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Hematology on Twitter

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Abstract

Twitter's impact on information dissemination and the possibility of exchanging opinions between people around the world have made this social platform particularly appealing for hematologists. We have evaluated the potential use of Twitter in the field of hematology for both physicians and patients, and sought out direct examples of Twitter's current application in medicine and hematology. With the use of the site https://followerwonk.com we have created a list of the most followed hematologists and hematological organizations and described their activity on Twitter.

Key words: hematology, social media, Twitter

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Introduction

The advent of social media enabled people all over the world to communicate and spread information much easier and faster. Between 2005 and 2015, an almost tenfold increase in adult Americans using social networking sites was observed (from 7% in 2005 to 65% in 2015) [1]. Apart from sources of entertainment, news and means of communicating, users of social media use them to obtain information related to health. As a consequence, those related to medicine, alongside medical organizations and journals, tend to post about the latest discoveries, standards of diagnosis and treatment etc. on their profiles. As hematology is one of the branches of medicine present in social media, in this paper we investigate its activity on Twitter.

What is Twitter?

Twitter, which started in July 2006, is a real-time, microblogging site with over 300 million monthly users [2]. To communicate, users of Twitter post short messages (up to 280 signs, including emojis). These are called 'tweets' [3–6]. As the content must be short, they often use acronyms or hashtags which are words or phrases preceded by a hash sign (#), used to identify specific topics. The tweet can also contain a photograph, short video clip, other website link or thumbnail [3, 7]. In order to receive updates of a particular account's tweets, one has to 'follow' it and become its 'follower'. For example, Barack Obama's account has 131 million followers [2]. Users who see a tweet can react by 'favoriting' or 'retweeting' it, which results in their followers seeing it and so the content rolling out to a wider audience.

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Moreover, users can tag others by using the '@' symbol [3, 7]. All these functions make Twitter very useful for those connected to hematology in spreading information, sharing points of view, and discussing medical issues.

Twitter in medicine

Twitter's environment has become one of the favored forums for physicians to discuss healthcare issues. Numerous papers and articles have explored the actual and potential value of social media for both physicians and patients [8]. Not only does it help to disseminate up-to-date information among people in the healthcare system, but also brings opportunities for professional development [3, 5–11]. Nowadays, news on social media spreads more rapidly than in traditional newspapers or radio or television broadcast [8]. Therefore many respected medical journals have their own Twitter accounts where they publish the latest information on a daily basis [3, 7, 11]. Data obtainable from these sites includes the latest articles, guidelines, clinical trials, educational opportunities, information about annual meetings, and more. The ease with which one can 'tag' specialists from around the world, or mention other physicians' tweets, enables discussions on medical issues which would not be possible otherwise. Such exchanges of views can lead to international cooperation [3, 6–9, 11, 12]. Weyand et al. [4] even mention a situation when one tweet lamenting a product label contraindication led to the establishment of an international registry.

On a personal level, Twitter makes it possible to follow experts in a particular medical branch and get their opinions on different issues. It is also a way to stay up-to-date with their latest articles and research. Such a network of virtual mentors is of enormous benefit for beginners in the field who are seeking career guidance [3, 7]. Furthermore, building a strong presence on Twitter can be seen as personal branding. Being active on a professional forum can lead to career opportunities and academic advancement [9]. Twitter can also be perceived as a useful tool to promote publications. Phillips et al. [13] stated that covering publications in the mainstream media had led to more journal citations, going back to 1991. Different studies have shown that sharing and pre-publishing papers on Twitter also results in significantly more citations [4, 6, 13]. The increasing influence of Twitter (and all social media) has resulted in the creation of the Altmetric scoring system, which shows how much attention an article has received across an array of platforms including mainstream and social media. This system, however, does not measure the quality of each work, and thus there have been concerns raised of manipulation attempts such as purchasing mentions [4].

With the swiftly growing and widespread popularity of Twitter, more patients with rare disorders have united together and formed communities. Not only does this strengthen the communication between people suffering from a disease, it also enables engagement from healthcare providers, scientists and advocates forming an international infrastructure. Stakeholders of such communities can express their issues with the use of disease-specific hashtags (e.g. #leusm for leukemia patients, #mmsm for multiple myeloma patients). As a result, physicians can receive direct feedback from their patients and follow their treatment. Moreover, specialists in the field can educate these communities and correct misconceptions. As Twitter enables real time interaction, physicians have an opportunity to learn more about the course of the particular disease as patients are usually open to sharing their experiences [9]. Furthermore, a study of prostate cancer by Huber et al. showed that online communities contribute to the decision making process regarding the choice of treatment [9, 14].

Hematology on Twitter

Being an international social media platform, Twitter is a place where one can gain recognition and build one's reputation. The most common way of measuring an account's popularity is by counting its followers, which tells you how many people (i.e. Twitter accounts) receive your tweets.

We have created a list of the most followed organizations/institutions and people associated with hematology. In order to achieve that, we used the site https://followerwonk.com/ which allows its users to find accounts with particular words in their Twitter profiles. We searched for accounts containing the words 'hematologist', 'hematology', 'hematologic', and 'hematological' and divided them into groups of organizations/institutions and individuals. It is important to remember that one is free to include whatever one wants on one's Twitter profile, regardless of the authenticity of this information. Having ranked our obtained groups in order of declining number of followers, we have created lists of the most popular accounts (Table I).

Among the most popular we find not only organizations or societies with @ASH_hematology (number 1 in the ranking) having the most followers but also @ASCOPost (number 2) and @OncologyTimes (number 3). Each account has its own profile of published posts, and their graphic design varies as well. @ASH_hematology, with almost 60,000 followers, tweets about its annual meetings (dedicated hashtag for the one held in 2022: #ASH22), ethical issues, FDA updates and innovative therapies. Furthermore, some of the posts contain disease-riddles using the association's own image bank. @CancerNetwrk's (#7, c.25,000 followers) tweets reviews of data from trials, announcements of works published in journals, and recent Food and Drug Administration (FDA) approvals. In some of these, podcasts/interviews with authors are attached. Moreover, every week a tweet with the top five articles of this period appears. @CancerNetwrk also retweets content published

Table I. Top 15 hematology societies, organizations or institutions on Twitter

	Society, organization or institution	Followers	Tweets	Account age [years]	Social authority*
1	@ASH_hematology | ASH	59,701	17,278	13.08	57
2	@ASCOPost | The ASCO Post	57,443	30,354	12.93	56
3	@OncologyTimes | Oncology Times	50,478	26,774	13.82	53
4	@BloodJournal | Blood Journal	45,191	6,551	7.29	63
5	@BloodAdvances | Blood Advances	30,432	5,22	6.51	53
6	@CancerNetwrk | CancerNetwork®	25,257	15,741	13.72	55
7	@EHA_Hematology | European Hematology Association	23,516	4,863	11.62	59
8	@OncJournal | The Oncologist	21,172	2,69	12.31	38
9	@ASHClinicalNews | ASH Clinical News	19,362	3,372	8.07	44
10	@VJHemOnc | VJHemOnc	18,224	31,337	7.58	62
11	@TheLancetHaem | The Lancet Haematology	17,54	3,772	8.39	56
12	@ESHaematology | ESH (Haematology)	11,997	1,775	11.74	42
13	@DFBC_PedCare | Dana-Farber/Boston Children's	8,713	6,22	13.38	43
14	@MDedgeHemOnc | MDedge Hematology & Oncology	7,946	11,257	13.42	33
15	@ELShematology | Elsevier Hematology	7,549	2,691	9.13	49

*Social authority is a reliable metric scored out of 100, which is calculated by: The retweet rate of users' last few hundred tweets. How recently they have tweeted. A retweet-based model trained on user profile data.

live by lecturers during conferences (so called 'real time reports'), which increases its prevalence. #8 @EHA_Hematology: beyond purely scientific content and promoting the next annual meeting (#EHA23), this leads weekly quizzes called #thinkingthursdays, #ehacase and #learningMondays, allowing its followers to verify their knowledge. In the top 10 organizations, places 2–5 and 8–10 were taken by journal accounts whose tweets are mainly focused on their recently published articles/retweeting from hematology-related associations. A unique form of tweets is published by @VJHemOnc (#10; The Video Journal of Hematological Oncology) as they contain links to video-interviews and podcasts which are free and possible to see on the journal's website/Youtube. However, these are intended for healthcare personnel (HCP) only.

Unlike the first group, tweets published by individuals (set out in Table II) concern not only medical issues but also matters of everyday life. These people also tend to offer their private opinions on 'hot topics' such as politics or sport. The majority of content is still hematology-related, yet more frequently associated with practical issues for physicians. In order to engage with followers, owners of these accounts publish clinical cases in the form of quizzes or riddles to solve. Twitter enables the creation of questions in the shape of polls displaying the percentage of people who have chosen the correct answer. Making concise summaries of particular hematological issues, e.g. the causes of B12 deficiency, is common as well. Besides, Twitter is a place where physicians promote charity events e.g. healthcare workers against hunger (@acweyand). Given the ability to retweet or reply, owners of these accounts can discuss the latest articles and/or research trials. Furthermore, individual hematologists can engage remotely in hematological annual meetings e.g. ASH 2022 by stating their opinions with occasional hashtags.

Conclusions

Given the rapid growth of Twitter's popularity, it comes as no surprise that hematology has found a way of using it in multiple aspects. The unique method of posting short messages of up to 280 signs rewards concision and flexibility to best convey the essence of information in quickly readable tweets [3–6]. As a result, physicians can stay up to date with the most recent publications, research trials and new drug approvals by simply scrolling through this social platform [3, 9, 11]. It also gives them the opportunity to make a name for themselves and receive recognition internationally [9]. One can also follow leaders of particular areas of medicine in order to obtain knowledge from the best [6, 7, 9, 12, 15].

However, it is imperative to prioritize the welfare of patients by protecting their confidential health information and remaining professional with adherence to general standards while tweeting. In today's world, which is filled with fake information on social media, every physician should be particularly careful when retweeting different materials [3, 9, 11]. Furthermore, as everything posted on Twitter is

Table II. Top 15 hematologists on Twitter

	Hematologist	Followers	Tweets	Account age [years]	Social authority*
1	@AaronGoodman33 | Aaron Goodman — 'Papa Heme'	103,818	10,535	5.59	85
2	@acweyand | Shematologist, MD	63,768	41,581	5.82	81
3	@nihardesai7 | Nihar Desai	33,550	16,644	13.17	78
4	@DoctorYazanA | Yazan Abou-Ismail, MD	20,891	5,565	11.79	63
5	@j_thePA | aj PA-C	20,506	30,636	10.63	60
6	@Alaskar98 | Alaskar	19,661	6,901	10.96	64
7	@DavidSteensma | David Steensma, MD	19,565	6,521	8.28	56
8	@DrFadloKhuri | Dr. Fadlo Khuri	17,268	5,743	8.96	51
9	@Faisal_Alsayegh | Faisal Alsayegh	16,232	28,513	11.79	60
10	@HallekMichael | Michael Hallek	14,318	2,316	3.96	59
11	@Mohty_EBMT | Mohamad Mohty	14,179	34,589	8.42	66
12	@marwanalhajeili | Marwan Al-Hajeili	13,222	6,000	7.94	43
13	@MPaiMD | Menaka Pai, MSc MD FRCPC	12,837	8,96	6.29	61
14	@NicoGagelmann | Nico Gagelmann	12,807	4,493	4.07	69
15	@AMarshallMD | Ariela Marshall MD	12,611	4,749	9.96	54

*Social authority is a reliable metric scored out of 100, which is calculated by: The retweet rate of users' last few hundred tweets. How recently they have tweeted. A retweet-based model trained on user profile data.

considered permanent, the possible dissemination of inappropriate or inaccurate data can have very negative consequences [8, 9].

Authors' contributions

JS — design of study; TS, JS — literature search and analysis of data, writing manuscript. All authors — critical revision and final approval.

Conflict of interest

The authors declare no conflict of interest.

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Ethics

The work described in this article has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans; EU Directive 2010/63/EU for animal experiments; Uniform requirements for manuscripts submitted to biomedical journals.

References

1. Perrin A. Social media usage: 2005–2015. Pew Research Center. October 2015. http://www.pewinternet.org/2015/10/08/2015/Social-Networking-Usage-2005-2015/ (December 3, 2022).
2. Twitter Revenue and Usage Statistics. https://www.businessofapps.com/data/twitter-statistics/ (December 3, 2022).
3. Patel SS, Majhail NS. Twitter use in the hematopoietic cell transplantation community. Curr Hematol Malig Rep. 2018; 13(1): 53–58, doi: 10.1007/s11899-018-0434-1, indexed in Pubmed: 29374370.
4. Weyand AC, Zaidi AU. Tweetopoiesis: a peripheral review of twitter for hematologists. Am J Hematol. 2021; 96(1): 7–8, doi: 10.1002/ajh.26017, indexed in Pubmed: 33064309.
5. Jimenez-Sotomayor MR, Gómez-Moreno C, Aguilar-Velazco JC, et al. Cancer, aging and Twitter: a mixed methods evaluation of tweets about Geriatric Oncology (#gerionc) and Geriatric Hematology (#geriheme). J Geriatr Oncol. 2020; 11(6): 1038–1040, doi: 10.1016/j.jgo.2020.01.008, indexed in Pubmed: 32001202.
6. Benjamin Fyenbo D, Charlotte Frederiksen T, Linz D, et al. Researchers in cardiology — why and how to get on Twitter? Int J Cardiol Heart Vasc. 2022; 40: 101010, doi: 10.1016/j.ijcha.2022.101010, indexed in Pubmed: 35372661.
7. Thompson MA, Majhail NS, Wood WA, et al. Social media and the practicing hematologist: Twitter 101 for the busy healthcare provider. Curr Hematol Malig Rep. 2015; 10(4): 405–412, doi: 10.1007/s11899-015-0286-x, indexed in Pubmed: 26449718.
8. Markham MJ, Gentile D, Graham DL. Social media for networking, professional development, and patient engagement. Am Soc Clin Oncol Educ Book. 2017; 37: 782–787, doi: 10.1200/EDBK_180077, indexed in Pubmed: 28561727.
9. Attai DJ, Anderson PF, Fisch MJ, et al. Collaboration for Outcomes on Social Media in Oncology (COSMO). Risks and benefits of Twitter use by hematologists/oncologists in the era of digital medicine. Semin Hematol. 2017; 54(4): 198–204, doi: 10.1053/j.seminhematol.2017.08.001, indexed in Pubmed: 29153081.
10. Banerjee R, Kelkar AH, Logan AC, et al. The democratization of scientific conferences: Twitter in the era of COVID-19 and beyond. Curr Hematol Malig Rep. 2021; 16(2): 132–139, doi: 10.1007/s11899-021-00620-w, indexed in Pubmed: 33788125.

11. Patel SS, Majhail NS. Social media and hematopoietic cell transplantation: a review of online resources and communities. Curr Hematol Malig Rep. 2018; 13(6): 576–580, doi: 10.1007/s11899-018-0487-1, indexed in Pubmed: 30324550.
12. Pemmaraju N, Gupta V, Mesa R, et al. Social media and myeloproliferative neoplasms (MPN) — focus on Twitter and the development of a disease-specific community: #MPNSM. Curr Hematol Malig Rep. 2015; 10(4): 413–420, doi: 10.1007/s11899-015-0287-9, indexed in Pubmed: 26411990.
13. Phillips DP, Kanter EJ, Bednarczyk B, et al. Importance of the lay press in the transmission of medical knowledge to the scientific community. N Engl J Med. 1991; 325(16): 1180–1183, doi: 10.1056/NEJM199110173251620, indexed in Pubmed: 1891034.
14. Huber J, Maatz P, Muck T, et al. The effect of an online support group on patients treatment decisions for localized prostate cancer: an online survey. Urol Oncol. 2017; 35(2): 37.e19–37.e28, doi: 10.1016/j.urolonc.2016.09.010, indexed in Pubmed: 27810256.
15. Giebel S, Basak G, Bieniaszewska M, et al. Current status and achievements of Polish haemato-oncology. Acta Haematol Pol. 2021; 52(1): 4–17, doi: 10.5603/ahp.2021.0003.