



# Surgeon Personality, Time Spent With the Patient, and Quality of Facilities Are the Most Important Factors to Patients in Selecting an Orthopaedic Sports Medicine Surgeon

Ian D. Engler, M.D., Gillian M. Ahrendt, B.S., Andrew J. Curley, M.D., and Volker Musahl, M.D.

**Purpose:** To determine the most important factors to patients across the United States in selecting an orthopaedic sports medicine surgeon. **Methods:** In this cross-sectional survey study, adult U.S. residents were surveyed using Amazon Mechanical Turk, a validated survey tool. Data included demographics and the relative importance of both pre-office and in-office factors that determine how patients select an orthopaedic sports medicine surgeon. Results were compiled, and factors were compared by patient demographics. **Results:** Of 1,074 respondents, 56.3% were male, and 60.0% were 25 to 40 years old. Responses were geographically diverse. The most important factors in selecting a sports medicine surgeon (graded on a 0-10 scale) were surgeon professionalism and personality (6.6), quality of the hospital/office facilities (6.4), and how much time the surgeon spends with the patient (6.4). Each of these in-office factors were more important than pre-office factors, the most important of which were reputation of the surgeon's hospital or group (6.3), surgeon's reviews on medical review websites (6.2), and surgeon's educational background (6.0). The least important factors were surgeon's sex (3.7), marketing of the surgeon (4.2), and surgeon's social media accounts (4.3). A social media account was taken into consideration at least "a little" by nearly two-thirds of respondents. The most preferred surgeon personality was a balance of professional and lighthearted (66.9%), with strictly professional (27.6%) or largely lighthearted (5.6%) less preferred. **Conclusions:** The most important factors to patients in selecting their orthopaedic sports medicine surgeon, regardless of patient sex, race, or geography, are related to the patient's in-office experience, including surgeon's professionalism/personality, how much time the surgeon spends with the patient, and quality of the hospital/office facilities. Surgeons should consider prioritizing a professional office environment and taking the time to get to know patients for the benefit of their patients and their practice. **Clinical Relevance:** The market for orthopaedic sports medicine surgeons is competitive. It is important to know what qualities of a surgeon and his or her practice are important to patients.

As the market for orthopaedic sport medicine surgeons becomes more competitive, increased attention is directed toward recruiting patients. Increasing patient volume is of great interest both to surgeons and to hospitals, and it underpins the financial well-being of health care organizations. Furthermore, increased patient interest in and recruitment by a

surgeon lead to greater esteem for the surgeon and their institution.

Patient satisfaction with their provider is of great—and growing—interest to health care systems. The patient experience is now one of the most important quality metrics to health care organizations, owing to its role in market share and reimbursement.<sup>1</sup>

From the Department of Orthopaedic Surgery, UPMC Freddie Fu Sports Medicine Center, University of Pittsburgh (I.D.E., A.J.C., V.M.); and University of Pittsburgh School of Medicine (G.M.A.), Pittsburgh, Pennsylvania, U.S.A.

The authors report the following potential conflicts of interest or sources of funding: Funding support was provided by the UPMC Orthopaedic Surgery Sports Medicine Fellowship Research Fund, United States. Full ICMJE author disclosure forms are available for this article online, as [supplementary material](#).

Received November 30, 2021; accepted February 16, 2022.

Address correspondence to Ian D. Engler, M.D., Department of Orthopaedic Surgery, UPMC Freddie Fu Sports Medicine Center, University of Pittsburgh, 3200 South Water St., Pittsburgh, PA 15203. E-mail: [englerid@upmc.edu](mailto:englerid@upmc.edu)

© 2022 THE AUTHORS. Published by Elsevier Inc. on behalf of the Arthroscopy Association of North America. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>). 2666-061X/211663

<https://doi.org/10.1016/j.asmr.2022.02.006>

**Table 1.** Patient Survey

- 
1. Age
    - a. <25 years
    - b. 25-40 years
    - c. 41-60 years
    - d. >60 years
  2. Sex
    - a. Female
    - b. Male
    - c. Non-binary
    - d. Other
  3. Is English your native language?
    - a. Yes
    - b. No
  4. Where do you live?
    - a. Northeast
    - b. South
    - c. Midwest
    - d. West
  5. What community do you live in?
    - a. Urban
    - b. Suburban
    - c. Rural
  6. Highest educational degree
    - a. Did not finish high school
    - b. High school degree
    - c. College degree
    - d. Graduate degree
  7. Annual household income
    - a. <\$30,000
    - b. \$30,000-\$60,000
    - c. \$61,000-\$90,000
    - d. >\$90,000
  8. Race
    - a. White
    - b. African-American
    - c. Asian
    - d. Hispanic
    - e. Other
  9. What is your primary health insurance?
    - a. Private or commercial
    - b. Medicare
    - c. Medicaid
    - d. Military or Veterans
    - e. None
  10. How confident are you at filling out medical forms by yourself?
    - a. Extremely
    - b. Quite a bit
    - c. Somewhat
    - d. A little bit
    - e. Not at all
  11. How is your overall health status?
    - a. Poor or fair
    - b. Good
    - c. Very good
    - d. Excellent
  12. Do you work in health care?
    - a. Yes
    - b. No
  13. Do you regularly participate in sports or athletic activities?
    - a. Yes
    - b. No
- 

(continued)

**Table 1.** Continued

- 
14. Have you seen an orthopaedic sports medicine surgeon before?
    - a. Yes
    - b. No
- Questions 15-26: Regarding factors that would help you choose which orthopaedic sports medicine surgeon to see, how would you rate the following factors on a scale from 0 (not important) to 10 (most important): (Note: it is ok to repeat numbers)
15. Surgeon's educational background (i.e., schools where they trained)
  16. Friends/family recommending the surgeon
  17. Reputation of the hospital/group they work in
  18. Marketing of the surgeon (e.g., billboards, posters)
  19. Surgeon stating that they use new surgical technologies/techniques
  20. Surgeon's website
  21. Surgeon's social media account(s)
  22. Surgeon's reviews on medical review websites (e.g., Healthgrades, Yelp)
  23. Surgeon's presence in the community (e.g., speaking at local events and schools)
  24. Surgeon being team physician for a professional team
  25. Surgeon being team physician for a local college team
  26. Surgeon being team physician for a local high school team
- Questions 27-33: Regarding factors during an office visit that would help you choose which orthopaedic sports medicine surgeon to get your care from, how would you rate the following factors on a scale from 0 (not important) to 10 (most important):
27. Professionalism of front office staff
  28. Quality of the office/hospital facilities and buildings
  29. Surgeon's attire/clothing
  30. Surgeon's sex
  31. Surgeon's professionalism and personality
  32. How much time the surgeon spends with you
  33. How well the surgeon gets to know you
  34. How much would you consider a surgeon's presence on Instagram when choosing a surgeon?
    - a. Not at all
    - b. A little bit
    - c. A moderate amount
    - d. A lot
  35. How much would you consider a surgeon's presence on Twitter when choosing a surgeon?
    - a. Not at all
    - b. A little bit
    - c. A moderate amount
    - d. A lot
  36. How much would you consider a surgeon's presence on Facebook when choosing a surgeon?
    - a. Not at all
    - b. A little bit
    - c. A moderate amount
    - d. A lot
  37. What on a sports surgeon's social media profile would lead you to seek their care? (Select all that apply)
    - a. Posts on their scientific work
    - b. Posts on their surgical/patient cases
    - c. Posts on popular science
    - d. Memes
    - e. Posts on their personal lives
    - f. Other (short answer)
- 

(continued)

**Table 1.** Continued

- 
38. What clothing worn by the surgeon in the office would make you most likely to choose that surgeon?
- g. Formal (e.g., suit)
  - a. Business casual (e.g., dress shirt and tie for men, blouse for women)
  - b. Business casual with a white coat
  - c. Scrubs
  - d. Scrubs with a white coat
  - e. No preference
39. What sex would you prefer in an orthopaedic sports medicine surgeon?
- a. Woman
  - b. Man
  - c. No preference
40. What personality of the surgeon would make you most likely to choose that surgeon?
- a. Strictly professional/formal
  - b. A combination of professional and lighthearted
  - c. Largely lighthearted and humorous
- 

Numerous studies have examined variables associated with patients' perceptions of a medical provider,<sup>2-5</sup> and several have focused on perceptions of surgeons.<sup>6-9</sup> However, few studies have specifically evaluated which factors are important to patients in choosing an orthopaedic sports medicine surgeon. The 2 previous studies of several hundred patients were limited in volume and single-center methodology.<sup>10,11</sup>

The purpose of this study was to determine the most important factors to patients across the United States in selecting an orthopaedic sports medicine surgeon. We hypothesized that (1) the most important factors would include surgeon professionalism/personality and recommendation from family or friends, and (2) the least important factors would include surgeon sex and attire.

## Methods

This was a cross-sectional survey study of United States adults. Inclusion criteria were participation on the survey platform, United States resident aged 18 years or older, and having a social security number. The exclusion criterion was incomplete survey submission. A survey was created by the authors to collect patient demographics, an assessment of familiarity with health and sports medicine, and the relative importance of factors that determine how patients select an orthopaedic sports medicine surgeon (Table 1). Participants were asked to score the importance of said factors to the patient in selecting a sports medicine surgeon, scored on a 0-10 scale. The participants were not asked to rank the factors in order of preference.

Amazon Mechanical Turk (MTurk; [Amazon.com](https://www.amazon.com), Inc., Seattle, WA) was used to recruit participants, and the survey was hosted on Qualtrics XM (Qualtrics, Seattle, WA). MTurk is a crowdsourcing platform that allows

businesses and researchers to access a wide array of participants to complete various online tasks. Participants number over 500,000 and mostly reside in the United States, with demographics that reflect internet users in the United States.<sup>12</sup> MTurk is a validated survey tool used widely in academics, with responses showing strong internal consistency, test-retest reliability,<sup>12</sup> comparability to conventional survey techniques,<sup>13</sup> and generalizability to the United States population.<sup>14,15</sup> MTurk has been used increasingly frequently in the peer-reviewed orthopaedic literature.<sup>15,16</sup> Surveys were distributed to MTurk participants according to Amazon's distribution algorithm. Participants who chose to complete the survey were given \$0.25 following completion.

## Statistical Analysis

Frequency of survey responses were tabulated and presented. Statistical analysis was used to identify the association between particular patient demographics and patient ranking of importance of factors in selecting an orthopaedic sports medicine surgeon. The associations between demographic factors with more than 2 categories were tested with a one-way analysis of variance. If the one-way analysis of variance test resulted in a significant *P* value, then each pairwise combination between the categories of the demographic factor was compared with a 2-sample *t*-test, and the *P* values were adjusted for multiple comparisons with the Benjamini-Hochberg procedure. The association between demographic factors with only 2 categories were tested with 2-sample *t*-tests. Statistical significance was set at *P* < .05. This study received institutional review board approval at our institution (exempt status at University of Pittsburgh; STUDY21080053).

## Results

Of 1,074 respondents, 56.3% were male, and 60.0% were 25 to 40 years old (Table 2). Regarding race, 78.7% identified as White, 10.2% identified as Black, 5.7% identified as Asian, 2.8% identified as Hispanic, and 1.8% identified as American Indian or Alaska Native. Responses were geographically spread across the United States, and 84.4% of participants had at least a college degree. A single question assessment of health literacy<sup>15,17</sup> found that 75.5% were at least "quite a bit" comfortable filling out medical forms by themselves. Seventy-five percent participate in sports or athletics activities, and the majority had seen an orthopaedic sports medicine surgeon before.

The most important factors in selecting a sports medicine surgeon (graded on a 0-10 scale) were surgeon professionalism and personality (6.6), quality of the hospital/office facilities (6.4), how much time the surgeon spends with the patient (6.4), and how well the surgeon gets to know the patient (6.3) (Fig 1). Each of these in-office factors were more important

**Table 2.** Participant Characteristics

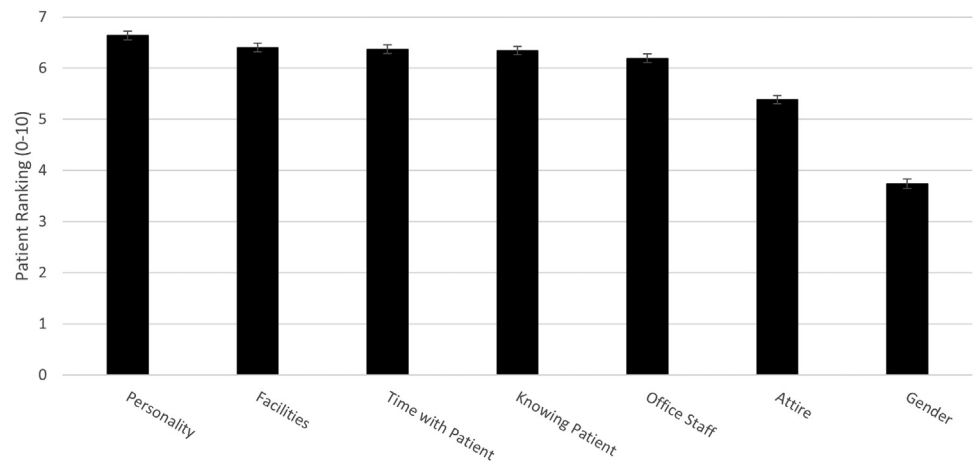
Characteristic	Respondents (%)
Age, y	
<25	7.2
25-40	60.0
41-60	27.5
>60	5.3
Sex	
Male	56.3
Female	43.4
Non-binary	0.3
Native language	
English	98.5
Other	1.5
Region of residence in U.S.	
Northeast	27.0
South	37.3
Midwest	21.8
West	13.8
Community type	
Urban	49.2
Suburban	34.9
Rural	16.0
Highest educational degree	
Did not finish high school	0.6
High school degree	15.0
College degree	47.0
Graduate degree	37.4
Annual household income	
<\$30,000	17.3
\$30,000-\$60,000	45.0
\$61,000-\$90,000	24.3
> \$90,000	13.5
Race	
White	79.0
Black	10.2
Other	11.2
Health insurance	
Private/commercial	41.8
Medicare	35.6
Medicaid	13.1
Military/veteran	3.6
Other	5.9
Confidence in completing medical forms independently	
Extremely	46.4
Quite a bit	29.1
Somewhat	19.1
A little bit	4.7
Not at all	0.7
Overall health status	
Poor or fair	5.4
Good	45.8
Very good	34.0
Excellent	14.8
Employed in health care	
Yes	45.3
No	54.8
Regular participant in sports or athletic activities	
Yes	75.0
No	25.0
Previously treated by an orthopaedic sports medicine surgeon	
Yes	57.2
No	42.8

than pre-office factors, the most important of which were reputation of the surgeon's hospital or group (6.3), surgeon's reviews on medical review websites (6.2), surgeon's educational background (6.0), and family/friends recommending the surgeon (5.8) (Fig 2). The least important factors were surgeon sex (3.7), marketing of the surgeon (4.2), and surgeon's social media accounts (4.3).

A surgeon's social media account was taken into consideration at least "a little" by at minimum 65.2% of respondents depending on the platform. All platforms (Twitter, Instagram, and Facebook) showed similar results, with participants taking them into consideration "a lot" 8.7% to 9.5% of the time, "a moderate amount" 23.8% to 25.5% of the time, and "a little" 31.0% to 34.3% of the time. When asked what type of social media posts patients would want to see, the most popular were posts on surgical/patient cases (30.5%), followed by posts on their scientific work (25.5%) and posts on popular science (21.6%). Posts on memes (10.3%) and their personal lives (9.9%) were less preferred. There was no consensus on preferred surgeon attire, although 43.8% of participants preferred a white coat be present. The most common responses were business casual with a white coat (26.7%), business casual (19.7%), scrubs with a white coat (17.0%), and scrubs (15.1%). Formal (14.4%) was least preferred. Regarding the surgeon's sex, 40.7% of respondents had no preference, 37.0% preferred a man, and 22.3% preferred a woman. The most preferred surgeon personality was a balance of professional and lighthearted (66.9%), with strictly professional/formal (27.6%) or largely lighthearted (5.6%) less preferred.

### Patient Preferences by Demographic

Patients older than 60 years, in comparison to the 24- to 45-year old group, valued friends/family recommending the surgeon (6.6 vs 5.5,  $P = .0002$ ) and hospital/group reputation (7.4 vs 6.1,  $P = .002$ ) significantly more, while valuing social media significantly less (3.3 vs 4.4,  $P = .02$ ). Compared with male participants, female participants were more likely to value surgeon personality (6.9 vs 6.4,  $P = .001$ ), how much time the surgeon spends with the patient (6.7 vs 6.1,  $P = .0003$ ), and how well the surgeon gets to know the patient (6.7 vs 6.1,  $P = .0002$ ). These were the top 3 most important qualities to female participants, and they were 3 of the top 4 most important qualities to male participants, with the other being quality of the office/hospital facilities. Female participants were significantly more likely to prefer a personality type that balanced formal and lighthearted (74% vs 61%,  $P < .0003$ ), whereas male participants were more likely to prefer strictly professional/formal (33% vs 21%,  $P < .0003$ ). Compared with White respondents, Black respondents were significantly more likely to value



**Fig 1.** Survey results of the importance of in-office factors in selecting an orthopaedic sports medicine surgeon, scored on a 0-10 scale.

the surgeon's presence in the community (5.7 vs 4.7,  $P = .001$ ) and role as a team physician for a professional team (6.0 vs 5.4,  $P = .03$ ), local college (5.9 vs 5.2,  $P = .01$ ), and local high school (5.9 vs 4.9,  $P = .002$ ).

Geographic location was correlated with how patients valued several factors. The Midwest scored family/friends recommending the surgeon significantly greater than the Northeast (6.2 vs 5.5,  $P = .02$ ), with the South and West between these values. Surgeon reviews on websites were important to respondents in the West than the Northeast (6.8 vs 5.9,  $P = .02$ ). Professionalism of office staff was also more important in the West (6.9) than in the Northeast (5.8,  $P = .001$ ) and the South (6.1,  $P = .01$ ).

Subanalysis of community type showed that patients from suburban settings, compared with urban settings, more highly valued a surgeon's professionalism and personality (7.2 vs 6.2,  $P < .0003$ ), how much time the surgeon spends with the patient (6.8 vs 6.0,  $P < .0003$ ), how well the surgeon gets to know the patient (6.7 vs 6.1,  $P = .01$ ), and quality of the office facilities (6.8 vs 6.1,  $P = .001$ ). Urban residents were more likely to prefer a formal surgeon personality type than suburban or rural residents (35% vs 17% vs 25%, respectively,  $P < .0001$ ).

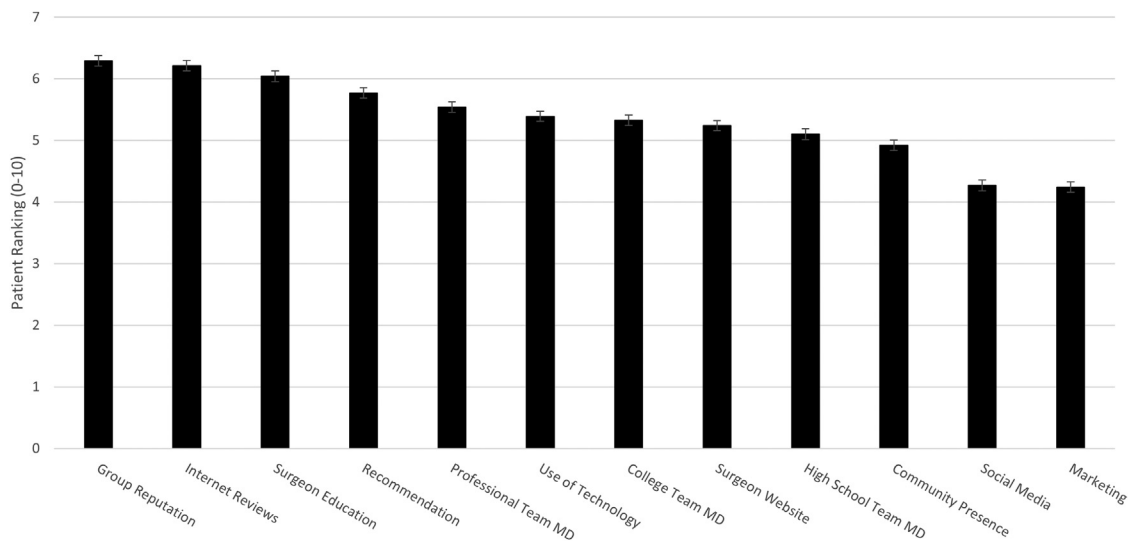
## Discussion

The key finding of this study was that surgeon-specific factors were the most important to participants in selecting an orthopaedic sports medicine surgeon, including the surgeon's professionalism and personality, how much time the surgeon spends with the patient, and how well the surgeon gets to know the patient. These remained among the most important factors when the population was analyzed by age, sex, race, geographic region, and community type.

Our findings suggest that surgeons and hospital systems should prioritize surgeon-patient interactions in the office. Surgeon personality, including surgeon empathy,<sup>18</sup> being a good listener, and including the patient in decisions,<sup>11</sup> makes a marked difference to the patient and their likelihood of pursuing care with an orthopaedic surgeon. So too does spending more time with the patient, which the surgeon must balance with patients also preferring shorter wait times in the orthopaedic sports medicine clinic.<sup>19</sup>

The most important non-surgeon factors to our respondents were quality of the hospital/office facilities and reputation of the surgeon's hospital or group. Of all factors evaluated, the hospital system likely has the most control over quality of facilities, and this can have a significant impact on patient recruitment. This in turn may feed into increasing the reputation of the hospital, further facilitating patient recruitment. Surgeon reviews on medical review websites were also highly valued, suggesting that surgeons and practices should direct efforts toward obtaining positive patient reviews. While online reviews have had a longer standing presence in the restaurant industry and elsewhere, they have entered the mainstream for surgeon evaluation as well.<sup>20</sup>

Interestingly, marketing of the surgeon and surgeon's social media accounts were 2 of the 3 least important factors. While millions of dollars are devoted toward direct-to-consumer marketing each year,<sup>21</sup> notably in plastic surgery,<sup>22</sup> this may not have a substantial impact on orthopaedic sports medicine patients. Social media is unquestionably a rising force in society, particularly for the younger generation, and surgeons feel an increasing pressure to take part.<sup>23</sup> Gross et al.<sup>23</sup> found that nearly two-thirds of orthopaedic surgeons did not have a social media presence, although nearly one-half of younger surgeons did. In our study, social media appears to not yet have a large role in surgeon selection.



**Fig 2.** Survey results of the importance of pre-office factors in selecting an orthopaedic sports medicine surgeon, scored on a 0-10 scale.

Although younger patients were more likely to value social media, it remained relatively low in importance compared with other factors.

Previous literature on patient preferences regarding an orthopaedic sports medicine surgeon is limited. In a survey study of 382 patients at a single urban sports medicine institution, Manning et al.<sup>10</sup> reported that the most influential factors in choosing a physician were board certification, being “well known” for a specific area of expertise, and in-network status. The authors noted the generalizability of these results was limited due to the single-center methodology of the study. Beck et al.<sup>11</sup> surveyed 280 adolescents and 256 guardians in sports medicine clinic at a single tertiary care center with a focus on shared decision-making. They found that involving the child in the decision-making process was very important to both parties. Our study focused more on the patient experience, whereas the other studies had a greater focus on the logistical aspects of care or specific surgeon personality traits. Our study also has the strength of generalizability given that it uniquely samples a large population across the United States.

### Limitations

Our study has several limitations. Our participants were not actively seeking a sports medicine surgeon in a clinic, so they may not exactly reflect the population of sports medicine patients. This was necessary to achieve a very large sample size. The study population was less racially and educationally diverse than the United States population, likely as a result of the demographics of Amazon MTurk workers. Though we found statistically significant differences, the clinical significance of magnitudes of differences in patient preference ratings is unknown. There are myriad other factors involved in

the surgeon selection process, such as logistics of insurance coverage and convenience of office location, but we could not capture all factors.

### Conclusions

The most important factors to patients in selecting their orthopaedic sports medicine surgeon, regardless of patient sex, race, or geography, are related to the patient’s in-office experience, including surgeon’s professionalism/personality, how much time the surgeon spends with the patient, and quality of the hospital/office facilities. Surgeons should consider prioritizing a professional office environment and taking the time to get to know patients for the benefit of their patients and their practice.

### References

1. Poole KG Jr. Patient-experience data and bias—what ratings don’t tell us. *N Engl J Med* 2019;380:801-803.
2. Petrilli CM, Mack M, Petrilli JJ, Hickner A, Saint S, Chopra V. Understanding the role of physician attire on patient perceptions: A systematic review of the literature—targeting attire to improve likelihood of rapport (TAILOR) investigators. *BMJ Open* 2015;5:e006578.
3. Schindelheim GL, Jerrard DA, Witting M. Patient preference for emergency physician age and gender. *Am J Emerg Med* 2004;22:503.
4. Janssen SM, Lagro-Janssen AL. Physician’s gender, communication style, patient preferences and patient satisfaction in gynecology and obstetrics: A systematic review. *Patient Educ Couns* 2012;89:221-226.
5. Freed GL, Dunham KM, Clark SJ, Davis MM, Pediatrics RACotABO. Perspectives and preferences among the general public regarding physician selection and board certification. *J Pediatr* 2010;156:841-845.e841.

6. Yahanda AT, Lafaro KJ, Spolverato G, Pawlik TM. A systematic review of the factors that patients use to choose their surgeon. *World J Surg* 2016;40:45-55.
7. Ejaz A, Spolverato G, Bridges JF, Amini N, Kim Y, Pawlik TM. Choosing a cancer surgeon: analyzing factors in patient decision making using a best–worst scaling methodology. *Ann Surg Oncol* 2014;21:3732-3738.
8. Manning BT, Ahn J, Bohl DD, Mayo BC, Louie PK, Singh K. Spine surgeon selection criteria: Factors influencing patient choice. *Spine (Phila Pa 1976)* 2016;41:E814-E819.
9. Abghari MS, Takemoto R, Sadiq A, Karia R, Phillips D, Egol KA. Patient perceptions and preferences when choosing an orthopaedic surgeon. *Iowa Orthop J* 2014;34:204.
10. Manning BT, Bohl DD, Saltzman BM, et al. Factors influencing patient selection of an orthopaedic sports medicine physician. *Orthop J Sports Med* 2017;5:2325967117724415.
11. Beck JJ, Murray MM, Christino MA. Clinical approach in youth sports medicine: Patients' and guardians' desired characteristics in sports medicine surgeons. *J Am Acad Orthop Surg* 2019;27:479-485.
12. Chandler J, Shapiro D. Conducting clinical research using crowdsourced convenience samples. *Annu Rev Clin Psychol* 2016;12:53-81.
13. Ranard BL, Ha YP, Meisel ZF, et al. Crowdsourcing—harnessing the masses to advance health and medicine, a systematic review. *J Gen Intern Med* 2014;29:187-203.
14. Mortensen K, Hughes TL. Comparing Amazon's Mechanical Turk platform to conventional data collection methods in the health and medical research literature. *J Gen Intern Med* 2018;33:533-538.
15. Puzitiello RN, Dubin J, Menendez ME, et al. Public opinion and expectations of stem cell therapies in orthopaedics. *Arthroscopy* 2021;37:3510-3517.e3512.
16. Moverman MA, Puzitiello RN, Pagani NR, Barnes CL, Jawa A, Menendez ME. Public perceptions of resuming elective surgery during the COVID-19 pandemic. *J Arthroplasty* 2021;36:397-402.e392.
17. Keene Woods N, Chesser AK. Validation of a single question health literacy screening tool for older adults. *Gerontol Geriatr* 2017;3:2333721417713095.
18. Menendez ME, Chen NC, Mudgal CS, Jupiter JB, Ring D. Physician empathy as a driver of hand surgery patient satisfaction. *J Hand Surg* 2015;40:1860-1865.e1862.
19. Judy RPSJ, Talentino SE, Irrgang JJ, Musahl V, Lesniak BP. Physicians can predict patient reported satisfaction scores. *Ann Sports Med Res* 2020;7:1160.
20. McNamara CA, Shah HA, Lezak BA, Haziza S, D'Apuzzo M, Hernandez VH. The effect of a surgeon's online presence on surgeon selection in elective joint arthroplasty. *J Orthop Trauma* 2021;28:22104917211020454.
21. Schwartz LM, Woloshin S. Medical marketing in the United States, 1997-2016. *JAMA* 2019;321:80-96.
22. Waltzman JT, Scholz T, Evans GR. What patients look for when choosing a plastic surgeon: An assessment of patient preference by conjoint analysis. *Ann Plast Surg* 2011;66:643-647.
23. Gross CE, Scott D, Samora JB, Khan M, Kang DG, Frank RM. Physician-rating websites and social media usage: A global survey of Academic Orthopaedic Surgeons: AOA Critical Issues. *J Bone Joint Surg Am* 2022;104:e5.