ORIGINAL RESEARCH

Ophthalmology Inquiries on Reddit: What Should Physicians Know?

Amisha D Dave [ID][1], Dagny Zhu [ID][2]

[1]University of Connecticut School of Medicine, Farmington, CT, USA; [2]NVISION Eye Centers, Rowland Heights, CA, USA

Correspondence: Amisha D Dave, University of Connecticut School of Medicine, 263 Farmington Ave, Farmington, CT, 06030, USA, Tel +1 203-903-2625, Email amishadave@gmail.com

Purpose: Patients are seeking answers to personal medical questions on social media. Reddit, a popular social media site, has been overlooked as a source of data in the field of ophthalmology. We analyzed posts in the subreddit, r/Ophthalmology, to better understand the most common ophthalmic conditions patients are discussing online and how often those making posts are being advised to seek professional medical care.

Patients and Methods: This cross-sectional study analyzed posts and comments from March 18, 2018 to November 9, 2020. All posts and comments on r/Ophthalmology are public and were accessed using the Python Reddit API Wrapper. This text was analyzed for unique references to common ophthalmic conditions and for mentions and recommendations to different types of medical care.

Results: Nine hundred and nineteen posts were collected from the above timeframe. An auto-moderator makes a comment on every post to discourage patients from asking personal medical questions. Despite this, over two-thirds of posts discussed medical treatment for eye conditions in either a post, comment, or both. Almost half of all posts mention "ophthalmology", but only 9% go as far as to recommend ophthalmic care. One-third of posts have no reference to medical care. Within posts, flashes and floaters were the most common condition mentioned, making up 15% of unique mentions, followed by glaucoma (7.4%) and retinal detachments (6.7%). Within comments, cataracts were most commonly discussed, making up 12% of unique mentions, followed by glaucoma (8.9%).

Conclusion: These findings show that patients are seeking information about their eye health on the r/Ophthalmology subreddit and that Reddit users are engaging with these types of posts, instead of recommending professional care in most cases. It is important for ophthalmologists to recognize the most common conditions patients are asking about online and learn how they can do a better job of educating their patients in the office.

Keywords: Reddit, social media, ophthalmology, subreddit, patient education, common conditions

Introduction

Over the last decade, social media has increasingly become a resource for patients seeking information about their health. Studies have shown that the majority of patients are now seeking medical information online,[1,2] with patients preferring sites such as Facebook and Twitter.[3] These sites have grown to serve as free, attractive, and easy to use apps, with up to 85% of patients using social media to search for health information.[4] Physicians and others in the medical field have knowingly increased their presence on these platforms to better educate and disseminate factual medical information, understanding that social media may be the first place that patients turn to for advice and information.[5–7]

As with many other fields of medicine, social media research in ophthalmology has primarily focused on sites such as Facebook, Twitter, Instagram and LinkedIn.[8–11] However, these are not the only social media sites that patients are turning to for medical advice. With over 52 million and growing daily active users, Reddit is a popular social media site that patients are frequently turning to for specific medical advice because of its discussion forum type format.[12] Reddit has proven to be a source of valuable patient information in other medical fields, such as dermatology, psychiatry, and radiology.[13–15] Despite its growing popularity, Reddit has yet to be fully explored within the field of ophthalmology.

Reddit offers a unique patient perspective because unlike other social media sites, its users are largely anonymous. This allows for them to make candid posts and comments in the various, individual communities that Reddit hosts on its

site, known as subreddits. Within these subreddits, users are given the opportunity to upvote or downvote posts and comments to increase the visibility of information that the community deems useful. The vast majority of ophthalmology information can be found in two main ophthalmology subreddits, r/EyeTriage and r/Ophthalmology. A previous cross-sectional study analyzed the content of posts made in the r/EyeTriage subreddit, giving some insight into the information that patients are seeking within this community.[16]

The goal for this study is to investigate the other ophthalmology subreddit, r/Ophthalmology, to determine what topics in ophthalmology are of greatest interest to Reddit users and whether ophthalmic care is being recommended to those seeking advice. This information will allow us to better understand the perspectives and discussion of the ophthalmology patient population on Reddit.

Materials and Methods

This cross-sectional study analyzed posts and comments on the Reddit subreddit r/Ophthalmology to understand eye-related patient concerns. r/Ophthalmology was created on June 29, 2011 with the goal of answering general questions about eye topics by the public.[17] As stated by the "moderator", u/arcadeflyer, specific patient questions should be redirected to a different subreddit r/EyeTriage.[18] Additionally, every post on the subreddit includes an automatic comment by an "automoderator" that explicitly states that questions from patients about their personal health will be removed. Despite this, many posts on the subreddit continue to be patient questions, providing a wealth of data for analysis. The subreddit is frequented by a wide variety of ophthalmic professionals, including ophthalmologists, optometrists, and ophthalmic technicians. Every user that makes a post is required to identify their background within the text and every user on the subreddit has the opportunity to self-identify their profession, which appear next to their username when they make posts or comments. Posts on the subreddit include advice, links, questions, topics for discussion, personal stories, and educational resources.

The public and anonymous posts and comments on r/Ophthalmology were accessed using the Python Reddit API Wrapper. This allowed the Python software to access the data structures within the Reddit interface and extract the necessary data. There was no interaction with individuals to retrieve this data and this data can be accessed without a Reddit account. Given the public and anonymous nature of this data, Institutional Review Board approval was not needed.[19] Posts and comments from March 18, 2018 to November 9, 2020 were analyzed and those that were deleted or removed on or prior to November 9, 2020 were not included in the analysis.

After the extraction of posts and comments, the data was pre-processed to prepare it for analysis (Figure 1). The "automoderator" comment was removed from each post and excluded from analysis. Following this, all text within post
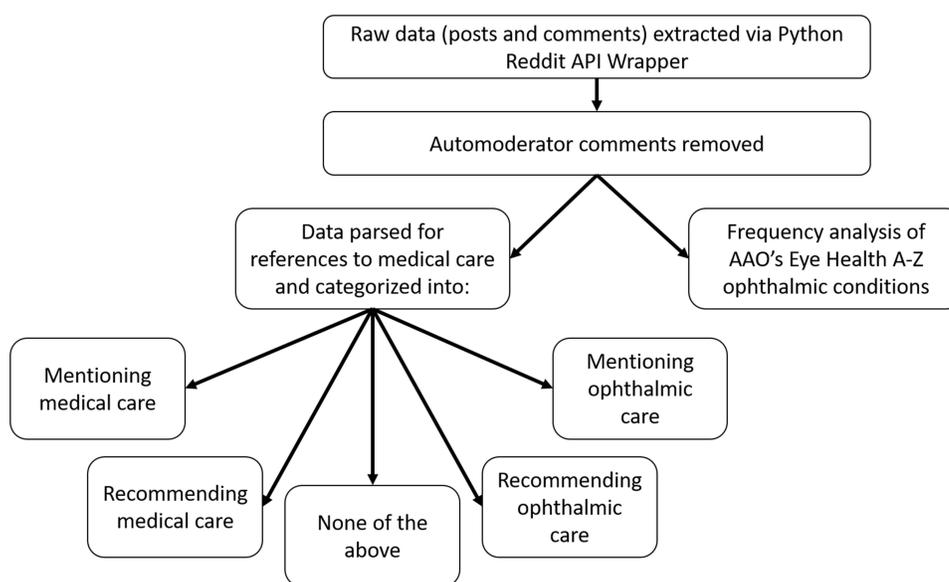

Figure 1 Data processing and analysis flowchart.

and comments was analyzed for unique references to ophthalmic conditions from the American Academy of Ophthalmology's (AAO's) Eye Health A-Z through a keyword search and the frequency of each reference was evaluated. To isolate posts and comments for references to different types of medical care, the data was parsed for posts and comments that included "ophth", "opth", "opto", "eye doctor", "professional", "physician", "primary care", "appointment", "medicine", "medication", "insurance", "prescribe", or "prescription", similar to previous methodology analyzing medical Reddit data.[13] The resulting posts and comments were then evaluated to determine if they mentioned or recommended either ophthalmic care or other medical care. Medical care is defined as medical intervention, treatment, or professional evaluation.

Posts were considered to be "recommending" any type of medical care if (1) it was mentioned only within the comments of a post and not within the title or body of the post itself and (2) at least 1 commenter encouraged the original poster or another commenter to seek care. Posts were considered to be "mentioning" any type of medical care if (1) it was mentioned within the comments of a post or (2) within the title and/or body of the post itself. Posts that were found to both "recommend" and "mention" care were categorized as recommending care. Comments were considered to be "recommending" any type of medical care if the commenter encouraged the original poster or another commenter of the same post to seek care. Comments were considered to be "mentioning" any type of care if it was mentioned within the comment. Again, the presence of both a "recommendation" and "mention" was categorized as a recommendation of care. Posts and comments that referenced both ophthalmic care and other forms of medical care were considered references to ophthalmic care. Post and comments that did none of the above were also noted. Ophthalmic care was defined as references specifically to ophthalmologists, optometrists, and eye doctors. Counts of posts and comments in these various categories were then analyzed.

Statistical analysis was done in Python using built-in statistical packages for frequency and count analysis (Python Software Foundation. Python Language Reference, version 2.7. Available at http://www.python.org).

Results

A total of 919 posts with 5345 non-automoderator comments were posted between March 18, 2018 and November 9, 2020. While posts that ask patient-specific questions were said to have been removed by the automoderator, almost half (403/919) of the posts available on the subreddit were found to be referencing patient questions. Furthermore, two-thirds (612/919) of the posts involved conversation surrounding medical care either within the post, subsequent comments, or both. Of the 5345 comments analyzed, 1196 were found to reference any type of medical care.

Amongst the 919 posts analyzed from r/Ophthalmology, the majority either mention (49%) or recommend (9.5%) ophthalmic care (Figure 2, Table 1). 7.7% of the posts mention other medical care and a negligible amount (0.4%) go as far as to recommend other medical care. Amongst the 5345 comments, the vast majority (78%) made no reference to medical care (Figure 3, Table 1). Of the 1196 comments that referenced any type of care, 66% mentioned ophthalmic
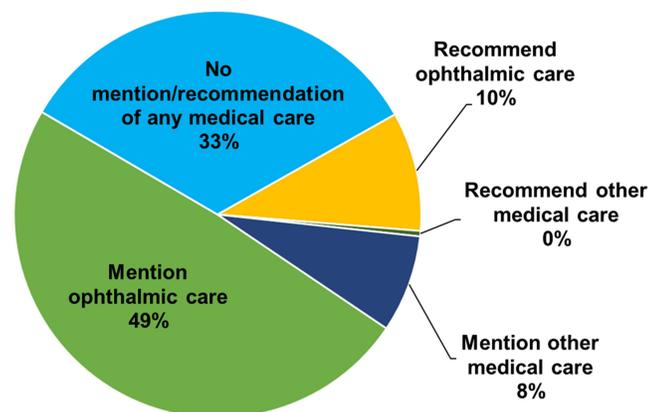

Figure 2 References to medical care in posts.

Table 1 Number of References to Medical Care in Posts and Comments

	Posts	Comments
Mention ophthalmic care	450	787
No mention/recommendation of any medical care	307	4149
Recommend ophthalmic care	87	134
Recommend other medical care	4	11
Mention other medical care	71	264
Total	919	5345

care and 11% recommended ophthalmic care (Figure 3). Other forms of medical care were mentioned in 22% of comments and recommended in 1% of comments.

Searching within posts for ophthalmic conditions found in the AAO's Eye Health A-Z list demonstrated 312 unique instances of these keywords. This analysis revealed that posters were most commonly discussing flashes and floaters (48/312). Glaucoma (24/312), retinal detachments (21/312), and headaches (21/312) were also commonly brought up by posters. Almost half (61/125) of the ophthalmic conditions within the Eye Health A-Z list were absent from post discussions in this subreddit. A chart of commonly discussed ophthalmic conditions in posts of this subreddit can be found in Figure 4.

Similar analysis within the comments of posts led to the discovery of 586 unique references to ophthalmic conditions. The most common condition within the comments, cataracts (71/586), differed from that discussed within posts. However, glaucoma (52/586) and flashes and floaters (45/586) were found to be common between the two analyses. A chart of commonly discussed ophthalmic conditions in comments of this subreddit can be found in Figure 5. The conditions discussed within the comments were also found to be slightly more diverse than those in the posts, with only 54 of the 125 conditions absent from conversation. Fifty-eight of the conditions were found to be discussed in both the posts and the comments.

Discussion

The r/Ophthalmology subreddit is a popular social media platform for patients to seek and share information about eye concerns. Analysis of the interactions show that close to two-thirds of posts discuss medical concerns despite these posts being strongly discouraged and deleted from the subreddit. The persistence of posts seeking medical advice on this
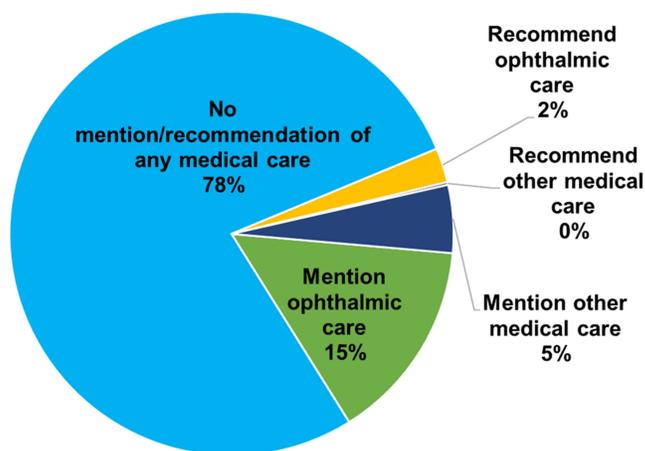

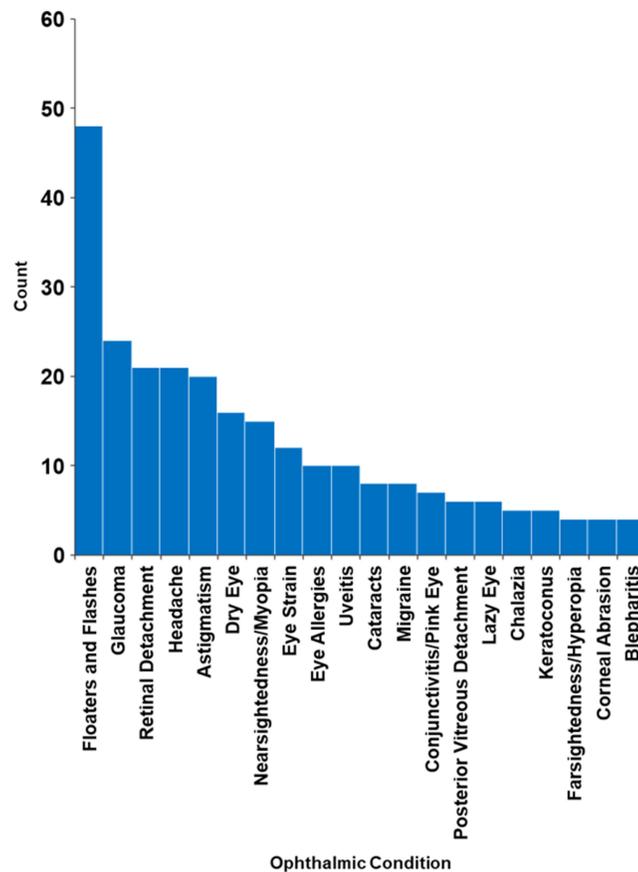**Figure 3** References to medical care in comments.

Figure 4 Top 20 ophthalmic conditions mentioned in posts.

platform suggests that there is a need for increased patient education on ophthalmic conditions. Patients were found to discuss a variety of topics within this group, with conversation in posts and comments largely being dominated by discussion surrounding retinal detachments, cataracts, and glaucoma. As these are common ophthalmic concerns of patients seen in-office, this study highlights topics that could benefit from increased patient education.

While it is clear that patients are looking for medical information within this subreddit, these results also demonstrate that 75% of comments did not mention or recommend users to seek any type of medical care. Of the comments that referenced care, only a minority went as far as to recommend some type of medical care. These findings highlight the discrepancy between the number of users seeking medical advice on this platform and how often they are told to see a professional for their concerns. This can partially be attributed to the growing amount of self-diagnosis that patients partake in, given the amount of health information accessible to them, and medical advice they receive from others on the internet. Patients may be hopeful to receive medically accurate information about their concerns online, however a previous study suggests that ophthalmologists make up a minority of the self-identified users that frequent the other ophthalmology subreddit, r/EyeTriage.[16] This can result in a greater reliance on the advice of other Reddit users, increasing the risk of misinformation. In addition, many of the posts and comments mentioning ophthalmic care do so in the context of users wondering or unsure if they should seek this type of care. A study analyzing the r/EyeTriage subreddit also found that patients posting about ophthalmic concerns demonstrated anxiety and worry with patients most commonly seeking diagnoses, highlighting the potential vulnerable state that patients may be in when seeking ophthalmic care information online.[16] This suggests that there is room for improvement in educating patients about circumstances in which they should seek ophthalmic care. Ophthalmologists can play a key role in improving patient education about a variety of sight-threatening conditions by understanding what ophthalmic information patients are seeking online as
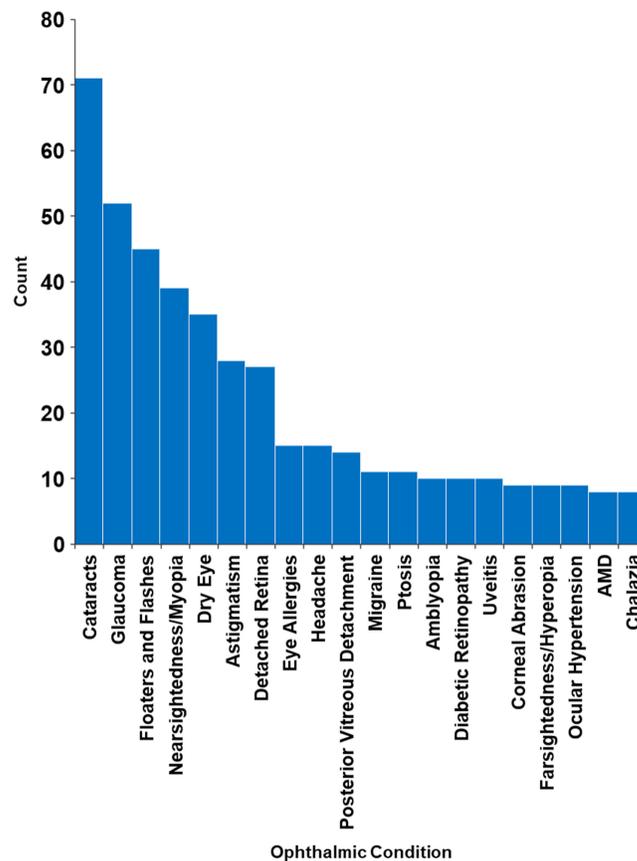
Figure 5 Top 20 ophthalmic conditions mentioned in comments.

a result of this study. This type of education will improve patient outcomes and better educate those who may be giving advice to others online.

When considering what patients are discussing within posts, the increased frequency of flashes and floaters appearing in conversation suggests that patients are turning to this platform to ask others what they should do when experiencing these symptoms. While one of the most common reasons for acute onset flashes and floaters is a posterior vitreous detachment, patients should be aware that they need to be appropriately evaluated in order to rule out a possible retinal detachment.[20,21] Patient education strategies aimed to decrease delayed presentation of certain ophthalmic concerns may be useful tactics for ophthalmologists to use in office. One particular acronym, FLASH, can help patients remember the following symptoms for vision-threatening eye emergencies: flashes and floaters, loss of vision, aching pain, second image, help.[22] This education can also help address the other commonly brought up topics in posts, glaucoma and headaches. Patients experiencing acute angle closure glaucoma may often presents with headaches and blurry vision,[23] both of which are encompassed by the acronym. This can help patients with these concerns know to seek immediate medical attention as opposed to turning to the advice of those on the internet. It is important to note that patients are not exclusively bringing up acute medical concerns in posts. Posts are also made by those seeking more information about chronic conditions they may have such as glaucoma, astigmatism, dry eye, and uveitis. These results can help guide further patient education both on social media and in the office.

Within comments, users of the r/Ophthalmology subreddit are found to be commonly discussing similar topics to those found in posts. This suggests that the comments may be frequently used for other users to give advice on topics brought up in posts. As there is no qualification necessary for a layperson to give medical advice online, it is important that eye professionals are acutely aware of the discussions taking place. The knowledge of the results of this study can help inform ophthalmologists and optometrists on what education they should focus on disseminating. The benefit of this is twofold: (1) Patients are inherently better educated about eye conditions and can more appropriately assess when to

seek medical care and (2) if they are giving advice on the internet, they will be less likely to spread misinformation to others. Methods of patient education can be divided into social media resources and non-social media resources. Outside of social media, ophthalmologists can make use of the variety of patient education resources available through the AAO, including pamphlets, videos, and diagrams.[24] Many ophthalmologists also have personalized patient education information sheets that can be included in after-visit summaries. These resources are additionally helpful from a patient perspective because they can include links to reputable resources that patients can rely on to further their own education on particular topics. These types of resources tend to be more static, whereas the wide spectrum of social media platforms can give ophthalmologists creative freedom to decide how to disseminate patient education, including text, photo, and video-based material. While engaging in social media can be time-intensive, it is important for physicians to recognize that up to 80% of their patient population is seeking information about their health online.[25] Within the field of ophthalmology, social media has been gaining more momentum and the AAO provides guidelines that may help ophthalmologists use social media to market their practices.[26] Extending use of social media to educate patients can help ophthalmologists reach those who may otherwise lack other resources to access health information while also helping to build their practice.[25]

Reddit as a social media platform for health information offers unique advantages and perspectives. Unlike other social media sites, Reddit allows for patients to easily create accounts that give them anonymity. This has been found to facilitate more supportive and instrumental conversation about medical conditions, especially in situations where stigma may be involved.[27] The platform creates a space in which patients do not feel like they are broadcasting their concerns or revealing too much personal information to those that they know, as they would on sites such as Twitter and Facebook.[28–30] The r/Ophthalmology subreddit may possibly attract more ophthalmologist subscribers than that of r/EyeTriage given that the subreddit more adamantly discourages patient-specific questions. Physicians are well aware of the professional consequences of giving specific medical information on the internet.[31] The anonymity provided by Reddit and the rules of the r/Ophthalmology subreddit gives ophthalmologists the freedom to interact within the group without feeling obligated to respond to patient questions, making it more likely that they have a greater presence there than in r/EyeTriage. This makes the subreddit an accessible platform for ophthalmologists to disseminate education materials for patients while getting input from other users of various backgrounds, already found to be effective in other fields of medicine.[32,33] This type of engagement with patients and others can help increase overall ophthalmic knowledge in the general population.

This study is not free of limitations, both with Reddit itself as a data source and the study methodology. As this study relies on data directly from the r/Ophthalmology subreddit, it is important to consider that this forum is also frequented by others with an interest in ophthalmology, such as medical students, residents, and other eye professionals. With 56% percent of available posts discussing topics outside of medical advice, conversations would be expected to fall outside of mentioning or recommending any type of medical care, serving as a confounder when attempting to determine whether patients are appropriately being recommended to seek care. Additionally, the subreddit rules make it likely that more posts were made discussing patient-specific questions but were deleted prior to data extraction from the site. Further research into the posts and comments in this subreddit since the time of data extraction may prove valuable in better understanding the conversations about ophthalmology on this social media platform. In evaluating the conditions that patients are discussing on r/Ophthalmology, it is possible that conditions outside of those included in the AAO's Eye Health A-Z list were discussed and not captured in these results. A more exhaustive list of ophthalmic symptoms and diseases may yield greater information about topics of conversation. The pre-processing methodology used to identify posts and comments with references to medical care has been previously described, but may have unintentionally excluded a small number of conversations related to patient questions. Future studies analyzing Reddit data may benefit from a more robust natural language processing approach to thoroughly process this complex data source.

Conclusion

In summary, Reddit data, specifically the r/Ophthalmology subreddit, offers unique insight into the conversations that patients are having about their eye health on social media. Patients were found to ask specific questions about their health on the platform, leading to increased self-diagnosis and spread of medical advice from other Reddit users. Within these patient-specific conversations, ophthalmic care was often mentioned, but there is room for increased patient education in

this space to better inform patients about both acute and chronic ophthalmic conditions. Ophthalmologists, and others in the vision community, can use the results of this study to tailor patient education towards commonly discussed ophthalmic conditions found in the r/Ophthalmology subreddit. This approach can help improve patient safety while decreasing the spread of misinformation.

Funding

Disclosure

The authors report no conflicts of interest in this work.

References

1. Atkinson NL, Saperstein SL, Pleis J. Using the internet for health-related activities: findings from a national probability sample. *J Med Internet Res*. 2009;11(1):e4. doi:10.2196/jmir.1035
2. Hesse BW, Nelson DE, Kreps GL, et al. Trust and sources of health information: the impact of the internet and its implications for health care providers: findings from the first health information national trends survey. *Arch Intern Med*. 2005;165(22):2618–2624. doi:10.1001/archinte.165.22.2618
3. Antheunis ML, Tates K, Nieboer TE. Patients' and health professionals' use of social media in health care: motives, barriers and expectations. *Patient Educ Couns*. 2013;92(3):426–431. doi:10.1016/j.pec.2013.06.020
4. Marar SD, Al-Madaney MM, Almousawi FH. Health information on social media. *Saudi Med J*. 2019;40(12):1294–1298. doi:10.15537/smj.2019.12.24682
5. Wexner SD, Petrucci AM, Brady RR, Ennis-O'Connor M, Fitzgerald JE, Mayol J. Social media in colorectal surgery. *Colorectal Dis*. 2017;19(2):105–114. doi:10.1111/codi.13572
6. Scarano Pereira JP, Martinino A, Manicone F, et al. Bariatric surgery on social media: a cross-sectional study. *Obes Res Clin Pract*. 2022;16(2):158–162. doi:10.1016/j.orcp.2022.02.005
7. De Martino I, D'Apolito R, McLawhorn AS, Fehring KA, Sculco PK, Gasparini G. Social media for patients: benefits and drawbacks. *Curr Rev Musculoskelet Med*. 2017;10(1):141–145. doi:10.1007/s12178-017-9394-7
8. Micieli JA, Tsui E. Ophthalmology on social networking sites: an observational study of Facebook, Twitter, and LinkedIn. *Clin Ophthalmol*. 2015;9:285–290. doi:10.2147/OPTH.S79032
9. Clarke C, Smith E, Khan M, Al-Mohtaseb Z. Social media and ophthalmology: perspectives of patients and ophthalmologists. *J Med Syst*. 2018;42(12):258. doi:10.1007/s10916-018-1079-2
10. Micieli R, Micieli JA. Twitter as a tool for ophthalmologists. *Can J Ophthalmol*. 2012;47(5):410–413. doi:10.1016/j.jcjo.2012.05.005
11. McGregor F, Somner JEA, Bourne RR, Munn-Giddings C, Shah P, Cross V. Social media use by patients with glaucoma: what can we learn? *Ophthalmic Physiol Opt*. 2014;34(1):46–52. doi:10.1111/opo.12093
12. Patel S. Reddit claims 52 million daily users, revealing a key figure for social-media platforms. Wall Street Journal; December 1, 2020. Available from: https://www.wsj.com/articles/reddit-claims-52-million-daily-users-revealing-a-key-figure-for-social-media-platforms-11606822200. Accessed April 4, 2021.
13. Parks R, Newsom EC, Park JH, Lawrence N. Skincare addiction on reddit: dermatology enthusiasts talk skin. *Dermatol Surg*. 2020;46(10):1372–1374. doi:10.1097/DSS.0000000000002060
14. Primack BA, Shensa A, Sidani JE, et al. Social media use and perceived social isolation among young adults in the U.S. *Am J Prev Med*. 2017;53(1). doi:10.1016/j.amepre.2017.01.010
15. Munawar K, Prabhu V. Radiology on Reddit: a content analysis and opportunity for radiologist engagement and education. *Curr Probl Diagn Radiol*. 2021;50(3):362–368. doi:10.1067/j.cpradiol.2021.02.001
16. Mahjoub H, Prabhu AV, Sikder S. What are ophthalmology patients asking online? An analysis of the eye triage subreddit. *Clin Ophthalmol*. 2020;14:3575–3582. doi:10.2147/OPTH.S279607
17. r/Ophthalmology. Reddit. Available from: https://www.reddit.com/r/Ophthalmology. Accessed March 28, 2021.
18. u/arcadeflyer. Sticky: new Subreddit, r/ eyetriage, for patient questions. r/Ophthalmology; January 27, 2019. Available from: www.reddit.com/r/Ophthalmology/comments/ak7i27/sticky_new_subreddit_reyetriage_for_patient/. Accessed March 28, 2021.
19. Guidance on research using social networking sites. Available from: https://research.cofc.edu/administration/documents/policies-documents/IRB_SNSguidance.pdf. Accessed July 8, 2022.
20. Hollands H, Johnson D, Brox AC, Almeida D, Simel DL, Sharma S. Acute-onset floaters and flashes: Is this patient at risk for retinal detachment? *JAMA*. 2009;302(20):2243–2249. doi:10.1001/jama.2009.1714
21. Sharma P, Sridhar J, Mehta S. Flashes and Floaters. *Prim Care*. 2015;42(3):425–435. doi:10.1016/j.pop.2015.05.011
22. Jairath N, Commiskey P, Kaplan A, Paulus YM. FLASH: a novel tool to identify vision-threatening eye emergencies. *Int J Ophthalmic Res*. 2020;6(1):336–343.
23. Khazaeni B, Khazaeni L. Acute closed angle glaucoma. In: *StatPearls*. StatPearls Publishing; 2022. Available from: http://www.ncbi.nlm.nih.gov/books/NBK430857/. Accessed March 13, 2022.
24. Patient education. Available from: https://store.aao.org/patient-education.html. Accessed August 7, 2022.

25. Forgie EME, Lai H, Cao B, Stroulia E, Greenshaw AJ, Goez H. Social media and the transformation of the physician-patient relationship: viewpoint. *J Med Internet Res*. 2021;23(12):e25230. doi:10.2196/25230

26. Use social media to market your practice. American Academy of Ophthalmology; January 1, 2016. Available from: https://www.aao.org/eyenet/article/use-social-media-to-market-your-practice. Accessed August 7, 2022.

27. Choudhury MD, De S. Mental health discourse on reddit: self-disclosure, social support, and anonymity. In: *Proceedings of the 8th International Conference on Weblogs and Social Media, ICWSM 2014*. Michigan, USA; January 1, 2014:71–80.

28. Choudhury M, Gamon M, Counts S, Horvitz E. Predicting depression via social media. 2013.

29. Paul MJ, Dredze M. You are what you tweet: analyzing Twitter for public health. In: *Proceedings of the 5th International AAAI Conference on Weblogs and Social Media*. Catalonia, Spain; 2011: 8.

30. Newman MW, Lauterbach D, Munson SA, Resnick P, Morris ME. It's not that I don't have problems, i'm just not putting them on Facebook: challenges and opportunities in using online social networks for health. In: *Proceedings of the ACM 2011 Conference on Computer Supported Cooperative Work*. New York, USA: CSCW '11. Association for Computing Machinery; 2011: 341–350. doi:10.1145/1958824.1958876.

31. Farnan JM, Snyder Sulmasy L, Worster BK, Chaudhry HJ, Rhyne JA, Arora VM. Online medical professionalism: patient and public relationships: policy statement from the American College of Physicians and the federation of state medical boards. *Ann Intern Med*. 2013;158(8):620–627. doi:10.7326/0003-4819-158-8-201304160-00100

32. Okon E, Rachakonda V, Hong HJ, Callison-Burch C, Lipoff JB. Natural language processing of Reddit data to evaluate dermatology patient experiences and therapeutics. *J Am Acad Dermatol*. 2020;83(3):803–808. doi:10.1016/j.jaad.2019.07.014

33. Latack KR, Yuen F, Wang C, Nguyen BT. Online community queries on hormonal male contraception: an analysis of the Reddit "Ask Me Anything" experience. *Contraception*. 2021;104(2):159–164. doi:10.1016/j.contraception.2021.02.009