



Contents lists available at ScienceDirect

North American Spine Society Journal (NASSJ)

journal homepage: www.elsevier.com/locate/xnsj

Basic Science

Modern internet search analytics and spine: what are patients asking and reading online?



Viknesh Kasthuri, AB^a, Alexander Homer, AB^a, Daniel Alsoof, MBBS^b, James Hong, BS^b, Christopher L McDonald, MD^b, Bassel G Diebo, MD^b, Alan H Daniels, MD^{b,*}

^a Warren Alpert Medical School, Brown University, 1 Kettle Point Ave, East Providence, RI, 02914, United States

^b Department of Orthopedics, Warren Alpert Medical School, Brown University, 1 Kettle Point Ave, East Providence, RI, 02914, United States

ARTICLE INFO

Keywords:

Anterior cervical discectomy and fusion
Discectomy
Lumbar fusion
Spinal fusion
Social media
Machine learning
Natural language processing
Online health information
Search analytics
Patient education

ABSTRACT

Background: Google's People Also Ask feature uses various machine learning algorithms to distill the most frequently asked questions and link users to potential answers. The aim of this study is to investigate the most frequently asked questions related to commonly performed spine surgeries.

Methods: This is an observational study utilizing Google's People Also Ask feature. A variety of search terms were entered into Google for anterior cervical discectomy and fusion (ACDF), discectomy, and lumbar fusion. Frequently asked questions and linked websites were extracted. Questions were categorized by topic based on Rothwell's Classification system, and websites were categorized by type. Pearson's chi-squared and Student *t* tests were performed as appropriate.

Results: A total of 576 unique questions (181 ACDF, 148 discectomy, 309 lumbar fusion) were extracted with 372 unique websites and 177 domains. The most common website types were medical practice (41%), social media (22%), and academic (15%). The most popular question topics were specific activities & restrictions (22%), technical details (23%), and evaluation of surgery (17%). Questions related to technical details were more common in discectomy vs lumbar fusion (33% vs 24%, $p=.03$) and lumbar fusion vs ACDF (24% vs 14%, $p=.01$). Questions related to specific activities & restrictions were more common in ACDF vs discectomy (17% vs 8%, $p=.02$) and ACDF vs lumbar fusion (28% vs 19%, $p=.016$). Questions related to risks & complications were more common in ACDF vs lumbar fusion (10% vs 4%, $p=.01$).

Conclusions: The most frequently asked questions on Google regarding spine surgery are related to technical details and activity restrictions. Surgeons may emphasize these domains in consultations and direct patients to reputable sources of further information. Much of the linked information provided originates from nonacademic and nongovernment sources (72%), with 22% from social media websites.

Introduction

People increasingly use the internet and search engines to ask questions and find information, and patients are no exception when trying to learn more about their health problems and potential treatments. According to a survey by the Pew Research Center, 72% of adult internet users in the United States have searched online for information about health issues [1]. In the orthopedic domain, prior studies have found that 66% of orthopedic patients have used the internet to find informa-

tion on their disorders and over 90% of these patients regularly used the internet for this purpose [2,3].

While the internet is an accessible and low-cost tool for patients to acquire information, the wide range of content available raises concern for whether patients are accessing accurate information. Previous studies have assessed the quality and readability of online information for orthopedic patients, finding that the quality is extremely variable and readability on professional society and practice-based websites is often at a level higher than what is recommended for the general United States

FDA device/drug status: Not applicable.

Author disclosures: **VK:** Nothing to disclose. **AH:** Nothing to disclose. **DA:** Nothing to disclose. **JH:** Nothing to disclose. **CLM:** Nothing to disclose. **BGD:** Consulting: Spinevision (B), **AHD:** Royalties: Spineart (F), Southern Spine (B), Medicea (B). Consulting: Stryker (C), EOS (B), Orthofix (C), Medtronic (B), Research Support (Investigator Salary, Staff/Materials): Orthofix (B, paid directly to institution); Fellowship Support : Orthofix (E, paid directly to institution), Medtronic (E, paid directly to institution).

This study does not involve human or animal participants and did not require IRB approval.

* Corresponding author. Department of Orthopedics, 1 Kettle Point Ave, East Providence, RI, 02914, USA. Tel.: +1 401-457-1500

E-mail address: Alan.daniels@brown.edu (A.H. Daniels).

<https://doi.org/10.1016/j.xnsj.2023.100214>

Received 24 January 2023; Received in revised form 21 March 2023; Accepted 22 March 2023

Available online 6 April 2023

2666-5484/© 2023 The Author(s). Published by Elsevier Ltd on behalf of North American Spine Society. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Table 1
Description of classification system for questions and websites.

Rothwell's classification	Description
Fact	Asks whether something is true and to what extent, objective information Example: How long will I need a walker?
Policy	Asks whether a specific course of action should be taken to solve a problem Example: Should I delay lumbar fusion?
Value	Asks for evaluation of an idea, object, or event Example: How successful is an ACDF?
<i>Question classification by topic</i>	
<i>Fact</i>	
Specific activities/Restrictions	Ability/Inability to perform a specific activity or action after surgery
Cost	Cost of surgery including questions about insurance coverage
Recovery	Specific questions regarding recovery, including timelines
Technical details	Surgical procedure, includes specific questions about implants
<i>Policy</i>	
Indications	Surgical indications, timing of surgery
Risks/complications	Management of risks/complications during and after surgery
<i>Value</i>	
Pain	Pertains to duration, severity, and management of pain
Evaluation of surgery	Evaluation of surgery, eg, successfulness or invasiveness
<i>Website categorization</i>	
<i>Description</i>	
Commercial	Commercial organization that positions itself as a source of health information, includes medical device and pharmaceutical companies
Academic	Institution with a clear academic mandate, including universities, academic medical centers, academic societies, and journals.
Medical practice	Local hospital or other medical practice without an academic affiliation
Government	Websites ending in .gov or maintained by a national government
Social media	Websites maintained by nonmedical organizations primarily designed for information sharing between internet users. Includes health blogs, internet forums, and support groups

ACDF, anterior cervical discectomy and fusion.

population [4–8]. Moreover, social media is being used at an increasing rate, with the number of estimated users at 3.6 billion in 2020 [9]. This has implications on how health information is distributed and communicated to the general public.

To better address concerns, it is crucial to identify what patients are asking online. Prior studies have used Google, the most widely used search engine [10], and its People Also Ask (PAA) feature to determine common question types [11–13]. The power of PAA comes from Google's machine learning algorithms that provide users with frequently asked questions related to their original search. This is especially helpful in synthesizing the various questions of a multitude of patients based on what people have asked in the past. One study used this technology to extract questions about rhinoplasty and found that patients are most curious about preoperative factors, cost, and the recovery timeline [11]. Similar research using this method found that the most frequently asked questions about the COVID-19 vaccine have to do with safety and efficacy [13]. In orthopedics, another search analytics investigation reported that the most frequently asked questions related to total joint arthroplasty involve arthritis management, rehabilitation, and ability to perform specific tasks [12].

Given the lack of literature concerning questions asked pertaining to spine surgery, this study aims to report what questions are asked by the general population on Google, and which internet resources are readily available.

Methods

Obtaining data

A custom web scraper written in Python for this project was utilized to navigate to google.com, and enter search terms for ACDF (“ACDF,” “Anterior cervical discectomy and fusion,” “cervical fusion”), discectomy (“discectomy,” “open discectomy,” “minimally invasive discectomy,” “percutaneous discectomy,” “diskectomy”), and lumbar fusion (“lumbar fusion,” “ALIF,” “PLIF,” “TLIF,” “anterior lumbar interbody

fusion,” “posterior lumbar interbody fusion,” “transforaminal lumbar interbody fusion”).

On each search page, the “People Also Ask” section was refreshed until there were 100 questions collected, consistent with previous literature [12]. 100 questions were archived for each search term (eg, 100 for “discectomy” and 100 for “diskectomy” etc.) Then questions were de-duplicated to isolate unique questions. This web scraper was utilized to collect data on June 18, 2022.

The web scraper instantiates a brand-new copy of Chromium every time it was run; this means that browsing history was not kept track of in the browser. This is superior to incognito mode because it also mitigates against user-specific browser fingerprinting (ie, browser extensions). This study does not involve human or animal participants and did not require IRB approval. No funding was provided for this study.

Question classification

The questions were first classified according to Rothwell's system, and further classified into the following subcategories as relevant for our dataset: specific activities & restrictions, cost, recovery, technical details, indications, risks/complications, pain, and evaluation of surgery [14]. Websites were categorized into the following groups: commercial, academic, medical practice, government, and social media. Additional descriptions of these categories are available in Table 1. Classification of the questions and websites were performed by 2 independent reviewers (VSK, ASH) after developing a flowchart for classification (Fig. 1).

Statistical analysis

Interobserver reliability for question classification and website categorization was assessed using Cohen's kappa coefficient. Discrepancies between the 2 reviewers (VK, AH) were resolved by a third reviewer (DA). Student's t-tests were performed to compare the percentage of each of the subcategories in pairwise comparisons of the 3 conditions. Statistical analysis was performed in R (version 4.2.1).

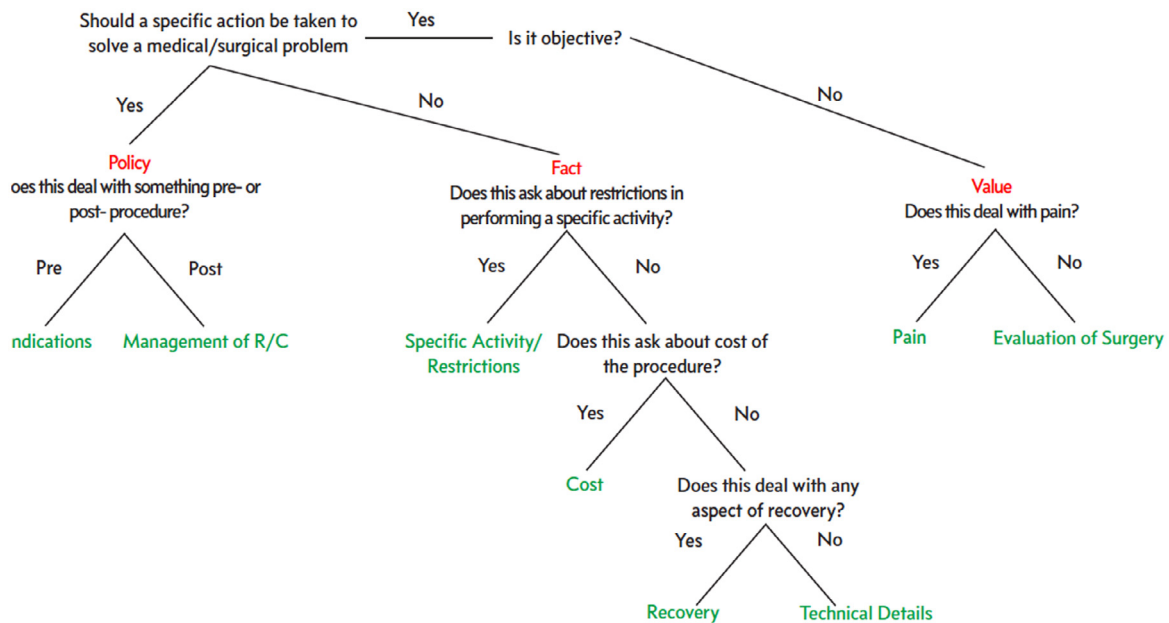


Fig. 1. Flow chart to classify question type.

Results

Classification

In total, 576 unique questions (181 ACDF, 148 discectomy, 309 lumbar fusion); 372 unique websites, and 177 unique domains were extracted and classified. Interobserver reliability was 0.914 for subcategory classification and 0.842 for website classification.

Most questions were categorized as "Fact" under Rothwell's system (ACDF: 58.3%, discectomy: 60.4%, lumbar fusion: 60.8%) (Fig. 2).

The most popular question topics were specific activities & restrictions (SARS) (21.5%), technical details (23.0%), and evaluation of surgery (17.3%). In the ACDF group, the most popular question topics were SARS (27.6%), evaluation of surgery (20.5%), and recovery (16.2%). In the discectomy group, the most popular question topics are technical details (32.8%), SARS (18.7%), and evaluation (14.8%). In the lumbar fusion group, the most popular question topics are technical details (23.7%), SARS (19.6%), and recovery (17.0%) (Fig. 3).

Comparison between surgeries

Questions related to technical details were more common in discectomy vs lumbar fusion (33.0% vs 24%, p=.03) and lumbar fusion vs ACDF (24% vs 14%, p=.01). Questions related to SARS were more common in ACDF vs discectomy (17% vs 8%, p=.02) and ACDF vs lumbar fusion (28% vs 19%, p=.02). Questions related to risks & complications were more common in ACDF vs lumbar fusion (10% vs 4%, p=.01) (Table 2).

Website types

The most common website types for all 3 groups were medical practice (ACDF: 46.5%, discectomy: 44.29%, lumbar fusion: 39.7%) and social media (ACDF: 25.4%, discectomy: 20.1%, lumbar fusion: 23.0%) (Table 3). There was a significant difference in the number of commercial websites linked in discectomy vs lumbar fusion (16% vs 8%, p=.02), Government websites linked in discectomy vs lumbar fusion (9% vs 16%, p=.04), and academic websites linked in ACDF vs lumbar fusion (8% vs 20%, p=.001) (Table 4).

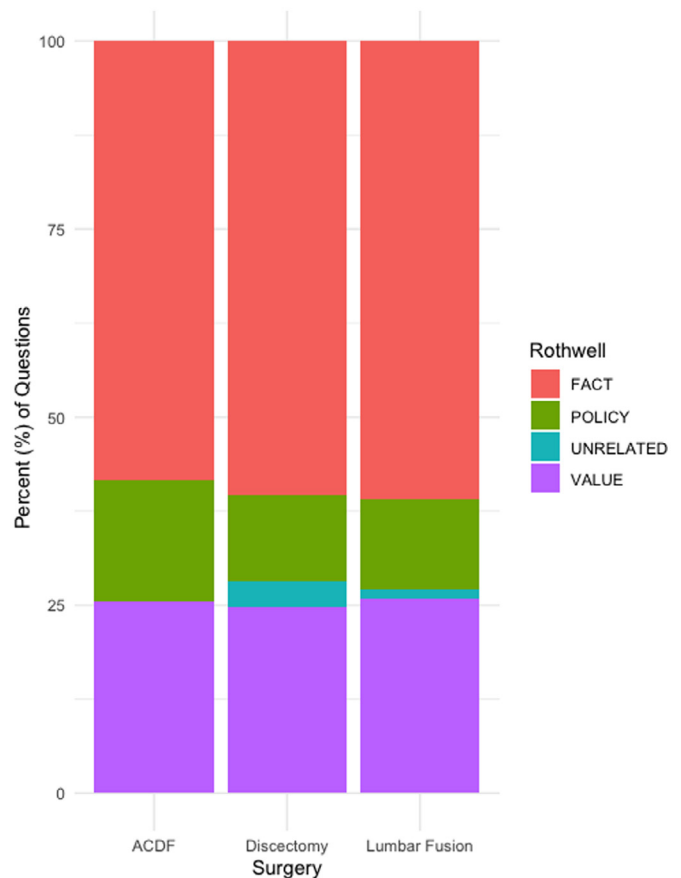


Fig. 2. Rothwell's classification stratified by surgery type.

Discussion

The power of Google's search analytics is based upon the PAA section which distills questions asked by millions of patients. This study design is superior to patient self-reporting surveys, as Google captures what

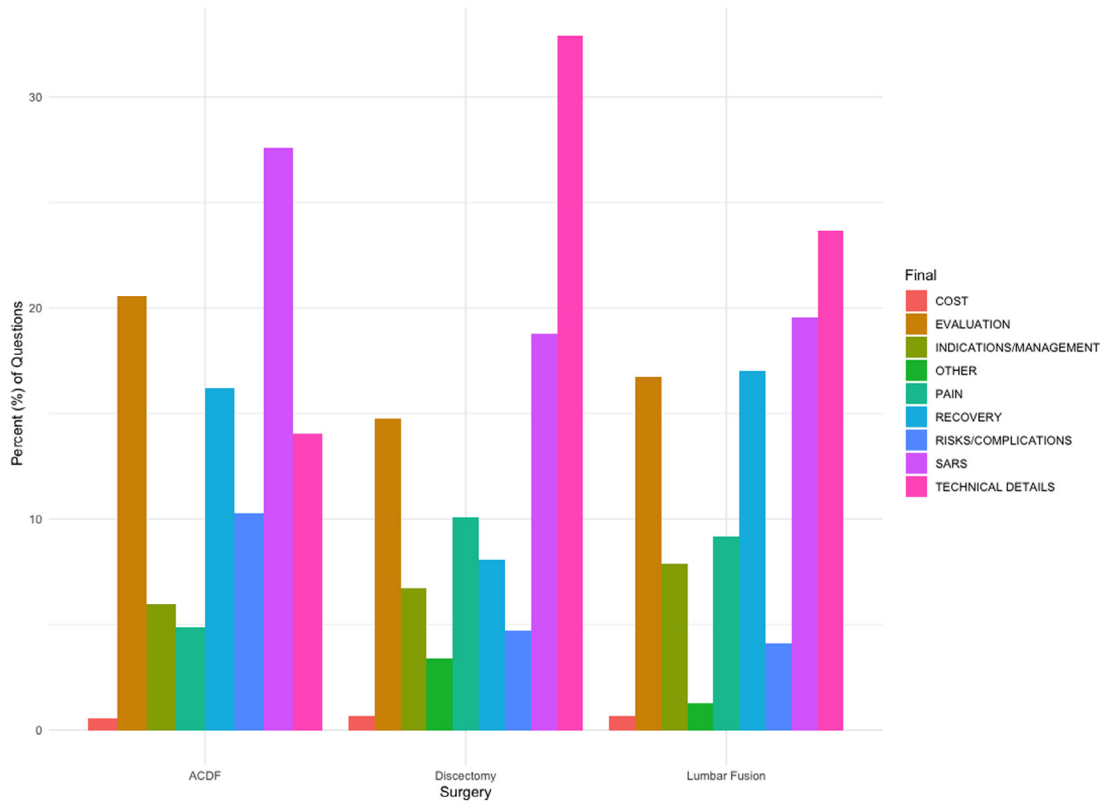


Fig. 3. Subcategory classification stratified by surgery type.

Table 2
Pairwise comparison by subcategory.

Subcategory	ACDF % (SD)	LF % (SD)	p	ACDF % (SD)	Discectomy % (SD)	p	LF % (SD)	Discectomy % (SD)	p
Cost	1 (0.07)	1 (0.08)	.90	1 (0.07)	1 (0.08)	.88	1 (0.08)	1 (0.08)	.97
Evaluation	20 (0.4)	17 (0.37)	.35	20 (0.4)	14 (0.35)	.18	17 (0.37)	14 (0.35)	.54
I/M	6 (0.24)	8 (0.27)	.41	6 (0.24)	7 (0.25)	.79	8 (0.27)	7 (0.25)	.62
Other	0 (0)	1 (0.11)	.12	0 (0)	3 (0.18)	.01	1 (0.11)	3 (0.18)	.13
Pain	5 (0.22)	9 (0.29)	.08	5 (0.22)	10 (0.3)	.07	9 (0.29)	10 (0.3)	.79
Recovery	17 (0.37)	17 (0.38)	.93	17 (0.37)	8 (0.27)	.02	17 (0.38)	8 (0.27)	.01
R/C	10 (0.31)	4 (0.2)	.01	10 (0.31)	5 (0.21)	.06	4 (0.2)	5 (0.21)	.79
SARS	28 (0.45)	19 (0.39)	.02	28 (0.45)	18 (0.39)	.04	19 (0.39)	18 (0.39)	.91
Technical Details	14 (0.35)	24 (0.43)	.01	14 (0.35)	33 (0.47)	<.001	24 (0.43)	33 (0.47)	.04

SD, standard deviation; SARS, specific activities and restrictions; R/C, risks/complications; I/M, indications/management; LF, lumbar fusion; ACDF, anterior cervical discectomy and fusion.

Bold denotes statistical significance with a p value <0.05.

Table 3
Pairwise comparison by website category

	Discectomy N=147	LF N=308	p	ACDF N=181	LF N=308	p	ACDF N=181	Discectomy N=147	p
Academic (% [SD])	14 (0.35)	20 (0.42)	.17	8 (0.30)	20 (0.42)	.00	8 (0.30)	14 (0.35)	.09
Commercial (% [SD])	16 (0.36)	8 (0.29)	.02	13 (0.34)	8 (0.29)	.10	13 (0.34)	16 (0.36)	.54
Government (% [SD])	9 (0.28)	16 (0.38)	.04	12 (0.33)	16 (0.38)	.26	12 (0.33)	9 (0.28)	.34
Medical Practice (% [SD])	45 (0.59)	41 (0.64)	.53	48 (0.56)	41 (0.64)	.25	48 (0.56)	45 (0.59)	.68
Social Media (% [SD])	20 (0.40)	24 (0.48)	.48	26 (0.51)	24 (0.48)	.62	26 (0.51)	20 (0.40)	.28

SD, standard deviation; LF, lumbar fusion; ACDF, anterior cervical discectomy and fusion.

Bold denotes statistical significance with a p value <0.05.

Table 4
Breakdown of websites linked by category.

Website category	%
Medical Practice	40.6%
Social Media	21.6%
Academic	15.0%
Government	12.8%
Commercial	10.0%

patients are truly curious about and may be reluctant to ask their doctor about or self-report.

Our study is clinically relevant as it discovered that the most frequently asked questions on Google regarding outpatient spine surgery are related to technical details and activity restrictions. Most of this information originates from nonacademic and nongovernment sources. Though previous literature identifies varied question topics and sources of information by procedure, our findings are in line with these studies in identifying fact as a primary question topic and medical practices as key sources of information [11–13,15].

Previous research has identified a substantial gap between surgeon and patient expectations and evaluation of spinal surgery [16]. Identification of patient question topics via search analytics helps elucidate where this mismatch in information may lie. Most patient questions fell under Rothwell's Fact category, indicating that patients primarily use Google search to obtain information on the characteristics of the surgery. Furthermore, Policy was the least searched category, suggesting that questions about eligibility and risk are answered elsewhere, possibly by physicians themselves. Also common across the 3 procedures was the source of information which was primarily medical practices, followed by social media. Thus, it appears that rather than using reservoirs specific for academic or commercial organizations, patients' questions are often addressed by individual practices or through the ease of social media accessibility.

There is evidence that active preoperative patient education improves postoperative outcomes in spinal surgery regarding emergency room use, expenditure, and psychological measures [17,18]. Given that social media websites have been established as poor sources of information, the high proportion of patients utilizing these websites is concerning and offers room for advancement [15,19,20]. Our study revealed that most information provided originates from nonacademic, nongovernment sources (72.2%), with 21.5% from social media websites. Medical practices may benefit from proactively routing patients towards established, peer-reviewed sources of information rather than social media [21].

However, social media will likely remain a first-line resource for many patients. Thus, academic and professional organizations should enhance their social media presence to disseminate verified information on these platforms. Neely et al. [22] found that 64% of social media users in their study were unlikely to fact check what they read on the internet with a health professional. Therefore, it is increasingly important to provide these users with an accurate source of information. Furthermore, academic and commercial organizations may benefit from establishing greater relationships with community medical practices and improve the quality of social media information by developing a greater presence on those platforms. Indeed, an increasing proportion of patients report using social media to exchange health information with a health-care professional [23].

Although ACDF, discectomy, and lumbar fusion share general characteristics, there are notable differences in the question sub-types most asked. Renovanz et al. [24] developed a question prompt list for patients undergoing elective spine surgery and found that in the consent process, patients often asked questions beyond the surgery itself such as prognosis and recovery. However, the study performed by Renovanz et al. [24], did not evaluate the differences between surgeries, while the present study considers procedural differences.

Lumbar fusion had a significantly lower proportion of questions concerning risks/complications and SARS when compared to ACDF. Lumbar fusion had a significantly lower proportion of questions concerning technical details, but more questions regarding recovery when compared to discectomy. ACDF had a significantly lower proportion of questions concerning technical details when compared from discectomy, but more questions concerning recovery and SARS. These findings may reflect the inherent differences in surgeries and how patients perceive the risk profile of ACDF as compared to lumbar fusion. The differences in questions asked may also reflect nuances in patient consultation for each surgery with differing emphasis. This is the first study to explore the search analytics for common spine surgeries and further research is required to better appreciate the differences in the informed consent process across these spine procedures, and what are the concerns of patients preoperatively.

This study has some limitations, consistent with previous literature using these data. For one, while we used a new instance of the Chrome browser for every new search term, there may be other ways by which Google personalized the PAA search results. To mitigate this, we collected a large sample size of questions and associated websites, and thus do not believe the validity of our results are affected. Secondly, PAA search results change over time in response to new queries regarding the topic, so the types of questions patients are asking and the websites from which they are sourcing answers may change. Thirdly, our categorization system is subject to review bias. To combat this, we did create a flowchart for reviewers to follow, and show inter-rater reliability, but the process is inherently partially subjective. Finally, we did not directly verify the veracity of any of the information to which Google directed patients; we only use the category of website as a proxy indicator.

Conclusion

This study uses Google search analytics to provide a novel look at exactly the types of questions that patients have with respect to some of the most common spine procedures: ACDF, discectomy, and lumbar fusion. The most frequently asked questions relate to technical details and activity restrictions. This may indicate that patient counseling should focus even more on the technical aspects of the procedure as well as short- and long-term lifestyle restrictions. Additionally, much of the linked information provided originates from nonacademic, nongovernment sources (72.2%), with 21.5% from social media websites, suggesting that the spine community needs to take further steps to develop online resources addressing these categories of questions. As the sources of information patients consult shift, so too, will the spine community have to adapt to provide accurate information and support patients in making the appropriate treatment decisions.

Declarations of Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding

This study did not receive funding.

References

- [1] Fox S. The social life of health information. Pew Research Center. Accessed September 27, 2022. <https://www.pewresearch.org/fact-tank/2014/01/15/the-social-life-of-health-information/>.
- [2] Fraval A, Ming Chong Y, Holcdorf D, Plunkett V, Tran P. Internet use by orthopaedic outpatients - current trends and practices. *Australas Med J* 2012;5(12):633–8. doi:10.4066/AMJ.2012.1530.
- [3] Hertling S, Matziolis G, Graul I. The role of the Internet as a source of medical information for orthopedic patients. *Orthopädie Heidelb Ger* 2022;51(7):521–30. doi:10.1007/s00132-022-04238-5.

- [4] Badarudeen S, Sabharwal S. Assessing readability of patient education materials: current role in orthopaedics. *Clin Orthop* 2010;468(10):2572–80. doi:10.1007/s11999-010-1380-y.
- [5] Ellsworth B, Patel H, Kamath AF. Assessment of quality and content of online information about hip arthroscopy. *Arthrosc J Arthrosc Relat Surg Off Publ Arthrosc Assoc N Am Int Arthrosc Assoc* 2016;32(10):2082–9. doi:10.1016/j.arthro.2016.03.019.
- [6] Beutel BG, Danna NR, Melamed E, Capo JT. Comparative readability of shoulder and elbow patient education materials within orthopaedic websites. *Bull Hosp Jt Dis* 2013 2015;73(4):249–56.
- [7] Wang SW, Capo JT, Orillaza N. Readability and comprehensibility of patient education material in hand-related web sites. *J Hand Surg* 2009;34(7):1308–15. doi:10.1016/j.jhbs.2009.04.008.
- [8] Vives M, Young L, Sabharwal S. Readability of spine-related patient education materials from subspecialty organization and spine practitioner websites. *Spine* 2009;34(25):2826–31. doi:10.1097/BRS.0b013e3181b4bb0c.
- [9] Yoon S, Wee S, Lee VSY, Lin J, Thumboo J. Patterns of use and perceived value of social media for population health among population health stakeholders: a cross-sectional web-based survey. *BMC Public Health* 2021;21:1312. doi:10.1186/s12889-021-11370-y.
- [10] Search Engine Market Share Worldwide. StatCounter global stats. Accessed September 27, 2022. <https://gs.statcounter.com/search-engine-market-share>.
- [11] Fassas SN, Krane NA, Zonner JG, Sykes KJ, Kriet JD, Humphrey CD. Google search analysis: what do people want to know about rhinoplasty and where do they find the answers? *Facial Plast Surg Aesthetic Med* 2022;24(5):363–8. doi:10.1089/fpsam.2021.0100.
- [12] Shen TS, Driscoll DA, Islam W, Bovonratwet P, Haas SB, Su EP. Modern internet search analytics and total joint arthroplasty: what are patients asking and reading online? *J Arthroplasty* 2021;36(4):1224–31. doi:10.1016/j.arth.2020.10.024.
- [13] Sajjadi NB, Shepard S, Ottwell R, et al. Examining the public's most frequently asked questions regarding COVID-19 vaccines using search engine analytics in the united states: observational study. *JMIR Infodemiology* 2021;1(1):e28740. doi:10.2196/28740.
- [14] Rothwell JD. *In mixed company: communicating in small groups*. 9th ed. Boston, MA, USA: Wadsworth Publishing; 2015.
- [15] Elhassan Y, Sheridan G, Nassiri M, Osman M, Kiely P, Noel J. Discectomy-related information on the internet: does the quality follow the surge? *Spine* 2015;40(2):121–5. doi:10.1097/BRS.0000000000000689.
- [16] Lattig F, Fekete TF, O'Riordan D, et al. A comparison of patient and surgeon preoperative expectations of spinal surgery. *Spine* 2013;38(12):1040–8. doi:10.1097/BRS.0b013e318269c100.
- [17] Eastwood D, Manson N, Bigney E, et al. Improving postoperative patient reported benefits and satisfaction following spinal fusion with a single preoperative education session. *Spine J Off J North Am Spine Soc* 2019;19(5):840–5. doi:10.1016/j.spinee.2018.11.010.
- [18] Burgess LC, Arundel J, Wainwright TW. The effect of preoperative education on psychological, clinical and economic outcomes in elective spinal surgery: a systematic review. *Healthc Basel Switz* 2019;7(1):E48. doi:10.3390/healthcare7010048.
- [19] Gussner A, Baskar D, Rohde M, Ganley T, Shea K. Evaluating information about osteochondritis dissecans shared across social media platforms. *J Pediatr Orthop* 2022;42(10):627–30. doi:10.1097/BPO.0000000000002244.
- [20] Stogowski P, Antkowiak L, Trzciński R, et al. Content quality and audience engagement analysis of online videos for anterior lumbar interbody fusion. *World Neurosurg* 2022;160:e636–42. doi:10.1016/j.wneu.2022.01.102.
- [21] Madkouri R, Grelat M, Vidon-Buthion A, Llleu M, Beaurain J, Mourier KL. Assessment of the effectiveness of SFCR patient information sheets before scheduled spinal surgery. *Orthop Traumatol Surg Res OTSR* 2016;102(4):479–83. doi:10.1016/j.otsr.2016.02.005.
- [22] Neely S, Eldredge C, Sanders R. Health information seeking behaviors on social media during the COVID-19 pandemic among american social networking site users: survey study. *J Med Internet Res* 2021;23(6):e29802. doi:10.2196/29802.
- [23] Huo J, Desai R, Hong YR, Turner K, Mainous AG, Bian J. Use of social media in health communication: findings from the health information national trends survey 2013, 2014, and 2017. *Cancer Control* 2019;26(1):107327481984144. doi:10.1177/1073274819841442.
- [24] Renovanz M, Haaf J, Nesbigall R, et al. Information needs of patients in spine surgery: development of a question prompt list to guide informed consent consultations. *Spine J Off J North Am Spine Soc* 2019;19(3):523–31. doi:10.1016/j.spinee.2018.08.015.