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Opportunities and challenges of social media for health knowledge management: A narrative review

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Abstract:

INTRODUCTION: Social media is becoming a new tool for developing health knowledge management. However, despite the rapid growth of research in this area, few attempts have been made to review previous research. This study tried to summarize the opportunities and challenges of using social media to managing health knowledge.

METHODOLOGY: This article used a narrative approach to collect and review studies. In this review, published documents during 2010–2019 were retrieved by search in the following three electronic scientific databases: Web of Knowledge, PubMed, and Google Scholar search engine using keywords including social media, public health, health knowledge, knowledge management, and health promotion.

RESULTS: Social media by overcoming geographical barriers, developing health promotion, facilitating decision-making, and providing public health education has been able to enhancing health awareness and improving health behavior. Doctors' unwillingness to interact with the public, lack of compliance with the principles of medical ethics, users' privacy concerns, and difficulty of managing negative comments are the four challenges to health knowledge management in social media.

CONCLUSION: Social media can be a suitable tool for developing health knowledge management processes if medical professional ethics and users' privacy managed properly.

Keywords:

Health communication, health knowledge, health promotion, knowledge management, public health, social media, technology

Introduction

The World Health Organization has addressed the goal of knowledge management as filling the knowledge gap between different countries and has defined its activities on the basis of three pillars including: people, processes, and technologies.^[1,2] People are those who create, disseminate, and use knowledge.^[1,3] Processes include ways of acquiring, creating, organizing, sharing, and transferring knowledge.^[1] Technologies also include mechanisms that enable people to store and access data, information,

and knowledge generated by people in different geographical locations.^[1,4] In health knowledge management, information generated by physicians, specialists and health centers, and also the presence of the general public has importance as knowledge consumers.^[5,6]

Health knowledge management refers to the generation, modeling, sharing, using, and translation of knowledge to improve the quality of patient care and to better manage medical and health problems. The goal of health knowledge management is to provide, disseminate, and deliver knowledge to medical professionals, patients, and individuals at the right time

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and place.^[7] In fact, health knowledge management seeks to utilize appropriate solutions based on the integration of information and communication technologies and health workflows to improve quality and increase efficiency and better effectiveness of health-care delivery.^[8]

Some previous studies have shown that health knowledge management can be supported by a range of technologies such as social media.^[9-15] Some other studies have considered various challenges of social media applications in health knowledge management.^[16-19] Despite several related studies separately, there is still a lack of a review synthesizing the findings of previous research to provide evidence of the opportunities and challenges of social media for health knowledge management. Therefore, the current review was designed to address this gap. The objective of this study is to review the literature and identify the different impacts of social media in health knowledge management processes and summarize the results of previous related studies. The findings of this study could be providing an opportunity for physicians, health policy-makers, health service providers, and information technology activists to better understand the impact of social media for health knowledge management.

Methodology

In this narrative review, we assessed published articles in two scientific databases including PubMed and Web of Science and in Google Scholar, as a common scientific search engine, using the different combinations of two term groups. The first group of selected keywords includes "social media," "web 2.0," "social network," "weblog," "wiki," "podcast," "forum," "content community," and "microblog." The second group of selected keywords includes "health knowledge management," "health-care knowledge management," "public health," "health knowledge," and "health promotion."

The inclusion criteria were: (1) the use of social media has been studied in at least one of the stages of health knowledge management including knowledge acquisition, knowledge organization, knowledge dissemination, and knowledge application; (2) empirical studies that answered the research questions or tested the hypothesis and conducted on specific population and sample; (3) journal articles; and (4) published between 2010 and 2019. The exclusion criteria were: (1) none of the roles of social media are considered; (2) presenting an outcome unrelated to any stage of knowledge management; (3) duplicates; (4) not in English; (5) conference papers, book sections, and other formats (except journal articles); and (6) unknown methodology (the population, the sample, the data

collection tool, or the method of data analysis has not been stated).

Results

Initially, 370 studies were extracted from the literature search. Ninety-two studies were removed as they were duplicated studies. From the remaining articles, 263 were excluded after assessing the title and abstract and considering inclusion and exclusion criteria. Finally, after reviewing the references of the remaining articles and adding related studies, 17 studies were selected for the final review. The findings of this study were classified into three categories including barriers to health knowledge management implementation, social media opportunities for health knowledge management, and health knowledge management challenges in social media. Each of these categories is explained below.

Barriers to health knowledge management implementation

Proper implementation of health knowledge management processes can reduce physicians' and patients' mistakes and speed up problem-solving.^[20,21] Some of the barriers for knowledge management in health-care organizations overlap with those in other areas. For example, the lack of a well-established strategy, the lack of a proper knowledge sharing culture, and poor information technology infrastructure are among the barriers to health knowledge management.^[22,23]

Various factors such as the high growth of health information and knowledge production, health communication problems, and interaction issues between patients and physicians have posed other challenges for health knowledge management.^[24] Another challenge for health knowledge management is the resistance of medical professionals to the adoption of new technologies. Most of the health professionals have imagined that some clinical processes are at risk when they use new technologies.^[25]

Excessive specialization was other factors that have created limitations for the use of health knowledge management approaches that can disrupt the cycling of knowledge and information. Accordingly, physicians' resistance to acceptance of knowledge management can be attributed to their motivations for engaging in alternative approaches to knowledge leadership.^[26]

Political interference is another barrier to health knowledge management. Medical networks, originally founded for the purpose of knowledge sharing, are rapidly becoming tools for achieving management goals. Furthermore, while physicians are concerned about

improving patient care, managers emphasize reducing current costs and increasing revenues.^[27]

Social media opportunities for health knowledge management

Despite arisen concerns about the use of social media for health promotion, such as maintaining information security and violating patients' privacy, the use of these tools for health knowledge management can have some benefits.^[28] Delivering the responsibility of patient care to the patient itself, providing opportunities for patients and physicians to share their viewpoints and experiences, increasing the control of diseases through enhancing personal capabilities to take care of health, improving decision-making, and correcting dangerous health behavior are from among the benefits of the use of social media.^[29]

Overcoming geographical barriers, sharing information, expanding collaboration, and improving shared decision-making in patient care processes can be mentioned as the most obvious roles of social media for facilitating health knowledge management.^[30,31] The use of social media, by facilitating knowledge acquisition, information sharing, and clinical decision support, has accelerating delivering health care.^[32]

Some wrong behaviors of health users can be changed with the use of social media, and one-way communication has given its place to interactive conversations. Patients' trust in doctors on social media has led to increased health information dissemination. Using social media, physicians have been able to answer more questions from users.^[33-35] Through social media, by seeing the other similar experiences, patients' motivations to pursue treatment have increased. Social media has also been able to provide a tool for understanding patients' needs and evaluating health-care service quality.^[36,37]

Virtual communities and social networks between patients with similar status can make the patient more aware of his/her condition. Asking questions and sharing the experiences of people during the course of the illness can increase other patients' awareness of their problems and provide solutions to better decision-making in similar situations.^[38,39] In addition to the use of public social media tools, many media designed, especially for health, and delivered for the use of physicians and patients. For example, the three social networks, Medical Mingle, MyMedPort, and Ozmosis, are medical social media tools designed for physicians which are accepted by a wide range of users. Furthermore, some social networks such as CheckMd and "My Family Health" have also provided a wide range of options for patients for better health management.^[40]

Health knowledge management challenges in social media

The findings of the present study identified four challenges for health knowledge management in social media, including unwillingness of physicians and health organizations to interact with the public, endangering medical ethics by some nonspecialist users, patients' privacy, and negative patient comments.^[41-45]

Although social media can facilitate health communication and interactions,^[46] in many cases, health organizations and physicians only use it to inform and insist on maintaining one-way relationships.^[47-49] Another challenge in health media management in social media relates to the inability to control messages, and there are always concerns about negative comments, messages and conversations being distorted, and misinterpretations of others' opinions.^[47,50-52] Another challenge of health knowledge management is the generalizability of social media users' behavior to the whole community. It should be noted that a great number of patients are not able to use social media for various reasons.^[53] The participatory nature of social media and the openness of information exchange increasing incorrect information disseminate on social media compared with other media.^[50]

Discussion

Based on the findings of the present study, the use of social media can provide opportunities to facilitate health knowledge management. Social media enables health stakeholders to gain more knowledge by sharing experiences, sharing opinions, expanding relationships with colleagues, and acquiring new scientific findings.^[54,55] Using social media can be an opportunity to develop health-care knowledge at both the individual and organizational levels by facilitating health communication, accelerating health knowledge sharing, and supporting decision-making through the formation and participation in social networks.^[56]

Although literature reported that social media have considerable potential health promotion and education, like traditional health promotion media, health-related activities in social media must be properly planned. Otherwise, social media may not always achieve the desired results in health context.^[57] Obviously, if an organization uses social media to promote health, appropriate monitoring and evaluation indicators should also be provided.^[58]

Conclusion

The findings of this study showed that social media can facilitate health knowledge management processes if medical professional ethics and patients' privacy

managed carefully. Due to the lack of proper national and international policy on the proper use of social media, further scientific research is needed to identify the different dimensions of social media use in health knowledge management.

This study has limitations. First, the full text of some related articles was not accessible. The heterogeneity of study populations in the analyzed studies was the second issue. Third, in some studies, the descriptive statistics about the situation of using social tools for health knowledge management were rarely mentioned. Fourth, some studies lacked considering health knowledge management subprocesses, thereby leading to limitations in synthesizing the results of these studies.

Based on the results of the current review, the authors suggest these practical topics: (1) it is recommended that each of the health stakeholders develops appropriate implementation strategies based on the use of social media to developing health knowledge management; (2) it is recommended that expert committees, including information technology professionals, physicians, and medical information experts, created and developed suitable codes of conduct for health users to safely engage in social media; and (3) it is recommended for health organizations to design quality assurance labels to tag authenticated and approved activities on social media.

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Conflicts of interest

There are no conflicts of interest.

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