A CONCEPTUAL UNDERSTANDING OF HEALTH VIRTUAL COMMUNITIES

Norzaila Mohamad Nor

Kulliyyah of Muamalat and Management Science, Universiti Islam Antarabangsa Sultan Abdul Halim Mua'dzam Shah, Kedah, Malaysia

norzaila@unishams.edu.my

Nafishah Othman

College of Arts and Sciences, Universiti Utara Malaysia, Kedah, Malaysia

nafishah@uum.edu.my

Shafiz Affendi M.Yusof

Faculty of Engineering and Information Sciences, University of Wollongong in Dubai, Dubai, United Arad Emirates

samohdyu09@gmail.com

Abstract

The rapid dispersion in Web 2.0 technologies have led to a paradigm shift where people increasingly gain health-related information and support through virtual communities. The significance of health virtual communities has been proven by the positive impact they bring on the lives of the patients and their families members. This paper presents a conceptual understanding of virtual communities which promote a new platform for health communication. It provides a brief discussion on the background of virtual communities and its sub topics, the health virtual communities. The definition and categories of virtual communities are reviewed, as well as main issues on participation of doctors in the health based communities, in an effort to understand how their participation in health virtual communities may affect their different life domains, especially the work and family life, in the near future.

Keywords: Virtual community, Health virtual community, Doctors

1. Introduction

People's daily life has been shifted with the rapid dispersion of information and communication technologies (ICT) in general and Web 2.0 in particular. Web 2.0 has created a paradigm shift, in which the Web is turn into a participatory platform, where people not only consume content but also

contribute and produce new content. One of the ICT-based applications that synthesize Web 2.0 technologies which have shown a remarkable growth is the virtual community (Zha, Zhang, Yan, & Zha, 2015). Virtual communities are delineated as "a group of people who may or may not meet one another face-to-face, and who exchange words and ideas through the mediation of computer bulletin boards and networks" (Rheingold, 1993, p. 1). Although technically people join virtual communities to meet online, socialize, collaborate, discuss on forums and exchange information, these days people increasingly gain health-related information and support through virtual communities, referred to as the health virtual community (HVC).

The rest of this paper is organised as follows: First, we discuss the background of virtual communities and divide it into two parts that is, virtual community definitions and its categories. Second, we describe the details of health virtual communities. Third, we highlight the doctor's participation in health virtual communities. Finally, we then draw conclusion.

2. Background on virtual communities

Virtual communities emerged at the beginning of the 1990's during the rapid widespread of Computer-Mediated Communication (CMC) tools, such as e-mails and other communication applications, chosen the key information resource by many people. Issues related to virtual communities that were early researched include the definition of virtual communities, their function as real communities and the psychological and sociological perspectives of virtual communities (Guazzini, Sarac, Donati, Nardi, Vilone, & Meringolo, 2017; Wellman & Gulia, 2018). According to Hagel and Armstrong (1997), early virtual communities were started by enthusiasts who had certain interests and were the results of spontaneous social events. Participation in virtual communities is often spontaneous and volitional. A

virtual community is usually open to any interested member.

2.1. Virtual communities: Definition

The definition of a virtual community (VC) varies based on the perspective from which it is defined. In general, VC is defined as a community made up of people, shared purpose, policies, and computer systems. Howard Rheingold (1993) was the earliest author who explained VC in detail. According to a definition provided by Rheingold, virtual community is "…social aggregations that emerge from the [Internet] when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (p. 5). Further, he suggested that people in virtual communities perform activities that they do in real life, yet have no face-to-face contact to exchange ideas.

Lawrence (1995, as cited in Rothaermel & Sugiyama, 2001) also suggested that a virtual community is a social network whereby members communicate in an organizational community and are bound by specific standards and rules. Shafique, Ahmad, Kiani, and Ibrar (2015) defined a virtual community as a community that communicates through discussion forums on a certain topic of interest via electronic media. In general, virtual communities can be regarded as cyberspace using computer-mediated upon interaction of memberships to create member-driven subjects. The online space may come in the form of blogs, social networking groups (e.g., Facebook, Twitter, YouTube, and LinkedIn), forums, message boards, and chat rooms.

2.2. Categories of virtual community

There is no particular or widely accepted type of virtual communities (VCs). In the past, researchers have categorized VCs based on the core principles of

the communities. A VC may be categorized on the basis of user needs: transaction, interest, fantasy, and relationship. A community of transaction is mainly about the buying and selling of products or services online, thus delivering the information pertaining to the transaction. A community of interest is targeted at a group of people who interact with one another on particular topics such as interior design and gardening. A community where people create and explore unreal worlds of fantasy is a community of fantasy while a community of relationship is formed among people with certain life experiences (such as diseases) which lead to a deep personal bonding. Hagel and Armstrong argued that for a VC to be mature, the fundamentals of all categories VC need to be present so that all user needs can be achieved.

In contrast to Hagel and Armstrong (1997), Bressler and Grantham (2000) grouped VCs according to motivation such as purpose, practice, circumstances, and interest. Purpose refers to the objectives that members try to achieve in a community while practice brings together members of a similar profession, situation, or vocation. The next motivation that leads people to form communities is the circumstances, where members are led by position, situation, or experiences. The last category is where communities are motivated by their interest, thus, members with a common interest or passion get together. Bressler and Grantham's classification is viewed more from a business perspective while Hagel and Armstrong's viewpoint is more from a sociological perspective.

Buhrmann (2010) proposed four major categories of VC based on the specifics of its members, purpose, customer communities and communities of practice. The VCs based on the particulars of its members are grouped according to age-related VC, gender-related VC, and a VC that reflects real communities. Meanwhile, the community of purpose is adopted from Hagel and Armstrong which reflects the four user needs. It was defined in the previous subsection. The customer communities are companies that feature a community on their websites in order to gain a

relationship with customers and eventually generate income. Last but not least, the community of practice (CoP) is formed by a group of like-minded individuals (such as practitioners) who share and seek knowledge (such as experience, stories, and way of handling a problem) related to their practice. Lave and Wenger (1991) were the first who coined the concept of Communities of Practice (CoP) in 1991. Wenger and Snyder (2000) defined CoP as a group "of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p. 4). Normally, membership of CoP is voluntary and the community has an informal structure for the members to gain and distribute knowledge. The virtual community is valuable for volunteers to build a connection with other members and engage in the sharing of experiences. That community may work on a specific topic of interest, problems or passion, hence turning into a community of practice. Thus, the interaction with other members in a similar professional area allows the members to build a sense of belonging and expand their professional identity. Such CoP may come from a wide area, such as health, education, business or industrial-related. As the communities are developed and maintained online, they are known as a Virtual Community of Practice (VCoP). A study by Pan et al. (2015) demonstrated that social networking support may enhance knowledge exchange and social capitals in VCoP. Table 1 provides a summary of the classification types of virtual communities.

Table 1. Classification types of VC

Authors	Classification by	Types of Virtual Community
Hagel and Armstrong (1997)	Basic needs of human	- Interest - Relationship - Fantasy - Transaction
Bressler (2000)	Motivation	- Communities of purpose - Communities of practice - Communities of circumstances - Communities of interest

Buhrmann (2010)	Not mentioned	- Based on the particulars of its members - Based on purpose - Customer communities - Communities of practice (CoP)

Of most interest to the categories of the virtual communities, the researchers were interested in VC which are developed for the purpose to share knowledge in healthcare and improve the health of its member, known as the health virtual communities (HVCs).

3. Health virtual communities

Health virtual communities allow people to interact together through telecommunication technologies to get information, self-help, and social support for health-related concerns (Wu, 2018). The stakeholders and participants, such as doctors, nurses, patients, caregivers, researchers and public are able to interact virtually by sharing their knowledge and experience or provide support to the virtual communities.

HVCs involve the interactions between doctors and patients are known as the *P2D (patients-to-doctors)* communities (Peng et al., 2015). These HVCs may include applications that improve disease management or offer alternative ways of communication between doctors and patients beyond face-to-face meetings. Through this avenue, doctors form a virtual group by offering support to participants (i.e. patients or caregivers) on specific health information while participants may share their experiences and seek information in improving patient care. The P2D communities can enhance a doctor-patient relationship and, to some extent, reduce health argument.

HVCs which comprises of patients and their family members with applications that act as self-help groups of individuals with similar medical situation are known as the P2P. These *patient-to-patient (P2P)* communities are useful for patients to collect information and find peer patients. A number of studies found that participation in HVCs can help patients seek psychosocial (e.g., coping, depression) and emotional support (Wang et al., 2015). They also act as a therapy for patients and increase understanding of health. Such support helps the patients and their family members fight against the disease.

Another type of HVCs known as *General Public Centered* HVCs (Morr, 2010) are open and made publically to anyone to access and discuss health information through forums or educational services. The main objective of this HVC is to provide the communities, especially patients, on wide-ranging information available, thus enabling them to self-manage their healthcare. A general centered HVC targets specific diseases and some focus on special social groups, such as women.

Finally, *Professional Centered* HVCs are managed by a team of health professionals in creating, defining, and exchanging new knowledge. Particularly, professional-centered HVCs are used for research purposes as well as distributing knowledge. A good example of this type of HVCs is the virtual community of practice (VCoP). VCoPs primarily support health professionals in the same domain of interest to participate online to share knowledge, improve performance and support the expansion of innovation and best practices. Table 2 summarizes the classification types of HVCs.

Table 2. Classification Types of HVC

Types of HVC	Descriptions
P2D (patients-to-doctors)	- interactions between doctors and patients - doctors offering support to participants (i.e. patients, caregivers)
P2P (patient-to-patient)	- comprises of patients and their family members - act as self-help groups of individuals to collect information and find peer

	patients
General Public Centered	- open to anyone to access - enable communities to self-manage their healthcare
Professional Centered	- managed by a team of health professionals - used for research purposes and distribute knowledge

There is no doubt that HVCs has gained considerable attention as it moves very fast to capture the attention of doctors, patients and other stakeholders. An example of this is a HVC named DoktorBudak.com (DB) formed by a group of voluntary pediatricians in Malaysia, aiming to help parents out there by sharing knowledge and experiences related to children's health. DB is one of the fastest growing HVCs in Malaysia, where after six month being launched, the website has reached 250,000 hits page views, over 17,000 Facebook fans, and more than 2,000 followers on Twitter (Yong, 2014). DB also offers a potential solution to some problems exist in the Malaysia health system such as the inadequate number of health promotion workforce, lack of supportive environment, and the unwillingness of the community to take ownership of health issues (Ministry of Health Malaysia, 2011).

4. Doctors participation in HVC

The participation of doctors in HVCs has not been discussed widely though they play important role as mediator in serving community health problems virtually. Greater participation by doctors on a voluntary basis is critically needed to deliver health services more effectively. The online voluntary works performed by doctors in HVCs has facilitated the functions of a doctor as he/she is not tied to specific locations (at home or in the office) and times (during or after office hours), hence increasing the flexibility of his/her engagement.

Even though a comprehensive body of literature can be found on the involvement of doctors in onsite volunteering (Gau, Usher, Stewart, & Buettner, 2013) such as doctors who volunteer through Malaysian Medical Relief Society (Mercy Malaysia) or the Islamic Relief Malaysia (IRM), too little attention has been paid to online volunteering, particularly in Malaysia. Moreover, past research on volunteering has tended to focus on aspects such as motivations, challenges, burden to onsite volunteers rather than online volunteers. To the researchers' knowledge, less research focused on doctors volunteering online in health virtual communities, such as doctors volunteer in DB.

5. Conclusions and recommendations

Health virtual communities are emerging in many healthcare related domains. HVCs moderated by a team of doctors for example, have the potential to become powerful tools in facilitating knowledge exchange. However, little is known regarding how doctors who volunteer online through HVC manage their life as their participation with limited resources such as time and energy can potentially bring conflict or enrich their different life domains. Further studies are needed to identify the way doctors volunteering online in HVCs in managing their work and family life domains. This would help to explain the online volunteering phenomenon in HVCs among doctors.

References

Bressler, S. E., & Grantham, C. E. (2000). *Communities of commerce: Building internet business communities to accelerate growth, minimize risk, and increase customer loyalty*. McGraw-Hill.

Buhrmann, C. H. (2010). Virtual communities: Implications for companies. *SA Journal of Information Management*, 5(4).

Gau, Y. M., Usher, K., Stewart, L., & Buettner, P. (2013). Burden experienced by community health volunteers in Taiwan: A qualitative study. *International Journal of Nursing Practice*, 19(1), 74–80.

Guazzini, A., Saraç, A., Donati, C., Nardi, A., Vilone, D., & Meringolo, P. (2017). Participation and privacy perception in virtual environments: The role of sense of community, culture and gender between Italian and Turkish. *Future Internet*, 9(2), 11.

Howard, R. (1993). *The virtual community: Homesteading on the electronic frontier*. Mass: Addison Wesley.

Lave, J., & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge University Press.

Ministry of Health. (2011). *Country Health Plan: 10th Malaysia Plan (2011 - 2015).* Kuala Lumpur, Malaysia. Retrieved from http://www.moh.gov.my/images/gallery/Report/ Country_health.pdf

Morr, C. E. (2010). *Challenges and opportunities health care virtual communities. In M.M Cruz-Cunha, A.J. Tavares, & R. Simoes (Eds.), Handbook of Research on Developments in e-Health and Telemedicine: Technological and Social Perspectives* (pp. 278–298). Hershey, Pennsylvania: Medical Information Science Reference

Pan, Y., Xu, Y.C., Wang, X., Zhang, C., Ling, H., & Lin, J. (2015). Integrating social networking support for dyadic knowledge exchange: A study in a virtual community of practice. *Information & Management*, 52(1), 61-70.

Peng, X., Sun, D., Zhao, Y., & Xu, W. (2015). What trigger people use physician-patient interactive ohcs ? An empirical research based. Paper presented at the *The Pacific Asia Conference on Information Systems (PACIS)*. Retrieved from http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1 254&context=pacis2015

Rothaermel, F. T., & Sugiyama, S. (2001). Virtual internet communities and commercial success: Individual and community-level theory grounded in the atypical case of TimeZone.com. *Journal of Management,* 27, 297–312.

Shafique, M. N., Ahmad, N., Kiani, I., & Ibrar, M. (2015). Exploring relationship among factors of virtual communities, trust and buying in Pakistan. *International Letters of Social and Humanistic Sciences,* 49, 115–122.

Wang, X., Zuo, Z., & Zhao, K. (2015). *The evolution of user roles in online health communities – a social support perspective.* In Pacific Asia Conference on Information Systems (PACIS 2015).

Wellman, B., & Gulia, M. (2018). *Net-surfers don't ride alone: Virtual communities as communities*. In Networks in the global village (pp. 331-366). Routledge.

Wenger, E. C., & Snyder, W. M. (2000). Communities of practice : The organizational frontier. *Harvard Business Review*, 139–145.

Wu, B. (2018). Patient Continued Use of Online Health Care Communities: Web Mining of Patient-Doctor Communication. *Journal of medical Internet research,* 20(4).

Yong, Y.N. (2014, January 19). Doubts about your child's health? Ask the doctor...online. The Straits Times. Retrieved from http://www.straitstimes.com

Zha, X., Zhang, J., Yan, Y., & Zha, D. (2015). Sound information seeking in Web 2.0 virtual communities: the moderating effect of mindfulness. *Behaviour & Information Technology*, 34(9), 920–935.