



On the Value of Social Media in Health Care

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Abstract

The advent and diffusion of modern technologies have triggered the widespread adoption of social media by hospitals and medical clinics. Despite the increasing use of social media, its use cases in health care settings and the value proposition of each use case are yet to be explicated. To address this issue, this qualitative study explores the value of social media in health care. Relevant data were collected through semi-structured interviews with participants at 11 Australian hospitals and medical clinics. Common themes expressed by participants were identified through a thematic analysis of the transcripts. The findings revealed nine use cases of social media in health care: engaging in professional networking, harnessing patient feedback, promoting public health, educating professionals, educating patients, engaging with the public, crowdsourcing, conducting research, and patient collaboration. Furthermore, this study found that hospitals and medical clinics are not passive users of social media; rather, they make conscious decisions regarding whether, when, and how to use social media. Although social media can likely support various activities in health care settings, its value proposition for hospitals and medical clinics varies depending on the use case. Understanding such use cases and the value proposition in each use case will help more hospitals and medical clinics to incorporate social media strategically.

Keywords Social media · Hospitals, and medical clinics · Use cases of social media · Value of social media · Value proposition

Introduction

Background

The number of hospitals and medical clinics that use social media for health-related interactions is steadily increasing (Brown et al. 2014; Panahi et al. 2016). The term social media refers to internet-based applications that facilitate the exchange of user-generated content (Kaplan and Haenlein 2010). Typically, organizations use two types of social media: internal and external (Vuori 2012; Schlagwein and Hu 2017). Internal social media are hosted by organizations and are accessible only to their employees. By contrast, external social media are hosted outside the organization and are available to everyone. Many organizations use social media for broadcasting information, dialoguing with relevant stakeholders, managing knowledge, and socializing (Schlagwein and Hu 2017).

Business organizations use social media because they derive value from them (Nair 2011). In the context of technology use, the term value refers to positive outcomes created through user–system interactions (Boztepe 2007; Ukoha and Stranieri 2019). The value proposition of social media should be substantial for it to succeed against the communication options already available to hospitals and medical clinics. Value proposition means the incremental benefit that a product or service offers over alternatives (Clark 2006). Value proposition, as used in this study, means the features and functionalities that differentiate social media from alternative communication modes and make it potentially attractive to hospitals and medical clinics.

Many hospitals and medical clinics have adopted a wide range of social media platforms in their communication repertoire. The social media used in health care settings can broadly be grouped into two categories—general-purpose online social networks and virtual health communities (Kordzadeh 2016). The first includes most Web 2.0 websites and applications that enable users to create and share content or to participate in social networking. The second category comprises special purpose platforms that provide a means for health care professionals, patients, and their families to share information about an illness, seek and offer support, and connect with others in similar circumstances. The International Medical Informatics

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Association identified 13 types of social media platforms: social networks, professional networks, thematic networks, microblogs, blogs, wikis, forums or Listserv, social photo and video sharing tools, collaborative filtering tools, multiuser virtual environments, social apps and games, integration of social media with health information technologies, and others (e.g., FriendFeed).

Despite the growing adoption of social media in health care settings, the related use cases and the value proposition of each use case are yet to be elucidated (Gandolf 2014; Griffis et al. 2014; Ukoha et al. 2017). To help elucidate this complex phenomenon, this study explores the value of social media in health care.

Methods

Study Design

This study was exploratory in nature; thus, it followed a broadly interpretivist (Green and Thorogood 2013) and inductive approach (Thomas 2006).

Recruitment

To solicit feedback relevant to the study's objectives, hospitals and medical clinics in Australia that use social media were invited to participate in the study.

Following human ethics approval,¹ in 2017–2019, the authors interviewed participants aged more than 18 years. Participants were not provided financial incentives for participating. Both purposive and snowball sampling were used to select them. Purposive sampling involved the identification of major stakeholders (Palys 2008) and ensured that the initial participants were drawn from hospitals and medical clinics that use social media. First, five hospitals that use social media were contacted to participate in the study. Apart from the initial participants, all but one of the participating organizations were then recruited through snowball sampling. Four were large hospitals that provide comprehensive health services, three were smaller hospitals that offer a range of medical and primary health services, and one was a medical research center. Other participants were a family practice and a clinic that promotes public health. Four of the participating organizations were located in major cities, whereas the rest were located in regional areas outside major Australian cities. Individuals who use social media on behalf of their organization were qualified to participate in the study. The final composition of participants

was six medical doctors and five social media/communications managers. All the participants had at least 6-year experience of using social media for health-related purposes.

Data Collection

Qualitative data were collected through semi-structured interviews, as recommended by Walsham (Walsham 2006). When developing the interview questions, the authors initially outlined the broad areas of knowledge considered relevant to answering the larger research questions of the study. Questions were developed within each of these areas, adjusting the language of the interview to fit participants' backgrounds so that clinicians and communications personnel could relate to the questions. Before the interviews, all potential interviewees were requested to read about, and consent to participate in, the research. In line with the process of conducting semi-structured interviews, an interview guide was used flexibly (Dey 1993), which ensured free-flowing, yet focused, conversations. The flexible use of the researcher-developed interview questions enabled the interviewees to be probed further based on their responses (Lofland and Lofland 1984). The notes and probing questions in each interview were analyzed to help inform subsequent interviews. The average duration of the interviews was approximately 50 minutes. All the interviews were audio-recorded and transcribed verbatim by the first author. After each interview transcription, the researchers carefully reviewed the transcripts and recordings to ensure that no relevant information had been missed.

The expectation was to conduct between 12 (Guest et al. 2006) and 15 interviews (Kvale and Brinkmann 1996) to reach knowledge saturation. After the seventh interview, the analysis of subsequent interview transcripts yielded little or no new themes. In total, 11 in-depth interviews were conducted.

Data Analysis

The interview data were anonymized and utmost care was taken to preserve the richness of the interview material wherever possible, while also protecting the participants' privacy (Saunders et al. 2015). Then, the transcriptions were uploaded to NVivo for coding until themes emerged that helped elucidate the phenomenon under investigation. The authors first assigned summative or evocative attributes to different portions of the transcribed interviews and thus identified similarities, patterns, and relationships. Several initial codes were applied, with some of them overlapping to a certain extent. A preliminary categorization system was applied to the interview data. Subsequently, codes with similar meanings were clustered, and a corresponding theme was formed. The authors modified categories when the data showed additional and new information that required a new

¹ Approval was received in August 2017 from the Federation University Australia's Human Research Ethics Committee.

category. The authors differentiated the resulting defined themes into main and subcategories and assigned relevant original statements in the transcripts to these categories.

The first author coded and analyzed the interview transcripts, and the second author checked the codes for alternative explanations. This process helped to reduce subjectivity and ensured the consistent interpretation of the codes. Moreover, to ensure the validity of the results, they were compared with explanations from relevant literature, in line with triangulation techniques (Carter et al. 2014).

Results

The themes that emerged covered medical doctors (MD) as well as communications personnel (CP). A post-thematic analysis review of each group's comments, conducted separately, revealed no difference. Hence, the contributions of MD and CP participants were blended and presented based on themes that emerged collectively, rather than by group.

The thematic coding and analysis of interview transcripts revealed nine use cases of social media in health care (see Table 1).

Discussion

Principal Findings

This study explored the value of social media in health care. The findings revealed the following use cases of social media in health care: engaging in professional networking, harnessing patient feedback, promoting public health, educating professionals, educating patients, engaging with the public, crowdsourcing, conducting research, and patient collaboration. The subsequent sub-sections discuss these use cases, as well as their value proposition for hospitals and medical clinics.

Engaging in Professional Networking

The findings demonstrated that social media facilitates professional networking in health care settings. It enables health care practitioners to connect on a collegial level with friends, build and foster two-way relationships, search for information, maintain contact networks, find job opportunities, use new avenues for raising issues that are of interest to members of a social network, and advocate for the profession or campaigns (Hallikainen 2015). Thus, the emergence of social media has provided users with novel ways to form, and engage with, social networks (Dozier et al. 2011).

Alternatives to social media for professional networking include professional association membership, conference

attendance, and college networks. Judging by the results of this study, hospitals and medical clinics may prefer using social media rather than alternatives because it facilitates professional networking in ways not possible through other channels. The key difference between professional networking with social media and with the alternatives is that social media allows professional networking among a far broader network. The resulting symbiosis that potentially ensues has a positive influence on users' career trajectory.

Harnessing Patient Feedback

According to respondents' feedback, hospitals and medical clinics may find harnessing patient feedback through social media easier than through alternative channels because it enables them to obtain feedback quickly and allows two-way, direct communication with patients, given that most users are familiar with the platforms.

Monitoring patient experience helps hospitals and medical clinics to enhance safety, processes, and clinical outcomes, as well as to meet patients' expectations (LaVela and Gallan 2014; Kumah et al. 2017). Patient feedback surveys are widely accepted instruments for collecting their feedback. However, hospitals and medical clinics are increasingly choosing to harness patient feedback through social media (Lupton 2014). Thus, patients' online posts regarding their medical conditions and their ratings and opinions of hospitals and medical clinics have become a valuable information source. Moreover, the posts represent a source of unadulterated patient feedback (Lupton 2014) and unfiltered patient stories for hospitals and medical clinics, which enables them to tailor their services more effectively to match patients' expectations (Hui and Hayllar 2010).

Promoting Public Health

Participants indicated that hospitals and medical clinics use social media for public health promotion. Increasing health literacy is a goal of public health (Nutbeam 2000; Johnson 2014), and social media is an effective instrument to fulfill this purpose. Participants reported that social media facilitates the wider dissemination of health information, increases patients' knowledge about their conditions, and empowers them for healthy behavior.

Moreover, social media can augment public health communication (Thackeray et al. 2012). For example, hospitals and medical clinics can leverage the diffusion and reach of social media to position themselves as trusted, knowledgeable sources of helpful medical information, and influence audience behavior positively (Ruddiman 2016). Paying attention to social media conversations enables public health promoters to identify the health information needs of their audience and

Table 1 Use cases of social media in health care: themes and sample quotes

Themes	Sample quotes
Engaging in professional networking	<p>“I’ve got my accounts which I would use just for sharing with professional colleagues.” [MD6]</p> <p>“Until social media, really, we would only just meet at formal conferences... But with social media ... [that has changed]” [MD5]</p> <p>“It [social media] has broadened it [my career]. There are a lot of career opportunities and I have been invited to various conferences to talk”. I have found that I get invites to go and speak at events which I never got before, because of my use of social media.” [MD2]</p> <p>“We have our internal social media application that we started using this year. ... It is a free app that we asked our staff to download to their mobile devices, since 95% of our staff have got smart phones. We use that to keep our staff informed of any major changes that they need to know of. We also use the app to celebrate our staff and lift staff morale. I think I have seen enthusiasm increase among staff.” [CP2]</p>
Harnessing patient feedback	<p>“[Before adopting social media] we were just telling the community what to do, but now we are able to engage with them through social media in a two-way communication.” [CP1]</p> <p>“Patients who are already on social media will be keen ... [to volunteer their opinions]. That’s where it will be a real benefit for the health system and health practitioners. It will help in understanding what the patients’ perspectives are.” [MD1]</p> <p>“So for me it [Twitter] is a way of hearing from people unfiltered ...not mediated by journalists. People will listen to me because I am a doctor. It’s keeping an eye on what people are saying and retweeting some of that and directing people to those voices.” [MD1]</p> <p>“...the [patients’] posts indicate what works and what does not.” [CP1]</p> <p>“...they [patients’ social media posts] might actually inform things that we need to change...” [MD3]</p>
Promoting public health	<p>“It [social media] allows information to be broadcast quite quickly, as compared to the old newsletter.” [MD1]</p> <p>“We have leveraged on the reach of our social media to inform people about measles and the vaccinations available.” [MD2].</p> <p>I think the main benefit [of social media] is definitely reaching more people, particularly across borders, very easily. Particularly with Facebook, you can post in English and wherever someone logs into Facebook, if they speak a different language, Facebook will translate the post for them. So we are reaching people we most certainly would not have been able to reach.” [CP3]</p> <p>“I started using Facebook to communicate health education messages ...Specifically, I mainly wanted it to be about health promotional activities.” [MD2]</p> <p>“It’s about building our community’s health literacy, and doing that in a platform that they are used to. For instance, if we organize a health literacy event, no one would come. But... if we take the information to the people in a way that it is digestible, on a forum they use, they become more health literate.” [CP1]</p> <p>“I suppose the big picture is health literacy, trying to improve health literacy. We like to use it [social media] as a health promotion tool. We try and use it more as a community service and health promotion.” [CP4]</p> <p>“My ‘tweets’ explore topics such as public health and social determinants of health...” [MD1]</p> <p>“... by far the majority of my use was for health information and remains for health information.” [MD5]</p> <p>“It has enabled us to communicate better and improve health literacy.” [MD6]</p>
Educating professionals	<p>“We have an online platform for education and training for healthcare professionals, administrative staff and volunteers. There are a whole lot of modules that we do in there. Like the mandatory trainings.” [CP1]</p> <p>“By far the majority of my followers are medical practitioners or health professionals who have an interest in health.” [MD5]</p> <p>“... Majority of the time, they [healthcare professionals]’re on there to further their own education, to help others and to learn.... I use social media for my personal education and stuff.” [MD4]</p> <p>“We might discuss a case [on social media] that has stimulated our thought process in a certain way....” [MD4]</p> <p>“... I do think that social media has actually had an impact on patient care.... the result is better-educated doctors who are more aware of new changes in policy, in guidelines, and in research; and information can be disseminated more widely.” [MD4]</p>
Educating patients	<p>“What social media can do is to help in education and directing people towards education resources.” [CP4]</p> <p>“[the goal of educating patients through social media is to create] better informed patients who are able to make better informed choices by taking on board some of the advice that we post.” [MD2]</p> <p>“We have done videos on stroke, and a new heart surgery that we do here, what it is and how it will impact patients. ... customers like to see such videos because it helps them to understand things better. “It [social media use in healthcare] has enabled us to communicate better and improve health literacy.” [CP1]</p> <p>“[social media in healthcare is about] providing information for people who need it, when they need it, that’s what it’s about.” [CP5]</p>

Table 1 (continued)

Themes	Sample quotes
Engaging with the public	<p>“...well I think it’s important for any one ... wherever people are talking about you, that you are part of that conversation. It’s Facebook for us, it might not be Facebook for everybody.” [CP5]</p> <p>“We use social media to engage with members of the community. We are the major healthcare provider in a huge region so there was the need to communicate and engage with members of the community better.” [CP2]</p> <p>“It’s [use of social media] about managing our brand and our online reputation”. We could also use social media to inform the community about things that are going well within the organization. For instance if we win awards.” [CP2]</p> <p>“It is enabling us to let more people know about our events, to do health promotion better, given that our budget does not allow us to advertise a lot on print media.” [CP2]</p> <p>“I think the main benefit is the cost effective way to cross borders and reach a global audience.” [CP3]</p>
Crowdsourcing	<p>“...the other thing we have now started using social media for is to drive donations. So we post about people who have done say a marathon to raise money for us. Indirectly, I think it drives people to then donate to that.” [MD3]</p> <p>“We use it [social media] for fundraising purposes.” [CP2]</p> <p>“... [We brainstorm on] research evidence, implementation of findings, how you do things in clinic, how you incorporate patients experience in what you do, how you deal with deprived communities. I also get patients’ perspectives ...” [MD1]</p>
Conducting research	<p>“I had this quite large group of people [on social media] all with the one condition that I was very interested in from a research point of view... and I thought well let us devise a research study where we use the social media as a way of recruiting people into the study.” [MD3]</p> <p>“They [participants] go to the page, consent to take part, then fill in the survey...” [MD3]</p> <p>“...that’s a very valuable form of research. We’re writing a paper up based on comments in a [social media] forum on a particular area.” [MD3]</p> <p>“We collect information from those people and use it for research and then give that information back to people to improve their health. ...we analyze that data and write papers about it, then we feed that back to them [study participants] via Facebook and Twitter again.” [MD3]</p>
Patient collaboration	<p>“...to create a community [online] where people [patients] can chat and ask each other questions or ask us questions and interact with each other.” [CP3]</p> <p>“...we have now got... probably 25,000 people [patients] on the forum that interact with each other regularly about various issues.” [MD3]</p> <p>“...the forum is moderated. So we have a moderator on our [social media] website who will occasionally respond if there’s a question that cannot be sorted out on the forum.” [MD3]</p>

to reach them with the relevant information, unencumbered by geographical borders (Ukoha and Stranieri 2019).

Educating Professionals

The results revealed that the use of social media in professional education is increasing because it facilitates collaborative learning, virtual mentoring, and improved professional knowledge. Given the growing popularity of online training events (Rowley 2014), social media may have a role to play in medical education because it allows interlocutors to share medical information (Ruddiman 2016).

The flexibility of social media allows for the customization of learning to fit learners’ needs (Geyer and Irish 2008). Physicians can check facts, solve problems, and learn from each other using social media platforms (Nair 2011). Social media provides an easy means of connecting learners to resources and activities that would otherwise be less accessible because of geographical distance or scheduling barriers (Cheston et al. 2013). Moreover, social media also facilitates

a simple method for students to contact instructors, ask questions, and share their own thoughts (Hollinderbäumer et al. 2013).

Educating Patients

According to the study participants, since social media enables audiovisual content to be shared, it is a useful channel for patient education and helps patients understand the medical education imparted to them. Thus, it empowers them to make beneficial health choices.

The number of patients who obtain medical information and other educational resources from the internet is increasing (Yamout et al. 2011). Unlike when using other modes, physicians can use social media for tailored messaging that is more likely to resonate with patients and be acted on by them (Yamout et al. 2011). Medical education through social media can help to improve patients’ knowledge about multiple domains of care (Attai et al. 2015). From participants’ feedback, it is apparent that educating patients motivates behavioral

change and that social media can be effective in achieving this goal.

Engaging with the Public

The interviewees also communicated that hospitals and medical clinics increasingly use social media for organizational promotion because it is an effective tool for audience engagement, brand management, affordable advertising, and event promotion. Hospitals and medical clinics usually publicize their activities through various media channels (Ukoha 2020). However, traditional media channels, such as newspapers, magazines, radio, television, and direct mail, often do not deliver high levels of audience engagement; hence, these institutions are turning to social media.

Furthermore, using social media is cost-effective in that it can drive engagement and build authentic relationships in a comparatively affordable way. Social media-enabled services allow hospitals and medical clinics to expand their connectivity, engagement, and knowledge to areas that are ordinarily hard to reach (Ruddiman 2016). As a result, many hospitals and medical clinics now employ personnel to create and manage their online presence (Rowley 2014).

Crowdsourcing

Participants indicated an emergent use of social media in health care settings is for crowdsourcing. Given the ubiquitous nature of social media and the high number of users, it can serve as a platform through which hospitals and medical clinics crowdsource money and ideas (Ukoha 2018). Social media can be leveraged for fund-raising efforts related to health care (Grajales et al. 2014).

In terms of ideas, social media can be used to harness the knowledge and skills of a community of health care providers to solve problems or to gather information and the patients' opinions regarding treatment options. Social media can be employed to crowdsource treatment ratings from numerous patients, which helps reduce single stakeholder bias (Grajales et al. 2014). Crowdsourcing through social media helps hospitals and medical clinics to obtain the support they need, whether monetary or nonmonetary.

Conducting Research

The analysis conducted in this study revealed that social media supports the entire research lifecycle, including the recruitment of participants, the collection of research data, and the dissemination of research findings. Recruiting participants for health research through traditional methods has become increasingly expensive and challenging (Fenner et al. 2012). Social media can be a panacea to this problem (Gelinias et al. 2017). Thus, social media is increasingly used for medical

research by the scientific community (Chen et al. 2019). Social media speeds up enrolment in clinical trials (Gibson 2017) and it can reach more potential participants than can most other recruitment methods (Moreno et al. 2017). Furthermore, on completing a research project, social media can be used to disseminate and promote its findings online (Mollett et al. 2017).

Patient Collaboration

The study results showed that social media helps patients to cope with the challenges of living with a health condition, which explains its growing adoption and use in health care settings. Patient support groups offer patients who have common experiences an avenue to provide each other with emotional and social support (Hu 2017).

Social support is critical to good health because it helps people cope with stress (Shields 2004). In an increasingly fragmented society, technology helps connect people with shared interests (Bannister and Remenyi 2003). Patients are increasingly turning to social media to share their illness experiences or seek advice from others with similar health conditions (Naslund et al. 2016). They use social media not only to post their own views but also to research the opinions of others about health issues, medications, and treatments (Nair 2011). This enables them to build friendships with others in a similar condition and to give or receive emotional support (Gowen et al. 2012; Naslund et al. 2014; Nair 2011).

Limitations

Despite the contributions of this study to the growing body of literature on the use of social media in health care settings, it has some limitations. Its results should be interpreted as indicative and not necessarily generalizable, given the somewhat modest sample size and the fact that only medical doctors and communications personnel of hospitals and medical clinics were interviewed. Probably, a larger and more heterogeneous research sample may suggest additional themes. Furthermore, it is important to note the time frame of this study when considering its findings since the usage of, and attitude toward, social media evolve rapidly.

Conclusions

The uses of social media in health care settings identified in this study are somewhat similar to the ones identified in studies that explored why individuals and organizations in other industries use social media. One such study posited that at the individual level, social media is used for social interaction, information seeking, pass time, entertainment, relaxation,

communicatory utility, convenience utility, expression of opinion, information sharing, and acquiring knowledge about others (Whiting and Williams 2013). As regards the organizational use of social media, a recent study found that organizations use social media for broadcast, dialog, collaboration, knowledge management, and sociability (Schlagwein and Hu 2017). A similar study concluded that social media is used for internal communication, knowledge sharing, branding, dialog, and idea generation (Vuori 2012). Despite the seeming similarities between this study's findings and those of previous studies, the participants' feedback in the present study indicated that the overarching motivation of hospitals and medical clinics for using social media is somewhat different from those of other users. Many individuals use social media to derive hedonistic value, whereas many organizations use social media to derive business value (Ukoha and Stranieri 2019). In contrast, social media use in health care settings is motivated by neither hedonism nor profits alone—instead, it is aimed at improving patients' experience and/or outcome (Ukoha 2018; Ukoha and Stranieri 2019).

Furthermore, hospitals and medical clinics are not passive users of social media; rather, they make conscious decisions regarding whether, when, and how to use social media. The results also indicated that hospitals and medical clinics do not completely replace other communication modes with social media because each supports unique communication needs that the other may not completely fulfill. Furthermore, it was observed that hospitals and medical clinics usually do not embrace a single form of social media but tend to employ a range of platforms because each form of social media has its own biases in terms of use case and its value proposition for users. Therefore, a range of social media platforms is adopted as part of a communication repertoire that includes online and offline forms of communication.

Lastly, this study highlights the fact that social media has the potential to support various activities in health care settings. Nevertheless, its value proposition for hospitals and medical clinics varies depending on the use case. Understanding the use cases of social media in health care and its value proposition in each use case will help more hospitals and medical clinics to incorporate social media strategically.

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Compliance with Ethical Standards Federation University Australia's Ethics committee approved the study. See manuscript for details.

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Considerations Before the interviews, all potential interviewees were allowed to read about and consent to participate in the research. See manuscript for details.

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