Original Article

Social Media Use Among Arthroscopic and Orthopaedic Sports Medicine Specialists Varies by Subspeciality

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Purpose: To evaluate active social media use among members of the Arthroscopy Association of North America (AANA) and investigate differences in social media use based on joint-specific subspecialization. **Methods:** The AANA membership directory was queried to identify all active, residency-trained orthopaedic surgeons within the United States. Sex, practice location, and academic degrees earned were recorded. Google searches were conducted to find professional Facebook, Twitter, Instagram, LinkedIn, and YouTube accounts along with institutional and personal websites. The primary outcome was the Social Media Index (SMI) score, an aggregate measure of social media use across key platforms. A Poisson regression model was constructed to compare SMI scores across joint-specific subspecializations: knee, hip, shoulder, elbow, foot & ankle, and wrist. Specialization in the treatment of each joint was collected using binary indicator variables. Since surgeons were specialized in multiple groups, comparisons were made between those who do and do not treat each joint. **Results:** In total, 2,573 surgeons within the United States met the inclusion criteria. 64.7% had ownership of at least 1 active account, with an average SMI score of 2.29 ± 1.59. Western practicing surgeons had a significantly greater presence on at least 1 website than those in the Northeast ($P = .003$, $P < .001$) and South ($P = .005$, $P = .002$). Social media use by knee, hip, shoulder, and elbow surgeons was greater relative to those who did not treat those respective joints ($P < .001$ for all). Poisson regression analysis demonstrated that knee, shoulder, or wrist specialization was a significant positive predictor of a greater SMI score ($P \leq .001$ for all). Foot & ankle specialization was a negative predictor ($P < .001$), whereas hip ($P = .125$) and elbow ($P = .077$) were not significant predictors. **Conclusions:** Social media use widely varies across joint subspecialties within orthopaedic sports medicine. Knee and shoulder surgeons had a greater social media use than their counterparts, whereas foot & ankle surgeons had the lowest social media use. **Clinical Relevance:** Social media is a vital source of information for both patients and surgeons, providing a means for marketing, networking, and education. It is important to identify variations in social media use by orthopaedic surgeons by subspecialty and explore the differences.

In the current environment, social media is the predominant way of disseminating information and fostering interactions, with hundreds of millions of individuals using platforms such as Facebook, Twitter, and YouTube daily.[1] Within medicine, social media provides an easily accessible platform for physicians to

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market themselves directly to patients while simultaneously providing patients the opportunity to learn about pathology and potential treatment options before meeting with a provider.[2] As patients frequently research their symptoms or diagnoses online and search for clinicians who can provide the necessary treatments,[3] the content of one's social media presence and the number of platforms on which a physician has an active presence may have implications for practice volume and reputation. Within the orthopaedic surgery specifically, the use of social networking sites has been demonstrated to influence the surgeon selection process in more than one-half of orthopaedic patients.[1]

Given the importance of social media in modern physician marketing and patient recruitment, recent literature has sought to better understand current social media use among orthopaedic surgeons. Earp et al.[4] reported that more than 90% of surgeons have at least one online profile. By evaluating the social media use in various subspecialty societies, differences in use have been observed across subspecialties,[5-8] in addition to individual account activity.[9] Although previous studies have investigated social media use in this manner, the social media use among surgeons from a single, interdisciplinary orthopaedic organization, such as the Arthroscopy Association of North America (AANA), is unknown. Analyses such as these provide direct comparisons between individuals in distinct fields of practice.

AANA is recognized as being dedicated to advancing the art and science of arthroscopy and minimally invasive surgery.[10] Their educational impact spans a multitude of anatomic regions of subspecialization within orthopaedic sports medicine, including the treatment of the knee, shoulder, elbow, wrist, foot & ankle, and shoulder. The purposes of the current study were to evaluate active social media use among members of the AANA and investigate differences in social media use based on joint-specific subspecialization. The authors hypothesized that the use of social media platforms would vary for orthopaedic sports medicine surgeons significantly across joint specializations.

Methods

Physician Selection

This observational study was exempt from institutional review board approval at our institution. The AANA membership directory was queried on January 1, 2022, yielding a list of 2,894 members. Current orthopaedic fellows were excluded from the analysis, as they represent a collection of surgeons currently in training. Candidate members who were unable to be locate current practice location, retired, deceased, or practicing outside of the United States were excluded.

Social Media Presence

Sequential Google searches were performed using techniques similar to those described in previous literature.[9,11,12] Each member was searched as follows: "[first name] [last name] [medical degree] [social media platform]." If the surgeon was unable to be located via the first search, their medical degree was removed from the search string, and the term "orthopaedics" was added to the query. The first 20 results from the search were reviewed to identify ownership of a professional Facebook, LinkedIn, YouTube, Twitter, Instagram, personal website, and institutional website.

A member was considered to have a professional social media profile if it was deemed to represent that

Table 1. Social Media and Website Inclusion Criteria

Social Media Platform and Website Type	Inclusion Criteria
Facebook	Orthopaedist could be verified
	Account is public
	Professional, orthopaedic-related content posted within 6 months of data collection
LinkedIn	Orthopaedist could be verified
YouTube	Orthopaedist could be verified
	Professional, orthopaedic-related videos posted within 6 months of data collection
Twitter	Orthopaedist could be verified
	Account is public
	Professional, orthopaedic-related content posted within 6 months of data collection
Instagram	Orthopaedist could be verified
	Account is public
	Professional, orthopaedic-related content posted within 6 months of data collection
Personal website	Orthopaedists employed by a:
	Group practice
	Individual-practitioner practice
	Hybrid academic/private practice group ("privademic")
	Nonacademic hospital
Institutional website	Orthopaedists employed by a:
	University with an associated residency and/or fellowship training program

Table 2. Demographic Summary

	Number of Surgeons	Percentage
Degree		
M.D./D.O. only	2,339	90.9%
M.D./D.O. + additional post-baccalaureate degree	234	9.1%
Sex		
Male	2,434	94.6%
Female	139	5.4%
Population in city of practice		
Mean (SD)	490,000	(1,390,000)
Median [minimum, maximum]	73,700	[70.0, 8,850,000]
Region		
Midwest	544	21.1%
Northeast	549	21.3%
South	900	35.0%
West	573	22.3%
Missing	7	0.3%
Practice type		
Academic	486	18.9%
Private	2,087	81.1%
Knee		
Does not treat	465	18.1%
Treats	2,023	78.6%
Missing	85	3.3%
Hip		
Does not treat	1,584	61.6%
Treats	904	35.1%
Missing	85	3.3%
Elbow		
Does not treat	1,714	66.6%
Treats	774	30.1%
Missing	85	3.3%
Wrist		
Does not treat	2,222	86.4%
Treats	265	10.3%
Missing	86	3.3%
Foot & ankle		
Does not treat	2,051	79.7%
Treats	436	16.9%
Missing	86	3.3%
Shoulder		
Does not treat	490	19.0%
Treats	1,998	77.7%
Missing	85	3.3%
Website		
None	208	8.1%
Institutional	1,952	75.9%
Personal	67	2.6%
Both	346	13.4%
FB		
No social media Presence	2,049	79.6%
Has social media Presence	524	20.4%
Twitter		
No social media presence	2,092	81.3%
Has social media presence	481	18.7%
IG		
No social media presence	2,410	93.7%
Has social media presence	163	6.3%
LinkedIn		
No social media presence	1,103	42.9%
Has social media presence	1,470	57.1%
YouTube		
No social media presence	2,453	95.3%
Has social media presence	120	4.7%
Any social media		
No social media presence	908	35.3%
Has social media presence	1,665	64.7%
SMI score		
Mean (SD)	2.29	(1.59)
Median [Q1, Q3]	2.00	[1.00, 3.00]

FB, Facebook; IG, Instagram; SD, standard deviation; SMI, Social Media Index.

orthopaedist and was verified by a photograph, location/institution affiliation, or by having at least 2 followers/friends that were orthopaedic-related providers or patients (Table 1).[9] Applicable accounts, including those on Twitter, Instagram, Facebook, and YouTube, were deemed active if they had posted professional, orthopaedic-related content within the past 6 months before data collection. Social media accounts that were private, and those that only reflected the surgeon's personal life, were excluded. Surgeons who were in a group practice, individual-practitioner practice, a hybrid academic/private practice group ("privademic"), or hospital employed were categorized as private-practice physicians. Surgeons employed by a university with an associated residency and/or fellowship training program were categorized as academic-practice physicians.

Demographic variables, including practice type, sex, geographic location (state), and population of the city of practice, were collected. Practice location was stratified into 4 geographic regions: Northeast (CT, ME, MA, NH, RI, VT, NJ, NY, PA), Midwest (IL, IN, MI, OH, WI, IA, KS, MN, MO, NE, ND, SD), South (DE, FL, GA, NC, SC, MD, District of Columbia, VA, WV, AL, AR, KY, TN, LA, OK, TX, MS), and West (AZ, CO, NV, NM, UT, WY, AK, CA, HI, OR, WA, MT, ID). Population data were collected from the United States Census Bureau.[13] Given surgeons may treat multiple anatomic regions, specialization in the treatment of each joint was collected using binary indicator variables from data provided either from the AANA or personal/professional website. Thus, surgeons could be included in multiple subspecialty groups, and comparisons were made between those who do and do not treat each joint, respectively.

Social Media Presence and Index Score

Surgeons with a presence on at least one platform were noted as having social media using a binary indicator variable. Adapted from Garofolo et al.,[11] the Social Media Index (SMI) score was used to quantify the use of social media. Using this metric, each platform

is weighted equally (1 point each), with the exception of personal websites (2 points). Therefore, the score range is 0 to 8 points, with 0 points indicating no social medial use and 8 points indicating the maximum amount of social media use.

Statistical Analysis

Statistical analysis and figure generation were performed using 'R' (version 4.1.0; R Foundation for Statistical Computing, Vienna, Austria). Demographic and social media characteristics were summarized by descriptive statistics using means with standard deviations for continuous variables and frequencies with percentages for categorical variables. Normality was not achieved with the Shapiro–Wilk test. Therefore, comparisons between groups were performed using Kruskal–Wallis, χ^2, and Fisher exact analyses. Regional differences were analyzed through pairwise Wilcoxon rank-sum tests. Given that the SMI scores in the dataset were not overdispersed, with the overall mean SMI score not significantly different from the variance, a Poisson regression analysis was conducted to determine (1) whether specific joint specializations were predictive of a greater SMI score and (2) the influence of demographic characteristics on this relationship. An omnibus test was performed to verify that the model created had a significantly improved fit relative to the null model with no predictors. Statistical significance was defined as $P < .05$.

Results

Demographics

Of the 2,894 participants who were queried from the AANA membership database, 2,573 were determined to be active orthopaedic surgeons currently practicing within the United States. The demographics of these surgeons are presented in Table 2. Most surgeons were male (94.6%, n = 2,434), worked in private-practice settings (81.1%, n = 2,087), and held an M.D. or D.O. degree only (90.9%, n = 2,339). There was a total of 2,208 surgeons with M.D. degrees and 131 with D.O. degrees. Among the analyzed members, most practiced in the Southern United States region (35.0%, n = 900) and treated the knee (78.6%, n = 2,023) and/or shoulder (77.7%, n = 1,998).

Overall Online Presence

The use distribution for each included online platform is summarized in Table 2. A total of 57.1% of identified surgeons had a professional LinkedIn profile, 20.4% had a Facebook page, 18.7% had a Twitter account, and 6.3% had an Instagram account. Only 4.7% of the AANA members identified had an active account on YouTube. Overall, 89.3% of members had a website associated with their practice affiliation and 16.1% of members had a personal website. Of those in academic practices, only 15% had both.

A total of 64.7% of surgeons had ownership of at least 1 active social media account, with an average SMI score of 2.29 ± 1.59 (range 0-8). There were no significant sex differences in the location of practice, presence of websites, use of any individual social media, presence of at least 1 social media account, or the SMI score. Those with the presence of additional graduate degrees were more likely to have a Facebook (odds ratio [OR] 1.58; 95% confidence interval [CI] 1.14-2.15]), Twitter (OR 1.69; 95% CI 1.22-2.32), and YouTube (OR 2.25; 95% CI1.31-3.73) account while having a significantly greater SMI score (2.60 vs 2.25, $P < .001$) compared with those who had only an M.D. or D.O.

Surgeon Breakdown by Orthopaedist Degree

The breakdown of surgeon degree within the AANA organization was as follows: M.D. = 2,208 (85.8%); M.D., Ph.D. = 64 (2.5%); M.D., M.B.A. = 55 (2.1%); M.D., M.S. = 49 (1.9%); M.D., M.P.H. = 39 (1.5%); D.O. = 131 (5.1%); and other = 27 (1.0%).

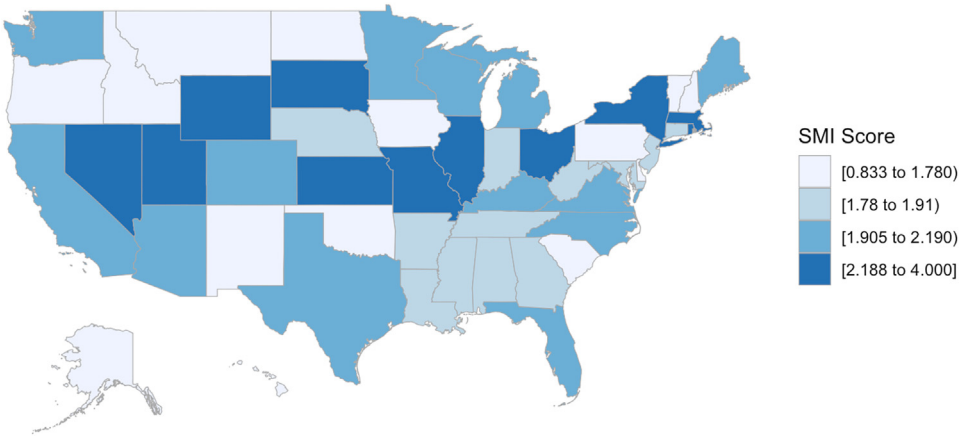

Fig 1. The Social Media Index score of AANA surgeons in each state.

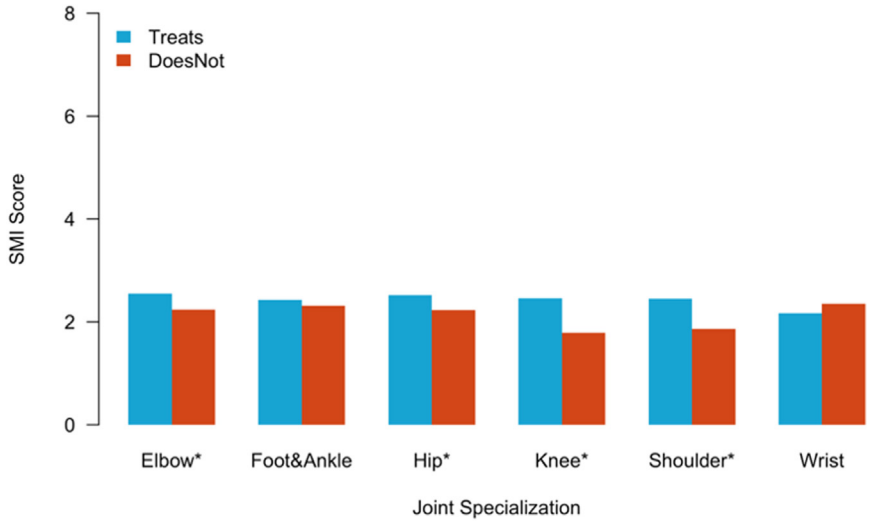

Fig 2. Social Media Index (SMI) score by joint specialization. Mean SMI score for those that treat (blue) and do not treat (red) a particular joint. Data are presented as mean scores, with the asterisks indicating a statistically significant difference.

Social Media Presence by Region of Practice

A map of social media use across the United States including the average SMI score for providers in that region is presented in Figure 1. Social media presence varied among orthopaedic surgeons depending on geographic region. Surgeons practicing in the West had a significantly greater presence on personal websites (21.6%) than those practicing in the Northeast (12.4%, $P < .001$) and South (14.2%, $P = .002$), whereas there were no other significant differences between groups. There were no significant regional differences in the presence of a personal website. For LinkedIn, surgeons in the Northeast had a significantly greater percentage of accounts compared with those in the South ($P = .008$). Surgeons in the West had a significantly greater active presence on YouTube relative to those in the South ($P = .043$). There were no significant regional differences in the use of any other social media accounts, presence of at least 1 social media account, or the SMI score when stratified by region of surgeon practice.

Social Media Presence by Practice Type

Academic surgeons used institutional websites, Instagram, Twitter, and LinkedIn more than private practice surgeons while practicing in more populated areas ($P < .001$). The mean SMI score and presence of at least 1 social media account for hospital-practicing physicians (2.55% and 73.3%) was significantly greater than those of private-practice physicians (2.23% and 62.7%, $P < .001$ for both). There was a significant association seen with activity on any website (OR 4.09; 95% CI 2.26-8.13) and on institutional websites (OR 3.89; 95% CI2.35-6.85) in favor of academic surgeons ($P < .001$ for both). Regarding social media platforms, academic surgeons were more likely to have a Twitter (OR 1.93; 95% CI 1.53-2.45), Instagram (OR 1.65; 95% CI 1.12-2.38), and LinkedIn (OR 1.32; 95% CI 1.07-1.63) profile compared with private-practice surgeons ($P < .001$ for all).

Social Media Presence by Joint Specialization

Significant associations between joint subspecialization and social media use and presence were observed, with those treating the knee and shoulder demonstrating significantly greater social media activity than those treating other joints (Fig 2). Specifically, knee surgeons had a larger social media presence on nearly every platform except YouTube compared with those

Table 3. Poisson Regression Model for Key Demographic Characteristics, Joint Specialization, and the SMI Score While Controlling for the population of the City of Practice

	Predictors of SMI Score		
Predictors	Incidence Rate Ratios	CI	*P* Value
(Intercept)	0.00	0.00-0.00	<.001
Reference: M.D./D.O. only	1.54	1.42-1.68	<.001
Advanced degree			
Elbow	1.06	0.99-1.13	.077
Foot & ankle	0.81	0.76-0.88	<.001
Reference: male	1.11	0.99-1.24	.069
Sex			
Hip	0.96	0.91-1.01	.125
Knee	1.78	1.64-1.93	<.001
Reference: private	1.85	1.73-1.99	<.001
Practice type			
Shoulder	1.19	1.10-1.28	<.001
Reference: Midwest			
Northeast	0.29	0.27-0.31	<.001
South	0.80	0.74-0.86	<.001
West	0.78	0.72-0.84	<.001
Wrist	1.18	1.07-1.29	.001

CI, confidence interval; SMI, Social Media Index.

who did not treat the knee. Similarly, shoulder surgeons had a significantly larger social media presence on nearly every platform except Instagram than those who did not treat the shoulder. Hip surgeons had a significantly larger presence on websites (personal and institutional) and Facebook ($P < .001$) in addition to a greater SMI score ($P < .001$) and were more likely to be on at least 1 platform than non-hip specialists (OR 1.26; 95% CI 1.05-1.51, $P = .011$). Elbow surgeons had a significantly larger presence on websites (personal and institutional, $P = .009$ and $P < .001$), Twitter ($P = .002$), LinkedIn ($P = .003$), and YouTube ($P = .013$) in addition to a greater SMI score ($P < .001$) and were more likely to be on at least 1 platform than those who do not treat elbows (OR 1.39; 95% CI 1.16-1.69, $P < .001$). Foot & ankle surgeons were more likely to have ownership of at least 1 social media platform than those that were not foot & ankle surgeons (OR 1.33; 95% CI 1.06-1.69, $P = .013$), whereas there were no other significant differences between the groups. Finally, wrist surgeons were significantly less likely to use Facebook ($P = .010$), Twitter ($P = .008$), and Instagram ($P = .041$) but did not demonstrate a significantly lower SMI score. A complete summary of social media presence by joint specialization is provided in the Appendix Table 1, available at www.arthroscopyjournal.org.

A Poisson regression model incorporating all collected demographic characteristics from included physicians was constructed to determine the relationship between joint specialization and the SMI score while controlling for these potential cofounders and the population of the practice location (Table 3). This model provided incidence rate ratios (IRRs), which demonstrated that those with additional graduate degrees (IRR 1.54, $P < .001$) in an academic practice (IRR 1.85, $P < .001$) specializing in the treatment of the knee (IRR 1.78, $P < .001$), shoulder (IRR 1.19, $P < .001$), and/or wrist (IRR 1.18, $P < .001$) had a greater chance of having a greater SMI score relative to their respective counterparts. Those who specialized in treating the foot & ankle (IRR 0.81, $P < .001$) had a significantly lower chance of having a greater SMI score compared with those that did not, whereas no significant difference in risks was noted for those specializing in treatment of the elbow (IRR 1.06, $P = .077$) or hip (IRR 0.96, $P = .125$). With regards to region of practice, those practicing in the Northeast (IRR 0.29, $P < .001$), South (IRR 0.80, $P < .001$), and West (IRR 0.78, $P < .001$) all had a significantly lower chance of having a greater SMI score as compared with those practicing in the Midwest.

Discussion

The main findings of the current study are as follows: (1) approximately two-thirds of orthopaedic surgeons who are members of AANA actively use at least 1 social media platform with an average SMI score of 2.3; (2) social media activity significantly varies based on practice location and practice model; (3) knee, hip, shoulder, and elbow surgeons were more likely to use a majority of platforms than those who did not treat those joints, whereas wrist surgeons did not show a significant difference in use of most platforms, and foot & ankle surgeons were less likely to use most platforms compared with their counterparts; and (4) LinkedIn was the most used social media among members of AANA (57.1%). After we controlled for all potential demographic confounding characteristics, a Poisson model demonstrated that knee, shoulder, and wrist specializations were significant positive predictors of greater SMI scores, whereas the foot & ankle specialization was a negative predictor.

Social media continues to become increasingly integrated into patient care and education, as well as surgeon marketing and branding, as reflected in the prevalence results from the current study, which showed 64.7% of surgeons actively use at least 1 social media platform. However, despite the rapid growth of social media use by physicians[14] to market themselves to new patients through these mediums,[5] the current study found a relatively low diversity of social media ownership, with an average SMI score of 2.3 of 8. The relatively low SMI score indicates that physicians infrequently increase their presence across the breadth of available social media platforms. These results are similar to those of previous studies on social media use.[5,12] When reviewing the same platforms as the current study in addition to a ResearchGate profile, Narian et al.[12] found the average number of sites actively used by shoulder and elbow surgeons was 1.6 of 7. Although publishing content through online platforms may be difficult for physicians, given concerns about patient privacy or physician malpractice,[15] social media has been demonstrated to be an effective tool to reach a broader number of patients, improve their personal digital identity, and enhance patient–provider communication.[11,16–18] Ultimately, this study further supports the notion that orthopaedic surgeons should expand their presence across social media platforms and consider the potential benefits of diversifying their online presence given its emerging impact and potential utility as a free marketing source.

Regarding demographic comparisons, surgeons practicing in an academic practice were more likely to have a greater SMI score (2.55 vs 2.23) and more likely to use nearly all social media platforms more than private practice surgeons. This may be contributed by the increased motivation of academic surgeons to promote their programs to both patients and prospective applicants in addition to their research as opposed to private practices promoting their practices only to potential patients.[19,20] Further, site-specific differences in regional use were noted. Specifically, the West had the

greatest presence of personal websites and YouTube, the Northeast had the greatest use of LinkedIn, and the South had the lowest overall social media use. In line with previous research,[8,12,21] these findings reinforce that significant differences exist in social media use across geographic regions, which may indicate patient and physician communication preferences through online connections. Sharing content regarding an orthopaedic surgeon's research, practice insights, and personal life may enhance patient aptitude, care, and preference toward the physician, but the opposite also can be true. The positive impacts have been observed in several previous articles, citing the positive correlation between social media activity and online physician review scores.[7,22,23] Another key finding was that specific regions of practice were significant positive predictors of greater SMI scores as compared with their counterparts. This was specifically highlighted in the Poisson regression model for those from the Midwest region, which demonstrated that they were significantly more likely to have a greater SMI score relative to any other region. Possible explanations for this finding are the expectation of patients regarding access to surgeons on social media varies among region, or more likely competition among surgeons to "keep up" with their peers. Given that competition is regional and market specific, growth of social media use in any given market may influence additional surgeons to participate. However, the model reaffirms the findings from the current study with respect to social media use and helps refine our understanding of their digital footprint.

Our study found significant differences in social media use by specialization. Those who treat the knee, shoulder, hip, or elbow were more likely to be present on nearly every social media platform and have a greater SMI score that those who did not treat those respective anatomic regions. Contrarily, those who treat the foot & ankle did not have any significant differences from their counterparts outside of ownership of at least one platform, whereas those who treat the wrist used fewer platforms. Previous individual studies investigating social media use of members of specialty-specific orthopaedic societies, representative of each joint included in the current study, corroborate these findings.[5,6,8,12] This may be seen due to differences in the burden of injury across joints.[24] Joints with a grater prevalence of injury require a greater number of surgeons to treat patients suffering from associated pathologies. This may prompt an increase in competition and pressure on orthopaedists to reach those patients, thereby promoting and encouraging the use of online social media platforms.[4,22] The results of the current study support this hypothesis and are reflective of the membership of the investigated society.

While controlling for population differences in city of practice, we found that specialization of the knee or shoulder was a significant and positive predictor of a grater SMI score, hip or elbow specialization was not significant a predictor, whereas foot & ankle specialization was a significant negative predictor. Within the AANA organization, the proportion of surgeons specializing in each joint included in this study mirrors the burden of injury across these joints. For example, knee surgeons were the most prevalent in the AANA cohort, and knee injuries present the largest injury burden.[24] Further, this also parallels the findings seen from the constructed Poisson model, as those who specialized in joints with greater injury burden were associated with a grater SMI score. Interestingly, although specialization in the wrist was a significant positive predictor, this may be reflective of the physician dispersion of wrist surgeons in smaller-populated cities, given that population was used as an offset in the constructed model.[8] Nonetheless, physicians across all subspecialties reviewed in the current study used social media at a low rate. Further research will be essential to better delineate the intricacies of use differences in social media use in orthopaedics and how this meaningfully translates to enhancing the patient–physician relationship as well as the quality of care provided.

Limitations

This investigation is not without limitations. First, the only social media platforms included were Facebook, Twitter, YouTube, LinkedIn, Instagram, and personal and group websites. However, we selected these sites to holistically represent the most used media platforms by physicians and patients and to calculate the SMI score as done previously.[5,11] Second, there remains a possibility that some physicians use privately accessible accounts for professional purposes or have their accounts listed under a name other than their own. This would change the demographics and social media use reported in this investigation. However, the purpose of this study was to mirror the process of a patient searching for said accounts for information on their provider. Third, the cross-sectional study design of this investigation limits our ability to determine causality. Fourth, social media use is fluid, and it is possible for fluctuations to occur daily. Fifth, there are also several limitations inherent to the AANA membership database, as the information reported on a given surgeon's profile may not accurately reflect the current status of that surgeon. For instance, the provided work address of a surgeon may be outdated, indicating the population of the city of practice may be inaccurate. However, when available, information from the AANA website was verified online during the search process. Further, we were not

able to control for surgeon age in this analysis. Age was not found to be a consistent demographic available online to be collected for each surgeon and was not available in the AANA database. Despite the importance age would potentially play on the use of social media among surgeons, we chose not to include age as a factor in the analysis, given this was not available for more than one-half of the included surgeons. Thus, including this variable would bias the results of this study. Finally, this study does not encompass all training specializations within orthopaedics. Given the paucity of information available regarding a surgeon's general specialty and the multidisciplinary nature of certain specialties, such as sports medicine and pediatrics, it was not possible to delineate a physician's training specialization. Instead, joint specialization was used to assess trends in social media use, controlling for any variance in joints treated by the included cohort of surgeons.

Conclusions

Social media use widely varies across joint subspecialties within orthopaedic sports medicine. Knee and shoulder surgeons had greater social media use than their counterparts, whereas foot & ankle surgeons had the lowest social media use.

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Appendix Table 1. Summary of Social Media Presence by Joint Specialization

		Elbow			Foot & Ankle			Hip			Knee			Shoulder			Wrist		
	Level	Does Not Treat	Treats	*P* Value	Does Not Treat	Treats	*P* Value	Does Not Treat	Treats	*P* Value	Does Not Treat	Treats	*P* Value	Does Not Treat	Treats	*P* Value	Does Not Treat	Treats	*P* Value
n		1714	774		2,051	436		1,584	904		465	2,023		490	1,998		2,222	265	
Any website, %	No social media presence	148 (8.6)	19 (2.5)	**<.001**	148 (7.2)	19 (4.4)	**.039**	140 (8.8)	27 (3.0)	**<.001**	121 (26.0)	46 (2.3)	**<.001**	121 (24.7)	46 (2.3)	**<.001**	157 (7.1)	10 (3.8)	.058
	Has social media presence	1,566 (91.4)	755 (97.5)		1,903 (92.8)	417 (95.6)		1,444 (91.2)	877 (97.0)		344 (74.0)	1,977 (97.7)		369 (75.3)	1,952 (97.7)		2,065 (92.9)	255 (96.2)	
Personal website, %	No social media presence	1,453 (84.8)	623 (80.5)	**.009**	1,718 (83.8)	358 (82.1)	.439	1,366 (86.2)	710 (78.5)	**<.001**	421 (90.5)	1,655 (81.8)	**<.001**	436 (89.0)	1,640 (82.1)	**<.001**	1,853 (83.4)	222 (83.8)	.944
	Has social media presence	261 (15.2)	151 (19.5)		333 (16.2)	78 (17.9)		218 (13.8)	194 (21.5)		44 (9.5)	368 (18.2)		54 (11.0)	358 (17.9)		369 (16.6)	43 (16.2)	
Institutional website, %	No social media presence	194 (11.3)	39 (5.0)	**<.001**	200 (9.8)	33 (7.6)	.184	170 (10.7)	63 (7.0)	**.002**	126 (27.1)	107 (5.3)	**<.001**	125 (25.5)	108 (5.4)	**<.001**	215 (9.7)	18 (6.8)	.158
	Has social media presence	1,520 (88.7)	735 (95.0)		1,851 (90.2)	403 (92.4)		1,414 (89.3)	841 (93.0)		339 (72.9)	1,916 (94.7)		365 (74.5)	1,890 (94.6)		2,007 (90.3)	247 (93.2)	
FB, %	No social media presence	1,363 (79.5)	602 (77.8)	.35	1,624 (79.2)	340 (78.0)	.622	1,283 (81.0)	682 (75.4)	**<.001**	400 (86.0)	1,565 (77.4)	**<.001**	409 (83.5)	1,556 (77.9)	**.008**	1,738 (78.2)	226 (85.3)	**.01**
	Has social media presence	351 (20.5)	172 (22.2)		427 (20.8)	96 (22.0)		301 (19.0)	222 (24.6)		65 (14.0)	458 (22.6)		81 (16.5)	442 (22.1)		484 (21.8)	39 (14.7)	
Twitter, %	No social media presence	1,416 (82.6)	597 (77.1)	**.002**	1,656 (80.7)	356 (81.7)	.71	1,285 (81.1)	728 (80.5)	**.757**	398 (85.6)	1,615 (79.8)	**.005**	424 (86.5)	1,589 (79.5)	**.001**	1,781 (80.2)	231 (87.2)	**.008**
	Has social media presence	298 (17.4)	177 (22.9)		395 (19.3)	80 (18.3)		299 (18.9)	176 (19.5)		67 (14.4)	408 (20.2)		66 (13.5)	409 (20.5)		441 (19.8)	34 (12.8)	
IG, %	No social media presence	1606 (93.7)	720 (93.0)	.586	1,922 (93.7)	403 (92.4)	.381	1,488 (93.9)	838 (92.7)	.262	447 (96.1)	1,879 (92.9)	**.014**	463 (94.5)	1,863 (93.2)	0.368	2,069 (93.1)	256 (96.6)	**.041**
	Has social media presence	108 (6.3)	54 (7.0)		129 (6.3)	33 (7.6)		96 (6.1)	66 (7.3)		18 (3.9)	144 (7.1)		27 (5.5)	135 (6.8)		153 (6.9)	9 (3.4)	
LinkedIn, %	No social media presence	752 (43.9)	290 (37.5)	**.003**	873 (42.6)	168 (38.5)	.135	676 (42.7)	366 (40.5)	.306	226 (48.6)	816 (40.3)	**.001**	238 (48.6)	804 (40.2)	**.001**	924 (41.6)	118 (44.5)	.394
	Has social media presence	962 (56.1)	484 (62.5)		1,178 (57.4)	268 (61.5)		908 (57.3)	538 (59.5)		239 (51.4)	1,207 (59.7)		252 (51.4)	1,194 (59.8)		1,298 (58.4)	147 (55.5)	
YouTube, %	No social media presence	1,646 (96.0)	724 (93.7)	**.013**	1,957 (95.4)	412 (94.7)	.613	1,509 (95.3)	861 (95.2)	.999	449 (96.6)	1,921 (95.0)	.192	476 (97.1)	1,894 (94.8)	**.042**	2,117 (95.3)	252 (95.1)	.993
	Has social media presence	68 (4.0)	49 (6.3)		94 (4.6)	23 (5.3)		74 (4.7)	43 (4.8)		16 (3.4)	101 (5.0)		14 (2.9)	103 (5.2)		104 (4.7)	13 (4.9)	
SMI score, mean (SD)		2.23 (1.56)	2.55 (1.62)	**<.001**	2.31 (1.60)	2.43 (1.50)	.159	2.23 (1.57)	2.52 (1.60)	**<.001**	1.79 (1.50)	2.46 (1.58)	**<.001**	1.86 (1.58)	2.45 (1.57)	**<.001**	2.35 (1.61)	2.17 (1.34)	.078
Any social media, %	No social media presence	624 (36.4)	225 (29.1)	**<.001**	722 (35.2)	126 (28.9)	**.014**	570 (36.0)	279 (30.9)	**.011**	196 (42.2)	653 (32.3)	**<.001**	204 (41.6)	645 (32.3)	**<.001**	749 (33.7)	100 (37.7)	.216
	Has social media presence	1,090 (63.6)	549 (70.9)		1,329 (64.8)	310 (71.1)		1,014 (64.0)	625 (69.1)		269 (57.8)	1,370 (67.7)		286 (58.4)	1,353 (67.7)		1,473 (66.3)	165 (62.3)	

FB, Facebook; IG, Instagram; SD, standard deviation; SMI, Social Media Index.
Bold values are statistically significant.