

Roles of Social Media in Disseminating Health Information: An Exploratory Study in China

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Abstract

Social media have largely transformed the way how health information is disseminated. However, the literature is limited in understanding the applications and implications of social media in health information dissemination. In this exploratory research, we interview Chinese social media users with diverse demographics by asking a set of open-ended questions regarding their use of social media in gaining and sharing health information. This research-in-progress paper reports the results of a preliminary analysis of the qualitative data that we were able to collect from 27 respondents by the time of submission. We find social media to be a major or even the only channel of seeking and sharing health information. Despite a number of relative advantages, the uncertainty about credibility is a major concern of many respondents in practicing and sharing the information gained through social media. These findings provide valuable insights for both research and practice.

Keywords: Health information, information dissemination, social media.

1. Introduction

Social media including instant messaging (IM) tools, social networking sites (SNSs) and microblogs have become a major part of Chinese people's daily life, especially with the wide use of mobile devices in recent years [1]. In particular, these social media play significant roles in interpersonal communication and information dissemination. IM tools offer real-time text transmission over the Internet [2], while SNSs (e.g., Facebook) and microblogs (e.g., Twitter, and Sina Weibo) are platforms with dynamic, "multimodal" features by which users can post, share, and discuss with other users [3]. Social media have significantly transformed the pattern of Chinese people's online use [4], particularly the structure of online information dissemination and peer-to-peer influence [5].

One particular manifestation of the shifts of the pattern of information dissemination due to social media is in the health care domain [6]. As Chinese people are paying increasing attention to wellness in general and health information in particular, social media such as SNSs have been increasingly used in the communication and dissemination of health information, and are arguably reshaping health care [7]. Social media have changed the way how people gain and share health information for which they traditionally rely on central mass media. However, few studies have investigated the roles of social media versus mass media in health information dissemination. In addition, while there is a growing body of literature on information dissemination through globally used social media (e.g., Twitter), little research has investigated the issue in the context of Chinese social media [7].

In order to address this gap, this study aims to explore the usage and implications of social media in spreading health information. Referring to the literature on information dissemination and media ecosystem, we explore a number of issues related to the use of social

media in health information dissemination. In particular, we are interested to identify the major channels or sources through which Chinese people gain health information, the specific social media services they primarily use, the relative advantages and disadvantages of social media versus mass media in disseminating health information, and their willingness to accept the information gained through social media, apply it in daily life, and share it with others. To address these issues, this exploratory study uses in-depth face-to-face interviews to collect qualitative data from Chinese social media users with diverse demographics. These data are content analyzed, to build a basic understanding about the roles of social media in the dissemination of health information, which can serve as a foundation for further empirical research in future.

The remainder of this paper is organized as follows. Section 2 gives the research background, including a review of the literature on information dissemination and media ecosystem. Section 3 presents the research methodology of data collection. Analysis of the current data and the results are described in section 4. The last section concludes the paper and summarizes the implications of this research for research and practice.

2. Research Background

2.1. Chinese Social Media and Information Dissemination

In recent years, social media have gained widespread use in China and played significant roles in computer-mediated communication [8]. For instance, the number of registered users of Sina Weibo, one of the most prevailing social media in China, had reached 368 million by the middle of 2012, with over 100 million weibos (microblogging messages in Sina Weibo, like tweets in Twitter) being posted everyday on average [9]. In Sina Weibo, users can get information, update statuses, share views, and communicate with other users in real time [10]. According to a report from the Chinese Academy of Sciences, 70% of microblog users in China take microblog sites as their primary source of news [11]. The spread and resonance of the views of users on Sina Weibo can generate tremendous power and even affect the progress of some social events, such as epidemics or huge disasters [9].

Another example is WeChat, the most widely used social media service in China. WeChat is a mobile IM application offering instant text and voice messaging communication. It is free to download, install, and use, supporting all smartphone platforms including iPhone, Android, and Windows Phone operating systems. WeChat was open to the public in January 2011 and, by the end of 2013, had attracted 355 million monthly active users and was available to use in over 200 countries, supporting 18 difference languages (Tencent 2013 Fourth Quarter and Annual Results Announcement). WeChat provides a free channel for its users to send and receive messages between different mobile platforms. It provides users a creative method to communicate and interact with friends through text messaging, hold-to-talk voice messaging, one-to-many messaging, photo/video sharing, location sharing, and contact information exchange (<http://en.wikipedia.org/wiki/WeChat>) [3].

Social media such as Sina Weibo and WeChat give opportunities to millions of users to interact, cooperate, create, and share information [12, 13]. Both Sina Weibo and WeChat provide a number of functions that are useful for spreading information, including forwarding (*zhuangfa* in Chinese), commenting (*pinglun* in Chinese) and marking (*shougang* in Chinese), among others. Different from traditional mass media, social media provide their users publicity, visibility, and accessibility to others, and have partially replaced actual social connections [14]. In addition, social networks enabled by social media facilitate interpersonal communications and interactions among users, providing an efficient mechanism for spreading information and recommendations [15]. As shown by Luarn (2014), features of Facebook users' social network such as network degree and network cluster have significant impact on the frequency of information dissemination [16].

2.2. Information Dissemination and Media Ecosystem

The dissemination of information and opinions (e.g., word of mouth) via Internet and online channels is widely documented in the literature. For instance, prior research suggests that word-of-mouth behavior within SNS is originated from users' desire to maintain social relationships within their personal networks [17]. A positive word of mouth provides beneficial information about a product or service to customers and thereby facilitate the promotion of the product or service [18], in various domains such as tourism [19]. In addition, prior research has investigated the roles of social networks and key persons in information dissemination. Heavy users and early adopters are found to be more influential in a social network; through them, information can be disseminated more efficiently [20]. Similarly, Twitter users with a large number of followers are found to have a greater influence on information dissemination [21]. Despite these previous studies on online information dissemination, very few empirical studies have attended to the specific context of health information dissemination through social media. To address this gap, this study aims to explore the applications and implications of social media in disseminating health information.

In order to understand the roles of social media, as compared to other media such as mass media, in public communication and information dissemination, we refer to the literature on media ecosystem. Figure 1 depicts a conceptual map of media ecosystem for disseminating scientific knowledge [22], which provides useful insights for understanding the dissemination of professional information and/or knowledge in general. Both traditional mass media (e.g., press releases) and social media can serve as channels to transfer professional information and/or knowledge (e.g., scientific knowledge about health) from the professionals (e.g., scientists or doctors) to the public. Social media such as microblogging and IM tools have transformed the media ecosystem by providing a new route to make information more directly and widely available to interested audiences [22]. The primary limitations of this pathway include its uncertain reach, the perceived and actual credibility of the information sources, and self-selection biases [23]. While both social media and mass media can complement each other in disseminating professional information or knowledge of health, the current literature is short of a systematic understanding of the roles and implications of social media versus mass media in health information dissemination.

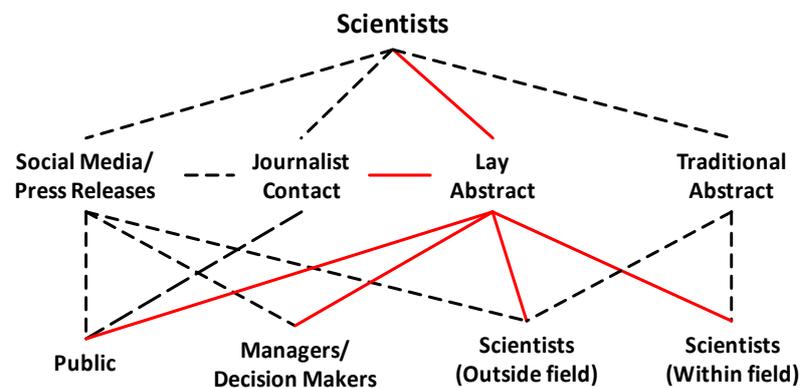


Fig. 1. Science Media Ecosystem (Source: [22])

3. Methodology

The purpose of this study is to explore the use and impacts of social media in health information dissemination. In this exploratory study, we collect data from Chinese social media users with diverse demographics, using face-to-face in-depth interviews.

3.1. Respondents

We recruited participants for the interviews using a combined approach of convenient sampling and snowball sampling. In this process, we tried to cover respondents with as diverse demographics as possible. In order to encourage participation, we provided a gift to each respondent in appreciation of the effort and input contributed. By the time of writing this paper, we were able to collect data from 27 valid respondents. As shown in Table 1, one third of the respondents are male and the others are female. All of the respondents are between 20 to 30 years old, including 63 percent between 20 to 24 years old and the others between 25 to 30 years old. Regarding the level of education, all respondents except one have a bachelor degree or above. The majority of the respondents are graduate students (63.0%) and company employees (33.3%), while only one respondent is unemployed. Finally, the respondents are from various regions of China, including East China (37.0%), North China (18.5%), Central China (18.5%), Northwest China (11.1%), and Southwest China (14.8%). In general, the current sample has an adequate level of diversity in demographics.

Table 1. Respondents' Profile.

Demographics	No.	Percentage (%)
Gender		
Male	9	33.3
Female	18	66.7
Age		
20-24	17	63.0
25-30	10	37.0
Education		
Vocational degree	1	3.7
Bachelor degree	24	88.9
Master degree	2	7.4
Occupation		
Graduate student	17	63.0
Company employee	9	33.3
Unemployed	1	3.7
Region		
East China	10	37.0
North China	5	18.5
Central China	5	18.5
Northwest China	3	11.1
Southwest China	4	14.8
Northeast China	0	0

3.2. Interview Procedure

Every interview was audio recorded upon the interviewee's consent. In each interview, the interviewee was asked to answer five sets of open-ended questions regarding health information dissemination. The first question is a screening question. The respondent was asked to indicate whether he/she had ever attended to health information or knowledge, and if so, through which media or channels. In the second set of questions, we asked the respondent to compare social media against other media or channels in terms of pros and cons, identify which media or channels he/she prefer to use or tend to trust when getting health information, and explain the reasons. The third set of questions focused on the use social media, asking the respondent to indicate the specific social media he/she use to get health information, report the extent to which he/she rely on these media, and explain why. Then, the fourth set of questions regarded the applications and implications of the health information that the respondent gained from social media in his/her daily life. The last set of questions asked about the respondent's intention to transmit the health information gained through social media to others, and the underlying reasons. At the end of each interview, we asked the respondent to

recommend no more than three other persons who he/she thought would be interested to participate in this study.

4. Data Analysis and Results

4.1. Social Media as an Important Channel to Gain Health Information

In replying to the first screening question, six respondents reported that they have never attended to any health information or knowledge. Among the remaining 21 respondents who have ever done so, most rely on social media as the single channel to gain health information, while few respondents also use mass media including television, metro and bus media, newspaper, magazines or hospital propaganda. As such, social media play a critical role in health information transmission among those people who are interested, by not only complementing but surpassing traditional mass media.

4.2. Relative Advantages and Disadvantages of Social Media in Disseminating Health Information

Respondents' answers to the second set of questions varied. For those respondents who have abandoned mass media and only used social media as their major information source, it was difficult to make clear comparisons between social media and mass media in health information dissemination. When being asked about the advantages and disadvantages of social media as an information source, they reported convenience, instantaneity, and availability as typical advantages whereas low credibility as a typical disadvantage. For example, one respondent said "I only watch entertaining shows on televisions, but get information from Weibo and WeChat. In fact, although those social media are instant, they are not as credible as some mass media."

While some respondents (especially graduate students) do not have much exposures to some mass media (e.g., televisions), other respondents use both mass media and social media to gain health information. These respondents were able to directly compare social media against various types of mass media. For instance, some respondents chose both social media and paper media (e.g., books and magazines) to gain health information, and thought that social media cost low and can be more specific than paper media, whereas the latter are more credible than the former in general. Some respondents compared social media against transportation (e.g., metro or bus) media and thought that the former can provide more information than the latter which normally provide limited (although useful) information. Other respondents preferred professional sources (e.g., hospital propaganda) or televisions for accuracy. Overall, if respondents need to look for precise and professional information or advice about their health situation, most of them were inclined to refer to mass media or professionals (e.g., doctors). Interestingly, many mass media quitters in our sample are female.

4.3. Reasons of Adopting Social Media as Health Information Sources

As for the third set of questions, the majority of the respondents (92.6%) would use WeChat and/or Sina Weibo, while very few used other social media such as Quaro (3), Meipai (2) and Douban (1) to get health information. In choosing social media as health information sources, major reasons include ease of use (e.g., convenience), playfulness (e.g., fun and attractiveness), low cost (free of charge), information value (e.g., specificity and timeliness), and accessibility. Over half of the respondents mentioned ease of use as a major reason of adoption. One typical response is "I play my smart phone all day long and these APPs are easy to use." Playfulness is another major reason. A number of posts in social media use attractive titles that are exaggerated or even misleading to activate users' curiosity to read (i.e., attractiveness), or provide funny details or pictures along with main texts (i.e., fun). Information seeking and receiving in social media is of low cost and normally free of charge.

In addition, the information received through social media can have high value in terms of specificity and timeliness. For instance, social media users can get information in real time, from their friends and public accounts that may focus on a specific theme (e.g., for girls to keep in health).

4.4. Applications and Implications of the Information Gained through Social Media in Real Life

As indicated by the responses to the fourth set of questions, the health information received through social media doesn't matter much in the daily lives of many respondents. Over a quarter respondents indicated that they would not apply the health information or knowledge in practice, primarily because they did not believe it. They may read and mark a post in Sina Weibo or WeChat that contain information or knowledge about health regimen or disease prevention and treatment, but would never apply the knowledge contained in the post in real life. One respondent said "I just take a look at the health information, but I really doubt its credibility, so it will never influence my personal life." While some respondents did learn about health regimen, beauty, or fitness from social media and seriously apply the information or knowledge they learned in their real life, few were able to persist the practice for a long time. Moreover, there were gender differences in what types of information are likely attended to. For instance, more males than females would like to receive and apply the information or knowledge about fitness.

4.5. Willingness to Share the Information Gained through Social Media with Others

Responses to the last set of questions showed that most respondents would like to share the health information that they gain through social media with others (e.g., their elder relatives, friends, or classmates) either through social media or in offline conversations, if they believe the information to be useful and credible. Information or knowledge about regimen or disease prevention and treatment will more likely be sent to elder relatives, while those about regimen and fitness will likely be sent to young peers. However, one third of the respondents indicated low intentions to share the health information gained from social media with others, primarily due to their uncertainty about the reliability, accuracy, and/or usefulness of the information.

5. Discussions and Conclusion

5.1. Key Findings and Implications

This study explores the applications and implications of social media in health information dissemination. The preliminary results of the data analysis reveal that social media play a critical role in the transmission of health information. For many people, social media are the dominant or even the only channel to gain health information. As compared to mass media, social media have a number of advantages for getting health information, including ease of use, playfulness, information timeliness and specificity, low cost, and accessibility. The major disadvantage, however, is the low level of perceived credibility of the information gained through social media. This may prevent people from adopting and applying the information in their daily life, and sharing it with others.

This research has important implications for both research and practice. As for research, it extends the research on information dissemination through social media to the context of health information dissemination. In particular, the findings of this research may enrich our current understandings about the roles of social media in disseminating health information or, more generally speaking, other professional information among the public. Research findings of the present exploratory study can serve as a foundation for more in-depth empirical research on the usage and implications of social media in information dissemination. The research findings of this research also have implications for practice. Providers of health

information or other health products or services can draw upon the insights of this research to better leverage social media in delivering information about health care in general and their products or services in particular. This would be beneficial for their businesses on many aspects such as product or service promotion, customer attraction, and service delivery, among others.

5.2. Limitations and Future Research

The results of the present study should be interpreted with its potential limitations in mind. First, our sample is small and biased towards young people. Yet, given the qualitative and exploratory nature of the present study, it is less vulnerable to small sample size than to homogenous respondents. In addition, in the next stage of our research, we plan to collect data from more respondents with broader demographics (e.g., by recruiting more elder respondents), thus introducing more diversity to our sample. This will help enhance the generalizability of the research findings.

Second, this research focuses only on Chinese social media and Chinese people. While we think that the Chinese context represents a typical manifestation of health information dissemination through social media, future research can extend the research into other social media and countries to enhance the generalizability of our research findings. On the other hand, it is also interesting for future research to more deeply investigate the unique features of the Chinese context and social media.

Finally, some preliminary results of this exploratory study needs further investigations and explanations (e.g., whether and why females are more likely to abandon traditional mass media but rely on social media to gain health information). Moreover, while the current research is an exploratory study, future research can dig deeper into the issues regarding the use and impacts of social media in the dissemination of health (or other professional) information. For instance, future research can investigate in more depth on such issues as the factors motivating information seekers' choice of social media versus mass media in gaining health (or other professional) information or knowledge, their influencing mechanisms in this process, and the effects of the tripartite interactions of information seekers, information, and media on the information seekers' intention and behavior of information adoption, application, and sharing. In doing so, future research can investigate on various types of health information (e.g., knowledge about healthcare and nutrition, information about medical service seeking, etc.) more sophisticatedly.

5.3. Conclusion

Focusing on health information dissemination through social media in China, this research-in-progress paper reports the preliminary results of an exploratory study. We content analyze the qualitative data collected from 27 Chinese social media users using face-to-face in-depth interviews containing a set of open-ended questions. The results indicate that social media play a significant role in spreading health information. Many people use social media as the primary or even the only sources to gain health information, as social media have a number of relative advantages (e.g., ease of use, playfulness, information timeliness and specificity, low cost, and accessibility). While many people gain health information through social media, some are hesitate to believe the information, apply it in real life, or share it with others, primarily due to their uncertainty about the credibility of the information, which is a major disadvantage of social media as compared to mass media. When people believe the information gained through social media to be useful and credible, they show intention to share it with corresponding others. These findings provide interesting insights for both practice and academic research. We will advance the research further by collecting more data and conducting more in-depth analysis.

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