Work-related factors influencing doctors search behaviors and trust toward medical information resources

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ABSTRACT

Regulation of clinical practice is a characteristic aspect of the medical profession. Regardless of whether this regulation derives from government-sourced guidelines or materials from government-sponsored institutions, it results in a high production of information resources (institutional information resources), which are disseminated to the clinical stuff in order to ensure compliance. In that case, the issue of credibility of these information resources might arise, since medical practice is characterized by a high frequency of change. The latter involves a continuous effort on the part of the clinical staff, which is motivated by work-related factors (e.g., need for compliance) or personal motivation (e.g., need for self-improvement). In this study we consider a simple trust model, according to which we assume that perceived trust is a direct antecedent of perceived credibility. We evaluate whether work-related or personal motivating factors influence the relation between perceived credibility and trust toward institutional information sources and how the effect of each factor affects this relation. Findings suggest that work-related factors have a higher impact on the relation between credibility and trust than personal motivation factors, while they are stressing the important role of hospital libraries as a dissemination point for government-sponsored information resources.

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1. Introduction

Healthcare professionals represent a critical class of knowledge workers from the viewpoint that they require access to high-quality medical information in order to improve their service quality (Case, 2012). From that point of view the quality of medical information becoming available to them through the internet is a critical factor for achieving high-quality healthcare services (Clarke et al., 2013; Hersh, 2008; Jamal, McKenzie, & Clark, 2009). In the context of healthcare the drive for high specialization and increased demand for specialized know-how have an effect on shaping the information needs for both medical and nursing staff (Pearson & Rossall, 2001; Thain & Wales, 2005). Furthermore, this complexity has generated heterogeneity of information needs, which vary across the different specialties and functions of medical professionals.

A traditional source of information, hospital libraries, has been acknowledged as playing a significant role in providing highly reliable information to end users (Kostagiolas & Kaitelidou, 2009). However, user information needs and information seeking behaviors have become rather complicated and cannot be addressed exclusively by hospital libraries any longer (Thain & Wales, 2005). Factors such as advances in medical research and willingness for professional development in conjunction with the continuous flow of medical information available to patients (Dickerson et al., 2004; Jackson et al., 2007) have advanced the information needs of healthcare professionals to a more technical level. Hospital libraries often impose certain limitations including restricted information resources availability, outdated collections, and sometimes rather old-fashioned services, which require too much time for little return (Klein-Fedyshin, 2010; Tooey, 2009). However, some of these limitations have been addressed by information technology advances and trends in the circulation of scientific material. On the other hand, hospital libraries are thought to provide healthcare professionals with high quality information in a reliable way, if compared to information obtained by searching the Internet (Harrison & Beraquet, 2010). Another perspective on hospital libraries includes the role of the clinical librarian as a trustworthy mediator of information within the doctors' work environment, by working alongside the doctors and supporting clinical decision making (Lappa, 2005).

Rarely do medical professionals make evaluative judgments of information resources, although they are well aware of the need for information quality. They make wide use of resources that they already know and, thus, have grown to trust (Hughes, Wareham, & Joshi, 2010). In their everyday practice, doctors can seek information from colleagues, conventional resources such as libraries, and online information resources. It is, as a result of this variety of possible information sources, interesting to examine attitudes toward perceived trust of the various information resources employed by doctors in their daily medical practices when treating patients. For example, although searching for health information through what is easily accessible on Web 1.0 or Web 2.0 media resources is rather common (Metzger & Flanagin, 2011), the issue of trustworthiness when doctors' employ specific online information resources in their daily routines is rather unclear. Internet and Web 2.0 information technologies provide a rather complex and vast information landscape with an abundance of medical information (Masters, 2008). This abundance of online healthcare information, however, provides an additional obstacle when doctors' are seeking information to satisfy real life clinical related information needs (Metzger & Flanagin, 2011). Furthermore, some authors challenge the effectiveness of various medical information resources because of the fact that most doctors go directly to the sites they know and they trust (Hughes et al., 2010).

In information seeking behavioral studies of practicing medical doctors, it is emphasized that clinical decision making in health should be safeguarded from inaccurate information (Metzger, 2007). Therefore, it is critical that, although alternative information resources may each have a number of benefits for health professionals, their use within day-to-day medical practices requires information literacy skills. Perceived trust toward a specific information resource is considered to be an important issue if this particular information resource is to be preferred by doctors (Zulman, Kirch, Zheng, & An, 2011).

While the medical profession is characterized by a high demand for knowledge, it is at the same time highly regulated by government-sponsored institutions that provide guidelines for all aspects of clinical practice—from the evaluation of clinical trials to the way medical treatment is administered. Indeed, compliance with government regulations, guidelines, and standards entails a high level of complexity and the information in question should be easily accessible by doctors at the time and point of need in the workplace. Such information is, therefore, expected to be available in a hospital library or information repository, where government reports and materials sourced from government regulatory bodies and public institutions are collected and are accessible by the staff. While past research has addressed the case that some information sources are trusted more by medical practitioners than others (Frewer, Howard, Hedderley, & Shepherd, 1996), a more detailed analysis as to whether work-related factors affect this attitude of trust needs to be undertaken. Thus, this study is motivated by the fact that the issue of trusting institutional (government sponsored) information sources has a direct consequence on regulatory compliance, patient safety, and the quality of healthcare delivery. Therefore, these information resources play an important role in keeping healthcare delivery consistent with evidence-based practices. In particular, in this study we are interested in examining the effects of intrinsic (personal driven) and extrinsic (work related) factors of information needs on shaping trust toward institutional information resources. This leads to the following hypothesis: "*To what extent do work-related and personal motivation factors for information seeking and knowledge updating affect trust toward institutional (government sponsored) information sources.*"

We use a simple trust model, in which we assume that trust toward an information resource derives from the perceived credibility of an information source is influenced by both the individual's work environment and personal motivations. We use a path model to assess the effect of the perceived importance of motivation sources at work and individual motivational factors on shaping the relation between perceived credibility and perceived trust toward institutional information sources.

This paper is structured as follows. Section 2 provides the theoretical model used in our study, including the model factors and the hypothesized effects to be evaluated. Section 3 provides an empirical analysis of the theoretical model with analysis and results discussed in Section 4. A subsequent discussion of the findings is presented in Section 5, which also outlines limitations and issues for further research.

2. Conceptual development

2.1. Model definition

2.1.1. Heterogeneity of information needs

The literature suggests that the information needs of healthcare professionals vary according to different professional groups and specializations with physicians having numerous and various information needs (Denekamp, 2007; Lawson, Forbes, & Williams, 2011) that mainly relate to on the spot treatment, diagnosis, and pharmaceutical treatment (Cheng, 2004; Davies, 2007; González-González et al., 2007). Boissin (2005), in an early study on information-seeking behaviors and the use of the Internet in France, reported that physicians face three types of information needs: diagnostic, treatment information on the patient's diagnosed condition, and general medical matters. A complimentary study by Thain and Wales (2005) categorized motives for information seeking in research, professional development, patient care, identifying patient information, determining guidelines for patient care, and resolving difficult and rare cases. While medical doctors are more research oriented during their information seeking, the information needs of nursing staff relate more to pharmaceutical treatment and diagnosis, and differ according to their work position and the nature of their duties (Turner, Stavri, Revere, & Altamore, 2008). With regard to the latter, nurses holding a master's degree appear to have more information needs as compared to their counterparts without such a degree (Cogdill, 2003). Nurses mainly seek information on day-to-day patient care either from their colleagues, a physician, or the patient's medical record (Blythe & Royle, 1993). When seeking information, nurses usually face significant problems related to inaccurate data or incomprehensible information, while access to effective information sources is considered to be crucial in making the right decisions and reducing professional stress (Cogdill, 2003; Leckie, Pettigrew, & Sylvain, 1996).

2.1.2. The influence of perceived credibility on shaping trust toward information sources

Information source credibility has been considered as one of the most critical attributes of an information resource on influencing the users toward trusting it. *Source* credibility differs from other closely related information credibility dimensions [refer to Metzger, Flanagin, Eyal, Lemus, & McCann, 2003 for an extended review], such as medium and message credibility, in that it focuses on the information source's believability and motivation to provide accurate, trustworthy, and truthful information (Hu & Sundar, 2010). Extant studies in information science reveal a positive association between source credibility and the formulation of trust to 'consume' or 'use' the information deriving from that source (Lucassen & Schraagen, 2012). For example, online websites with logos designed to communicate elements of a company's credibility, such as expertise and trustworthiness, are found to trigger more positive credibility judgments, which in turn, may result to