



An Examination of U.S. Health Departments' Social Media Strategies

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Abstract

Social media allow health organizations, governments, and institutions post timely health related information, respond to crises, and create two-way communication with the public. Considering the rapid growth of social media use in public relations, state-level health departments have recognized the potential of social media platforms for engaging publics and increasing the awareness of health issues. Using the dialogic principles as a theoretical framework, this study investigated how state-level health departments were using Facebook to build and maintain relationships with the public. Furthermore, this study attempted to explore whether there were significant changes in terms of Facebook management strategies over time. We conducted a content analysis of state-level health departments. Facebook posts over a two-year period. Findings demonstrated that state health departments were not fully engaging in dialogic communication. Only a limited portion of the posts were utilizing the four dialogic principles. In addition, there was no significant change in 2014 when compared with the 2012 data. This analysis revealed some key points regarding state-level health departments' use of Facebook as a relationship-building tool.

Keywords

Health informatics; Health management; Social media; Dialogic principles; Engagement

Introduction

The public's demand for health-related information is increasing. A survey conducted by Pew Internet revealed that health-related information remains one of the most searched topics online [1]. Beyond simple Internet inquiries, the use of social media in the United States is dramatically increasing, as one survey conducted by Pew disclosed that 65% of online adults used some form of social media in 2011 such as Facebook, Twitter, or LinkedIn, compared to only 8% in 2005 [2]. Facebook is one of the most active social media with over 750 million users (Centers for Disease Control and Prevention, 2011). The average user creates 90 wall posts on Facebook per month, and 50% of active users login to the site on a daily basis (CDC, 2011). This computer mediated communication trend and increase in overall adoption may have caused state-level health departments and health organizations to adopt social media to address health issues and engage in dialogic communication with the publics.

Pro-health attitudes and behaviors are in the publics' interest and can be addressed easily using social media, while at the same time allowing health practitioners to build relationships (CDC, 2011). To meet the health organization's goal, regardless of industry, social media must be used to its fullest potential by providing the public vital, relevant and valid sources of information.

Park, Rodgers, and Stemmler [3] explored how health organizations used Facebook's interactive features to publicize their brand by capitalizing on health literacy issues. Their study shared knowledge on promotional techniques and the usage of interactive features by health organizations. The current study approaches the subject from a different point of view by adopting dialogic theory to closely examine how state-level health organizations are using social media, such as Facebook to develop and maintain relationships with the publics.

In applying dialogic principles to this issue, the present study aims to provide practical strategies and recommendations for health practitioners about how to improve or use social networking tools to effectively distribute health-related content. Through content analysis, we will determine to what extent health practitioners are addressing vital and relevant health issues to the public interactively. Each Facebook wall post will be a unit of analysis to identify how state health departments are employing dialogic principles. In an attempt to improve promotional strategies used by health organizations, this study will set a foundation for health organizations to appropriately address necessary health issues and reveal opportunities for new media research.

Literature Review

The Benefits of utilizing social media

In a systematic review of health articles, Moorhead, Hazlett, Harrison, Carroll, Irwin, and Hoving [4] found several benefits as to why health organizations should adopt social media, including (a) increased interaction, (b) information dissemination (c) increased accessibility/access, (d) interpersonal support, (e) public health surveillance, and (f) impact on health policy. The study highlighted the agreement among communication scholars regarding the potential benefits of social media.

The dissemination of information has been noted as being a major function of social media [5]. Another useful purpose of social media in health communication was its ability to reach a wide range of diverse populations and geographically distant consumers [4,6,7]. Unlike traditional media, social media has the ability to reach across geographic boundaries.

We could not possibly ignore the role of social media in building relationships. Jo and Kim [8] suggested that a key component of building relations with stakeholders was interactivity. The use of social media quickly became the focus of strategic communication campaigns [9,10]. However, findings from prior research revealed that organizations were not effectively using social media sites as a tool to build relationships. For example, McAllister [11] examined the strategic usage of social media by U.S. universities to help build and maintain relationships with students. Findings from this study revealed that instead of facilitating communication, the university

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Facebook sites were actually silencing lines of communication. Therefore this key benefit of social media can be completely lost if used incorrectly.

If we examine the objectives of state health organizations we can see the potential benefits of employing social media. Generally speaking, state health organizations are focused on educating and informing the public of significant health issues, provide health services, and encourage pro-health attitudes and behaviors. They also seek effective ways to establish and maintain relationships, as well as to engage with the general public. Therefore, state-level health departments should consider adopting and effectively using social media.

Theoretical background: The dialogic theory

Kent and Taylor [12] developed the dialogic theory based on the interactive concept found in computer-mediated communication. Although a number of studies have applied dialogic theory to web site features that facilitated potential dialogue [13,14], Taylor and Kent [15] argued that dialogue should be viewed as “an orientation that valued sharing and mutual understanding between interactants...”. Using their concepts as a background, this study attempts to explore how dialogue is created and practiced by examining each wall post in detail on Facebook. Therefore, we referred to the five principles proposed by Kent and Taylor [12]. They were: (1) creation of dialogic loops, (2) usefulness of information, (3) generation of return visits, (4) conservation of visitors, and (5) ease/intuitiveness of use. In the current study, ease of interface was omitted because in the context of Facebook, the graphical user interface was consistent.

Previous research has examined how organizations used dialogic principles to facilitate relationships with the public in a variety of contexts, including websites, blogs, mobile devices, and Facebook/Twitter [14,16-20]. Such research indicated that some principles were more frequently used, such as usefulness of information and conservation of visitors, while others such as creation of dialogic loops and generation of return visits were not so common [20,21]. Little research has been conducted regarding how state health department’s utilized dialogic communication strategies on Facebook. In addition, most studies analyzed the dialogic principles utilization within a short time frame or at a fixed point in time. This study monitored state health departments activities on Facebook for two time frames over a two-year period. Specifically, this study investigates the extent to which state health departments' utilize the dialogic principles on Facebook by examine the following research questions:

RQ₁: To what extent did state health department’s use Facebook in 2012 and 2014 respectively?

RQ₂: To what extent were state health departments Facebook wall posts shared and liked in 2012 and 2014 respectively?

RQ₃: To what extent did state health departments utilize the following dialogic principles (a) the creation of dialogic loops, (b) usefulness of information, (c) generation of return visits, and (d) conservation of visitors on their Facebook pages in 2012 and 2014 respectively?

Method

We conducted a content analysis of state health departments Facebook posts for a one-month period in 2012 and a one-month period in 2014. The first data collection period between March 9, 2012 and April 6, 2012, and the second was between was between January 10, 2014 and February 6, 2014.

Sampling procedure

The sampling frame was all 50 states in the U.S. To obtain the data, we first searched for state health department’s websites on a search engine using the keywords “[State Name] Department of Public Health”. Secondly, on each health departments' website we searched for a link or icon for their corresponding Facebook page. As a result we located 21 state health department Facebook pages in 2012 and 36 Facebook pages in 2014. All wall posts (within the time frames) on each state health department Facebook page were analyzed, resulting in a total sample of 517 posts in 2012 and 585 in 2014. The unit of analysis was each Facebook wall post.

Coding scheme

We coded the date and time of each post, number of “likes”, “shares”, and comments for each message. Beyond the above numeric information, the major part of the coding scheme was the dialogic principles, which were developed based on Kent and Taylor’s [12] four dialogic principles.

Dialogic loop

The dialogic loop principle examined to what extent the state health department engaged in discussion with publics by (1) posing a question on Facebook to stimulate dialogue; (2) engaging in a dialogic opportunity by responding directly to a question or comment posted by another user; or (3) creating polls.

Usefulness of information

This item was developed to explore to health department posted messages that were useful to the public. The following types of information were considered as useful to the public: (1) links to news releases/speeches/policies, (2) video/audio, (3) phone numbers, (4) calendar, (5) information from other health associations/government agencies, and (6) useful health tips.

Generation of return visits

Some types of information were considered as useful to encourage visitors to return to the site. They were (1) links to pages on the health department’s sites, (2) friend requests, and (3) “join now” options.

Conservation of visitors

Elements of conservation of visitors included links to other health department social networking sites such as YouTube, Twitter, and blogs.

Coding Procedures

Three trained coders, coded the sample. 5% of the sample (n = 50) were coded for training to determine intercoder reliability. During the training, definitions of the categories were discussed and necessary modifications were implemented. Intercoder reliability was calculated using Scott's *Pi*. The overall intercoder reliabilities for all coding items were above 0.70.

Results

RQ₁ sought to explore the adoption rate change of Facebook accounts among state health departments. An analysis of descriptive statistics of the 2012 data indicated that 21 out of 50 states were employing Facebook during the time span of the study. In 2014, 15 additional states adopted Facebook (Table 1).

In 2012, the Illinois Department of Public Health’s Facebook

page had the largest number of posts in the time frame examined (n = 60, 11.6%), on average 2.14 postings per day, followed by California (n = 53, 10.25%), Colorado (n = 43, 8.32%), and Arizona (n = 39, 7.54%). By contrast, the Connecticut Department of Health's Facebook page had the lowest number of posts (n = 1). In 2014, The Alabama Department of Public Health ranked the highest with the largest amount of posts published during the researched time frame (n = 54, 9.23%) with an average of 1.74 wall posts per day. Mississippi scored the second highest in the amount of Facebook wall posts (n = 50, 8.55%) with an average of 1.61 daily wall posts, followed by Kansas (n = 37, 1.19%) and Arkansas (n = 37, 1.19), both with an average of a 1.19 posts per day (Table 2).

RQ₂ asked how the number of "likes" and "shares" of Facebook posts changed over time. In 2012, only 177 posts (34.2%) were shared, and only one-tenth (n = 53, 11.3%) of the posts were shared more than once. The maximum number of shares of one post was seven. In 2014, the numbers have increased. 243 posts were shared (41.5%), 102 posts (17.4%) were shared more than once, and the maximum number of shares was 359.

In examining the "like" function, the majority of the posts (n = 363, 70.2%) were liked by followers in 2012. Among them, 262 (50.7%) posts were liked by more than one user, and the maximum number of likes to one post was 13 (n = 2, 0.4%). These numbers did not change dramatically after two years. In 2014, 436 Facebook wall posts were liked (74.5%). Over a half were liked more than once (n =

329, 56.2%), and the maximum number of likes to one message was 652 (n = 1, 0.2%).

RQ_{3a} through RQ_{3d} attempted to examine how state health department's utilized the four dialogic principles on their Facebook pages between 2012 and 2014. For RQ_{3a}, posing a question, responding to comments, and creating votes were the three indicators for the principle "creation of dialogic loops". A frequency analysis of these variables found that only a limited portion of the wall posts were utilizing this principle in both 2012 and 2014. In 2012, 78 (15.1%) posts asked questions; only 23 (4.4%) of the posts contained the department's responses through the comment function; and only 0.8% (n = 4) of the posts featured polls. In 2014, 86 (14.7%) posts asked questions; only 13 (2.2%) posts contained the department's responses through the comment function; and no posts featured polls.

RQ_{3b} sought to examine how state health departments utilized the dialogic principle--usefulness of information--on their Facebook wall posts. In 2012, state health departments posted news the most frequently (n = 200, 38.7%), followed by information from other health associations and government agencies (n = 164, 31.7%), and calendar information (n = 163, 31.5%). Speech information appeared the least frequently (n = 1, 0.2%). In 2014, information on other health associations and government agencies were the most frequently posted content in this category (n = 212, 36.2%), followed by calendar information (n = 115, 19.7%), health tips (n = 86, 14.7%), news releases (n = 52, 8.9%), audio/video information (n = 48, 8.2%), and phone numbers (n = 35, 6%).

Table 1: U.S state health departments with Facebook pages.

Year	States
2012	Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Kansas, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Nebraska, Ohio, and Tennessee
2014	Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Kansas, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Nebraska, Ohio, Tennessee, Indiana, Iowa, Kentucky, Missouri, Montana, New Jersey, New Mexico, New York, Oklahoma, Oregon, South Carolina, South Dakota, Vermont, Washington, and West Virginia

Table 2: The number of Facebook wall posts by each state.

State	2012			2014		
	# of posts	%	Posts per day	# of posts	%	Posts per day
Illinois	60	11.61	2.14	19	3.25	0.61
California	53	10.25	1.89	21	3.59	0.67
Colorado	43	8.32	1.54	32	5.47	1.03
Arizona	39	7.54	1.39	31	5.30	1
Mississippi	35	6.77	1.25	50	8.55	1.61
Alaska	31	6.00	1.11	36	6.15	1.16
Florida	30	5.80	1.07	31	5.30	1
Georgia	26	5.03	.93	34	5.81	1.09
Alabama	25	4.84	.89	54	9.23	1.74
Kansas	22	4.26	.79	37	6.32	1.19
Arkansas	22	4.26	.79	37	6.32	1.19
Michigan	22	4.26	.79	36	6.15	1.16
Minnesota	21	4.06	.75	34	5.81	1.09
Louisiana	20	3.87	.71	4	0.68	0.12
Tennessee	19	3.68	.68	32	5.47	1.03
Ohio	17	3.29	.61	15	2.56	0.48
Maryland	13	2.51	.46	17	2.91	0.54
Nebraska	10	1.93	.36	11	1.88	0.35
Hawaii	5	.97	.18	19	3.25	0.61
Delaware	3	.58	.11	28	4.79	0.90
Connecticut	1	.19	.04	7	1.20	0.22

RQ_{3c} sought to examine how state health departments utilized the dialogic principle--generation of return visits--on their Facebook wall posts. Results showed that in 2012, 148 (28.6%) of the posts had links to the department's website. However, only 1 (0.2%) asked users to "become a friend" and only 14 (2.7%) of the posts had a "join now" option. In 2014, 196 (33.5%) the posts had links to the department's website. However, only 1 (0.2%) and 18 (3.1%) posts asked users to "become a friend" and had "join now" options respectively.

RQ_{3d} sought to examine how state health departments utilized the dialogic principle -- conservation of visits -- on their Facebook pages. Links to other social media sites was the indicator for this principle. In 2012, only 40 (7.7%) posts had links to other self-owned social media sites such as Twitter and YouTube. In 2014, 75 (12.8%) posts had links to other social media sites.

Discussion and Conclusions

The main goal of this study was to explore how state health departments utilize dialogic communication to build and maintain relationships with the general public on Facebook. In particular, we collected data based on a two-step procedure. The first set of data was collected during spring 2012, and the second set was collected during spring 2014. In general, the findings demonstrated little progress during the two years in terms of effective use of social media.

Although our findings call into question the effectiveness of using social media in these departments, we do see some optimistic signs in considering the adoption of Facebook. We found that more state health departments have realized the importance of using Facebook to connect to stakeholders. In 2012, approximately half of state health departments had Facebook pages, whereas in 2014, nearly three in four of state health departments adopted Facebook. Compared with "older" online tools such as websites, social networking tools such as Facebook have advantages as noted above. Although more state health departments have adopted Facebook pages, it appears as though many health departments are either not aware of the advantages offered by social media or have neglected to adopt Facebook pages for other reasons. Some state health departments that had Facebook pages did not update them very often. For example, the Connecticut Department of Health only had 1 post during the examined time frame in 2012, and the Louisiana Department of Health and Hospitals posted only four times during the examined time period in 2014.

We found over half of the posts were not shared by the public in both the 2012 and 2014 data sets. To some extent, the figure could reflect the popularity of state departments Facebook posts among online health information users and the effectiveness of their relationship building effort. The overall low rates of sharing and likes suggested that state health departments might not be fully engaging the publics by providing interesting and useful health information that is relative to its target publics.

One of the main goals of the current study was to explore whether any progress has been made during the past two years in terms of creating a dialogic environment in social media. For health departments in state levels, it is critical to provide health information that is both interesting and useful. Interesting elements might include forwarding audio/video, creating polls, asking questions, etc. Compared with websites, social media poses more interactive functions to communicate with the public and to analyze the target audience. However, only a small portion of state health departments are utilizing the dialogic principles effectively in their Facebook posts.

For example, directly responding to a question/comment is considered a good way to maintain conversations with the public. However, few health departments respond to comments posted by the general public, meaning that they are not effectively using the discussion function in Facebook to actively communicate with the public. Therefore, even with the advanced technology, the communication model between the state health departments and the public is still asymmetrical and one-way. By its very definition, social media is social. Our recommendation here is simple and straightforward. We suggest that at least one member of the public health staff be responsible for monitoring and responding to all Facebook comments. There are many social media management platforms (i.e., HootSuite, Facebook Page Manager, and SocialBrother) available to help facilitate this process.

Examining both data sets, we found that in 2012 and 2014, state health departments provided more useful information than any other category. The findings showed that usefulness of information is one of the most common dialogic principles used by state health departments. Providing useful information includes posting news releases, event calendars, health tips, and information from other organizations. This will attract online users to follow their Facebook page for further helpful information and tips. Although reposting content from another source is cost efficient and time saving, failure of understanding your primary and secondary publics can result in low engagement and limited dialogue. Since this content makes up approximately 60% of the posted content, it is our recommendation that state health departments closely examine its publics through primary or secondary research and then reevaluate what content should be reposted.

Generation of return visits is another important principle to help create a dialogic environment, and both data sets showed that a majority of state health departments used Facebook pages as extension of their websites. Most state health departments posted the most interesting aspects of information on their Facebook pages along with a back link to attract users to go to their home websites. This is a good way to generate return of users. Including external content should be a guiding principle when posting social media content [22]. Although we did a considerable number of back links in the Facebook wall posts, it is unknown at this time if the health department websites are seeing a considerable return on investment for the inclusion of back links. We recommend that state health departments perform some basic network analyses to determine what content generates the most back links. One simple method of tracking this data is to use a link shorting service, such as Bitly. This service provides basic usage statistics for links in various content.

The least utilized principle was the conservation of visits, indicated by links to other social media sites. Health departments should also realize the advantage of other social media sites to conserve visits. Kent and Taylor [12] suggested that sites "should contain features that make them attractive for repeat visits" (p. 329). State health departments' Facebook posts should consider including interactive features such as YouTube videos. This may make the Facebook site more appealing to the general public and generate return visits.

Recommendations and Implications for Applications

Overall, the current study contributes to future research by providing the most recent longitudinal data. We found only limited changes during the two-year period. Instead of merely examining

the adoption of technology interfaces such as Facebook and Twitter, this study advanced the body of knowledge by exploring the actual dialogic strategies used by state health departments. We hope that in the future state health departments will recognize some of the current shortcomings in using Facebook and strive to take full advantage of social media to create an enriching dialogic environment.

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