Commentary

Is Twitter a forum for disseminating research to health policy makers?

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A R T I C L E  I N F O

Article history:
Received 26 August 2015
Received in revised form
31 August 2015
Accepted 6 September 2015

Keywords:
Social media
Twitter
Research impact
Health policy

A B S T R A C T

Findings from scientific research largely remain inside the scientific community. Research scientists are being encouraged to use social media, and especially Twitter, for dissemination of evidence. The potential for Twitter to narrow the gap on evidence translated into policy presents new opportunities. We explored the innovative question of the feasibility of Twitter as a tool for the scientific community to disseminate to and engage with health policy makers for research impact. We created a list of federal “health policy makers.” In December 2014, we identified members using several data sources, then collected and summarized their Twitter usage data. Nearly all health policy makers had Twitter accounts. Their communication volume varied broadly. Policy makers are more likely to push information via Twitter than engage with constituents, although usage varied broadly. Twitter has the potential to aid the scientific community in dissemination of health-related research to health policy makers, after understanding how to effectively (and selectively) use Twitter.

Introduction

Research dissemination is limited

Findings from scientific research largely remain inside the scientific community. Less than 1% of articles published in a 3-month window appeared in news media such as Time and NBC News [1]; more than half originated in The New England Journal of Medicine, The Journal of the American Medical Association, Science, and Nature [1]. Likewise, scholarly journals with higher impact factors are favored by regulatory policy makers [2].

Twitter

The Internet is the second highest source of science news [3]. As a leading social media platform, Twitter’s user base has grown dramatically since 2007, now with more than 302 million monthly active users and 500 million tweets per day (https://about.twitter.com/company). Twitter’s mission is to “give everyone the power to create and share ideas and information instantly, without barriers.” This makes it an attractive platform for information dissemination.

The scientific community is beginning to embrace Twitter as a deliberate tool [4] for research dissemination; currently, less than 10% of PubMed articles are mentioned on Twitter [5]. Health professionals use Twitter for a broad range of health-related communications from personal statements to testable claims [6]. Science [7] and The Lancet [8] articles have explored the use of Twitter.

Scientific researchers have recently been called to further engage in their use of social media, and often specifically Twitter, as a tool for research dissemination [4,9â12]. The translation of evidence into practice and policy may be facilitated by researchers’ use of social media [10]. Some advocate for an increasing need to narrow the communication gap between researchers and policy makers in the era of the Affordable Care Act [10].

As the role of social media in defining research impact is yet to be formalized [13], we consider the utility of Twitter as a route for the implementation sciences to directly connect researchers to policy makers.

Legislators’ use of Twitter

The Congressional Research Service has reported that Congress members’ three most frequently mentioned duties and activities included creating legislation, helping constituents solve problems, and representing the interests of their districts and constituents [14]. Likewise, expectations of the public are aligned with those of
policy makers. According to a public survey, members are expected to represent the people and district consistent with the wishes of the majority, to solve problems of the district, and to engage with the people of the district [14].

To aid their duties as members, legislators have been encouraged to use Twitter for years. TweetCongress (http://tweetcongress.org/) began in 2008 to encourage government transparency, communication, and engagement with the public. In 2009, the Congressional Research Services suggested “these mediums allow members to communicate directly with constituents (and others) in a potentially interactive way that is not possible through mail or e-mail. For members and their staff, the ability to collect and transmit real time information from constituents could be influential for policy or voting decisions” [15].

Twitter for research to policy impact?

In their role of problem solving, representing their districts, and creating legislation, policy makers have indicated that credible experts, objective content, and relevance of new insights to their priorities are among factors that help them increase awareness, decision making, and seek additional information [16].

It is therefore in this context of Twitter providing a platform to share ideas instantly; Congress members being encouraged to use Twitter; Congress members self-identifying their duties as helping constituents and representing the interests of their districts; and Congress members at times drawing on credible experts or evidence in their decision making and policy writing that we explored the innovative question of the feasibility of Twitter as a tool for the scientific community to translate and disseminate evidence for impact by engaging with health policy makers. Specifically, in the United States, we explored (1) how many health policy makers use Twitter; (2) how do health policy makers use Twitter; and (3) do health policy makers engage via Twitter?

Material and methods

We created a list of federal “health policy makers,” defined as individuals directly related to the actual writing of health legislation. This sampling frame is restricted to those within the legislative branch of the federal government, defined as: (1) “members of health committees,” that is, elected members of Congress who are on main committees with health jurisdiction; and (2) “committee staff,” that is, health staff of the main committees with health jurisdiction.

The main House committees with health jurisdiction are (1) Education and Workforce; (2) Energy and Commerce; and the (3) Ways and Means committees. The main Senate committees with health jurisdiction are (1) the Finance Committee and (2) the Health Education Labor and Pensions Committee. We used (1) Govtrack.us to identify House and Senate members of health committees (as of December 2014), (2) staffers. sunlightfoundation.com to identify appropriate House committee staff, and (3) data.washingtonexaminer.com for Senate committee staff.

Once committee members were identified, we searched Twitter for user accounts. We only included accounts that Twitter verified and that were official accounts of the policy maker. Owing to the difficulty in identifying and validating verified committee staff accounts on Twitter, we did not further pursue data collection on them, instead focusing on the members (legislators) themselves. We summarize policy makers’ Twitter use first at the committee level. We calculated the percentage of policy makers with an official and verified Twitter account by committee, and the median and range of number of tweets, number of Twitter accounts they follow, and number of Twitter accounts who follow them. Data were collected in December 2014 for their retrospective use of Twitter from that account.

We next identified the policy makers with the minimum and maximum Twitter usage within committee, based on the total number of tweets. From this subsample, we input user names into a Twitter streaming application programming interface (API) which summarizes the account’s most recent 100 tweets (“follower.me”). We report the year the account was created, popular “hashtags” (#) used, and their rate per 100 recent tweets for the following metrics: of tweets with “@” mentions (i.e., the policy maker names another Twitter user in a tweet); of hashtags mentioned (i.e., the policy maker catalogs their tweet as part of a Twitter conversation); of retweets (i.e., the policy maker disseminates another user’s tweet to their own followers); of tweets with links (i.e., the policy maker disseminates more information than can be mentioned in 140 characters); and of replies (i.e., responding to someone else’s tweet). The University of Missouri Health Sciences Institutional Review Board determined this study exempt from review.

Results

How many health policy makers use Twitter?

Nearly all health policy makers had Twitter accounts (95%–100%; Table 1).

How do health policy makers use Twitter?

Policy makers’ Twitter communication volume varied broadly from 184 to 14,800 tweets over the account’s lifetime. Health policy makers followed from 1 to 47,600 accounts and had attracted 959 to 514,000 followers.

Do health policy makers engage via Twitter?

Of the subsample of minimum and maximum users (Table 2), the rate of “@” mentions used in a tweet ranged from 24 to 87 per 100 recent tweets. The rate of hashtags included in a tweet ranged

Table 1

<table>
<thead>
<tr>
<th>Health Education Labor and Pensions Committee (S)</th>
<th>Finance Committee (S)</th>
<th>Education and Workforce Committee (H)</th>
<th>Energy and Commerce Committee (H)</th>
<th>Ways and Means Committee (H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of members</td>
<td>22</td>
<td>24</td>
<td>41</td>
<td>54</td>
</tr>
<tr>
<td>% on Twitter</td>
<td>100</td>
<td>100</td>
<td>95</td>
<td>100</td>
</tr>
<tr>
<td>Tweets, median (range)</td>
<td>2469 (337–10,900)</td>
<td>2282 (517–14,800)</td>
<td>1543 (186–4599)</td>
<td>1591 (391–7104)</td>
</tr>
<tr>
<td>Following, median (range)</td>
<td>462 (8–47,600)</td>
<td>542 (1–27,200)</td>
<td>849 (57–5124)</td>
<td>675 (31–11,100)</td>
</tr>
<tr>
<td>Followers, median (range)</td>
<td>27,550 (10,400–514,000)</td>
<td>29,850 (10,200–97,400)</td>
<td>7064 (959–30,300)</td>
<td>8470 (959–23,200)</td>
</tr>
</tbody>
</table>

* Data reported is summarized from the individual member level not committee level.

1 Senate (S) or House (H) of Representatives.
from 3 to 68 per 100 recent tweets. The rate of retweets ranged from 1 to 30 per 100 recent tweets. The rate of links shared ranged from 1 to 88 per 100 recent tweets. The rate of replies to another’s tweet ranged from 0 to 20 per 100 recent tweets.

Discussion

This exploration is novel in its approach to a critical responsibility of the scientific community, that of translation and dissemination of evidence for policy impact. We investigate the potential for the use of Twitter as a direct communication tool to bridge researchers and policy makers. We found that the most direct influencers of health legislation indeed use Twitter, some very actively.

As far as how policy makers use Twitter, we found broad variability in use of hashtags, retweets, and sharing links. Naturally, as public figures, some policy makers have substantial numbers of followers, suggesting the potential for broad dissemination of research via retweet. Some policy makers follow substantial numbers of accounts. This may suggest interest in a broad range of information, or an alternative interpretation is that following more Twitter accounts may be a strategy to gain more followers themselves.

Not surprisingly, our results suggest policy makers are more likely to use Twitter to “push” information to their followers than to interact with Twitter users via a reply. However, the rate of interaction varied considerably. It would be interesting to explore whether there are Congress member characteristics [17] that account for such variability, such as age, sex, Congressional service tenure, education, previous occupation, military service, and political aspirations. Legislative committee membership changes (members coming on or off committees) afford opportunities for additional research investigation, along with comparisons of committee members’ Twitter usage across levels of political influence: majority and minority parties; junior and senior standing; the committee chair versus other members; and the chair before and after assuming that position. Finally, policy maker engagement via Twitter might vary by calendar year, political and cultural climate, and current events.

Twitter is one forum for research-policy impact; benefits include Twitter’s widespread popularity and public documentation. Our analysis included policy makers assigned to health committees at the time of data collection and is intended as an illustration of usage rather than of specific legislators. Twitter abbreviates the number of followers in increments of 100, after reaching 10,000 which is reflected here (e.g. 13.9K vs. 13.932); this additional specificity would not substantively change the results. Some legislators differentiate tweets sent by staffers (e.g., @SenSanders’ Twitter page indicates tweets “ending in –B are from Bernie, and all others are from a staffer”); researching Twitter’s potential for engagement between those who tweet directly or through staffers is another avenue of research.

Should researchers tweet policy makers?

When we first encountered messages suggesting researchers tweet, we confess to initially questioning the intent and utility. The call for researchers to engage in social media is not without its challenges. Implementing a social media strategy may not necessarily increase the number of times a journal article is viewed [18]; the association between tweets and citations is mixed [5,19]; and there may be some resistance from the scientific community for these additional outreach efforts [9,10,20]. Well documented in the public sphere is the public relations nightmares of the impact of these additional outreach efforts [9,10,20].

However, in the process of investigating this topic, we now better appreciate the potential utility under certain careful circumstances. The tenets of the research scholar have a long history of supporting such endeavors. The American Association of University Professors was founded in 1915, where “Committee A” addressed academic freedom, that is, the Committee on Academic Freedom and Tenure. In their landmark report, the committee stated the nature of the academic calling’s function “…is to deal at first hand, after prolonged and specialized technical training, with the sources of knowledge; and to impart the results of their own and of their fellow-specialists’ investigations and reflection, both to students and to the general public, without fear or favor” [21]. The committee goes on to address the academic institution:

The third function of the modern university is to develop experts for the use of the community. For if there is one thing that distinguishes the more recent developments of democracy, it is the recognition by legislators of the inherent complexities of economic, social, and political life and the difficulty of solving problems of technical adjustment without technical knowledge. The recognition of this fact has led to a continually greater demand for the aid for experts in these subjects, and to advise both legislators and administrators. The training of such experts has, accordingly, in recent years, become an important part of the work of the universities; and in almost every one of our higher institutions of learning the professors of the economic, social and political sciences have been drafted to an increasing extent into more or less unofficial participation in the public service. It
is obvious that here again the scholar must be absolutely free not only to pursue his investigations, but to declare the results of his researches, no matter where they may lead him or to what extent they may come into conflict with accepted opinion. To be of use to the legislator or administrator, he must enjoy their complete confidence in the disinterestedness of his conclusions [21].

In this context, we agree that it is appropriate for researchers to use social media, such as Twitter, to engage with policy makers to share relevant evidence to inform research-policy translation. Having dual roles as both constituents and credible experts, researchers arguably hold a societal obligation to share evidence-based research and expertise with policy makers. Researchers might think of their role as one of the educators of policy makers on the evidence, rather than suppliers of evidence to support a cause.

The Twitter conversation is happening whether or not we participate. Ensuring credible scientific evidence is part of the national dialog must be considered a responsibility of the research community to keep that dialog balanced. In identifying that almost all the policy makers in our sample are on Twitter, it should not be discounted as a method of connecting researchers to policy makers with selective use. We certainly do not advocate that researchers begin tweeting policy makers en masse. Emphasizing researchers’ use of Twitter to advance measurable outcomes (e.g., the translation of evidence for impact), rather than activities (i.e., tweeting for the sake of tweeting), would be our recommended perspective.

What information do policy makers draw from Twitter?

Understandably, 140 characters is not much space to summarize research evidence for policy. At the same time, scanning tweets is arguably no different than scanning the titles of journal articles in PubMed, the links for newspaper articles in The New York Times, or the subject line of an email to filter through the ‘noise’ for the most relevant and applicable information to compare or contrast against our objective.

As with disseminating evidence-based communications to policy makers through traditional policy briefs [22], messages sent to policy makers via Twitter likely require a targeted approach based on politically relevant interests. Kreuter and Skinner [23] define targeting communication as customization of the message at the level of group or population, such as the congress persons and committee staff on committees of jurisdiction over a policy issue proposed in legislation. Given the importance to know one’s stakeholder, tweeting policy makers may be more successful after understanding the policy makers’ potential motivations for reading and using a message. Although they are meant to be applied at a broader level than the context of our study, functional [24,25], and uses and gratifications [26] theories help us think about a range of motivations such as diversion, personal relationships, personal identity, and surveillance [27]. Motivations to read and possibly use research tweets that inform policy are better described as informational and utilitarian in nature. Policy makers may be motivated by the political utility of such information, or how useful it is to their political—and legislative—agenda. Political utility is determined in large part by the opinions of the electoral base of the policy maker. Although surveillance as used in mass communications theory operates at a societal level, policy makers likely conduct continual surveillance for information, including research that supports or even contradict their policy position. Information may be useful to one policy maker in advocating for specific legislation; whereas other information may be useful to another policy maker in fighting against specific legislation.

Tailoring is customization of the message at the level of the individual, such as an individual senator [23]. We hesitate to go beyond targeted to tailored messaging in this context. We are careful to note that our conceptualization of political utility does not just include research evidence that supports the view of the policy maker. The dissemination of research evidence for policy impact should be to inform the policy debate, not to persuade one side or the other, in one direction or the other. Even our recommendation of targeting policy makers is driven by the information or message and not the other way around: We ask, To what target group is this information most useful? And not, What information is most useful to what target group? Research information that contradicts a policy maker’s position is still “useful to know.”

Political utility to a policy maker does not just include legislation. Policy makers may survey Twitter for information so their knowledge of current events, and knowledge of their stakeholders’ beliefs and behaviors, stays relevant and timely.

How should researchers tweet policy makers?

The “how” might come in the form of creating credibility and visibility with a policy maker correcting or clarifying a scientific point in national discussion (e.g., through hashtags), or sharing important new findings of research relevant to that policy maker. Twitter conversations are neither continuous nor reciprocal [28] and may be seasonal or situational, such as when events unfold in the public eye (e.g. #ebola, campaigns [29], and elections [30]). Future research could explore how policy makers use and ingest information from Twitter, the effectiveness of links, pictures, questions, and/or a repeated presence.

Can tweeting policy makers facilitate research-policy impact?

Ultimately, this is the question. Apart from the fiscal impact of decisions, trust and constituents were among the top three ranked influence factors that members reported affecting legislative decision making [31]. Building trust via 140 character messages likely requires consistent communication patterns over time. Leveraging political journalists may be another research dissemination strategy; journalists consider Twitter a more consequential social media platform than any other [29]. Yet, although journalists may engage in communications via Twitter, policy makers ranked the media low on factors of influence on legislative decision making [31].

Conclusions

Twitter is a venue with the potential to help scientists disseminate health-related research for policy impact. But before encouraging researchers tolood Twitter with hashtags and retweets, it would be best to develop an evidence-based approach that leverages key people and moments. Effectively driving policy impact will require an understanding of influencers, behaviors, and activists specific to the Twitter culture.

Acknowledgments

Dr. Hensel previously served as a Health and Aging Policy/ American Political Science Association Congressional Fellow in the office of Senator John D. Rockefeller IV of West Virginia (2008–2009). The authors thank Susan E. Meadows, MLS and Susan G. Elliott, MLS of the Department of Family and Community Medicine at the University of Missouri School of Medicine for their library expertise. The authors thank editor Dale Smith for his thoughtful editorial feedback; his time was funded by J.M.K.’s faculty funds. No other funding supported this work.
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