



Impact of Social Media on Public Health



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Abstract

As social media users increase and the user-generated content grows, social media are playing an increasingly important role in the general public's life during the past decade. A group of the users give their attention to health information on social media. They are health professionals, health consumers, health stakeholders, and health decision makers. The social media applications offer diversified channels for open, convenient and effective health information seeking, and enhance the communication between the health professionals and the health consumers. The health professionals can know the health consumers better and to generate different types of information for education and training purposes on social media; the health consumers can choose the most convenient and comfortable way to contact the health professionals; the health organizations can monitor disease breakouts on social media. The emergence of social media changes the health information seeking behavior from unidirectional to bidirectional and extends the traditional one-to-many information distribution mode to the many-to-many mode. The negative impacts of social media on public health include: (1) the quality of a part of the user-generated health information on social media is low; (2) there is a risk of unintended personal health information exposure when using social media.

Keywords: Social media; Public health; Health information; Health information seeking

Introduction

Social media are becoming increasingly important during the past decade, since different social media applications provide new communication channels for the general public. The establishment of the Usenet and the Open Diary initiated the emergence of social media. Compared with other Internet-based applications, social media are unique in both technology and functionality: (1) social media applications are founded on basis of the Web 2.0 technology; (2) social media applications allow the general public to create content and communicate spontaneously [1-2].

As the Internet technology keeps developing, new social media applications with specific characteristics are emerging. The big umbrella of social media currently covers a variety of Internet-based applications, such as YouTube, Twitter, Instagram, Wikipedia, and so forth. Some researchers have studied the nature, characteristics, and functionalities of these applications. Kaplan and Haenlein [1] proposed two dimensions of features for classifying the applications: (1) "the degree of self-disclosure" and "the type of self-presentation"; and (2) "the richness of the medium" and "the degree of social presence" [1]. Xie and Stevenson classified the social media applications into eight categories in terms of their functionalities [2]. The eight categories were blogs, micro blogs, photo sharing sites, pod casts, RSS feeds, social network sites, video sharing sites, and Wikis.

The number of social media users and the use of social media have grown rapidly. According to Social Media Usage: 2005-2015, American adults who used social network sites rose from 7% to 65% during 2005 to 2015 [3]. Smith and Anderson's report illustrated that American adults who used Facebook, Instagram, Pinterest, Snapchat, LinkedIn, Twitter, and WhatsApp kept growing from 2015 to 2018 [4].

Among the large number of social media users, some groups of users give special attention to the health-related information and use these applications for health issues. They are health professionals, health consumers, health stakeholders, and health decision makers. The health-related information on social media covers a wide range of topics, including diseases and treatments, nutrition, health care and insurance, healthy lifestyle, and so forth. Furthermore, social media allow users to develop their own health stories, interact with each other, and search for health topics online. According to Heidelberger's survey, about 45% of the hospitals in Norway and Sweden used LinkedIn and 22% of the hospitals in Norway used Facebook [5].

The purposes that health professionals use social media include facilitating communication, increasing skills, and increasing knowledge [6]. The information sources used by patients for

seeking health information are diverse but less authoritative than those used by health professionals. Dawson reported that Facebook was ranked the fourth health information source, and YouTube and Twitter were also prevalent sources [7]. Additionally, 81% of European consumers and 63% of US consumers trust the health information on social media applications [7]. These facts reveal that social media are playing an important role in public health.

Discussion

The growth of social media provides an open, convenient, and effective way for health professionals, health consumers, health stakeholders, and health decision makers to generate, share, and seek health-related information, to communicate with each other, and to build social connections. Compared with the traditional online information systems, the information on social media is open to the general public and easier for them to access, and most of the user-generated content is free. It is helpful for the health consumers, especially the poor, to gain general health knowledge. In addition, every kind of social media has its unique features and functions for solving specific problems. For instance, Wikipedia aims to create knowledge collaboration, public social Q&A sites are platforms for raising and solving questions, while social network sites are mainly utilized for building and maintaining social network. Therefore, selecting an appropriate social media application can largely promote the efficiency and effectiveness of health information seeking. However, a shortcoming is that the users without enough knowledge of the social media applications might easily get lost when utilizing the content on these applications.

The diversified social media applications can fulfill the health consumers' information needs by offering different types of health information (e.g. videos, audios, images and text) and information seeking channels. The users can choose their favorite types of information to read, which will improve the user experience, as well as the effectiveness and efficiency of information seeking and use. Regarding the information seeking channels, the health consumers can not only seek information by the search functions embedded in the applications or browsing, but also directly contact the health professionals or patients who are users of the applications and participate in group discussion to obtain useful information. Furthermore, the health consumers can post questions on social Q&A sites when they cannot acquire useful information via the previous means, or when they want to hear different voices. In this case, the health consumers are not only information receivers, but also information senders.

From the health professionals' perspective, the social media applications enable them to know the health consumers better, to educate and train them online, and to keep in touch with them by different means. For instance, with the consumers' consent, the health professionals can review their Facebook posts and tweets to know their health status and habits. For the education

and training purposes, the health professionals can post a series of health-related lectures on video sharing sites (e.g. YouTube); they can also share health knowledge by publishing articles on their own blogs or Wikipedia. In addition to texts, phone calls, emails and web portal communication, the health professionals and consumers can contact each other by new means on social media, such as online one-on-one chat, group discussion, channel subscription (e.g. YouTube), and so on. Those various services enable the two groups to choose the most convenient and comfortable way for communication and interaction.

Like the health professionals, health organizations (e.g. the World Health Organization) can educate and train the general public on social media. The health organizations are also able to organize and present popular health topics and monitor and investigate disease breakouts based on the health information on social media. Social media also have negative impacts on public health. A serious problem is that the quality of the user-generated content on social media varies. According to the previous studies, the quality of the health information in online discussion forums and Wikipedia is relatively high, while the user-generated content on social network sites is not always credible [8]. The health information of a low quality or the false health information might hurt the health consumers.

The maintenance of professional standards on social media is a challenge for doctors [9]. The professional standards require the doctors to maintain patients' confidentiality and maintain clear doctor-patient boundaries. However, in the context of social media, it is hard for the doctors to tell whether the friend requests are sent by their patients or not. Neither can they avoid being followed or contacted by their patients on social media. In this case, the boundary between doctors and patients is vague. Moreover, although a doctor can avoid mentioning her/his patients' personal information on social media, if s/he posts information related to work, it is possible to identify the patients by analyzing the sum of information posted. Therefore, more confidentiality protection measures are needed in the social media context.

Conclusion

With the emergence of social media and the increase of social media users, the importance of social media in public health keeps increasing. The new applications provide users with various types of health information, change the health information seeking behavior from unidirectional to bidirectional, and extend the traditional one-to-many information distribution mode to the many-to-many mode. In this way, the social media applications build the open, convenient, efficient, and effective channels for health information seeking and communication between the health professionals and the health consumers. However, social media have shortcomings as well: (1) the quality of a part of the health information on social media is relatively low; (2) the measures for protecting patients' confidentiality on social media are lacking. The two shortcomings will hurt the health consumers,

the health professionals, the health stakeholders, and the health decision makers. More research is needed to overcome these two shortcomings in the future.

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