

Investigating the association between Internet health information use and patient willingness to communicate with health care providers

Abstract

Communication between health professionals and patients is an intergroup phenomenon where the health professional has the most power and status. Over the past few decades, there has been a steady increase for patients in the availability of information about healthcare and specific diseases on the Internet. In this paper, we ask whether the use of Internet health information assists patients to better manage their consultations with health professionals and whether it alters the intergroup dynamic by providing a more equal status for patients. In this study 370 participants from Australia and Canada completed a survey that included a ‘willingness to communicate with health professionals’ scale. They also commented on their use and trust of Internet health information. Thematic analysis suggests that patient use of Internet health information serves as a broker between patients and their health provider in health consultations. We discuss the implications of these findings for health practitioners as they address how easier Internet access influences patient interactions with health professionals. We consider future research directions these finding provide in explaining communication behaviour in this context.

Keywords: intergroup communication, willingness to communicate, internet health information, doctor-patient relationship

Investigating the association between Internet health information use and patient willingness to communicate

Patients often need to acquire a considerable amount of information in order to manage their daily healthcare and achieve their health goals. Traditionally, there has been a tendency for health professionals to insufficiently provide health information to their patients (e.g., Epstein & Street, 2011a; McCabe, 2004; Zubialde, Eubank, & Fink, 2007) and to fail to provide opportunities (through their communication) for patients to participate in the consultation (Bolster & Manias, 2009). Many researchers have argued that it is the status and power differences between health providers and patients that create provider-dominated medical encounters that made it difficult for many patients to directly ask for health information. Over fifty years ago, Parsons (1951), for instance, depicted the patient as a passive recipient of health information, where the patient was expected to be cooperative and to follow the health professional's instructions. Research generally supported Parson's conceptualization of the patient, showing that, indeed, patients tended to not actively participate in the health consultation. While provider-dominated encounters are still the trend, in the last several years research has begun to uncover a potential shift in the relationship between health professionals and patients (Delaney & Martin, 2017; Epstein & Street, 2011b). For instance, more recent findings suggest that patients are no longer relying solely on their health provider for guidance about their health. Instead, they are turning to other readily available sources for health information. One notable and increasingly popular source of information for patients is the Internet. The amount of health information that can be found on the Internet is growing steadily and patients, in particular, are taking advantage of it. Indeed, many patients argue that the Internet provides them with more information than they can receive during their health consultation (Broom, 2005; Kim & Kim, 2009; Laugesen, Hassanein, & Yuan, 2015). As the use of the Internet for health information becomes more commonplace, research is needed to examine how its use affects the health professional-patient relationship.

It has been suggested that the Internet challenges the asymmetry of power and status between health professionals and patients by empowering patients to independently find answers about their health (e.g. Broom, 2005; Laugesen et al., 2015). Patients go from being passive recipients of health information to active information seekers. Patients may feel that, due to the abundance of health information on the Internet, they are no longer excluded from access to expert medical knowledge. This has the potential to strain the already challenging and complex relationship between health professionals and their patients. Earlier research that has examined the possible impact of patient's increasing use of Internet health information on health consultations has primarily focused on health provider perceptions and patient compliance (Erdem & Harrison-Walker, 2006; Kim & Kim, 2009; Laugesen et al., 2015). The emergence of web-based health information in consultations, though, may impact the dynamic of face-to-face health professional-patient interactions. This study aims to address the need for research that examines how internet health information potentially influences communication in the health context. Specifically, by applying a well-established theory of communication - the Willingness to Communicate (WTC) model (MacIntyre, Dörnyei, Clément, & Noels, 1998; McCroskey and Richmond, 1991) - this study explores how the use of Internet health information relates to patients' choice to communicate (or not) with health care providers.

Patient Use of Internet Health Information

A universal and ever-growing complaint from patients often centres on the difficulty of getting to see their healthcare provider, the amount of time they spend in waiting rooms, and the all too brief interactions during the consultation (see Erdem & Harrison-Walker, 2006). It is, therefore, not surprising that the most cited reason patients turn to the Internet for health information is that it is quick and readily available. Hardey (2001), for instance, found that patients sought health information online because they found the consultation time too short,

and were dissatisfied with the amount of the information they received during the medical encounter (see also Anderson, 2004). Patients have also argued that the information they receive from their health provider is too broad and does not address their specific health questions (Kivits, 2004). Other studies have shown that patients use Internet health information to decide if they need to see a health professional (see McMillan, 2005 for review). Many studies have reported that, although the use of Internet health information is becoming more common, patients still prefer to see a health professional, and tend to go online after a consultation to confirm the information they were given, to clarify the information, or to gather more information (McMullin, 2005; Nicholas, Huntington, Gunter, Russell, & Withey, 2003; Stevenson, Kerr, Murray, & Nazareth, 2007).

Health professionals' reactions to the growing popularity of Internet health information among patients are mixed. For instance, although many doctors embrace the availability of health information on the Internet and regard it as positive development in healthcare (Chen & Siu, 2001; Eysenbach, 2003; Helft, Hlubocky, & Daugherty, 2003; Murray et al., 2003; Sommerhalder, Abraham, Zufferey, Barth, & Abel, 2009; Swee-Lin Tan & Goonawardene, 2017; Townsend et al., 2015), others argue that the benefits of Internet information are primarily for the patients and not the health professionals. Those who react negatively to it do so because they feel that patients are bringing information into the consultation that is irrelevant to their health condition, contradicts the doctors' recommendations, and suggests treatments that are inappropriate or unavailable (Haluza, Naszay, Stockinger, & Jungwirth, 2017; Potts & Wyatt, 2002). Some doctors feel that their medical expertise is being challenged, and they are reluctant to take on a new role of interpreter of internet health information (Ahmad et al., 2006; Hirji, 2004). Research that examines nurses' reactions to online health information is limited, but findings over the last decade indicate that nurses generally do not acknowledge patient use of the Internet for health

information in their discussions, and that the majority of nurses would not recommend online health information to their patients (e.g. Lupianez-Villanueva, Hardey, Torrent, & Ficapal, 2011; Wilson, 1999).

Research that explores patients' trust in Internet health information has yielded inconsistent results. While some studies find that the majority of consumers trust all or most of the health information online (e.g. Conham, 2003; Morahan-Martin, 2004), others find that patients are skeptical of Internet health information, particularly when they cannot identify the site's author (Erdem & Harrison-Walker, 2006; Fox & Raine, 2002). Generally, patients reject a website if it does not come from a reputable source (e.g. American Cancer Society) or if they cannot determine when the information was last updated (Fox & Raine, 2002). An important finding is that consumers of Internet health information do not use it to undermine the value of the interactions with their health provider. Rather, consumers believe that the Internet has the potential to strengthen relationships with healthcare providers (Anderson, 2004; Bodenheimer & Grumbach, 2003). Research findings appear to support these goals. Patients have reported using the Internet to gather health knowledge in an effort to get the most out of their health consultation and to work with their health providers more efficiently (Ayers & Kroenfeld, 2007; Williams, Huntington, & Nicholas, 2003). Other studies indicate that patients seek information on the Internet prior to health consultations as a way to better understand their health provider and medical jargon (Chiu, 2011; Kivits, 2006). It is important to note that not all patients directly discuss the information found on the Internet with health professionals, particularly with their doctor. It is puzzling that patients who regularly seek Internet health information rarely engage in conversations about their findings with their doctor, but findings suggest that patients worry about their doctor's reactions to the information, and fear being embarrassed, interfering with the consultation process or insulting the doctor (Chung, 2013; Silver, 2015; Schrank, Sibitz, Unger, & Amering, 2010;

Sommerhalder et al., 2009). Instead, patients tend to introduce the information they found in more subtle ways, like asking additional questions during the consultation while silently comparing the information to the doctor's advice (Sommerhalder et al., 2009). Findings regarding patients' discussion of online health information with nurses are somewhat inconsistent and potentially related to the characteristics of the nurse. Gilmour et al. (2014) found that approximately 60% of primary health care (PHC) nurses encountered patients who wanted to discuss the information they found online. In their earlier study of medical ward nurses, however, Gilmour and colleagues found that only 30% discussed online health information with their patients (Gilmour, Huntington, Broadbent, Strong, & Hawkins, 2012). Taken together, the findings suggest that Internet health information is potentially related to patients' communicative behaviours with their health professionals.

Patient Willingness to Communicate

McCroskey and Richmond (1991) developed the WTC construct to describe the intention to communicate when given the choice to do so, and is considered the final step before actual communication. The construct was originally introduced to the first language (L1) context. McCroskey and Richmond (1991) found that people showed a regularity and stability in their choice to communicate across a variety of contexts, and thus defined WTC as a personality-based trait. Eventually, the WTC construct was introduced to the second language (L2) context, and this is when situational variations in the choice to communicate emerged (Baker & MacIntyre, 2000; MacIntyre, Baker, Clément, & Conrod, 2001). For instance, while L2 learners were willing to communicate in the target language in some contexts, they were unwilling in others. Applying the WTC construct to the L2 context, therefore, demonstrated that it is also a state characteristic. L2 contexts tend to emphasize the intergroup nature of communication and lower L2 learners' WTC. In Anglophone and Francophone interactions, for example, there are group differences in language identity and status that influence

communicative decisions and patterns (Clément, Baker, & MacIntyre, 2003; Clément, Baker, Josephson, & Noels, 2005). Owing to its inherent intergroup nature, the health context is similar to the L2 context in that it also involves communication between groups of differing roles, status, and language who are trying to negotiate communication while at the same time maintaining their group identity. In bringing the WTC construct to the health communication, we aim to introduce the interaction between WTC and context in L1 situations. This adds a new dimension to the WTC construct, which has, to date, has primarily explored intentions to communicate and context in L2 situations.

Consistently, two of the best predictors of WTC are communication anxiety and perceptions of communicative competence (Baker & MacIntyre, 2000; MacIntyre et al., 2001; McCroskey & Richmond, 1991). Communication anxiety refers to the anxiety associated with communication (in either real or anticipated situations) with a person or group of people (McCroskey, 1977; 1984). Research has found that communication anxiety tends to lower WTC. Specifically, anxious individuals tend to avoid communication when given the choice. Perceived communication competence refers to a person's judgement concerning their communicative ability (McCroskey & Richmond, 1990). It is not a person's actual abilities that determine whether or not they will communicate, but rather their subjective perceptions of competence (Clément et al., 2003). Thus, if an individual feels that they will be able to communicate effectively, they will choose to communicate.

There is a strong belief that communication anxiety and perceived communication competence are developed through experience and founded on expectations for communication success. The Internet serves as a source of information for patients to build on their health knowledge and medical language, so it may be related to patient WTC in the health context. Indeed, many have argued that the use of Internet health information empowers patients. Research has found, for instance, that patients who seek health

information online are better able to ask questions, and understand what is said during medical consultations (Kivits, 2006; Nettleton, Burrows, & O'Malley, 2005; Swee-Lin Tan & Goonawardene, 2017). Gaining medical knowledge on the Internet helps patients feel more comfortable with health discussions (Anderson, Rainey, Eysenbach, 2003; Erdem & Harrison-Walker, 2006; Eysenbach, 2003; Gustafson et al., 2001; Kim & Kim, 2009; Laugesen et al., 2015; Murray, et al., 2003). Such findings suggest that there may be a link between internet health information and patient communication. In the L2 context, frequent exposure to the target language and its speakers results in higher WTC (Baker & MacIntyre, 2000; Clément et al., 2003). Similarly, in the health context, patients who seek out health information on the internet are potentially gaining greater experience with medical language and concepts, which increases their perceptions of communicative competence and reduces communicative anxiety with a health provider. Thus, the knowledge patients gain from internet health information (particularly information they trust) may be related to greater communication confidence, and higher WTC with health providers.

The Present Study

Bernadette: can you see anywhere we can stick in the bit about a quantitative measure of WTC and qualitative of internet use/trust? I've tried it in a few places, but it sticks out -- like we're explaining something that doesn't need explanation.

Using a mixed-methods approach, this study explores patient participation in the health context as it relates to the use and trust in Internet health information. Specifically, this study uses the quantitative measure of WTC to gauge perceptions of the perceptions of patients who have high versus low WTC scores in the health context and map these scores on to qualitative descriptions by the same participants with respect to their use and trust in Internet health information. By applying the WTC construct, we can examine how patients' use of the

Internet may influence the intergroup processes in this context. Since this study is exploratory, we do not have specific hypotheses concerning the nature or direction of the relationship between use and trust of the Internet for health information and patient WTC.

Rather, we addressed the following research questions:

Research Question 1: What is the relationship between patient WTC and the use of Internet health information?

Bernadette: We could try to make the RQs more specific (as opposed to adding Hs like Reviewer 1 suggest - so something like "Are there differences in the use of internet health info between hi and lo WTC patients". I am happy with sticking with RQs and your RQ1 makes logical sense so put it in.

Research Question 2: What is the relationship between patient WTC and trust of Internet health information?

Method

Participants

There were 370 participants (247 females, 121 males, age range = 17-77 years, median age = 23) from Sydney, Canada and Brisbane, Australia in this study. Sydney and Australia both represent Westernized culture, with comparable access to internet health information. More than half of our participants (55.5%) indicated that their highest education level achieved was an undergraduate degree - 36.4% indicated high school diploma only; 3% have a Ph.D.; 2.7% have a Masters. When asked to describe their ethnic origins, those who responded to this question described themselves as White/Caucasian (33.1%), English/British (17.5%), Australian (14.5%), Scottish (7.4%), Canadian (7.1%), Chinese (6.7%), or Irish (5.6%). A smaller percentage of participants described themselves as Italian, Metis, Indian, French, Polish, Lebanese, Somalian, or Greek. The majority of the participants in this study indicated that they use the Internet to seek health information and that they trust the information at least

to some extent. Only 15% of participants said they never seek health information online and 12% said that they would never trust online health information. Since we are interested in exploring the relationship between patient WTC and the use and trust in Internet health information, these participants were included in the analyses.

Materials

The study consisted of a questionnaire, which included the following:

Patient Willingness to Communicate in Health Contexts. This scale was adapted from McCroskey and Baer's (1985) WTC scale for this study (see also Baker & Watson, 2015). This 10-item WTC in health contexts scale ($\alpha = .95$) was administered with instructions asking participants to indicate the chances, expressed on a scale from 1 to 5 (1 = almost never willing, 5 almost always willing), of their being willing to communicate in each of the 10 situations. The scale was administered with reference to speaking only in healthcare contexts. A sample item is "discussing medical treatment with the doctor".

Participants were also asked the following two open-ended questions about their use and trust of Internet health information:

1. Do you use the Internet to search for health information? Please explain.
2. Do you trust the health information available on the Internet? Please explain.

Procedure

All participants were given a consent/information form and a questionnaire, which took approximately 20 minutes to complete. To obtain a diverse sample, participants were recruited several ways. Patients were approached in the waiting room of their local clinics and asked if they would be interested in taking part in the study. Some were recruited through snowball sampling, and others were university students who either participated on campus in a designated lab or were given the hyperlink to complete the questionnaire during their own time. Recruitment of participants was conducted over a period of approximately two months.

Results

Patients were classified as either high or low in WTC based on a median split of the ratings on the patient WTC scale. Of the 370 participants, 175 had low WTC, and 195 had high WTC.

To address the research questions in this study, patients' descriptions of their use of and trust in the Internet for health information were analyzed using Leximancer 3.1 (Smith & Humphreys, 2006). Leximancer is a text-mining software program that derives, in a grounded fashion key themes and concepts in a text (a program manual and tutorials are available at www.leximancer.com). The program does this by extracting semantic and relational co-occurrence information. Leximancer then maps the concepts and the connections between them. Concept relationships are determined by their actual use in the text, rather than by pre-existing semantic, syntactic, or discursive categories. Concepts that appear close together on the map also tend to appear frequently in the same context in the text. Further, the size of the concept is indicative of its frequency in the text. Specifically, larger concepts appear more often in the text than smaller ones. Once the concepts are mapped, researchers can "drill down" into each concept to enable lexico-grammatical analyses.

Use of Internet health information and patient WTC

For the analysis, we restricted our focus to concepts surrounding the use of Internet health information and its relationship to patient communication by manually seeding a number of concepts. A map was generated exploring the concepts "learn", "communicate", "discuss", "confidence", "anxious", "ask", "talk", and "helps". These concepts were chosen based on an initial reading of the qualitative data, and on findings from earlier research. It is important to note that the word "learn" may not exist as such within the data, but that concepts related to it are present. Figure 1 presents the most prominent concepts and clusters for each of the two

groups (high and low WTC). The map shows three distinct themes that emerged - *Research*, *Communication Comprehension*, and *Self-care*.

INSERT FIGURE 1 ABOUT HERE

Theme 1: Research. We labelled this theme "Research" because the concepts in it describe the use of the Internet to gather medical information in preparation for a health consultation. As can be seen on the map, this theme was more strongly associated with patients who indicated high WTC in the health context. Prominent concepts in this theme were *helps*, *research*, *search*, *use*, and *questions*. A closer examination of the concepts in this theme suggest that many patients with high WTC use the Internet to get more immediate answers regarding their health condition while they are waiting to see their doctor.

- [...] *because sometimes it takes 2 or 3 weeks to make an appointment with my GP*
- *It [the Internet] can answer questions sooner than appointments*
- *Yes, just to get an idea of a diagnosis*
- *If I am experiencing symptoms, sometimes it is a quick way to find certain things out*

Other patients with high WTC indicated that they use the Internet to learn about their condition and their doctor so that they are able to ask appropriate questions during the consultation.

- *It can be very helpful in working out what questions to ask*
- *Allows me to ask sound questions and keeps my doctor on his toes*
- *To gain some background knowledge before you go and see a professional*
- *I do research on doctors such as specialist to see what their expertise is in and what sort of research they have done*

Finally, but to a lesser extent, patients with high WTC used the Internet after the health consultation to acquire further information.

- *I always do research when I am put on a different medication*

- I have in the past [used the Internet] only to research further on certain health topics AFTER I have first been to the doctor

- I usually use [the Internet] to investigate anything the doctor said that I didn't 100% understand

Theme 2: Communication Comprehension. We called this theme "Communication Comprehension" because it primarily described instances where patients used the Internet to clarify what was said during the health consultation. This theme was more closely associated with patients who indicated low WTC in the health context. The main concepts that appeared within this theme were *condition*, *understand*, *idea*, and *time*. For the most part, patients with low WTC used the Internet after consultation with the doctor to better understand what was communicated during the consultation and/or to obtain further information about their health or treatment.

- Yes, when I don't understand what my doctor has said

- I have checked online for medication side effects as usually these are not fully explained at consultation

- If for example, I have been to the doctor and they have offered me a treatment that I need to consider, I will usually look it up on the internet

Patients with low WTC also used the Internet to search for general information about their health and treatments.

- Yes, so I can understand more medical terms

- It [the Internet] is good for looking up side effects of treatment

- I feel I should understand my condition and treatment to be an active partner in my healthcare

Some patients with low WTC said that they used the Internet to search for health information prior to a health consultation but did not indicate whether or not they use the information to facilitate their discussions with their doctors.

- *To give me an idea of what I may be dealing with before consulting a doctor*
- *I want to go to the doctor with an understanding of what the case might be, but also so that I can give the doctor any relevant information*

Theme 3: Self-care. As can be seen on the map, this theme was associated with both groups of patients. We labelled this theme "Self-care" because an exploration of the concepts in this theme showed that both low and high WTC patients sometimes use the Internet in lieu of seeing a doctor. Prominent concepts in this theme were *easy, quick, possible, usually, feel, confidence, and serious*. Some patients with low WTC indicated that they preferred to use Internet health information either because they did not want to talk to a health professional or because they had a negative experience in a health consultation.

- *I feel uncomfortable talking to others*
- *I have dealt with doctors being condescending and dismissive*

Others with low WTC indicated that they used Internet health information to determine whether they should see a doctor or take care of the problem themselves.

- *Yes, if I am not sure whether it is worth going to the doctor, I might find some information and recommendations about when to seek help*
- *Yes, I often feel that the internet is the quickest way to get a rough answer/general idea about the potential nature of a problem or concern I have and what possible solution there may be*

For patients with high WTC, the Internet was used in instances where the patient did not feel that the problem was sufficiently serious to see a doctor and/or to reduce their general anxieties about their health.

- *You can figure the most likely diagnosis for yourself for most minor health concerns and then you can look up the treatment for it*
- *If I feel anxious about a health issue (usually trivial), I look it up on the internet to reassure myself that it is nothing*
- *Yes, but only for things that are seemingly common*

Trust of Internet health information and patient WTC

As with the Internet use data, we hand-seeded the concepts "learn", "communicate", "discuss", "confidence", "anxious", "ask", "talk", and "helps". Again, we were focused on the relationship between patient trust in Internet health information and their WTC in the health context. Figure 2 presents the most prominent concepts and clusters for each of the two groups (high and low WTC). The map shows two distinct themes that emerged - Site Credibility, and Seriousness of Symptoms.

INSERT FIGURE 2 ABOUT HERE

Theme 1: Seriousness of Symptoms. This theme highlighted the importance of patients' perceptions of the seriousness of their condition in determining whether they trusted Internet health information. An examination of the concepts did not reveal discernible differences between high and low WTC patients. The main concepts in this theme were *reliable, discuss, serious, symptoms, experiences, and take*. Generally, all patients trusted the Internet if they felt that their symptoms were not too serious.

- *I would never trust the Internet with severe symptoms. I would go to my health professional*

- *Only for very common ailments that aren't of pressing concern*

Some patients also noted that many of the symptoms found on the Internet may have little to do with their illness or problem, and that there is a risk they may misdiagnose themselves and create unnecessary anxiety.

- *Someone could have symptoms, look those up and it could be completely the wrong thing and then go out and get treatment for the wrong illness*
- *No because everyone has a unique presentation of symptoms and come from different contexts*
- *No. I would rather speak to somebody who has gained the appropriate knowledge to diagnose people case by case based on their personal symptoms and experience*

Theme 2: Site Credibility. In this theme, patients' trust in Internet health information depended on the nature of the site itself (e.g. government-regulated) and patients' perceptions of the site's reliability. The prominent concepts in this theme were *source, professional, reputable, accurate, and depends*. As with the first theme, there were no distinct differences between high and low WTC patients. Overall, patients indicated that they only trusted certain sites for their health information.

- *[...] many people on the Internet do not know what they are talking about and are not qualified*
- *Professional medical sites are more reliable*
- *If the health information has been published on a government or university website, or in a peer-reviewed journal, I am more likely to trust the information given*

Some patients indicated that they were more likely to trust the information if their doctor recommended the website.

- *When I got cancer, my oncologist provided me with some trusted sites to be able to research myself, which was really helpful for me.*
- *The only reason I trust a few sites is because a doctor told me they were the most reliable*

Other patients indicated that they check multiple sources for health information and trust the information if it is found on more than one website.

- I wouldn't trust everything, but when sources corroborate each other, it seems likely the information is legitimate

- I will check out a few [Internet sites] to ensure the information is consistent

Discussion

The purpose of this paper was to explore, using mixed methods, the relationship between the use and trust of Internet health information and patient WTC in the health context. The findings of this study authenticate the value of using models of communication - like the WTC model - to determine if there are differences among patients who more often choose to communicate in the health context and those who do not in their use of online health information. We explored patients' perceptions of their WTC with health providers and examined their descriptions of how they used the Internet for health information and their trust in that information.

In the first analysis that focused on patients' use of the Internet for health information, the main themes that emerged indicated distinct differences among patients with low and high WTC in their use of online health information. Patients with high WTC were more likely to seek health information prior to consultations with their doctor and indicated that they specifically intended to use the information to communicate (e.g. ask questions) with their doctor. According to the WTC model, feeling calm and competent about communicating is positively associated with the choice to communicate. This study is exploratory in nature and has not established causal relationships, but since patients are seeking information prior to the consultation, feelings of competence may develop from medical knowledge acquired from the internet, which could enhance patient WTC. This may be the case despite many of the inaccuracies of online health information. Indeed, Baker and Watson (2015) found that patients' *perceptions* of their ability to communicate in the health context were important to their WTC. It may be the case that exposure to online health information provides patients (at

least from their perspective) with the necessary vocabulary and background information to motivate their desire to communicate with their health provider. It is important to note that WTC represents an intention to communicate when given the opportunity. The intergroup nature of health consultations is strong and it is possible that even if patients wanted to communicate, they may feel that they do not have the choice. Despite the fact that patients now have access to an abundance of health information online, the doctor is still the ultimate authority on patient care, and can discourage patients from discussing internet information during the consultation.

Earlier studies have found that patients seek online health information after they talk to their doctor to get clarification or further information (McMullin, 2005; Nicholas et al., 2003; Stevenson et al., 2007). In the present study, this was the case for those with low WTC. Specifically, online health information was primarily used as a means to understanding what had been discussed during the health consultation. While those with high WTC said that they used the information they found online to prepare questions for their health consultation, those with low WTC did not indicate that they used the information for communication purposes. According to the WTC model, feelings of communicative anxiety and low perceptions of communicative competence tend to result in the choice to not communicate. It may be the case that patients with low WTC do not want to ask questions or make suggestions during the consultation, and, instead, use the Internet to obtain the information they seek on their own. Silver (2015) argues that there is a shift toward models that emphasize self-care and highlights the importance of online health information to patients' independence in managing their own health. Silver (2015), too, has found that not all patients talk to their doctors about the health information they find online, and suggests that high-quality sites include reminders to patients to consult with health providers when diagnosing or treating a health issue. This is relevant to patients with low WTC and would (hopefully)

deter them avoiding communication with a health provider. It is important to note that patients did not mention communication with nurses. This could be because patients tend to rely on nurses to use simple, non-medical language (see McCabe, 2004), so they may not use online health information to facilitate their communication with nurses as they do with doctors. Since earlier research suggests that patients talk about online health information with nurses, future research would benefit from examining patient interactions with nurses further.

At first glance, the theme of Self-Care seemed to indicate that there were no notable differences in high and low WTC patients - specifically, both groups used the Internet in lieu of seeing a health professional. A closer look at the concepts, however, revealed that patients with low WTC preferred using the Internet over visiting their doctor - either because they did not want to communicate with him/her or because of prior negative communicative experiences with a health provider. These results are consistent with earlier findings showing that, when patients have negative experiences with their health provider, they tend to avoid returning to that provider in the future (Baker & Watson, 2015). Such findings reveal a potential problem with the vast availability of Internet health information. The Internet, at least for those who experience low WTC in health contexts, may be providing the avenue through which patients can actively avoid seeing a health provider. Patients with high WTC, on the other hand, described using the Internet in instances where they did not feel that their condition or problem was not serious enough to warrant a visit to their doctor. This, too, is potentially problematic. Internet health information may be creating overconfidence among patients in their ability to properly and correctly diagnose their symptoms. Taken together, the results further highlight the need for online health information sites to emphasize the importance of discussing health issues with a medical professional.

In the second analysis focusing on patients' trust of health information, results showed that among both groups of patients, trust in the Internet depended on patients' perceptions of

the seriousness of their symptoms, and/or on the credibility of the website. This finding is consistent with earlier research that shows that patients are discriminating about which Internet sites they use and trust (Erdem & Harrison-Walker, 2006; Fox & Raine, 2002). Generally, the patients in our study acknowledged that not all Internet sites provide reliable information, and that the health information gathered from the Internet can potentially lead users to misdiagnoses and/or unnecessary anxiety about their health. Doctors, too, are concerned about the nature of the information their patients obtain from the Internet, and previous findings show that their concern is warranted (Jadad et al., 2000; Kiley, 2002). One potential solution to ease concerns of both patients and doctors about Internet health information is that doctors talk to their patients about online health information and recommend reputable sites to their patients. This has been suggested in earlier research (e.g. Haluza et al., 2017; Pletneva, Cruchet, Simonet, Kajiwarra, & Boyer, 2011), and many of the patients in our study agree, indicating that they had more confidence in the information when it came from a site that was suggested by their doctor. Additionally, it is important to improve patient communication. If patients are able to develop a positive rapport with their health provider, they may be better able to ask questions and elicit health information, leading to improved communication with their health provider. In addition, they may be more likely to trust the information provided by a health professional over the information they find online. This is particularly relevant to patients with low WTC, who (at least in this study) may be using online health information in lieu of talking to a health provider.

The findings in this study have implications for both the WTC model. In its early conception, the WTC construct was primarily employed in L1 contexts, and revealed that people possess regularity in WTC across communicative situations. Variability in people's WTC emerged when the construct was employed in L2 contexts. By likening the health context to the L2 context, the findings of this study demonstrate that variations in WTC can

occur in the L1 context under *intergroup* communication conditions. Thus, WTC can be influenced by power, role, and status. Strategies can be used to encourage WTC - like patients seeking online health information prior to a health consultation - but the presence of intergroup conditions may still limit actual communicative behaviours. This is important to keep in mind when using the WTC model as a predictive tool.

There are also implications for health care practices. Although health providers are reluctant to do so, it may become necessary for them to accept the new role of interpreter of online health information. Patients obtaining internet health information may be the emerging norm, and providers need to be prepared to manage this information during consultations. This task could be made easier if health providers recommend health sites and/or develop their own site as we have suggested. In this way, providers have at least some input into the nature of health information patients are getting online. Health providers also need to understand patients' motivation for seeing internet information. For instance, it is possible that patients who have a very serious illness are more likely to seek out and ask their health provider about online health information. It may be necessary to help patients decipher the information and to identify areas of confusion or misinformation. This could be a team effort by doctors, nurses, practitioners and specialists to assist overwhelmed patients.

There are some limitations to this study. While the sample was representative of two countries, the age of participants was fairly young. Future research should include a broader range of age groups so that differences across age in terms of WTC and internet use and trust could be explored. In addition, patients may differ in their use of the internet and WTC according to whether they have a chronic or an acute illness. Patients with chronic conditions such as diabetes or rheumatism most likely display a higher level of knowledge about their illness than those with short-term illnesses. Both these areas with respect to age and patient acuity should be further investigated. It may also be valuable to determine whether the

doctors proactively bring up issues around information seeking and the internet. Encouraging patients to discuss what they know from the internet may assist with those patients who may not otherwise have mentioned the knowledge they have obtained. Thus there are a number of avenues of research that will expand our understanding of WTC and internet use.

Conclusion

This study supports findings that patients are using the Internet to find out medical information. We have shown that a patient's WTC may indicate why they seek the information and how they negotiate their interactions with health professionals. These findings also shed light on why previous studies have had mixed results (Erdem & Harrison-Walker, 2006; Kim & Kim, 2009). Taking account of a patient's WTC explains some of these contradictory findings.

The importance of establishing a good rapport with the health provider may be one avenue to empowering patients to sharing the information they found on the internet with their health professional and improving their WTC and relatedly the effectiveness of the interaction. Other research has noted the positive influence on a patient's rating of a consultation when the health professional engages in appropriate levels of emotional expression through their ability to reassure and show concern and acknowledge patient anxieties and questions (Baker & Watson, 2015; Watson & Gallois, 1998, 1999, 2004). The previous research demonstrates that patients state higher levels of satisfaction and likelihood to return the health professional when their emotional needs are met. Returning to see the same health professional will increase familiarity and may also assist a patient with low WTC to negotiate their health care. Although we have not tested how much the health professional's use of emotional expression may encourage a patient with a low WTC to more actively engage, it would seem an encouraging line of investigation.

Their trust of the Internet is mixed but its ease of accessibility means that they will continue to use it. Thus, health professionals need to be aware of this trend and assist patients by providing them with recommended websites and also create their own websites. Such a proactive move on the part of practitioners would give patients implicit permission to talk about the website information and not fear reprisals for discussing information they have found and have not understood. Further it would support patients' desire to use the Internet and may well encourage low WTC to participate in the health context.

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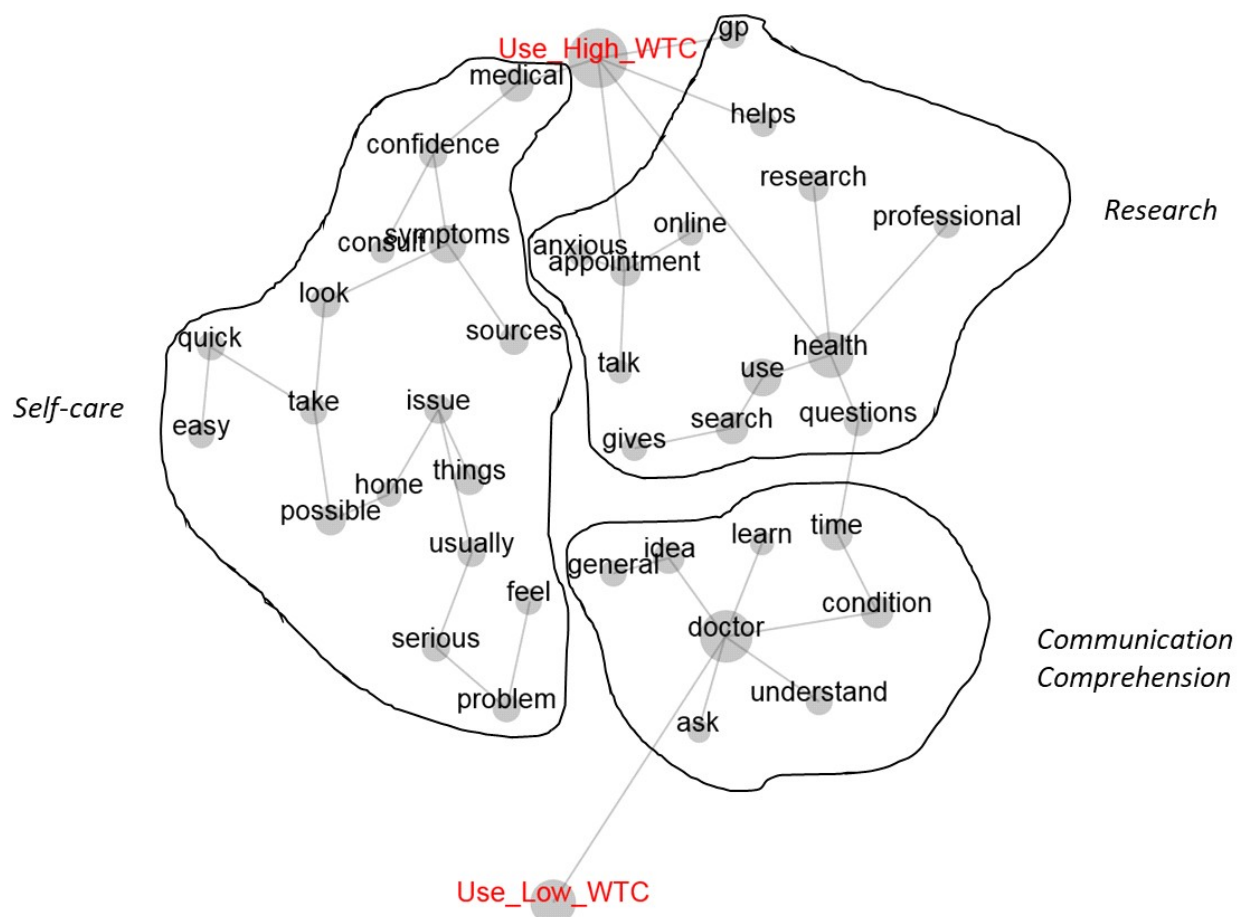


Figure 1. Use of Internet health information and patient WTC

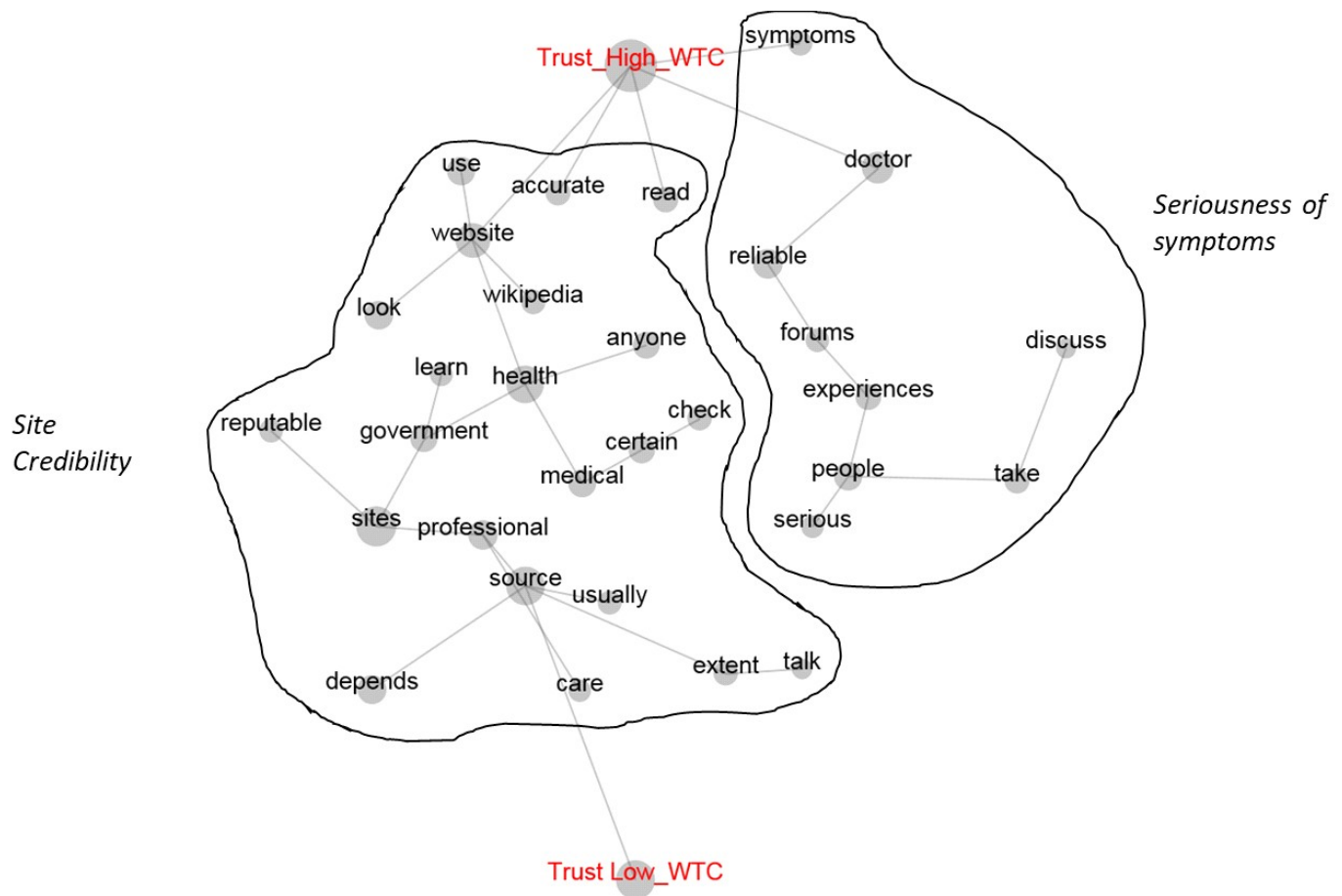


Figure 2. Trust of Internet health information and patient WTC