Original Investigation

Social Media and Scientific Meetings: Education Exhibit "Likes" at the Radiological Society of North America Annual Meeting

Paul M. Bunch, MD, Jeremy R. Wortman, MD, Katherine P. Andriole, PhD

Rationale and Objectives: Viewers of electronic education exhibits at the 2013 and 2014 Radiological Society of North America meetings had the opportunity to "like" exhibits, as one might "like" a Facebook or an Instagram post. The purposes of this study were (1) to evaluate for a relationship between exhibit popularity and receiving an award or *RadioGraphics* invitation, (2) to evaluate for a relationship between exhibit recognition and subsequent popularity, and (3) to quantify and compare the electronic education exhibit likes at the 2013 and the 2014 meetings.

Materials and Methods: Exhibit likes were recorded at the midpoints and ends of both meetings. Data analyses were performed by means of one-way analysis of variance and chi-square tests.

Results: There were similar numbers of electronic education exhibits at the 2013 (1856) and 2014 (1793) meetings with no significant difference between meeting years in the number of exhibits chosen for awards (423 vs. 404, $P = 0.88$) or for *RadioGraphics* solicitation (190 vs. 169, $P = 0.46$). In both meeting years, there were statistically significant associations between initial and overall exhibit popularity and exhibit recognition, as well as between exhibit recognition and subsequent popularity. A 152% increase in total likes recorded was observed at the 2014 meeting as compared to the 2013 meeting (11074 vs. 4391, $P < 0.0001$).

Conclusions: Popular exhibits were significantly more likely to receive awards and *RadioGraphics* invitations. Receiving an award or *RadioGraphics* invitation was associated with subsequent increased exhibit popularity. Significantly more likes were recorded at the 2014 Radiological Society of North America meeting than at the 2013 meeting.

Key Words: Social media; medical society meeting; RSNA; education exhibit.

INTRODUCTION

With the rapid growth and widespread adoption of social media, there has been increasing interest in social media's impact on and interaction with the field of medicine and the subspecialty of radiology (1–5). More specifically, previous researchers have investigated and analyzed the use of social media at major medical society meetings across a number of specialties, with most work to date focused on third-party social media sites such as Facebook (facebook.com, Menlo Park, CA) and Twitter (twitter.com, San Francisco, CA) (1,2,6–10).

The Radiological Society of North America (RSNA) introduced a form of medical societal social media at its 2013 annual meeting by offering Digital Presentation System (DPS) electronic education exhibit (EEE) viewers the opportunity to "like" an exhibit, just as one might "like" a Facebook or an Instagram post. This feature was again made available to EEE viewers at the 2014 RSNA meeting. The number of likes received by each exhibit was visible to all other meeting attendees in real time, and for each like recorded, the lead exhibit author received an automated e-mail notification containing the viewer's name. All in-person and virtual meeting attendees had the option of liking an unlimited number of EEEs; however, each attendee could like a specific exhibit only once.

A panel of judges evaluated the educational content of each EEE and selected exhibits to receive Education Exhibit Awards (magna cum laude, cum laude, or certificate of merit) (11,12). In both 2013 and 2014 meetings, Education Exhibit Awards were announced during the Wednesday plenary sessions (11,12). Following the awards announcement, each award-winning EEE was designated as such in DPS. Awards designations were visible to all meeting attendees, and attendees could filter EEEs by award winners.

Similarly, subspecialty panels of *RadioGraphics* education exhibit reviewers evaluated each EEE for potential solicitation

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From the Department of Radiology, Brigham and Women's Hospital, Harvard Medical School, 75 Francis Street, Boston, MA 02115. Received October 2, 2015; revised October 9, 2015; accepted October 15, 2015. Some of this article content was presented as oral scientific presentations at the Radiological Society of North America 2014 and 2015 annual meetings. **Address correspondence to:** P.M.B. e-mail: paul.m.bunch@gmail.com

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by *RadioGraphics* (13). EEEs chosen for *RadioGraphics* solicitation were designated as "Selected for *RadioGraphics*" in DPS during the second half of the meeting week. This designation was visible to all meeting attendees, and attendees could also filter EEEs by *RadioGraphics* selection.

We hypothesized that there would be a positive correlation between an exhibit's popularity among attendees, as measured by the number of likes received, and its merits in the eyes of the judges, as measured by whether the exhibit received an award or a *RadioGraphics* invitation. We also hypothesized that exhibits designated as "noteworthy" by the judges—either in terms of an award or in terms of *RadioGraphics* invitation—would enjoy a subsequent increase in visibility and popularity as compared to exhibits not receiving an award or a *RadioGraphics* invitation.

The purpose of this study was to test these hypotheses by determining whether there was a correlation between an EEE's popularity and its chance of being recognized with an award or an invitation to be published in *RadioGraphics* and by determining whether there was a correlation between an EEE's recognition and its subsequent popularity. We also sought to quantify and compare the EEE likes recorded at the 2013 and the 2014 meetings.

METHODS

Data Capture

The number of likes each EEE received was manually recorded from DPS at two separate time points over the course of both the 2013 and the 2014 RSNA meetings. The first time point was chosen to coincide with the midpoint of the meeting before either Education Exhibit Awards or *RadioGraphics* invitations had been announced, whereas the second time point was chosen to coincide with the meeting's conclusion. During both the 2013 meeting (held from December 1 to December 6) and the 2014 meeting (held from November 30 to December 5), EEE likes were first recorded after 3 full meeting days and again recorded after the meeting had closed. For both the 2013 meeting and the 2014 meeting, exhibits designated as having received an award or RadioGraphics invitation were manually recorded from DPS at the conclusion of the meeting.

Statistical Analysis

Statistical analyses were performed using JMP Pro, Version 11 (SAS Institute Inc., Cary, NC). One-way analysis of variance was used for the purposes of comparing the mean likes received between exhibits receiving and not receiving Education Exhibit Awards and exhibits receiving and not receiving *RadioGraphics* invitations at the 2013 and the 2014 RSNA meetings. One-way analysis of variance followed by Tukey's honest significant difference was used for the purposes of comparing the mean likes received among exhibits receiving "certificate of merit," "cum laude," and "magna cum laude" designation. A chi-square test was used for the purposes of comparing the number of exhibits at the 2013 and the 2014 RSNA meetings to the number of awarded exhibits, the number of invited exhibits, and the total number of likes.

RESULTS

EEEs and "Likes"

At the 2013 RSNA meeting, a total of 1856 EEEs were available for viewing. These EEEs were divided among 15 predominantly organ-centered communities (Table 1). Over the course of the meeting, the 1856 EEEs received a total of 4391 likes (mean 2.4, standard deviation [SD] 3.4, min 0 [$n = 527$], max 55 [$n = 1$]). A total of 2682 of the 4391 likes (61%) were entered over the first half of the meeting before the announcement of Education Exhibit Awards and *RadioGraphics* invitations (mean 1.4, SD 2.3, min 0 [$n = 785$], max 28 [$n = 1$]). The community receiving the most overall likes in 2013 was Neuroradiology ($n = 747$), and the community receiving the most likes per exhibit was Chest (mean 3.0). The community receiving the fewest overall likes ($n = 9$) and fewest likes per exhibit (mean 1.1) was Radiation Oncology.

At the 2014 RSNA meeting, 1793 EEEs were available for viewing. These EEEs were divided among 18 predominantly organ-centered communities (Table 1). Over the course of the meeting, the 1793 EEEs received 11,074 likes (mean 6.2, SD 7.5, min 0 [$n = 124$], max 109 [$n = 1$]). A total of 6687 of the 11,074 likes (60%) was entered over the first half of the meeting before the announcement of Education Exhibit Awards and *RadioGraphics* invitations (mean 3.7, SD 5.1, min 0 [$n = 273$], max 78 [$n = 1$]). The community receiving the most overall likes in 2014 was Musculoskeletal ($n = 1624$), and the community receiving the most likes per exhibit was Breast (10.6). The community receiving the fewest overall likes ($n = 29$) was Radiation Oncology, whereas the community receiving the fewest likes per exhibit (mean 2.3) was Nuclear Medicine.

Education Exhibit Awards

At the 2013 RSNA meeting, Education Exhibit Awards (Table 2) were given to 423 EEEs (22.8%), which received a total of 1490 likes (33.9%, mean 3.5, SD 4.6, min 0 [$n = 59$], max 55 [$n = 1$]). EEEs receiving awards had significantly more likes before the Education Exhibit Awards than EEEs not receiving awards ($P < 0.0001$). Additionally, EEEs receiving an award received significantly more likes over the second half of the meeting ($P < 0.0001$) and also had significantly more likes at the end of the meeting ($P < 0.0001$) than nonawarded EEEs (Table 4). EEEs receiving at least 15 likes over the first half of the meeting had a 44.4% chance of being recognized with an award compared to a 22.7% chance for EEEs with fewer than 15 likes. Of the 423 exhibits receiving an Education Exhibit Award at the 2013 RSNA meeting, 86 (20.3%) also received a *RadioGraphics* invitation.