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Patient Communities: A New Paradigm for Medicine

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13.1 Introduction

For proof that the “digitalization of health” is very real, one only has to consider that, when it comes to health, people today turn reflexively to the Internet. In fact, one out of every 20 Google searches globally deals with health concerns, and that figure has increased steadily by 15% every year since 2011 (Bell et al. 2016).

In 2014, 69% of the population of France looked up health information on the Internet, a number that has been increasing since 2010 (Richard 2016). In the USA in 2011, almost three quarters of the population did the same. More than 70% of patients use the Internet when experiencing various symptoms, and a similar proportion of physicians turns to information and communication technologies (ICT) to determine a diagnosis (Bell et al. 2016).

The researching and exchange of medical information online is done using different tools, such as blogs, websites (e.g., Wikipedia), social media sites and virtual patient communities or OHCs. With the latter, users may find an abundant source of useful information supplied and “analyzed” by other OHC members with whom it is possible to create relationships (Kannan et al. 2000).

By allowing access to medical information, the Web creates a new paradigm among medical patients, researchers, and even health professionals in a collaborative knowledge process (Kreps and Neuhauser 2010). People—whether they are more or less educated, sick (or not)—can read, write, and share this medical information, using it as much or as little as they wish, passing it along from OHC leaders to followers. Does this mean the physician is being forgotten? Not necessarily.

This new behavior by Internet customers deserves further study, including how it affects relationships with physicians. As noted by Johnston et al. (2013), social media associated with Web 2.0 technologies are fundamentally changing the way individuals manage their health care. At the other end of the spectrum, physicians also use the Web and its tools, which alter how they do their jobs and changes their relationships with patients (Murray et al. 2003).

The goal of this chapter is to present the results of research measuring the link between the usage frequency of OHCs, also known as virtual health communities (VHCs), and how this affects the quality of the patient–physician relationship, and users’ confidence in and attitudes toward this relationship. This link is something that needs to be investigated further according to Demiris (2006) and Eysenbach (2003).

13.2 Literature Review and Conceptual Framework

13.2.1 Virtual Health Communities

A VHC is an Internet platform that brings together individuals who share a social contract that enables them to network with each other. Together, they exchange information, offer moral support, discuss possible treatment therapies, and consult with experts (Demiris 2006). VHCs bring together patients with different pathologies (Kreps and Neuhauser 2010) with the goal of enabling them to share their experiences, medical and treatment information, and information about the possible side effects of medication. The literature shows that VHC sites offer several advantages. Firstly, they offer moral support for patients (Akriich and Méadel 2009; Thoër 2013). Secondly, they help restore a sometimes-distorted social link with the disease (Sillence et al. 2007). And thirdly, they provide patients with easier access to medical information (Erdem and Harrison-Walker 2006). This has the effect of reducing the asymmetry of information and, at the same time, increasing patients’ questioning of the power traditionally held by the physician.

Patients’ participation in VHCs helps them to be involved more effectively in medical decisions (Street et al. 2009). This directly and indirectly changes the relationship with the health professional (Thompson 2007). It also alters the impact of the psychosocial factors

that influence patients' confidence in the relationship, the quality of the relationship, and patients' attitude toward health staff.

13.2.2 Virtual Communities: The Idea of Confidence

Trust is an essential variable in relationship marketing and is particularly important in the context of the patient–physician relationship (Erdem and Harrison-Walker 2006). In this case, a trusted relationship can be defined as a reliable and integrated connection between the health-care provider and the recipient.

Confidence also plays a major role in maintaining a long-term relationship between the two (i.e., service provider and consumer). It also positively influences satisfaction and cooperation, thereby reducing uncertainty and the propensity to withdraw (Morgan and Hunt 1994). Information technology enables the reinforcement of the patient's confidence in his/her physician (Andreassen et al. 2006). In effect, individuals who frequently search for health information on the Internet tend to have more confidence in their physician. This may be explained by the fact that patients who surf the Web acquire medical knowledge, so they may be better able to discuss certain topics with their physician (Andreassen et al. 2006; Sofres 2013).

This positive link is also verified by patients: For a large proportion of patients with chronic conditions, the medical information they obtain on the Internet enables them to better understand their illness, and allows them to confirm their physician's advice (de Boer et al. 2007). For these authors, patients with chronic health conditions who use VHCs have a higher degree of confidence in their physician. And, compared with other patient groups, they trust their physicians more and have a higher level of commitment toward them.

Given the above, the following hypotheses were posited:

- Hypothesis 1 (H1): For individuals in general, participation in a VHC affects their confidence in their physician.
- Hypothesis 2 (H2): For individuals who are sick, participation in a VHC affects their confidence in their physician.

13.2.3 Virtual Communities: The Quality of the Relationship for Physicians

The concept of a patient–physician relationship is a key concept in health care (Ridd et al. 2009). The democratization of the Internet and improved access to health information increases users' knowledge, places the focus on the patient rather than the disease, and improves the relationship between the two stakeholders (Kaba and Sooriakumaran 2007). A study undertaken with women who had breast cancer shows that surfing the Internet in search of credible, high-quality health information positively affected their relationship with their physician (Shaw et al. 2007). With regard to people with chronic illnesses, Internet surfing contributes to an enriched relationship with their physician. Therefore, the information collected is shared, discussed, and dealt with differently by the physician and the patient (Anderson et al. 2003), and it forces health professionals to review their practices. As McMullan (2006) states, the incursion of digital information and the development of VHCs compete to redefine the patient–physician relationship, forcing the adoption of a patient-centric vision: patient self-education leads to a more collaborative, rather than paternalistic, dynamic.

In light of these studies, it is proposed that the following hypotheses on the quality of the patient–physician relationship in a VHC context be tested:

- Hypothesis 3 (H3): Participation in a VHC affects how individuals in general perceive the quality of their relationship with their physician.
- Hypothesis 4 (H4): Participation in a VHC affects how individuals who are chronically ill perceive the quality of their relationship with their physician.

13.2.4 Virtual Communities: Attitude Toward Physicians

Frequent use of VHCs allows patients to increase their sense of control over their disease by providing them with knowledge and self-awareness (Wald et al. 2007). Certain studies have shown that the disclosure of

personal information in VHCs generates more empathetic and friendly relationships between the person being treated and the caregiver (Dedding et al. 2011). By helping to encourage VHCs and the exchange of information, patients are better informed, making their relationships with health-care professionals more harmonious. This, in turn, facilitates the exchange of information and improves the effectiveness of meetings (Broom 2005; Dedding et al. 2011).

This leads to the following hypotheses:

- Hypothesis 5 (H5): Participation in a VHC affects the attitude of individuals toward their physician.
- Hypothesis 6 (H6): Participation in a VHC affects the attitude of patients with chronic conditions toward their physician.

13.3 Research Methodology

13.3.1 Survey Sample

An online survey was developed to test these six research hypotheses. In 2015, a total of 245 French citizens were contacted in through online communities using an online questionnaire. Of these, 213 provided usable data. Nearly 28% of respondents indicated they suffered from a chronic illness.

Fifty-four percent of respondents were women, which is consistent with the results of Ybarra and Suman (2006), who found that women are significantly more likely than men to use the Internet as a source of health information. The average age of the respondents was 34 years old, ranging in age from 18 to 62 years. Data was collected anonymously.

13.3.2 Measurement

Drawing on marketing and sociological literature, standard research measurement scales were adapted to make it possible to assess the

trust that VHC-participating patients have in their physician, their perception of the quality of the relationship with their physician, and their attitude toward their physician.

Each construct was composed of several items measured on seven-point Likert-type scales (1 = strongly disagree and 7 = strongly agree). The data was factor-analyzed to assess the dimensionality and consistency of the scales. The reliability of each scale was assessed using Cronbach's alpha coefficient.

13.3.3 Method

To test the first set of hypotheses (H1, H3, and H5), t-tests were run for each of the following constructs:

- a. the patient's perceived trust toward their physician;
- b. the patient's perceived relationship with their physician; and
- c. the patient's attitude toward their physician. This final construct was divided into two groups:
 - members who do not interact with VHCs, or who claim to interact poorly with VHCs; and
 - members who say they interact frequently with VHCs.

Patients who interacted daily or weekly with a VHC were considered high-frequency participants (m_{97}), whereas those who connected once a month or less were considered low-frequency participants (m_{116}).

Similarly, to test the second set of hypotheses (H2, H4, and H6), the means were compared for each of the three abovementioned constructs for high-frequency users (m_{cd37}) with chronic conditions versus low-frequency users (m_{cd23}) with chronic conditions, respectively.

13.4 Results

13.4.1 T-Test Results

13.4.1.1 Results for H1, H3, and H5

The t-test results indicate that frequent participation in VHCs does not significantly impact the patient's trust toward their physician; thus, H1 is not supported. In terms of the perceived quality of the relationship, the data shows that being a frequent user modifies the patient's perceived quality of the relationship toward their physician ($t = -2.310$; $p < 0.05$). Similarly, for frequent users, the data reveals a significant difference regarding attitudes toward their physician compared with less-frequent users ($t = 2.440$; $p < 0.05$). Therefore, H3 and H5 are supported by the data here.

13.4.1.2 Results for H2, H4, and H6

Let us now consider patients with a chronic condition. Regarding trust toward their physician, there was no significant difference found (at $p < 0.05$) between high- and low-frequency VHC users; thus, H2 is not supported.

The data indicates that a difference exists between high- and low-frequency users regarding their perception of the quality of their relationship with their physician. Specifically, the data shows that those who participate frequently in a VHC perceive their relationship with their physician to be of better quality than do other VHC members ($t = -1.892$; $p < 0.05$); H4 is supported by the data.

Similarly, the data underlines that members who frequently use a VHC have a better attitude toward their physician than less-frequent users ($t = 2.528$; $p < 0.05$); thus, H6 is supported here.

13.5 Discussion

The research objectives were to study the effects of participation in VHCs by the individuals in a physician–patient relationship. In the end, four of the six hypotheses were validated.

Firstly, looking at the impact that participation in VHCs has on members' trust in their physicians, the data reveals that being a frequent Internet user, whether sick or healthy, does not affect the level of trust. In France, the physician seems to be the primary and most credible source for health information, and these results are consistent with other studies. This low level of confidence in the Internet (compared with confidence in one's physician) could be explained by the heterogeneity of the quality of health information available online, a valid reality for many developed countries (Beck et al. 2014).

Secondly, the relationship between the frequent use of virtual communities and the quality of the user's relationship with respect to his/her physician was studied. A significant link was found between participation in these communities and the quality of the user's relationship with his/her physician, both for individuals in general, and for those with chronic conditions. These results confirm previous studies arguing in favor of the efficiency and benefit of looking for health information on the Internet, and the positive effect this has on the physician–patient relationship. (Thoër 2012).

Thirdly, the results show a significant correlation between patients' attitude toward their physician and the time spent by patients in VHCs, both for individuals in general and for those with chronic conditions. Again, the hypothesis agrees with the results of the study, suggesting that the time spent surfing the “health” Internet creates new forms of relationships between physicians and patients (Dedding et al. 2011) while improving the efficacy of meetings (Broom 2005) and the quality of care (McGeady et al. 2008).

On a managerial level, this study sheds new light on the variables affecting the patient–physician relationship. It also points to actions that physicians could take to improve their relationships with patients. It suggests that doctors should seek to build more pedagogical or educational communication with their patients—either by answering their specific questions, or by guiding them to sources of safe, credible information on the Internet.

While this study does highlight the contribution of VHCs toward strengthening the relationship between physician and patient, it also has its limitations. The first is the lack of a representative sample, since only the

Web was used to identify respondents (either sick or healthy). The second limitation is the low external validity of results. It would therefore be appropriate to conduct further research using a more representative sample of the French population. It would also be interesting to test these hypotheses with populations in other countries with different health systems (e.g., countries where it is easier or harder to access a doctor). This study also suggests future research possibilities. For example, it is recommended that additional variables be added, such as type of disease (i.e., chronic or acute) and their severity. To enhance the explanatory power of this model, other variables to assess the patient–physician relationship could be added, such as the level of involvement in VHCs (Akrich and Méadel 2009), motivation to participate in VHCs (Demiris 2006), or perceptions about the validity of information found on VHC websites.

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