Social media usage by medical journals: Implications for publication planning

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ABSTRACT

Objective: Recent data suggest the magnitude of social media usage (SMU) surrounding publication of a medical journal (MJ) article may provide a useful predictive tool in determining scientific impact.[1] The objective of this study was to determine the extent of adoption of SMU by MJs that may have implications for publication planning, examining oncology as a representative therapeutic area. **Research design and methods:** Oncology MJs were selected (impact factor [IF] >5) for assessment of SMU by Twitter/Facebook/Google+/LinkedIn/YouTube/blogs, dichotomized by region (US/UK), versus general medicine leading MJs (LMJs; IF >5). Oncology MJ SMU was further studied by characterizing Twitter MJ followers and activity. **Results:** Twelve oncology MJs (US, 9; UK, 3) of 24 (50%) have adopted SMU by establishing a Twitter account or by allowing readers to tweet articles versus 72% of LMJs (N = 18). Of a sample of 2 US/2 UK oncology MJs, MJ followers (N = 100/MJ) were identified as individuals/unknown users (50%), health care professionals (12%), patients/survivors (5%), advocates (5%), scientists/research (5%), commercial groups (4%), students (4%), and other (15%). Tweets from these MJs (N = 100/MJ) comprised content alerts (54%), oncology-related retweets (31%), announcements (9%), and meeting information (6%). **Conclusions:** Although SMU has been adopted by some oncology MJs, it remains underutilized compared with LMJs. Consideration of SMU by MJs may play a role in future publication planning, as the ability to highlight MJ content via SMU and thereby increase impact may play a greater role in author decisions regarding journal choice.

Background

- It has been suggested that companies can capitalize on their products by engaging with social media sites as a way of reaching and informing online opinion leaders about their products and services.[2]
  - Sixty-seven percent of US physicians have been reported to use social media professionally.[3]
- Recent data suggest that the magnitude of social media usage surrounding publication of a medical journal article may provide a useful tool in determining scientific impact.[1]
  - Social media usage may be useful for highlighting reports on important data from medical journal articles.
- In a survey of medical journal articles, social media usage was correlated with the number of PDF downloads and HTML views.[4]
- However, social media usage commenting can sometimes be detrimental to medical journal articles owing to the potential to reduce the impact of reported research in a very short time frame.[5]
  - This commenting happens in the public domain and is not limited to private conversations, as it might have been prior to the recent surge in social media usage.

Objective

- The objective of this study was to determine the extent of adoption of social media usage by medical journals that may have implications for publication planning, using oncology as a representative therapeutic area.

Methods

- Oncology medical journals were selected by impact factor (IF) >5 and initial assessment of social media usage was examined via the existence of a journal Twitter profile, dichotomized by region (US/UK).
- Social media usage by oncology journals was compared with:
  - Social media usage by leading general medical journals (IF >5) and leading oncology societies.
  - Social media usage in other therapeutic areas
    - Cardiology
    - Infectious disease
    - Genetics and genomic medicine.
- Oncology medical journal social media usage was further studied by characterizing:
  - Twitter medical journal followers, identified by profile descriptors, into categories of "individuals/unknowns," "health care professionals," "patients/survivors," "advocates," "scientists/research," "commercial groups," "students," and "others."
  - Tweets from medical journals by main topic area, consisting of "content alerts," "oncology-related retweets," "announcements," "meeting information," and "responses."
- Social media usage was also tracked by surveying social networking sites (ie, Twitter, Facebook, LinkedIn, Google +), social bookmarking sites (ie, Delicious, Digg, Diigo), reference sharing sites (ie, CiteULike, Connotea, Mendeley), web discovery engines (ie, StumbleUpon), news links (ie, Reddit), and blogging sites (ie, Technorati) available to share individual articles in oncology medical journals (IF >5).

Results

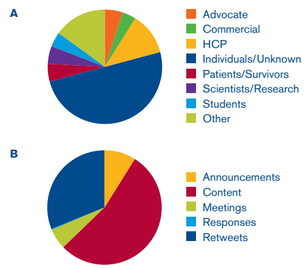
Social Media Usage By Oncology Journals as Assessed By Twitter Profile

- Six of 24 oncology medical journals (25%) (IF >5) have adopted social media usage by establishing a Twitter account (Table 1).
  - The distribution is identical in the United States (3/12) and the United Kingdom (3/12).
- A much greater Twitter presence was observed in leading general medical journals (IF >5), as 13 of 18 (72%) have Twitter accounts as an indicator of social media capacity or overall usage within medical journals (Table 2A).
- Twitter accounts are prevalent and active as a measure of social media capacity or overall usage within oncology societies (Table 2B).
  - These societies support specific oncology journals, and therefore, may serve as an outlet for affiliated oncology journal social media usage.
- The paucity of social media usage by oncology journals was not particular to that therapeutic area; similar trends were observed in cardiology, infectious disease, and genetics and genomics (data not shown).

Twitter Activity of Oncology Medical Journals

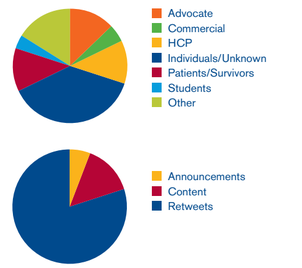
- In a sample of 2 US- (*Journal of the National Cancer Institute*, *The Oncologist*) and 2 UK- (*Annals of Oncology*, *National Review Cancer*) based oncology medical journals, medical journal followers (N = 100/medical journal) were identified as individuals/unknown users (50%), health care professionals (12%), patients/survivors (5%), advocates (5%), scientists/research (5%), commercial groups (4%), students (4%), and other (15%) (Figure 1A).
- Tweets from these medical journals (N = 100/medical journal) comprised content alerts (54%), oncology-related retweets (31%), announcements (9%), meeting information (6%), and responses (<1%) (Figure 1B).
- Trends in social media followers and content of individual oncology medical journals were largely dictated by the nature of the journal, and are illustrated for *Journal of the National Cancer Institute* (Figure 2A, 2B), *Annals of Oncology* (Figure 3A, 3B), *The Oncologist* (Figure 4A, 4B), and *Nature Reviews Cancer* (Figure 5A, 5B).
  - Individuals/unknown followers were dominant across oncology medical journals.
    - Second largest groups:
      - health care professionals for *Annals of Oncology* (13%) and *The Oncologist* (18%)
      - advocates for *Journal of the National Cancer Institute* (13%)
      - scientists/research for *Nature Reviews Cancer* (15%).
  - For individual oncology medical journals, posting of content was the dominant use of tweets.
    - However, individual journals also utilized tweets for different purposes.
      - *Annals of Oncology* used its tweets to broadcast ESMO meeting information (23%) and announcements (17%).
      - *Journal of the National Cancer Institute* tweets consisted largely of retweets of journal and other broad-based oncology content (80%).

Figure 1: Twitter activity as measured by characterization of (A) Twitter followers and (B) nature of tweets[a]



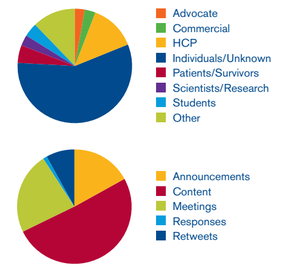
[a]Survey conducted on January 17, 2012.

Figure 2: *Journal of the National Cancer Institute* (US) Twitter activity by (A) nature of Twitter followers (N = 100) and (B) characterization of tweets (N = 100)[a]



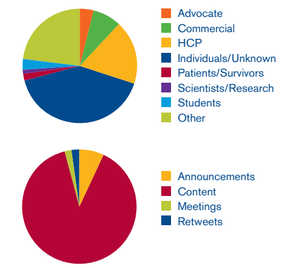
[a]Survey conducted on January 17, 2012.

Figure 3: *Annals of Oncology* (UK) Twitter Activity by (A) nature of Twitter followers (N = 100) and (B) characterization of tweets (N = 100)[a]



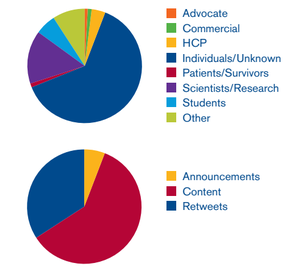
[a]Survey conducted on January 17, 2012.

Figure 4: *The Oncologist* (US) Twitter activity by (A) nature of Twitter followers (N = 100) and (B) characterization of tweets (N = 100)[a]



[a]Survey conducted on January 17, 2012.

Figure 5: *Nature Reviews Cancer* (UK) Twitter activity by (A) nature of Twitter followers (N = 100) and (B) characterization of tweets (N = 100)[a]



[a]Survey conducted on January 17, 2012.

US UK

Table 1: Twitter usage of oncology medical journals (US/UK)[a,b]

Journal	Twitter Activity: Followers	Following	Listed	Tweets
Nat Rev Cancer	236	92	36	62
J Natl Cancer Inst	4067	278	292	3218
Nat Rev Clin Oncol	206	88	34	210
Ann Oncol	2511	92	197	474
Oncologist	431	147	23	243
Neuro Oncol	62	65	3	17

[a]Survey conducted on January 14, 2012; [b]Only journals with Twitter usage shown.

US UK

Table 2: Twitter usage of (A) leading general medical journals[a,b] and (B) leading oncology societies supporting oncology journals[b]

A

Journal	Twitter Activity: Followers	Following	Listed	Tweets
N Engl J Med	50,776	48	2515	997
Lancet	26,568	45	1612	62
JAMA	13,255	18	1019	3425
Ann Intern Med	2366	243	223	278
PLoS Med	6964	581	760	10,957

B

Society	Twitter Activity: Followers	Following	Listed	Tweets
American Society of Clinical Oncology (ASCO)	7962	155	406	1693
American Association for Cancer Research (AACR)	6418	402	384	3179
European Society for Medical Oncology (ESMO)	1029	189	-	-
Oncology Nursing Society (ONS)	3922	73	182	1262

[a]Only the top 5 journals by IF using Twitter are shown; [b]Survey conducted on January 14, 2012.

US UK

Table 3: Oncology journal social media usage via individual articles[a,b]

	CiteULike	Connotea	Delicious	Digg	Diigo	Facebook	Google +1	LinkedIn	Mendeley	Reddit	Stumble Upon	Technorati	Twitter
CA Cancer J Clin	■	■	■	■	■	■	-	-	■	-	■	-	■
Nat Rev Cancer	-	■	-	-	-	-	-	-	-	-	-	-	-
Cancer Cell	-	-	-	-	-	-	-	-	-	-	-	-	-
J Clin Oncol	■	■	■	■	-	■	■	-	-	■	-	■	■
Lancet Oncol	-	-	■	■	-	■	-	-	-	■	■	-	-
J Natl Cancer Inst	■	■	■	-	-	■	-	-	■	-	-	-	■
Drug Resist Update	-	-	-	-	-	-	-	-	-	-	-	-	-
Nat Rev Clin Oncol	-	■	-	-	-	-	-	-	-	-	-	-	-
BBA Rev Cancer	■	-	-	-	-	-	-	-	-	-	-	-	■
Leukemia	-	-	-	-	-	-	-	-	-	-	-	-	-
Cancer Research	■	■	■	■	-	■	■	-	-	■	-	■	■
Semin Cancer Biol	-	-	-	-	-	-	-	-	-	-	-	-	-
Oncogene	-	-	-	-	-	-	-	-	-	-	-	-	-
Clin Cancer Res	■	■	■	■	-	■	■	-	-	■	-	■	■
Cancer Metastasis Rev	■	■	■	-	-	-	-	-	-	-	-	-	-
Cancer Treat Rev	-	-	-	-	-	-	-	-	-	-	-	-	-
Ann Oncol	■	■	■	-	-	■	-	-	■	-	-	-	■
Oncologist	■	■	■	■	-	■	■	■	-	■	-	■	■
Breast Cancer Res	■	■	■	-	-	■	■	-	■	-	-	-	■
Neuro Oncol	■	■	■	-	-	■	-	-	■	-	-	-	■
Neoplasia	-	-	-	-	-	-	-	-	-	-	-	-	-
Carcinogenesis	■	■	■	-	-	■	-	-	■	-	-	-	■
Mol Cancer Ther	■	■	■	■	-	■	■	-	-	■	-	■	■
Cancer	■	■	■	-	-	-	-	-	■	-	-	-	■

[a]Ordered by IF in descending order; [b]Survey conducted on February 25, 2012.

CONCLUSIONS

Use of Social Media By Oncology Journals via Individual Articles

- Rather than having a social media presence with a Twitter account, many oncology medical journals integrate social media by linking their individually published articles to various sharing modalities of traditional social media sites or bookmarking sharing sites (Table 3).
  - Overall usage: Connotea (63%); CiteULike (58%); Delicious (58%); Twitter (54%); Facebook (50%); Digg (29%); Mendeley (29%); Google +1 (25%); Reddit (25%); Technorati (21%); StumbleUpon (8%); LinkedIn (4%); and Diigo (4%).
- Although social media usage has been adopted by some oncology medical journals, it remains underutilized compared with leading general medical journals, whether US- or UK-based.
- Consideration of social media usage by medical journals may play a role in future publication planning, as the ability to highlight medical journal content via social media usage and thereby increase impact may play a greater role in author decisions regarding journal choice.
- Social media usage and its impact may also play a greater role in how health care professionals obtain information about changes in clinical practice.
- Further research on this topic is warranted, as the adoption and usage of new outlets for information sharing via social media and other communication venues is ever expanding.

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