



Original Research Article

Evaluation of Social Networking Sites as Communication Tools in Hematology

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Received: 02/05/2014

Revised: 21/05/2014

Accepted: 27/05/2014

ABSTRACT

Purpose: The objective of this study was to quantify the usage of social networking sites by hematology journals, patient centered and professional hematology organizations which remains largely unknown and, to our knowledge, has yet to be fully evaluated.

Methods: We obtained an archived list of 94 current hematology journals from SCImago on the World Wide Web and used the list to investigate Facebook, Twitter, and individual journal websites for the presence of social media accounts. We identified professional and patient-centered hematology organization activity on social networks through queries of predetermined search terms on Google, Facebook, Twitter, and LinkedIn. The activity of each entity was documented by recording the following metrics of popularity: the numbers of Facebook “likes,” Twitter “followers,” and LinkedIn “members.”

Main Outcomes and Measures: The numbers of Facebook likes, Twitter followers, and LinkedIn members corresponding to each hematology journal and each professional and patient-related hematology organization.

Results: On April 20, 2014, of the 94 hematology journals ranked by SCImago, 27.6% were present on Facebook and 17% on Twitter. We identified popular hematology journals based on Facebook likes and Twitter followers, led by Blood and Therapeutic Apheresis and Dialysis, respectively. Popular professional hematology organizations included The Leukemia and Lymphoma Society (2,20,699 Facebook likes and 12124 followers on Twitter). The presence of professional hematology organizations on Facebook (41%) and Twitter (26%) was higher than the presence of academic journals.

Conclusions: The usage of social networking sites was more common among professional hematology organizations (40%) than academic journals (32%).

Popular professional hematology organizations included The Leukemia and Lymphoma Society (2,20,699 Facebook likes and 12124 followers on Twitter).

We identified popular hematology journals based on Facebook likes and Twitter followers, led by Blood and Therapeutic Apheresis and Dialysis, respectively.

Academic journals should not underestimate the potential of social media as a means of reaching out to, and engaging with their readership.

Keywords: Social media, Hematology, Journals as topic

INTRODUCTION

Social media are dynamic and interactive computer-mediated communication tools that have high penetration rates in the general population in high-income and middle-income countries. However, in medicine and health care, a large number of stakeholders (eg, clinicians, administrators, professional colleges, academic institutions, ministries of health, among others) are unaware of social media's relevance, potential applications in their day-to-day activities, as well as the inherent risks and how these may be attenuated and mitigated. [1]

The objective of this study was to quantify the usage of social networking sites by hematology journals, patient centered and professional hematology organizations which remains largely unknown and, to our knowledge, has yet to be fully evaluated.

METHODS

We obtained an archived list of 94 current hematology journals from SCImago on the World Wide Web and used the list to investigate Facebook, Twitter, and individual journal websites for the presence of social media accounts. We identified professional and patient-centered hematology organization activity on social networks through queries of predetermined search terms on Google, Facebook, Twitter, and LinkedIn. The activity of each entity was documented by recording the following metrics of popularity: the numbers of Facebook "likes," Twitter "followers," and LinkedIn "members."

Main Outcomes and Measures: The numbers of Facebook likes, Twitter followers, and LinkedIn members corresponding to each hematology journal and each professional and patient-related hematology organization.

Ethics: The study was approved by the Institutional Review Board. Statistical analysis used- Fishers exact test and Chi square test were employed.

RESULTS

On April 20, 2014, of the 94 hematology journals ranked by SCImago, 27.6% were present on Facebook ,17% on Twitter while 3 % were on Linked In(Table 1-3). We identified popular hematology journals based on Facebook likes and Twitter followers, led by Blood and Therapeutic Apheresis and Dialysis, respectively. Popular professional hematology organizations included The Leukemia and Lymphoma Society (2,20,699 facebook likes and 12124 followers on Twitter).The presence of professional hematology organizations on Facebook (41%) and Twitter (26%) was higher than the presence of academic journals (p= 0.12 not significant). (Figure 1)

Table 1: Distribution of academic journals and professional organizations on social networking sites

	Not on social networking sites	Present on social networking sites
Academic journals	64	30
Professional organizations	18	12

Fishers exact test not significant (p= 0.12)

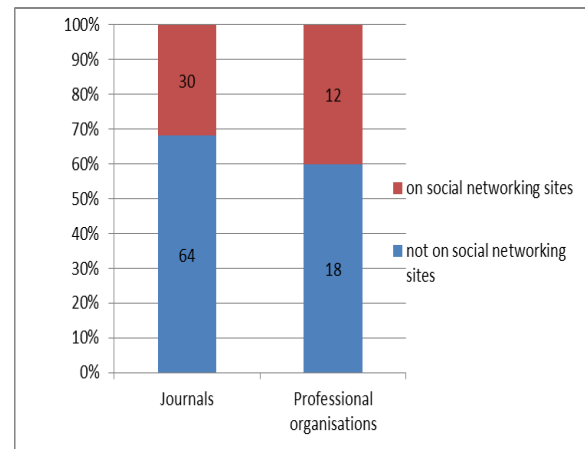


Figure 1: Usage of social networking sites by journals and professional organizations.

Table 2: List of 94 hematology journals with their presence on social networking sites on 20th April 2014.

Rank	Name of journal	FB	Twitter	Linked in
1	Blood	8573	Nil	Nil
2	Leukemia Journal	156	557	Nil
3	Stem cells journal	Nil	Nil	Nil
4	European journal of cancer	72	Nil	Nil
5	Blood Reviews	0	Nil	Nil
6	Journal of Leukocyte Biology	33	Nil	nil
7	Thrombosis and Hemostasis	719	916	833
8	Haematologica	1850	Nil	Nil
9	Current opinion in HIV and AIDS	0	79	nil
10	Oncologist	2138	2324	Nil
11	British Journal of Haematology	448	Nil	Nil
12	Seminars in Hematology	Nil	Nil	Nil
13	Critical reviews in oncology/ Haematology	824	Nil	Nil
14	Stem Cells and development	2466	120	556
15	Current opinion in haematology	Nil	108	Nil
16	Journal of Haematology and Oncology	1	Nil	nil
17	Experimental Hematology	20	106	nil
18	Best Practice and Research in Clinical Haematology	Nil	Nil	Nil
19	Bone marrow Transplantation	541	Nil	Nil
20	Seminars in Thrombosis amd Hemostasis	Nil	Nil	Nil
21	Cytometry part A: journal of the International Society for Analytical Cytology	Nil	Nil	Nil
22	American Journal of Haematology	28	Nil	Nil
23	Transfusion Medicine Reviews	Nil	Nil	Nil
24	Haematology/ Oncology Clinics of North America	Nil	Nil	Nil
25	Pediatric Blood and Cancer	149	Nil	Nil
26	Thrombosis research	Nil	Nil	Nil
27	Haemtological Oncology	Nil	Nil	Nil
28	Haemophilia	Nil	Nil	Nil
29	VoxSanguinis	641	335	Nil
30	Cytometry Part B – Clinical Cytometry	Nil	Nil	Nil
31	Blood Cells, Molecules and Diseases	Nil	Nil	Nil
32	European Journal of Haematology	138	Nil	Nil
33	Annals of Hematology	8	Nil	Nil
34	Blood Purification	Nil	Nil	Nil
35	Leukemia Research	Nil	Nil	Nil
36	Journal of Clinical Apheresis	Nil	2480	Nil
37	Expert Review of Haematology	Nil	Nil	Nil
38	Vascular Health and Risk Management	Nil	66	Nil
39	AAPS PharmSciTech	5845	1043	24563
40	Current Hematologic Malignancy Reports	Nil	Nil	Nil
41	Therapeutic Apheresis and Dialysis	Nil	6582	nil
42	Journal of Thrombosis and Thrombolysis	Nil	Nil	Nil
43	Hemodialysis International	Nil	Nil	Nil
44	International Journal of Hematology	22	1	Nil
45	Platelets	Nil	Nil	Nil
46	Advances in Hematology	Nil	Nil	Nil
47	Thrombosis Journal	Nil	Nil	Nil
48	Current Problems in Cancer	Nil	Nil	Nil
49	Clinical Hemorheology and Circulation	Nil	Nil	Nil
50	International Journal of Laboratory Haematology	Nil	Nil	Nil
51	Blood Coagulation and Fibrinolysis	Nil	Nil	Nil
52	Hemoglobin	Nil	Nil	Nil
53	Cardiovascular and Hematological Agents in Clinical Chemistry	Nil	Nil	Nil
54	BMC Blood Disorders	Nil	Nil	Nil
55	Journal of Pediatric Hematology/ Oncology	Nil	54	Nil
56	ActaHaematologica	Nil	Nil	Nil
57	Transfusion and Apheresis Science	Nil	Nil	Nil
58	Clinical and Applied Thrombosis/ Hemostasis	7	Nil	Nil
59	Hamostaseologie	Nil	Nil	Nil
60	Transfusion Medicine and Hemotherapy	Nil	Nil	Nil
61	Cardiovascular and Hematological Disorders- Drug Targets	Nil	Nil	Nil
62	Hematology	Nil	Nil	Nil
63	Pediatric Hematology and Oncology	Nil	Nil	Nil
64	Clinical Advances in Hematology and Oncology	5	Nil	Nil

Table 2: *Continued...* List of 94 hematology journals with their presence on social networking sites on 20th April 2014.

65	Blood Cancer Journal	Nil	Nil	Nil
66	Blood Transfusion	Nil	Nil	Nil
67	Anaemia	Nil	Nil	Nil
68	Artificial cells, Blood Substitutes and Immobilization Biotechnology	Nil	Nil	Nil
69	Transfusion Clinique et Biologique	Nil	Nil	Nil
70	Hematology/ Oncology and Stem Cell therapy	Nil	Nil	Nil
71	Korean Journal of Hematology	Nil	Nil	Nil
72	Mediterranean Journal of Hematology and Infectious Diseases	Nil	Nil	Nil
73	Hematology Reviews	Nil	Nil	Nil
74	UHOD - Uluslararası Hematoloji-Onkoloji Dergisi	Nil	Nil	Nil
75	Comparative Clinical Pathology	Nil	Nil	Nil
76	Laboratory Hematology	Nil	Nil	Nil
77	Open Hematology Journal	Nil	Nil	Nil
78	Turkish Journal of Haematology	Nil	Nil	Nil
79	Revista Brasileira de Hematologia e Hemoterapia	Nil	Nil	Nil
80	Memo - Magazine of European Medical Oncology	2	0	Nil
81	Transfusion Alternatives in Transfusion Medicine	Nil	Nil	Nil
82	Indian Journal of Hematology and Blood Transfusion	Nil	Nil	Nil
83	Acta Haematologica Polonica	nil	Nil	Nil
84	Transfuzje a Hematologie Dnes	Nil	Nil	Nil
85	Revista Cubana de Hematologia, Inmunologia y Hemoterapia	Nil	Nil	Nil
86	International Journal of Hematology-Oncology and Stem Cell Research	Nil	Nil	Nil
87	Hematologie	Nil	Nil	Nil
88	Journal Phlebology and Lymphology	Nil	Nil	Nil
89	Internet Journal of Hematology	Nil	Nil	Nil
90	Clinical and Transfusion Hematology	Nil	Nil	Nil
91	Gematologiya i Transfuziologiya	Nil	Nil	Nil
92	Journal of Leukemia and Lymphoma	Nil	Nil	Nil
93	Journal of Hematopathology	6	0	Nil
94	Leukemia Research Reports	Nil	Nil	Nil

Table 3 : List of hematology organizations with their presence on social networking sites on 20th April 2014.

sl no	name of the professional organisation	Fb	Twitter	Linked in
1	The American Society of Hematology	3976	7585	Nil
2	International Society of Hematology	Nil	Nil	Nil
3	The American Society of Pediatric Hematology/ Oncology	Nil	Nil	Nil
4	International Society for Experimental Hematology	20	Nil	Nil
5	European Hematology Association	1610	Nil	nil
6	Canadian Hematology Society	Nil	Nil	Nil
7	International Society for Laboratory Hematology	Nil	Nil	Nil
8	British Society for Hematology	476	565	nil
9	Saudi Scientific Society of Hematology	93	Nil	Nil
10	Belgian Hematological Society	Nil	Nil	Nil
11	Japanese Society for Hematology	Nil	Nil	Nil
12	The Hematological Society of Taiwan	Nil	Nil	Nil
13	Asian Hematology Association	Nil	Nil	Nil
14	Hematology Oncology Associates of New Mexico	Nil	Nil	Nil
15	German Society for Transfusion Medicine and Immune Hematology Association	Nil	Nil	Nil
16	British Committee For Standards In Haematology	Nil	Nil	Nil
17	Pakistan Society of Hematology	Nil	Nil	Nil
18	Indian Society of Haematology and Blood Transfusion	Nil	Nil	Nil
19	British Society for Hematology	Nil	Nil	Nil
20	The Haematology Society of Australia & New Zealand (HSANZ)	Nil	Nil	Nil
21	European Cancer Patient Coalition	1390	1865	Nil
22	European Hemophilia Consortium	173	Nil	Nil
23	ITP Support Association	2212	648	Nil
24	Lymphoma Coalition	2652	1349	nil
25	International MDS Alliance	NIL	Nil	Nil
26	Myeloma Patients Europe	Nil	Nil	Nil
27	Thalassaemia International Federation (TIF)	938	85	Nil
28	Aplastic Anaemia & MDS International Foundation, Inc.	5407	593	Nil
29	Cardeza Foundation for Hematologic Research	Nil	Nil	Nil
30	The Leukemia and Lymphoma Society	2,20,699	12124	nil

DISCUSSION

Kaplan and Haenlein [2] defined social media as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content”.

Examples of social media applications in health include (but are not limited to) access to educational resources by clinicians and patients, generation of content rich reference resources (e.g., Wikipedia), evaluation and reporting of real-time flu trends, catalyzing outreach during (public) health campaigns and recruitment of patients to online studies and in clinical trials. [1]

Facebook is an example of a social networking site. Social networking sites are defined as an online service, platform, or site that focuses on building and visualizing social networks or social relations among people, who, for example, share interests and/or activities. A social network service essentially consists of a representation of each user (often a profile), their social links, and a variety of additional services. [3]

LinkedIn is a prototype of a professional networking site. A professional networking site is a type of social network service that is focused solely on interactions and relationships related to business or a person’s professional career. [4]

Twitter on the other hand represents a Microblog which is defined as a tiny blog service that allows networks of users to send short updates to each other in less than 140 characters. Microblogs are considered a platform for information dissemination, social networking, and real-time communication. [5]

In medicine and health care, there have been over 140 reported uses for Twitter. [6] There have been some interesting applications of Twitter in medical education. The Pennsylvania State College of Medicine

has used Twitter to augment peer-to-peer and instructor-to-student learning [7] by stimulating topic discussions, providing feedback on critical thinking, conducting course evaluations, disseminating writing prompts, soliciting class responses, and monitoring student progress. Second, a junior doctor and a medical student started a Twitter Journal Club [8] that functions in the same manner as traditional journal clubs, except that the means for discussion is Twitter. By using a combination of blog posts, where the paper and discussion questions are posted in advance, along with the hash tag #TwitJC, students, doctors, and anyone interested in the subject can engage and interact in a meaningful way. The club meets every second Sunday evening.

An iconic paper by Farmer and colleagues (2009) [9] evaluated the relationship between Facebook groups and common medical conditions. They found that the most common type of groups on Facebook were centered on specific medical conditions (eg, malignant tumors), peer-to-peer support, and fundraising for support groups, organizations, and individuals. Farmer and colleagues also found that researchers used Facebook to aggregate themselves into a “network” for dissemination of their research to other researchers and health care providers. They also identified the existence of self-aggregated negative-behavior support groups, mainly centered on the promotion of excessive alcohol consumption.

Similarly, Bender and colleagues (2011) [10] found that the majority of those who use social networking sites use them to form self-aggregated interest groups. Within a single disease, breast cancer, a search on Facebook revealed over 600 support groups organized around four central themes: fundraising, awareness, marketing, and general support. General support groups were not used as an adjunct to supportive

care nor did they serve as a general form of patient-to-patient support; rather, they were most often created by a user (or family member) with cancer as a means to keep friends and family members updated on their treatment and, at the same time, receive supportive feedback.

Bender et al ^[10] also noted that their results may be skewed because they were able to analyze public groups only, which had very few user contributions as a whole. Furthermore, the technical architecture of Facebook, which makes it difficult to have a fictitious profile when compared to other (more open) social media such as Twitter, may also be responsible for skewing the data. This is a general limitation of research on social media sites—all closed profiles and private conversations cannot be evaluated unless the actual patient discloses the content of these interactions, thus this literature review did not find any formal research comparing “closed” groups on Facebook.

Mahsa et al ^[11] conducted a study of utilisation of the use of social media by dermatology journals and professional organization concluded that while patient-centered and professional dermatology organizations use social networking sites; however, academic journals tend to lag behind significantly similar to the observations made in the present study. Mahsa et al ^[11] in their study of 102 dermatology journals ranked by SCImago observed that 12.7% were present on Facebook and 13.7% on Twitter.

Kamel Boulos ^[12] et al in their study of general medicine journal noted that 20 of 25 journals had some sort of Facebook presence, with 11 also having a Twitter presence. Total 'Likes' across all of the Facebook pages for journals with a Facebook presence were 321,997, of which 259, 902 came from the New England Journal of Medicine (NEJM) alone. The

total numbers of Twitter 'Followers' were smaller by comparison when compiled across all surveyed journals. 'Likes' and 'Followers' are not the equivalents of total accesses but provide some proxy measure for impact and popularity.

In the present study too Twitter Followers were smaller when compared to Facebook likes. Facebook and Twitter are very well optimised for smart phones and tablets and supported by many apps (applications) running on these devices, which are rapidly becoming the main form of access to the Internet for millions of users worldwide. Today, hundreds of millions of users are doing many online tasks on Facebook, including reading, commenting on, and sharing news articles, an activity that holds great potential for journal publisher looking to expand their reach and impact. 'Google Trends for Websites' shows Facebook gradually widening its existing lead over social media such as YouTube, Twitter, and Wikipedia. ^[13]

New England Journal of Medicine in particular has made very good use of the new Facebook 'Timeline for pages' feature introduced by Facebook at the end of February 2012. ^[14] They have used it to tell the history of the journal since it was founded in 1812. Social networks can offer journals a better way of reaching their readers than through their own Web site. Marketing and communication departments at various organizations have long realized that large numbers of the people they want to reach and influence are already on Facebook. ^[15]

CONCLUSIONS

The usage of social networking sites was more common among hematology organizations. Popular professional hematology organizations included The Leukemia and Lymphoma Society (2,20,699

facebook likes and 12124 followers on Twitter).

We identified popular hematology journals based on Facebook likes and Twitter followers, led by Blood and Therapeutic Apheresis and Dialysis, respectively.

Academic journals should not underestimate the potential of social media as a means of reaching out to, and engaging with their readership.

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How to cite this article: Hasan Z, Seema H S. Evaluation of social networking sites as communication tools in hematology. *Int J Health Sci Res*. 2014;4(6):85-91.
