250 surveys were completed between December 2021 and February 2022.

Survey results were analyzed for differences in SM use based on patient characteristics (age, sex, occupation, level of education) and which surgeon the patient saw that day using multinomial logistic regression. Using a 5-point Likert scale, patients were asked to respond to the survey to determine which SM content categories were perceived positively, neutrally, or negatively (1 = *strongly disagree*; 2 = *disagree*; 3 = *neither agree nor disagree*; 4 = *agree*; and 5 = *strongly agree*) to statements such as “*If I were to view the social media account of a physician/surgeon, I would enjoy posts designed to educate patients regarding common sports medicine injuries such as sprained ankles, ligament tears, or arthritis.*” Patient responses regarding the SM content categories were analyzed using the response median. The interquartile range (IQR) was also calculated to judge whether the responses were polarized or more consistent across the groups. A lower IQR indicated less variability in responses. The IQR was calculated using Microsoft Excel 365.

RESULTS

A total of 250 patients in the clinics of the 3 senior surgeons (R.M.F., J.T.B., E.C.M.) completed patient surveys

[§]References 3, 5, 7, 9-11, 15, 18, 20, 22, 23, 27

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Ethical approval was not sought for the present study.

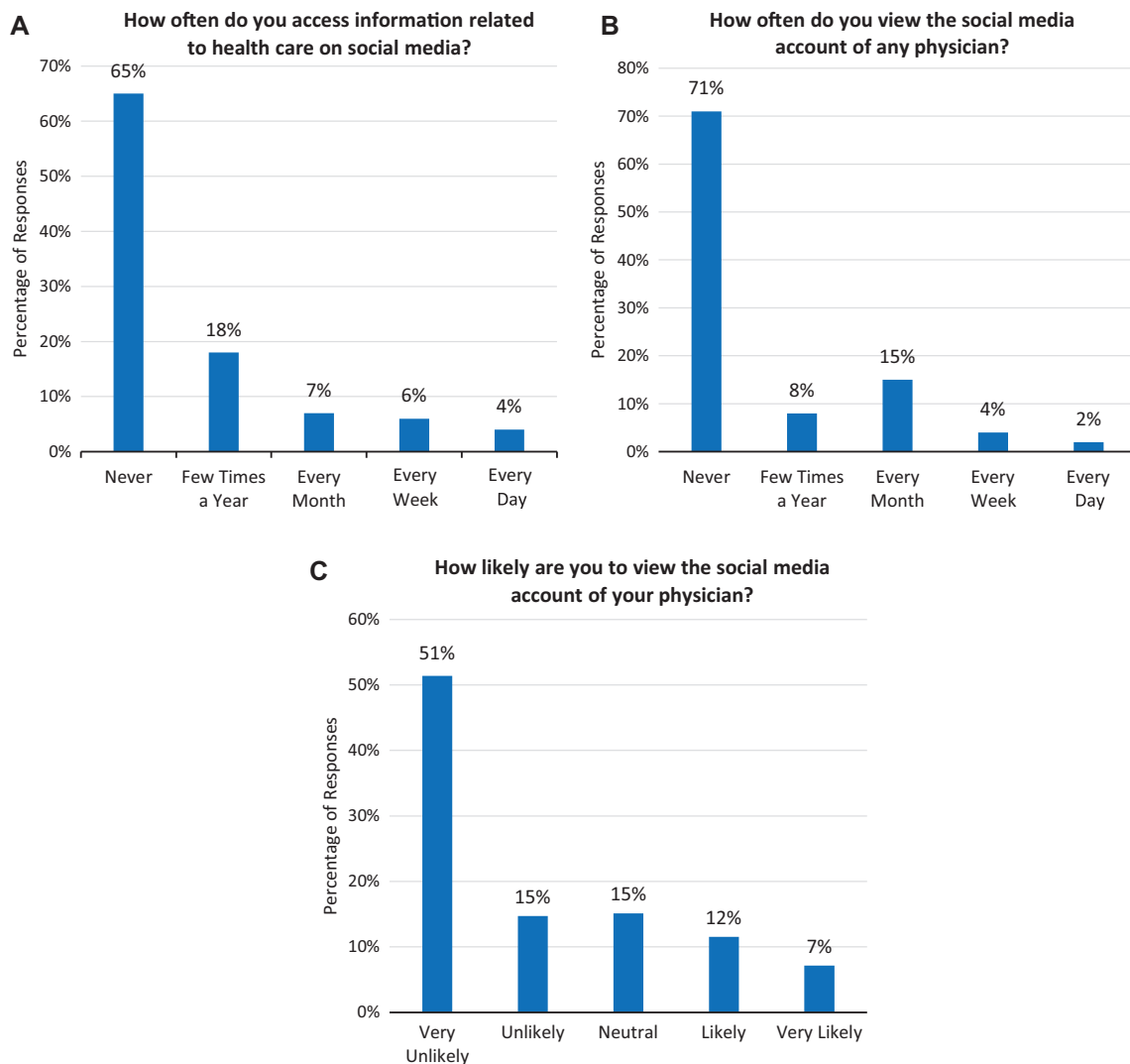


Figure 1. Summary of survey responses showing (A) the frequency of social media use by patients to access information regarding their health care, (B) the frequency with which respondents view the social media accounts of any physician, and (C) the likelihood of respondents to view the social media account of a physician who is providing them with medical care.

between December 2021 and February 2022 for this pilot study. Survey respondents identified as women (51.2%), men (48.4%), and nonbinary (0.4%). No significant differences were observed between patient-reported sex and SM use. The most common age group for respondents was the 25 to 34 years age group (26.4%), followed by the 35 to 44 (23.2%), 45 to 54 (16%), 55 to 64 (16%), 18 to 24 (12.4%), and 65 + years age groups (6%). Regarding education level, 81.2% of patients had completed a bachelor's degree or higher. There were no significant differences in SM use based on education level or occupation.

Overall, 65.6% of patients stated that they used SM daily, 12.4% every week, 7.2% monthly, 4.8% several times yearly, and 10% never used SM. Instagram was the most used platform in patients 18 to 24 and 25 to 34 years age groups, while Facebook was most used in the 4 older age groups. Multinomial logistic regression results showed that

patients in the 18 to 24 and 25 to 34 years age groups were significantly more likely than older age groups to report daily SM usage, with 87.1% and 86.4% reporting everyday use, respectively ($P = .002$). However, SM use was common at all ages, with 78% of all patients and at least 62.5% of patients in each age group reporting weekly or daily usage. There were no statistically significant differences in SM use among the patients of the 3 different surgeons.

Although most patients infrequently used SM to view information about their health care or physician, between 17% and 23% of patients used SM to view information about their health care or about a physician at least once per month (Figure 1A). Moreover, 21% of respondents said they reviewed the SM account of a physician or surgeon at least once per month (Figure 1B). Also, 19% of patients said they were likely or very likely to check up on the SM account of the physician or surgeon who was

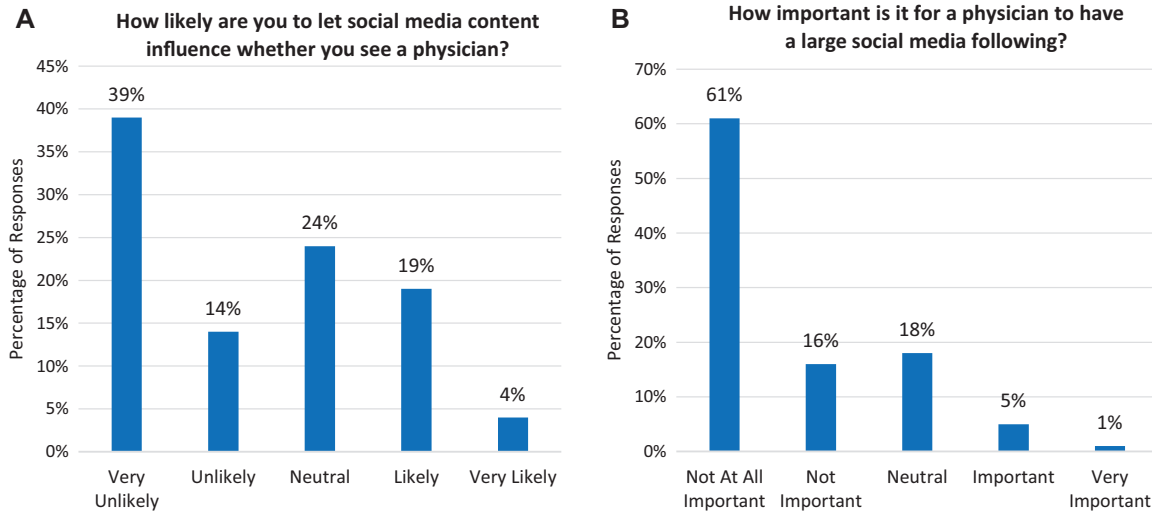


Figure 2. Summary of survey responses showing (A) the likelihood of respondents allowing content posted on social media to influence their decision whether to see a physician and (B) the importance of a physician having a large number of social media followers.

TABLE 1
Patient Perceptions of Physicians’ Social Media Content by Category

Positive Response	Neutral Response	Polarized Response	Negative Response
<ul style="list-style-type: none"> • Patient education • Team/athlete coverage • Patient testimonials 	<ul style="list-style-type: none"> • Colleague education • Academic presentations • Personal life • Case-based imaging • Support for diversity or marginalized groups 	<ul style="list-style-type: none"> • Research publications • Surgical technique picture/video • Operating room picture/video • Pictures from patients’ surgery 	<ul style="list-style-type: none"> • Political positions

treating them (Figure 1C). In each instance, there were no statistically significant differences between patients seeing different surgeons.

When asked how likely it would be for content posted on SM to influence whether a patient sought treatment from a physician or surgeon, 23% responded “likely” or “very likely” (Figure 2A). When asked whether it was important for a physician or a surgeon to have many followers on SM, only 6% of respondents felt it was “important” or “very important” (Figure 2B). No statistically significant differences were found in patient perception in the number of followers between patients of the 3 surgeons.

Regarding SM content categories posted by physicians, patients held the most consistently positive view of posts centered on educating patients (median, 4 [positive]; IQR, 1), discussing sports team coverage (median, 4 [positive]; IQR, 1), and providing patient testimonials (median, 4 [positive]; IQR, 1). Patients held consistently neutral views of posts educating colleagues (median, 3; IQR, 1), discussing presentations at national meetings (median, 3; IQR, 1), displaying aspects of the surgeon’s personal life (median, 3; IQR, 1), cased-based imaging discussions (median, 3; IQR, 1), and supporting diversity or marginalized groups (median, 3; IQR, 1). Several posts elicited polarized responses, including those discussing research publications

(median, 3; IQR, 2), showing surgical techniques (median, 3; IQR, 2), showing a surgeon operating (median, 3; IQR, 2), and showing pictures from a patient’s surgery (median, 3; IQR, 2). Respondents had a consistently negative response to posts in which physicians voice their political positions (median, 4 [negative]; IQR, 1) (Table 1).

DISCUSSION

Based on the results of this study, certain types of content posted by physicians may be more effective in driving patient engagement on SM, while other types of content may elicit variable reactions from patients and should be posted carefully. Physicians who focus on SM posts pertaining to patient education and patient testimonials are likely to drive more engagement with patients. Moreover, sports medicine surgeons wishing to drive patient engagement should post frequently about the teams that they cover. We recommend that physicians with patient-focused accounts carefully consider content created in the operating room (surgical techniques, pictures during surgery) before posting, as these categories are more likely to be viewed negatively by some patients. If orthopaedic surgeons do wish to post this type of content, we recommend using

sensitive tags (a feature that provides users with a warning and an option whether to view a particular piece of content) or other strategies that allow patients to avoid viewing this material against their will while using SM applications.

The results of this study supported the use of SM by orthopaedic surgeons who wish to interact with patients, as roughly 1 in 5 patients access information regarding their health care at least once a month. Although these results did not directly demonstrate that SM use will help physicians build a busier practice, we believe that the addition of SM to a physician's broader, more traditional marketing strategy may contribute to this goal. SM is not likely to replace other proven practice building methods—including family/friend recommendations, relationship building with referring colleagues, paid advertisements, and community events. However, in many saturated markets, targeted SM interaction by physicians with the patients who use SM for health care may provide a competitive advantage in gaining market share over physicians who do not. Moreover, respondents placed low importance on the number of SM followers, indicating that even surgeons with few followers may still benefit from interactions with patients in their local area.

Aside from its potential role in building a practice, the use of SM by physicians has other possible benefits. The prevalence of misleading health information online is a growing problem that physicians must consider during discussions with patients.^{2,12,25} There is no verification of expertise necessary before being able to post health care-related content online. Patients increasingly struggle to differentiate between evidence-based recommendations and pseudoscience online. The results of this survey show that SM content aimed at providing patient education is viewed positively. Physicians who post patient education content on SM may increase their engagement with patients; nonetheless, they may also help prevent patients from following recommendations from other content creators who post misleading or poorly informed health-related content.

Respondents to this survey of all age groups used SM to access information regarding their health care at a similar rate, with no statistically significant differences between age groups. There was variation in which SM platform was used most often between age groups, with younger patients aged 18 to 34 years reporting Instagram as their most frequently used platform while all age groups >34 years reported using Facebook. These findings are consistent with previously published data.¹ Physicians with a particular target audience should keep this in mind. For example, a sports medicine surgeon may prefer to use SM to reach a younger, more athletic population, while an arthroplasty surgeon may prefer to reach an older population, who is more likely to undergo an arthroplasty procedure. This point is further emphasized by a recent study showing that only 9% of professional team physicians have an Instagram account, and professional team physicians use LinkedIn more than other SM platforms.²² The most popular SM platforms and technologies are certain to change over time, and surgeons must be ready to adapt as changes occur. Physicians interested in incorporating SM into their practice should also devise strategies to

increase their interaction with patients. Some possible methods include posting content that patients are more likely to view favorably, sharing interactions with other SM accounts, coordinating SM posts with sports teams or organizations a physician works with, or requesting that happy patients create SM posts about their physician.

We have yet to be aware of any previous studies focused on patient perceptions of SM use by orthopaedic physicians. Previous studies have focused more on physician factors correlated with SM usage and the effects they may have on practice building. Previous studies have shown that SM presence is correlated with more total reviews online, and some studies have shown a correlation with higher online ratings.^{20,13,21} Another study showed that fellowship training in sports medicine is a significant predictor of sports medicine physician SM presence.¹³ Sports league affiliation, practice setting, and geographic location have shown no correlation to SM presence.¹³

Limitations

There are several limitations to this study. First, the method used to identify SM accounts to review was broad and likely influenced by Instagram's algorithm linked to the account used to perform the search. However, we believe that this method achieved the goal of broadly reviewing accounts that a patient may find via a similar search. Second, the number of survey responses in this pilot study may have been too small, and the survey questions too broad to identify differences in patient SM use between the surgeons with varying levels of SM activity. We plan to complete a larger follow-up study with edited survey questions specifically asking whether patients chose to visit that particular physician based on SM posts.

All patients who visited the clinics during the study were approached to complete the survey. It is likely that less technology-savvy patients may have declined to complete the survey, which may have affected the applicability of the results to these patients. Based on the results, there were respondents who did not use SM for health care but who still answered the survey. It will be interesting to further analyze the responses of just those who do use SM for health care in future studies. Another possible source of bias is that 81% of respondents held a bachelor's degree or higher, including additional respondents across various levels of education or socioeconomic status. Future studies will need to improve the generalizability of the information.

Finally, most of our survey questions related to SM content categories required responses to a positively phrased question (ie, posts that respondents would enjoy seeing), while 2 of the questions required responses to a negatively phrased question (ie, posts that respondents would *not* enjoy seeing). The negatively phrased questions were included to avoid decision fatigue among respondents. Responses to these 2 questions resulted in polarized responses (content related to pictures/videos of how to perform a surgery) and negative responses (content related to political statements). The negative phrasing of these questions may have contributed to these responses.

Additional research in this growing area is needed to help physicians understand how their patients use SM in relation to their health and create SM content that aligns well with their patients' goals in using SM. At the time of this publication, 2 additional studies are ongoing—including a survey of physicians and other health care providers regarding which SM content may be most effective to post on accounts and a multicenter international survey of patients, similar to the survey conducted in this pilot study.

CONCLUSION

SM is likely a useful tool to help physicians interact with patients. Physicians who wish to interact with patients should consider posting content viewed most positively—including posts educating patients, discussing sports team coverage, and providing patient testimonials. Less favorably viewed content should be posted sparingly or with a sensitive tag. Further study in this field is necessary to help guide productive interactions between patients and physicians on SM.

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