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Measuring patients' perceptions of privacy and its outcomes in health care

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Measuring Patients' Perceptions of Privacy and Its Outcomes in Health Care

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This thesis has been prepared
under my supervision
and the candidate has complied
with the Master's regulations.



Signature of Supervisor

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Date

MEASURING PATIENTS' PERCEPTIONS OF PRIVACY

Abstract

The purpose of this study is two-fold. The first is to develop a measurement instrument of patient perceptions of privacy in the healthcare sector. Privacy is critical in health care since it affects patient perceptions of the various aspects of their experience. The second objective of this study is to empirically investigate how privacy affects patients' trust in their health care provider, which in turn influences their commitment, word-of-mouth, and future intentions to use the service. Based on a comprehensive literature review, it was proposed that privacy is a multi-dimensional construct which consists of three theoretically independent dimensions: informational, physical and psychological privacy. A survey instrument was developed and subjected to extensive face validity assessment.

In order to empirically test the suggested model, a survey of 100 health care users in Canada was conducted. Various quantitative techniques, including Structural Equation Modeling, were employed. An empirical assessment of the developed privacy scales demonstrated that the instrument was reliable and valid. The findings indicate that informational privacy is the key component of the overall privacy perceptions of health care users, followed by physical privacy. In contrast, psychological privacy has no effect on the overall privacy construct. Overall privacy has a strong effect on trust, which in turn affects the level of commitment, intentions to use the provider's services in future, and engagement in positive word-of-mouth. In addition, patients whose gender matched the gender of their doctor demonstrated a statistically significant increase in their levels of privacy perceptions. Implications for both theory and practice are offered.

Keywords: privacy, health care, second-order construct, model, trust, commitment, word-of-mouth.

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Introduction

In medical practice, privacy has become an important issue since the time when the Hippocratic Oath, which has been enforcing medical ethics for centuries, originated in the 4th century B.C. (Moskop et al., 2005). Privacy is central for psychological well-being, and it has been recognized as a basic human need (Altman, 1976). Traditionally, the concept of privacy has been used to define a variety of experiences covering personal control over self, information, living space, access to bodies and places, self-concealment, and interpersonal boundary regulation (Altman, 1975; Burgoon, 1982; Conklin, 1976; Lyman & Scott, 1967; Petronio, 2002; Warren & Brandeis, 1890). Even though privacy norms and control mechanisms differ across cultures, some characteristics of privacy exist in every nation, which makes privacy a universal need (Kemp & Moore, 2007).

An increased interest in privacy in health care has been encouraged by changes in the patients' perceptions of their role. Currently, patients are active and well-informed participants in their health care, treatment and decision-making (Swan, 2009). Information technology makes it easy for patients to access any relevant health care information online. As a result, knowledgeable patients expect that physicians provide a better quality of service.

The extant literature emphasized the importance of privacy issues in the healthcare domain and advocates that patients' perceptions of privacy may directly impact their level of trust in the health service provider. Trust, in turn, has an effect on several critical outcomes, such as commitment to the doctor, word-of-mouth, and behavioral intentions to use the services of this doctor in future.

Problem Statement

Privacy is critical since it directly and indirectly affects patients' perceptions of the various aspects of their health care experience. Privacy perceptions are also considered a functional part in the evaluation of service quality. However, despite the importance of this issue, studies of patients' perceptions of privacy in health care are rare (Parrott et al., 1989).

Particularly, little is known about the outcomes of privacy perceptions of health care patients.

The concept of privacy has been recognized as one of the most important issues in health care ethics and nursing (Leino-Kilpi et al., 2001). It is underlined in various ethics codes and patients' bills of rights. The CMA Code of Ethics (2004) guides and informs physicians about standards of behavior in contemporary physician-patient relationships. Codes of ethics articulate ethical obligations that install professional standards guiding the practice of medicine. The obligation of confidentiality outlines the physician's boundary when confidentiality is maintained or breached (Kenny, 1996). Patients' bills of rights (Smith, 2002) provide a list of personal rights with respect to information, privacy, confidentiality, and consent to treatment.

Overall, the importance of privacy in health care is well-recognized. It is an extremely important topic in health care communication, marketing, research, social policy, and nursing. The health communication field covers the use of communication strategies with respect to both personal and public health. Health communication plays a very important role in health promotion, disease prevention, and care delivery. Effective communication between health providers and patients influences health outcomes of acute and chronic conditions, reduces impacts of socioeconomic factors, encourages patients to choose healthy behaviors, and promotes positive changes in all aspects of their lives (Thomas, 2006).

The measurement of patient satisfaction can be used for research, administration and planning (Donabedian, 1980), and privacy issues have become a composite part of this process. Understanding the patients' perceptions of privacy may be useful for physicians and nursing staff. The assessment of privacy can be used to examine and direct physician-patient interaction. The physician-patient interaction in the health care settings is related to the patient's response to treatment. For example, research demonstrates that the effective physician-patient interaction is associated with improvements in blood pressure, blood glucose, pain management, and recovery time (DeVoe, Wallace, & Fryer, 2009).

Research demonstrates that the patients' perceptions of privacy may be different from those reported by the medical professionals. Cultural differences also affect patient expectations of privacy norms. For instance, privacy scores self-reported by the elderly patients differ from the measures reported by the nursing staff. Privacy self-reported measures of the patients from Finland, Germany and the UK were similar to those predicted by the nursing staff. In contrast, these measures differed in Greece and Spain (Schopp et al., 2003). Therefore, the most reliable privacy measurement approach is to survey health care patients directly.

There are several advantages of directly measuring the patients' perceptions of privacy by administering a survey. First, it is less expensive since it requires minimal involvement of personnel. Second, it is easier to administer, especially, in large facilities. Third, there is no need to have complete medical records that contain all information related to the various interpersonal aspects of care. Fourth, patient judgment could be very detailed. Patients see different things than physicians, for example, they may separate high technical aspects of care from psychosocial issues (Chang et al., 1984). Fifth, patients may see positive aspects of care and suggest new ways to increase the quality of care. Sixth, patients' participation in privacy assessment procedures

may directly increase their level of trust, and therefore influence their compliance with treatment, continuity of care and outcome (Rosenthal & Shannon, 1997). As such, valid and reliable privacy assessment instruments may be used by the personnel of health care facilities who may suggest ways to improve patients' experience based on the results.

At the same time, measuring privacy from only the patients' perspective has some limitations. First, people may have a partial understanding of medical science and be unfamiliar with some aspects of medical care that can lead to unreasonably high expectations. Second, patients may expect and require things that physicians cannot provide because it contradicts their professional or social values (Donabedian, 1980). Third, the demographic characteristics of patients, their values and personal preferences may influence their perceptions (DeVoe et al., 2009). Thus, patient perceptions reflect their personal subjective evaluations of the physician and provided care. However, a reliable and valid privacy assessment instrument may successfully address these limitations. Overall, it is believed that having a reliable and valid privacy measurement scale may help both researchers and practitioners approach privacy issues from a scientific perspective, and allow them to develop policies and procedures when dealing with their patients.

The extant literature from non-medical fields presents several privacy measurement instruments, which are usually designed in the form of questionnaires. At the same time, it is regrettable that very few of them focus on the measurement of privacy perceptions of patients in the healthcare sector. It is the difficulties involved in creating an operational definition of the privacy concept and the lack of methodological foundation that have hindered the development of these important measurement tools. On the one hand, the importance of privacy in the healthcare domain has been clearly established in the academic literature. On the other hand, no

widely accepted instrument exists; this omission may negatively affect the entire healthcare sector.

Purpose of the Study and Research Questions

The purpose of this study is two-fold. The first is to develop a measurement instrument of the patients' perceptions of privacy in the healthcare sector. This study focuses on the patients' perceptions of privacy during medical appointments with their primary health care physicians. It approaches the conceptualization of the concept of privacy from a multi-dimensional perspective and suggests that the overall privacy construct is comprised of informational, physical, and psychological dimensions. These dimensions of privacy allow narrowing down the extensive definition of privacy. In addition, identifying privacy as a multidimensional construct allows including a number of specific descriptions and defining the components that best reflect patient perceptions of privacy. However, it is critical not only to measure privacy but also to understand its outcomes. Therefore, the second objective of this study is to empirically investigate how privacy affects patients' trust in their health care provider, which in turn influences their commitment, word-of-mouth, and future intentions to use the service.

As such, the following research questions are proposed:

What is the instrument that may be utilized to measure each dimension as well as the overall perceptions of patients' privacy in health care?

How do the patients' perceptions of privacy influence their level of trust in the health care provider, which further influences their commitment, word-of-mouth, and service usage intentions?

Privacy

In this section, the concept and definition of privacy with respect to the healthcare sector are discussed, a number of privacy dimensions that are employed in the development of a measurement tool are identified, and the operationalization of privacy constructs is presented.

Defining Privacy

Privacy is difficult to define. Despite many previous attempts, the very notion of privacy does not have a universally accepted definition. The lack of agreement on a definition of the concept of privacy demonstrates its complexity. It is easy to describe what constitutes privacy invasions or violations, identify privacy preferences, characterize the lack of privacy, and explore the functions of privacy. In contrast, it is very challenging to give a simple and universal definition to the fundamental and universal need, which is called privacy. The meaning of privacy is contingent on culture, situation and personal preferences (Woodward, Orleans, & Higgins, 2003). BeVier (1995) compares privacy to a “chameleon-like word” and argues that privacy is a very ambiguous concept which is usually interpreted in various ways depending on the interests of the party using it, ranging from information confidentially to personal autonomy.

To understand the complex definition of privacy, it is easier to group the existing definitions into two distinct but not mutually exclusive categories: 1) privacy as control over information; and 2) privacy as freedom from judgment (Introna, 1997).

Privacy as control over information. The famous legal theorists Samuel Warren and Louis Brandeis (Warren & Brandeis, 1890) define privacy as the right “to be let alone.” They emphasize the importance of individuals as being able to have *control* over their personal information. Autonomy is an important aspect of privacy since the individual is entitled to decide

what information can be known to the public. Without a person's consent, nobody has the right to access personal information or facts relating to his or her private life (Ramsay, 2010).

Altman (1976) defines privacy as "selective control of access to the self or to one's group" (p. 18). Based on this definition, Altman outlined several important characteristics of privacy. First, it involves diverse social *units*, such as person to person, person to group, and group to group. Second, privacy may be seen as a *bi-directional* process with an output (from an individual to the others) and inputs coming from the others to the individual. Third, privacy is a *selectively* controlled process, which means that individuals selectively regulate how much and with whom to interact. Fourth, there are two levels of privacy: desired and achieved. The *desired level* of privacy represents one's ideal level of interactions with others at some moment in time. *Achieved privacy* is one's *real* level of interactions with others. Privacy is an optimizing process which means that there is an *optimum level* of interaction when desired privacy equals achieved privacy. Deviations from an *optimum level* lead to dissatisfaction with interactions: too much interaction feels like privacy invasion, and too little feels like alienation. Fifth, privacy is a dialectic process that involves opposing feelings (e.g., a need to be alone and a need to be with others). Last, there are behavioral mechanisms that help people achieve the desired level of privacy; these include verbal and non-verbal behavior, environmental behavior (personal space and territory) and cultural mechanisms (Altman, 1975).

Privacy as freedom from judgment. The judgment from others illustrates the normative nature of privacy. The concept of privacy is shaped by social and cultural norms. People from different cultures may have different notions of privacy. However, most cultures universally recognize that some aspects of a person's life need to be protected from the evaluation or judgment of others (Johnson, 1989). To isolate and to keep culturally defined limits is an

important function of privacy. Private aspects of personal life should be free from judgment of others. Freedom from judgment and interferences reinstates personal values, gives a sense of protection, and creates a need for solitude when required.

Overview of Privacy Dimensions

The concept of privacy as a multidimensional construct has been described by using three principal dimensions: informational, physical, and psychological. These dimensions, identified by Burgoon (1982) and Parrott et al. (1989), are very practical and relevant for better understanding and analyzing the patients' perceptions of privacy in health care. Table 1 outlines the dimensions and their definitions.

Table 1

Second-Order Privacy Dimensions

Privacy Dimension	Definition
Informational privacy	The patients' perceptions of the degree of control over their personal information. Individuals want to have the right to determine how, when and to what extent their data may be released to another person. Overall, it reflects patients' control over the collection, storage, dissemination, and use of their personal information. Dimensions include: information acquisition and information ownership.
Physical privacy	The patients' perceptions of the degree of physical inaccessibility to others. It includes avoiding unwanted actions from others, such as invading personal space by the physical presence, touching body parts, observing or monitoring acts, video surveillance, overhearing sounds or noise, and smelling odor. Dimensions include: personal space and interactional space.
Psychological privacy	The patients' perceptions of the extent to which the physician respects patients' cultural beliefs, inner thoughts, values, feelings and religious practices, and allows them to make personal decisions. Dimensions include: personal values and decisional autonomy.

One of the major problems with measuring privacy in health care is that this construct is comprised of several dimensions. In the present study, these are informational, physical, and psychological privacy. Each of them, in turn, also consists of two different dimensions that are conceptually different. Therefore, a multi-dimensional privacy model should be developed.

There are two types of constructs: unidimensional and multi-dimensional (Wetzels, Odekerken-Schröder, & van Oppen, 2009). A unidimensional construct measures only a single dimension of the underlying latent variable. It is usually operationalized with reflective indicators (i.e., items) that are supposed to highly correlate with one another. The degree to which all indicators capture the measured concept is tested by several reliability measures, for example, Cronbach's Alpha (Nunnally & Bernstein, 1994). However, in some situations the construct may consist of several dimensions. If a multi-dimensional construct is operationalized with reflective indicators, it exhibits extremely low reliability because its indicators will be measuring different components that are not necessarily correlated. In the present case, for example, a doctor may ensure a high level of the patient's physical privacy but violate his or her informational privacy. If both of these concepts are measured in a single construct, the construct becomes unreliable and, therefore, not valid.

To avoid this situation, a multi-dimensional approach is suggested in this thesis. A multi-dimensional construct is the conceptualization of the phenomenon when it consists of two or more components. These components may not necessarily correlate with one another. In the present case, an increase in patient perceptions of physical privacy may emerge when the physician rearranges his or her office to give more personal space to the visitor. At the same time, this may not affect the level of psychological and informational privacy experienced by a patient. The same applies to changes in the levels of other constructs. This, therefore, justifies the

definition of a multi-dimensional construct consisting of three dimensions (Creswell, 2003; Nunnally & Bernstein, 1994). In this investigation, each dimension is treated as a distinct construct that forms part of overall (i.e., higher-order) privacy construct.

The first-order construct is referred to as overall or global privacy, measured by means of global measures. Global measures are indicators that reflect the general nature of the concept without referring to specific sub-dimensions. The second-order constructs are informational privacy, physical privacy, and psychological privacy. Each of them is also measured with global measures. The third-order constructs are operationalized with reflective indicators (i.e., not global measures). They include 1) information acquisition and information ownership (informational privacy); 2) personal space and interactional space (physical privacy); and 3) personal values and decisional autonomy (psychological privacy). The rest of this section discusses the development of these constructs and related measures in detail.

Informational Privacy

Informational privacy definition. Informational privacy refers to the patients' perceptions of the degree of control over their personal information when the physician collects, uses, disseminates and stores this information. As such, patients may want to provide only the information that is directly relevant to the health care services, determine how the physician uses it, control how, when and under what circumstances it may be transferred to other individuals and organizations, and be assured that it is stored appropriately in both electronic and written form. Thus, the patient' perceptions of informational privacy can be broken down into perceptions of their control over information a) collection; b) use; c) dissemination; and d) storage.

Informational privacy importance. The issue of confidentiality and trust between the physician and the patient is very important in medical practice (Gostin, 1997). Informational privacy is directly related to the concept of patient *confidentiality*, which refers to the physician's responsibility to protect the patient's personal information. The term confidentiality comes from the Latin word *confidere*, which means "to trust" (Larkin et al., 1994). Even though the notion of confidentiality is used interchangeably with the concept of privacy, the former is narrower in scope and does not reflect all aspects of a patient's privacy (Geiderman, Moskop, & Derse, 2006). In fact, confidentiality is one of the many factors contributing to the overall privacy concept.

The individual seeking medical help always has to reveal some of his or her private information. *Private information* refers to the information about the person that he or she does not want to disclose publically. It may include facts about personal life that are relevant to the medical assistance provided by the physician (Brann & Mattson, 2004). On the one hand, patients benefit when they reveal their relevant private information to physicians. An individual has to share his or her private information with the physician in order to receive medical help, and the physician should have access to this sensitive information to ensure the quality of care. On the other hand, patients may feel vulnerable. *Perceived vulnerability* refers to the patients' perceptions of risk when their personal health information is misused or disclosed. Most patients feel vulnerable when their sensitive information, such as sexual practices, bad habits, genetic information and illegal activities, becomes known to strangers. The perception of risk and vulnerability can be created if the patient's personal information becomes available to a large number of people, including friends, insurance agencies, and employers (Burgoon, 1982).

Informational privacy differs from psychological privacy because it involves an interpersonal aspect. In interpersonal interactions between the patient and the physician, the patient and various doctors, the patient and anyone who has access to his or her personal information, the patient's vulnerability to information leakages increases. Current healthcare has a very complex system involving multiple medical professionals interacting in the circle of care. Patients see a family doctor, specialists, nurses, and pharmacists in a variety of locations. Unintentional or intentional disclosure of confidential information, abuses of privileges by medical staff, and unauthorized intrusion to the medical information system from an outside source are the most common cases of informational privacy breaches. Research demonstrates that disclosures of confidential information made by the medical staff are as common as disclosures made by outside sources (Patel, Arocha, & Shortliffe, 2001).

Burgoon and colleagues (1989) classified a number of behaviors that patients perceived as informational privacy violations in doctor-patient interaction. They include: 1) sharing personal files with others; 2) sharing patients' personal discussions with others; 3) revealing patients' personal information to their employers; 4) criticizing patients in front of other people; 5) telling others what has been discussed during private meetings; and 6) interfering with patients' area of responsibility with respect to their personal information handling. However, Burgoon et al. (1989) did not distinguish between informational and psychological privacy. They believed that psychological and informational violations are interrelated. On the one hand, it is difficult to draw a line between informational privacy and psychological privacy because any disclosures of information may lead to psychological invasions. On the other hand, these concepts are theoretically different, and they may be measured from different perspectives.

Brann and Mattson (2004) identified two types of privacy violation, which they referred to as confidentiality breaches. They suggest that *external* confidentiality breaches occur when confidential information about the patient is disclosed by a family member or a friend who happens to be a staff member in a hospital. *Internal* confidentiality breaches take place when information is overheard in informal conversations among health care providers, between health care providers and patients, during health care providers' telephone conversations, and between health care providers and non-patients. Overall, there are many situations in which personal information is being transferred to unauthorized individuals.

Personal health information has a high value for individuals due to its sensitive and intimate nature. Many studies investigated attitudes towards health information privacy protection and addressed the disclosure of confidential health information (Peekhaus, 2008). Privacy breaches may have dire consequences for patients. For instance, some faced discrimination and lost their job, home, and partner. The disclosure of confidential information put at risk patients' health, and diminished their well-being (Brann & Mattson, 2004). Patients can easily identify privacy breaches and avoid looking for care at particular medical facilities where they experience or hear about actual or potential cases of confidential information disclosure (Whetten-Goldstein, Nguyen, & Sugarman, 2001).

The patients' perceptions of informational privacy are based on their beliefs about their legal rights and social norms. The increased potential for personal information to be spread and used by strangers has led to legal attempts to protect and guarantee privacy rights (Burgoon et al., 1989). For example, *the Personal Information Protection and Electronic Documents Act* (PIPED Act) establishes a set of rules for the collection, use and disclosure of personal information in a way that recognizes the privacy rights of individuals in Canada (Department of

Justice Canada, 2009). Personal Health Information Privacy Act (PHIPA) is the Ontario provincial privacy legislation. It defines *personal health information* as information that identifies the individual and can be used, manipulated or linked to the individual or to the information that matches or identifies this particular individual (Canadian Institutes of Health Research, 2001). PHIPA offers people the right to access their personal health records for the purposes of correcting their information (Cavoukian & Garcia, 2008).

Informational privacy dimensions. There are two key dimensions of the informational privacy construct: 1) information acquisition and 2) information ownership. Figure 1 visualizes the dimensions of informational privacy.

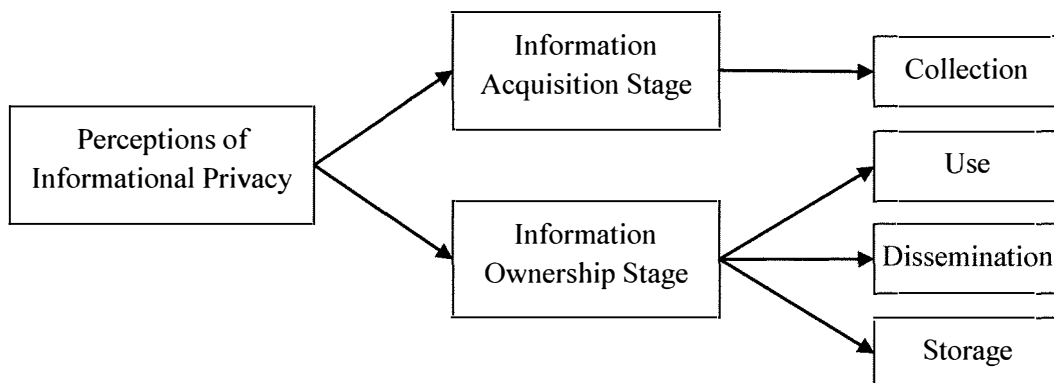


Figure 1. Dimensions of informational privacy.

In the *information acquisition stage*, the patient has an opportunity to form perceptions of the way the physician collects his or her information. Physicians collect and keep patients' illness histories for the purposes of making decisions on diagnosis, treatment, and care. The way the physician *collects* health information influences the patients' perceptions of informational privacy. For example, patients expect that their physician collects a *reasonable amount* of information which is *relevant* to their health concerns.

After information collection, the physician has ownership over the information shared by the patient. The *ownership stage* includes the patients' perceptions of the ways the physician uses, disseminates and stores this information. Ownership is a term that refers to processes through which co-owners (the patient and the physician) of private information negotiate privacy rules or the ways they manage private information (Petronio, 2002). Ownership represents responsibility for shared private information, rights and privileges that come as a result of sharing private information.

The *use* of information refers to the patients' perceptions of the way the physician utilizes the collected personal information. The physician uses their personal information to make diagnosis or treatment. When doing so, the physician is supposed to keep this information confidential and can not reveal any information to the second or third party. The physician and the patient are the *only* people who equally own the patient's private information.

Data collected by physicians are used for multiple purposes (e.g., treatment or compensation for mistake). There is a growing demand for the *dissemination* of medical records for treatment and research purposes. The modern healthcare system benefits greatly from scientific research that employs personal health information. Society has interests in scientific knowledge and discoveries. In addition, health information may become attractive to the third parties, such as insurance companies, future employers, banks, legal organizations and authorities, who potentially have interests in patients' health information (Canadian Biotechnology Advisory Committee, 2004).

The situation when personal information becomes accessible to total strangers or enemies (e.g., insurance companies) represents a privacy violation. Intentional and unintentional disclosures are two types of informational privacy violations. *Intentional disclosure* occurs when

health care professionals purposely disregard their patients' rights for confidentiality or knowingly use their authorized access to confidential information with the purpose that is not related to people's health care and treatment (Brann & Mattson, 2004). As such, *intentional disclosure* of collected confidential information refers to an inappropriate access/disclosure of personal information to unauthorized individuals.

Unintentional disclosure refers to an event when health professionals unintentionally or by mistake reveal confidential information. Unintentional disclosure may also happen as a result of someone (a visitor/stranger) overhearing the conversation or remarks made by the medical staff. For example, physicians, nurses and other hospital employees make inappropriate comments in public places, such as elevators, waiting rooms, cafeterias and registration desks, discuss patients' medical histories in the presence of others, publically comment on a medical condition of the patient, or carry written personal files that could be easily read by various unauthorized individuals (Ubel et al., 1995). Even though no names are usually mentioned, seemingly unidentifiable health information when shared in public has a high chance of being identified by friends, relatives and unauthorized visitors even when provided without specific facts (Brann & Mattson, 2004).

The collected data should not be used or accessed by unauthorized parties, and personal information should be protected from *unauthorized use and dissemination*. Information that has been collected for *one purpose* cannot be used and disseminated for other purposes. For instance, patients usually provide their background information, such as address, occupation and marital status, on initial application forms. However, if this information gets to a marketing department that starts sending advertisements and making unsolicited phone calls, the patient may feel a loss

of privacy due to lack of control over who has the information and how it is being used (Burgoon, 1982).

The collected personal health information is stored as paper-based files or electronic health records. Keeping patients' records in the digital format when compared to paper may give some advantages, such as reduced storage space, ease of maintenance, standardization, and accessibility. Better access to relevant health care information improves efficiency and allows doctors to make more informed decisions when it comes to diagnosing and prescribing medications, which improves patients' health care outcomes (Wynia et al., 2001). However, the main issue with electronic health records is that patients may not know if the record is stored securely.

Informational privacy variables. There are four types of variables that reflect each of the informational privacy dimensions: control, limited collection, relevance, and consent (see Figure 2).

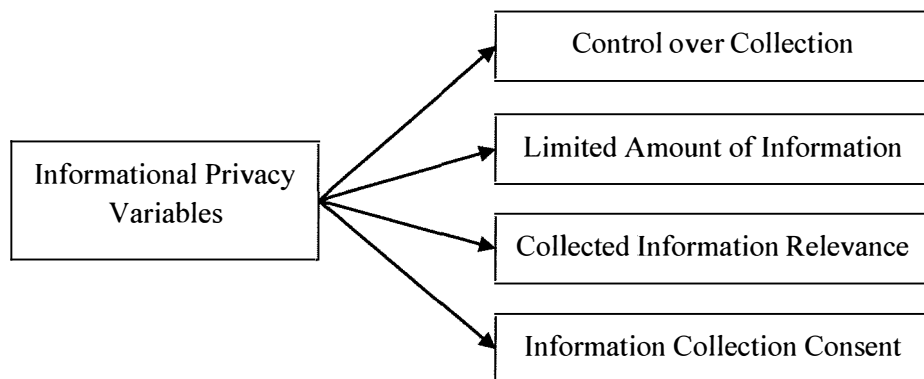


Figure 2. Informational privacy variables.

The idea of *control* is critical to the concept of privacy. The patients' perceptions of the level of control over their information are influenced by their experience during the processes of initial information collection, consequent use, dissemination and storage. The patients' sense of

vulnerability increases and their sense of control decreases when their privacy is threatened.

Control and vulnerability are issues that shape and determine the state of privacy (Dinev & Hart, 2004). The lack of control over personal information may affect the ability of patients to have an open discussion with their physician and impact their relationships with a doctor. As a result, if patients refuse to give complete information to their physicians, the physicians' ability to diagnose and treat their patients may be hindered (Malcolm, 2005). Medical doctors are official representatives who have the obligation to treat their patients and to use their health information in a way that patients believe they are in control over their privacy.

Limited amount refers to the amount of information that patients reveal to their physicians. Patients may feel uncomfortable or even threatened when their physicians collect, use, disseminate and store unreasonable amounts (i.e., too much) of personal information.

Relevance of information refers to the patients' perceptions of the degree to which the collected, used, disseminated and stored information is directly relevant to their health concerns. When information is not related (i.e., irrelevant) to the patients' concerns or health topics, patients may feel uneasy. However, this feeling of discomfort is justifiable when patients reveal relevant private information because their level of vulnerability is balanced by the expectation to receive medical help. For example, if somebody is experiencing a migraine, it may be reasonable for the physician to inquire about medical history of the parents. At the same time, asking to disclose extramarital affairs or intimate fantasies may be viewed as irrelevant to the problem.

Informed consent has become a common part of medical practice. Under the PIPED Act, health care providers are required to acquire patients' consent when they collect, use, and release their personal health information. When physicians ask their patients to provide informed

consent, patients may perceive that the physician is well-informed about their privacy and follows the required standards of practice.

Informational privacy item development. In this study, two dimensions of informational privacy were identified, such as information collection and information ownership. As discussed earlier, there are three components of the information ownership dimensions: information use, dissemination and storage. However, it may be very difficult for the patients to know every detail of the usage, dissemination and storage of their private information by their health care provider. For example, some may not be aware how this information is stored and who has access to it. Therefore, these three components were combined together to provide the survey respondents with a higher level of abstraction when responding to the items pertaining to the information ownership dimension. Specifically, instead of asking them about their perceptions of information use, dissemination and storage individually, they were asked to report their perceptions of privacy with respect to how their physician keeps their personal information in general.

Each third-order dimension was measured with four reflective items: control, limited collection, relevance, and consent. To measure the global perceptions of informational privacy, three global measures were proposed which measure both dimensions of informational privacy within a single construct. Based on the literature review above, the following items were developed (see Table 2).

Table 2

Informational Privacy Items (Note: this is the final questionnaire after face validity assessment)

Code	Dimension	Variable	Item
IA1	Information Collection	Control over collection	When my doctor collects my personal information, I am not worried about my privacy.
IA2		Limited amount	I am comfortable with the amount of personal information my doctor collects about me.
IA3		Relevance of collected information	My doctor <i>only</i> collects my personal information that is related to my health concerns.
IA4		Consent over collection	My doctor collects my personal information <i>only</i> with my consent.
IO1	Information Ownership	Control over use	When my doctor keeps my personal information, I am not worried about my privacy.
IO2		Limited amount	I am comfortable with the amount of my personal information my doctor keeps.
IO3		Relevance of used information	My doctor keeps my personal information that is <i>only</i> related to my health concerns.
IO4		Consent over use	My doctor keeps my personal information <i>only</i> with my consent.
GPLI1	Global info privacy		Generally, I am comfortable with the way my doctor collects and keeps my personal information.
GPLI2	Global info privacy		Overall, I feel at ease sharing my personal information with my doctor.
GPLI3	Global info privacy		When my doctor collects and keeps my personal information, I feel that my privacy is ensured.

Physical Privacy

Physical privacy definition. *Physical privacy* refers to the patients' perceptions of the degree of their physical inaccessibility to others. It includes avoiding various unwanted actions from others, such as invading personal space by the physical presence, touching body parts, observing or monitoring acts, video surveillance, overhearing sounds or noise, and smelling odor (Burgoon et al., 1989). For example, patients may not want anybody, except for the physician, to engage in physical contact with them or monitor their intimate actions.

Physical privacy importance. Physical privacy is critical for well-being. Patients, who believe that their physical privacy has been well addressed by the physician, have feelings of their own space, are relaxed and protected, become less anxious and feel in control.

Personal space and *territoriality* are two important conditions for the physical dimension of privacy. *Personal space*, also referred to as the “invisible bubble,” is the space surrounding a person’s body that protects and insulates him or her. *Territoriality* is a physical space (e.g., home, office) that a person believes to own. Territoriality refers not only to a physical space, but also to the area of expertise, social status, position or role in a specific group of people (Altman, 1975; Hayter, 1981). The territoriality concept illustrates the state characterized by control, possessiveness, and authority. Patients may experience fear and anxiety because illness may affect their roles, relationships and social status. Territoriality has four functions: privacy, security, autonomy and self-identity. Age, sex, state of health, and culture may influence territoriality. For example, older people feel safer and more in control in their own homes than younger people (Hayter, 1981).

Lyman and Scott (1967) identified four types of territory: public, interactional, home and personal. *Public space* is accessible to all people (e.g., park). *Interactional space* is intended to be used only by approved participants (e.g., gym membership, movie goers). *Home space* entails more restricted access only to those who own the territory (e.g., neighborhood, car, office). *Personal space* includes the human body itself and the space surrounding it, which may be referred to as the body buffer zone. It represents individual privacy by limiting access to the person’s body.

Conklin (1976) proposed a different classification approach to privacy that is very relevant to the description of physical privacy developed by Burgoon (1982). *Remote*

observational privacy includes freedom from observation by another person who is not physically present (e.g., observation of real-time or recorded actions through camera or radio).

Direct observational privacy is freedom from observation by an observer who is physically present and gathers information directly through sight, sound and smell. *Contact privacy* is freedom from touch, restraint, or inferences by others that may include the use of verbal language, legal or administrative command, and other unwanted physical contact. Conklin (1976) suggests that privacy violations may be passive, such as remote and direct observational privacy inferences, and active, such as contact privacy breaches. This classification approach is not exhaustive, but it can be effectively applied to understand the key dimensions of physical privacy in health care.

Patients, however, have a very limited right to physical privacy due to the nature of the service they receive. First, they have to give up some physical privacy to allow their doctors or caregivers to make a medical examination and do a treatment. Second, illness itself requires people to make some changes and adjustments (e.g., stop working, leave safety of the home, expect some unpredictable news, etc.) that reduces their degree of control over their environment (e.g., less control over their body and not being able to “defend the territory.”) Thus, patients believe that it is the responsibility of their physicians to ensure that their physical privacy is protected.

Physical privacy violations may take different forms, such as walking into a room without warning, watching intimate actions (i.e., undressing), entering personal space, standing extremely close, putting arms around the patient, and touching the patient unexpectedly (Burgoon et al., 1989). For instance, Parrott et al. (1989) report that patients consider situations as privacy violations when they have to undress parts of their body unrelated to the nature of

their concerns or to the purpose of their visit. The physical dimension of privacy is important in maternity, post-natal and midwifery care. For instance, research shows that physical environment in a delivery room, touching, undressing and sounds are important determinants of a patient's experience (Burden, 1998; Leino-Kilpi et al., 2002). Especially, privacy is critical in situations when sensitive topics are discussed, for example, when taking history from a patient with sexual problems or during pap-test screenings (Sarkadi & Rosenqvist, 2001).

Privacy is more difficult to protect in some situations than in others. For example, the emergency department (ED) is generally crowded with patients, visitors, staff members (e.g., attending physicians, consultants, and residents), law enforcement officers and others. ED has open spaces and little sound isolation that provides minimal physical privacy. Hospital elevators and hallways are places where physicians commonly violate patients' confidentiality by openly discussing their cases. Medical receptionists located in open spaces ask direct personal questions to patients related to the nature of the visit and symptoms (Flegel & Lant, 1998; Moskop et al., 2005).

Physical privacy dimensions. Personal space and interactional space are the two dimensions of physical privacy in health care. These dimensions are utilized in the framework that conceptualizes the patients' perceptions of physical privacy during dyadic interaction with the doctor. Public and home spaces are less applicable with respect to patients' visits to medical practitioners, and therefore are excluded from this study. First, doctors interact with their patients in public places very rarely, mostly in emergencies. Second, even though some doctors visit their patients at home, those cases are uncommon in Canada; therefore, the privacy dimension reflecting home territory privacy would not apply to most individuals from the general population. Figure 3 visualizes the dimensions of physical privacy.

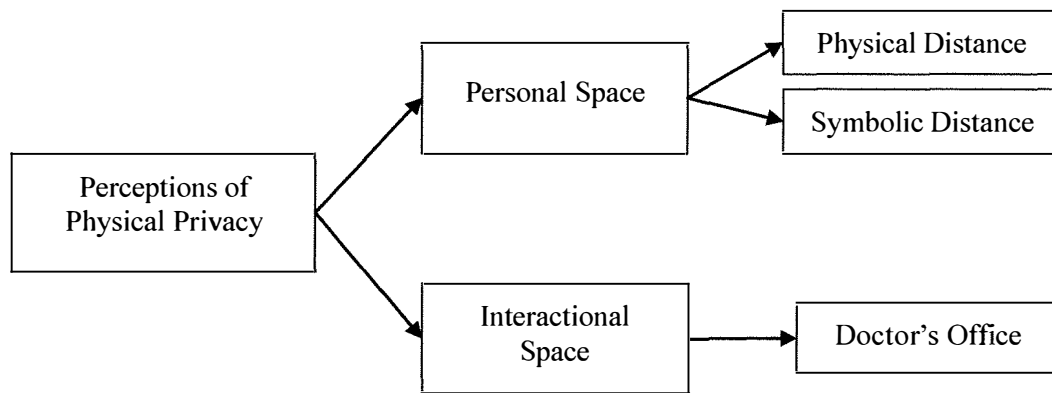


Figure 3. Physical privacy dimensions.

Personal space, also referred to as body space, does not have a definitive physical boundary; it is subjective and has a multiplicity of meanings. In the past, the concept of physical space was described as a physical zone, physical distance or position which allows researchers to observe or to measure the personal space. However, this approach was criticized as being too simplistic to explain antecedents of individual behavior. Instead, Leibman (1970) suggested that personal space is a psychological or perceptual variable. In fact, it is difficult to physically measure the distance between one person and another to determine personal space privacy limits since all individuals have their own beliefs, expectations, and norms. Thus, personal space represents a set of personal expectations about the ways the doctor accesses the patient's body and the immediate space around the body that is used by the doctor.

Physical distance (physical zone) and *symbolic distance* are important components of personal space for the clients' physical privacy. Research shows that people choose *an optimum interaction distance* when they communicate with others depending on their goals and degree of familiarity with these people (Altman, 1975; Dinges & Oetting, 1972; Patterson & Sechrest, 1970). In fact, the way people use their personal space depends on their interpersonal goals and involves achieving a desired or satisfying level of psychological distance (Leibman, 1970). The

symbolic distance does not include physical zone spacing but creates a psychological distance. For example, the client and the doctor can be very close in physical proximity but be symbolically distant from each other when the doctor behaves formally and professionally.

For the patient, the doctor's office is considered an *interactional space*. Patients' access to the doctor's office is granted on the basis of their health concerns. Most patients perceive the physician's office as a temporary territory. However, they should feel that this space has been created especially for them, and that they have some authority over this environment. Therefore, the physical arrangement of the room, such as chairs, tables, colors, light, temperature, acoustic control and equipment, should indicate that it is the patient who is in full control over this territory (Baillie, 2009; Hayter, 1981). In other words, the architectural features of a medical office should be used not only for functional purposes but also for privacy facilitation (Leino-Kilpi et al., 2001).

Physical privacy variables. Similar to informational privacy, the same four types of variables that reflect each of the physical privacy dimensions were used: control, limited collection, relevance, and consent. However, variables pertaining to personal space were adapted to fit the definition of the construct and changed to: control over personal space, limited physical distance, relevance of the doctor's actions, and control over personal space. With respect to interactional space, only two variables were relevant: control over physical environment and limited exposure to others. Figure 4 visualizes these variables.

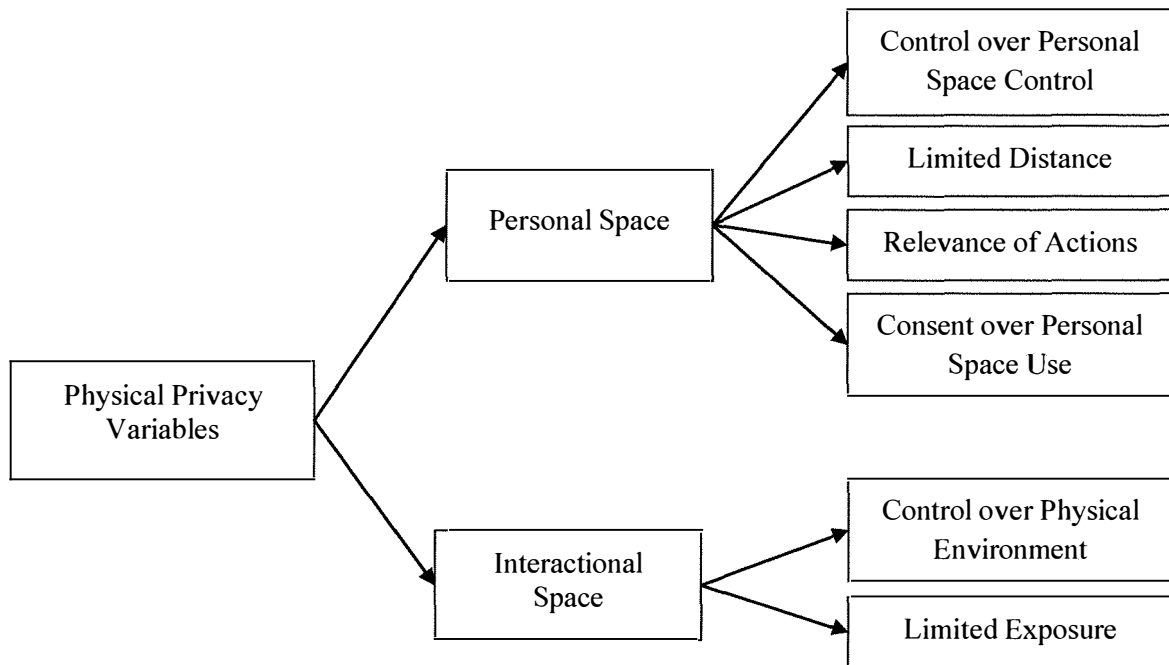


Figure 4. Physical privacy variables.

With respect to personal space, patients' ideal expectations about the ways the doctor should approach their personal space must match their goal which is to keep a desired level of psychological distance that facilitates physical privacy. When patients' expectations about the ways the doctor accesses their body and the immediate space around the body are confirmed, patients would feel a sense of *control over their body and personal space*.

In situations when the physician has to approach the patient very closely, he or she is expected to behave formally. Formality and professionalism represents *symbolic distance*. For example, the physician would follow the prescribed role behavior (e.g., examining body in a certain way, using special medical tools, avoiding direct excessive eye contact, etc.) By choosing neutral appropriate physical distance (*limited distance*) during interactions with patients, the physician creates the positive perceptions of physical privacy.

The *relevance of actions* for personal space refers to patients' expectations about the ways the physician touches, examines, and observes their body parts that are relevant to health

concerns. This way, the doctor's actions are justifiable. Even though physical contact takes place, the doctor keeps a symbolic distance to ensure a certain level of privacy and the patients feel psychologically comfortable.

When the doctor behaves professionally and shows respect for the patient's physical privacy, he or she obtains the patient's *consent* over the use of his or her personal space. For example, the doctor may ask the patient when he or she is ready for a physical exam. By doing so, the physician psychologically prepares the patient to give up some physical privacy. There are many ways the physician obtains patients' consent to be examined and treated. Ultimately, the patients' readiness indicates consent to the doctor's actions.

With regards to interactional space, the patients' perceptions of the level of *control* over the room may be achieved by furniture arrangement that indicates to the client that he or she has some authority to be here. *Limited exposure* means that the patient feels secure in the physician's office. The doctor's office is supposed to be a protected zone that keeps others from seeing, hearing, or knowing what is happening inside. Other variables, such as relevance and consent, are not directly applicable to interactional space.

Physical privacy item development. Based on the discussion above, the personal space and interactional space dimensions were operationalized. The higher-order physical privacy construct was operationalized with two items which combine the attributes of both personal and interactional space. Table 3 presents the items.

Table 3

Physical Privacy Items (Note: this is the final questionnaire after face validity assessment)

Codes	Dimension	Variable	Item
PPS1	Personal space	Control over personal space	When I interact with my doctor, I feel a sense of control over my body and personal space.
PPS2		Limited distance	My doctor chooses appropriate physical distance during my appointments.
PPS3		Relevance of actions	My doctor <i>only</i> examines or treats parts of my body that are related to my health concerns.
PPS4		Consent over personal space use	My doctor verbally informs me every time he/she touches me.
PPI1	Interactional space	Control over physical environment	The space and furniture arrangement in my doctor's office creates a sense of privacy.
PPI2		Limited exposure	When I am in my doctor's office, my actions and conversations may not be observed or overheard by people outside.
GLPH1	Global physical privacy		When my doctor examines me and my body, I feel that my privacy is ensured.
GLPH2			I feel a sense of privacy in my doctor's office.

Psychological Privacy

Psychological privacy definition. *Psychological privacy* refers to the patients' perceptions of the extent to which the physician allows them to participate in their health care decisions and maintain their personal and cultural values, such as inner thoughts, feelings, cultural beliefs and religious practices. The key function of psychological privacy is to provide patients an opportunity to keep their values, emotions and thoughts without being penalized or influenced. When patients are allowed to rationalize their behaviors and make choices without the risk of being judged or receiving a contradictory feedback from their physician, they have a chance to reinstate their self-image and dignity, and feel respected and valued.

Psychological privacy importance. The importance of the psychological dimension of privacy is emphasized by the functions it performs. Patients may perceive an illness as a stressful condition that threatens their self-image and self-esteem. The psychological function that allows patients to have some level of control over their self-image and self-esteem is called *self-protection* or *psychological insulation* (Dosey & Meisels, 1969). Self-protection is similar to the function called *concealment* (Jourard, 1966), which refers to the situation when a person needs to withhold information from others in order to control others' perceptions of the self. Concealment allows individuals to hide information from others to fulfill the need to be an enigma to the outsiders, and have a chance to live without having feedback from others (Jourard, 1966). Self-protection is also used to reduce excessive sensory stimulation. Bostwick (1976) calls this privacy "the privacy of repose" or freedom from anything that disturbs or excites the person.

Laufer et al. (1973) suggests that psychological privacy is evident in three dimensions: the self-ego dimension, the control dimension and the phenomenological dimension. The *self-ego* dimension deals with the development of autonomy as an important part of self-expression and freedom to be alone or independent from the social and physical environment. The control dimension addresses an individual's ability to use control over self, information, and behavior that are critical to privacy. The phenomenological dimension refers to psychological experience that consists of affective and cognitive components.

Rawnsley (1980) describes the psychological functions of privacy as three groups: 1) antisocial; 2) restorative; and 3) self-actualizing. The *antisocial function* of privacy, which has a negative connotation, explains when people remove themselves from the group. The *restorative function* explains when an individual needs to get away from social pressure. The *self-actualizing* function refers to the personal need to fulfill intimate acts and self-development.

Psychological privacy may be described as a safe *psychological zone* in which a patient is allowed to apply his or her personal and cultural values when it comes to patient-physician interaction (Bostwick, 1976; Burgoon, 1982). Patients need to experience *freedom from power and influence* of others that offers a degree of psychological privacy (Kelvin, 1973).

Psychological privacy also includes cognitive and affective components (Woodman et al., 1982). The *cognitive component* refers to the patient's inner thoughts. The *affective component* explains the patient's feelings and emotions that he or she experiences.

Psychological privacy conveys *freedom from cognitive and affective interferences* (Pierce, Sarason, & Sarason, 1996). These are intrusive and unwanted thoughts that patients may experience when psychological privacy is invaded by their physician. Inferences that appear during a medical appointment are different from those in ordinary life. For example, if a doctor makes a comment about the patient's unhealthy smoking habits, the patient may assume that the comment is related to his or her complaint about the cough. In contrast, if the patient complains about back pain and the doctor comments on smoking, the patient may see no relationship between the problem and the statement, and assume that the doctor simply judges him or her instead of providing necessary medical assistance. As a result, patients whose psychological privacy is not addressed by their physician may feel anxious, incapable, and devalued that leads to negative behavioral responses (e.g., disagree with the doctor's recommendations to take medication) and thoughts that the patient "deserves the illness."

Research shows that the type of questions asked during an appointment may influence the patients' perceptions of psychological privacy (Parrott et al., 1989). Some topics, such as asking a patient about leisure activities, suggesting participating in a support group or verbal comments on body, are considered too informal and inappropriate. Further, the physician's references to

morality and responsibility may be perceived as privacy violations. However, it is sometimes unavoidable for the physician to ask questions about very sensitive topics. Questions about patients' sexual preferences and practices become more common with the spread of AIDS. Reassuring and preparing the patient helps reducing the level of discomfort. The physician should be prepared to facilitate a medical interview that consists of very sensitive topics. Psychological privacy helps patients reflect on inner feelings and thoughts that were not installed when they were vulnerable or sick, and create a sense of self-identity, empowerment and autonomy.

Psychological privacy dimensions. Individual values and decisional autonomy are the two dimensions of psychological privacy. These dimensions are utilized in the framework that visualizes the patients' perceptions of psychological privacy (see Figure 5).

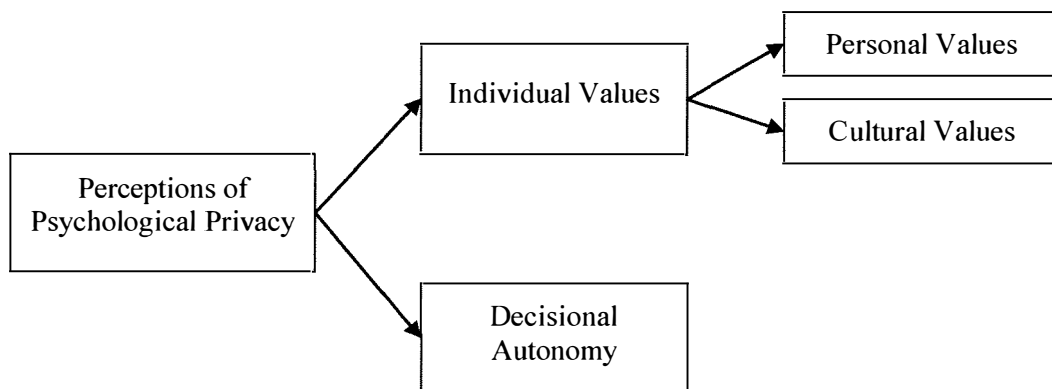


Figure 5. Psychological privacy dimensions.

Individual values refer to the patients' perceptions of whether the physician respects their personal and cultural values. Values are shared beliefs or norms that have been internalized by people (Milberg et al., 1995). Individual or personal values are important principles that influence individual behavior and motivation (Parks & Guay, 2009). People consider values the central aspect of the self (Bardi & Goodwin, 2011; Lwin & Williams, 2003). Individual values

are a very important part of self-identity. In a situation when a person requires medical help and struggles with unpleasant health conditions, individual values are a significant source of strength (Haslam et al., 2009). Further, when a person's health is changing, the stable individual values act as a counterbalancing and stabilizing force. Thus, individual values can be compared to an anchor that holds an individual in place while the illness pushes him or her deeper into the unpredictable.

Decisional autonomy concerns the patient's right to have a personal choice and to make personal decisions. Decisional autonomy is an important part of the contemporary medical practice. This trend has been motivated by the change from the paternalistic model of care to the autonomous model in which the patient's sense of self-determination plays a central role. Consumers want to be active participants in their health decisions and make informed decisions about their treatment (Guadagnoli & Ward, 1998). The autonomous person has the *right to choose* the treatment, accept the doctor's recommendations, decline suggestions, and act based on his or her *personal and cultural values* (Beauchamp & Childress, 2001). Health care professionals have to respect the patient's autonomous choices, preferences or wishes to make decisions, to receive information and to act.

For example, the Navajo Nation patients prefer receiving negative information about their health risks in a positive language. A health care provider unfamiliar with this situation may use a negative terminology that would unintentionally influence the Navajo patients' choice. Some may decide not to have a procedure only because of the way information was presented. Instead, the physician is advised to learn in advance about the patients' cultural values and beliefs and to help them make health *decisions* without compromising their individual values (Beauchamp & Childress, 2001).

From the paternalistic perspective, a health care professional has medical knowledge, training and authority to determine the patient's best interests (Beauchamp & Childress, 2001). Paternalistic actions are intentionally directed at changing another person's (the patient's) preferences to either avoid harm or benefit the person. At the same time, the patient's opinion may not be considered. Thus, the physician who applies the paternalistic approach can be perceived as disrespecting patients' individual values and autonomy.

Consent is the basic principle of autonomy (Beauchamp & Childress, 2001). There are two forms of consent: *non-express* and *express (also referred to as informed)*. In medical practice, non-express consent may take three forms: tacit, implicit and presumed. *Tacit* consent refers to the passive type of agreement which is expressed silently. For example, a patient does not openly object when the doctor says that he or she needs to take a blood test. The physician however needs to be sure that the patient acts voluntarily, and his or her rights are respected. *Implicit* consent is assumed but not explicitly stated. For example, the physician may assume that the patient implicitly agreed to a medical procedure when he or she came to the hospital for a specific treatment. *Presumed* consent means that the physician is already familiar with the particular patient's preferences and individual values. It is however important that health care professionals consider not only non-express consent but also the clearly stated choice.

Express (or informed) consent is synonymous with mutual decision-making (Beauchamp & Childress, 2001). It refers to the patient's explicitly stated agreement on medical intervention or participation in research. Express consent represents a legal document acquired from patients before any medical or research procedure, and it is similar to a contract between the patient and the physician or researcher. In this context, the informed consent implies the patient's autonomous choice.

Informed consent includes two elements: information and consent (Beauchamp & Childress, 2001). The information component allows the physician to disclose information to the patients because it is assumed that they have an adequate level of knowledge to understand the disclosed information. The consent component refers to patients' intentional decisions to authorize an intervention or treatment. The disclosure of information to patients should help them make better decisions. By disclosing information, the physician includes patients in decision making. Therefore, patients perceive themselves as well-informed, autonomous decision makers.

Psychological privacy variables. Similar to informational privacy, the same four types of variables that reflect each of the psychological privacy dimensions were used: control, limited collection, relevance, and consent. However, variables pertaining to individual values were adapted to fit the definition of the construct and changed to: control over values, limited invasiveness, respect of values, and freedom of values. With respect to decisional autonomy, three variables were relevant: control over health decisions, inclusiveness and decisional consent. Figure 6 visualizes these variables.

Control over values refers to the patients' expectations of the ways the doctor provides a safe psychological environment. This perception of control allows them to feel that their identity and self are not threatened when they are vulnerable due to an illness or specific health concerns. *Limited invasiveness* is also an essential part of psychological privacy. The physician is supposed to allow patients to have a safe psychological zone or freedom from cognitive and affective interferences during an appointment. *Respect for values* refers to the patients' perceptions of the degree to which the physician respects their individual and cultural values. However, it is not sufficient for the physician to only respect the values; the physician should not impose his or her

own values on patients. Patients may be disinclined to share information if they feel that the physician may interpret it negatively. Patients should feel that their provider will be protecting their personal values, attitudes and beliefs and will not judge them (Britto, Tivorsak, & Slap, 2010). Therefore, *freedom of values* refers to the patients' perceptions of the ways the physician does not impose his or her values, beliefs, and thoughts on the patients.

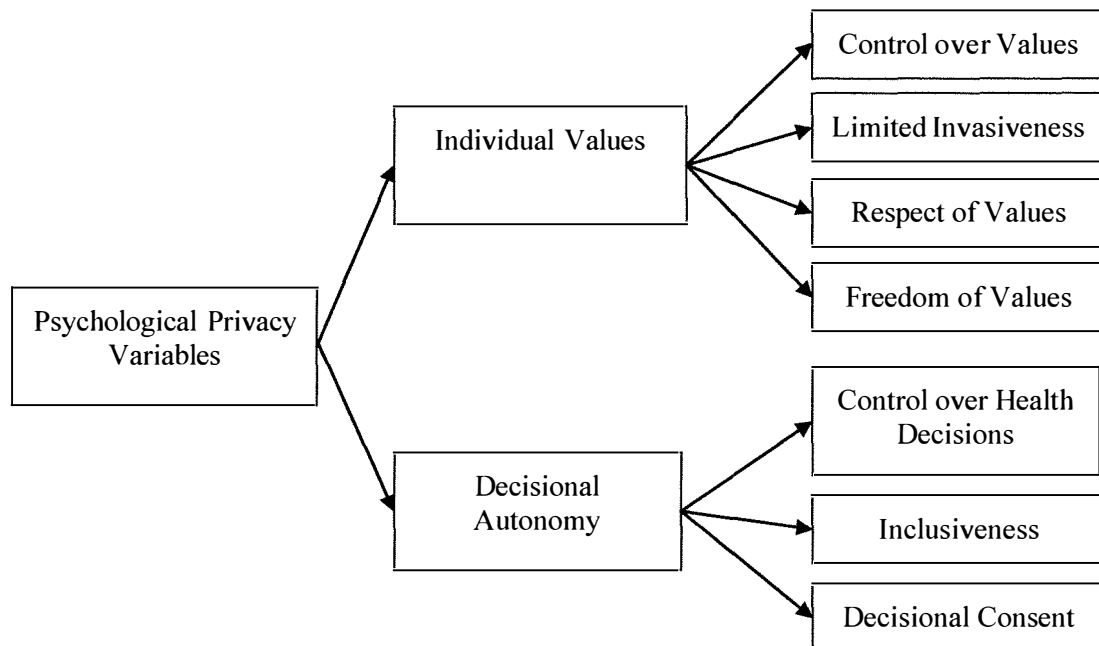


Figure 6. Psychological privacy variables.

A desirable level of *control over health decisions* is achieved when patients have been actively involved in decisions. The physician is expected to provide enough information to the patient to make an informed decision and show an adequate level of respect of patients' choices. *Inclusiveness* means that patients feel being included in all treatment decisions. The sense of inclusiveness is generally based on patients' subjective feelings that the physician answered their questions and provided enough information on the condition, treatment and risk. *Decisional*

consent refers to the degree to which the patients approve the decision that has been achieved by both parties.

Psychological privacy item development. Based on the discussion above, the personal and cultural values, and decisional dimensions were operationalized. The higher-order psychological privacy construct was operationalized with two items which combine the attributes of both individual values and decisional autonomy. **Table 4** presents the items.

Table 4

Psychological Privacy Items (Note: this is the final questionnaire after face validity assessment)

Codes	Dimension	Variable	Item
PSI1	Individual Values	Control over personal and cultural values	When I interact with my doctor, I don't have to hide my personal and cultural values.
PSI2		Limited invasiveness	My doctor does not question my personal and cultural values.
PSI3		Respect	My doctor acts in a way that is respectful of my cultural norms and customs.
PSI4		Freedom of values	My doctor does not impose his/her personal and cultural values on me.
PSA1	Decisional Autonomy	Control over health decisions	I am in control of my health decisions.
PSA2		Inclusiveness	My doctor considers my opinion in his/her decisions about my health.
PSA3		Decisional Consent	My doctor makes decisions about my health with my consent.
GLPS1	Global psychological privacy		When I visit my doctor, I always remain true to my personal and cultural values.
GLPS2			During my interactions with my doctor, I always participate in all decisions on my health.

Global Measures of Privacy

In this study, three second-order privacy constructs were proposed: informational privacy, physical privacy, and psychological privacy. It is however important to develop a global measure of privacy which measures the overall perceptions of privacy (i.e., first-order construct) and does not concentrate on a particular privacy dimension. Based on the extant literature, five variables were identified: overall privacy, level of privacy, satisfaction with privacy, level of privacy protection, and level of a doctor's professionalism when handling privacy issues. In addition, one negatively worded (i.e., reversed) variable was proposed which reflects overall privacy. Figure 7 outlines privacy variables, and Table 5 presents global privacy items.

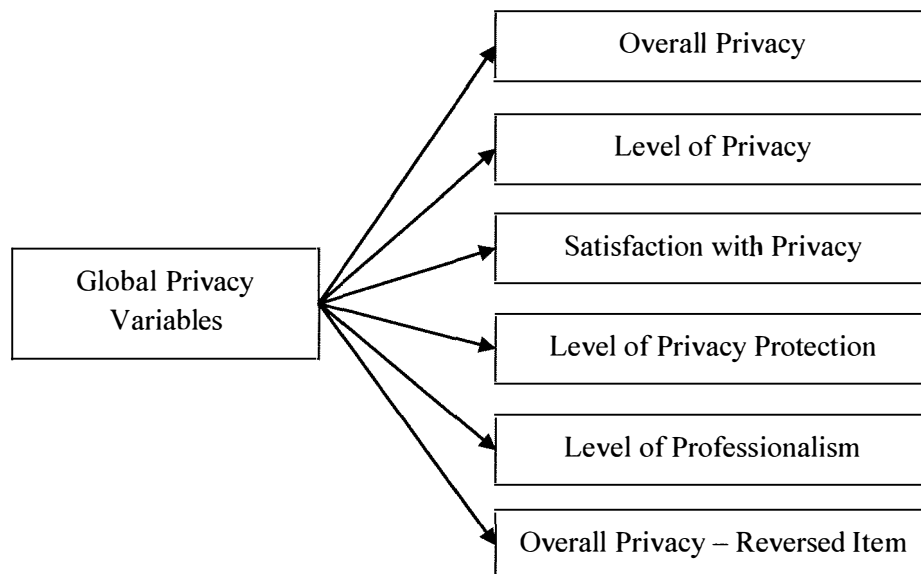


Figure 7. Global privacy variables.

Table 5

Global Privacy Items

Codes	Variable	Item
GLP1	Overall privacy	Overall, my doctor provides an acceptable level of privacy.
GLP2	Level of privacy	My doctor ensures my privacy very well.
GLP3	Satisfaction with privacy	I am fully satisfied with how my doctor addressed my privacy issues.
GLP4	Protected privacy	Every time I visit my doctor, I feel that my privacy is fully protected.
GLP5	Professional	My doctor addresses my privacy concerns in a very professional manner.
GLP6	Overall privacy – reversed Item	Every time I interact with my doctor, I feel that my privacy is invaded.

Outcomes of Privacy Perceptions

Defining Patient

Avedis Donabedian, one of the most prominent theorists in health care quality, argues that amenities are an important element in the quality of care. Amenities are considered part of interpersonal relationships and have an impact on patient satisfaction (Donabedian, 1980). Amenities include a nice waiting room, a comfortable examination room, clean sheets, a soft bed, phone, and delicious food. To clarify the category of amenities, Donabedian uses abstract concepts, such as promptness, comfort, courtesy, acceptability, and privacy. Thus, privacy is recognized as an important part of patient satisfaction and a standard of the quality of interpersonal care.

The physician is supposed to act according to societal expectations. There are five necessary components describing the physician's role. *Technical competence* refers to the physician's ability to apply medical science to help the patient recover from illness. *Universalism* means that the physician treats any person who needs medical help using universally acceptable

treatment. *Functional specificity* refers to the expectation that the physician practices only within his or her area of expertise. *Affective neutrality* corresponds to the physician's ability to be objective or emotionally neutral, and to express his or her concern in a professional manner. *Collectivity orientation* states that the physician places the welfare of the patient before his or her own welfare in the practice of medicine. In the context of medical practice, the physician is released from certain societal constraints. These include the necessity to invade the patient's privacy only for the purpose of medical care (Leigh & Reiser, 1980). On the one hand, the patient is entitled to a certain degree of privacy when treated by the physician. On the other hand, the physician needs to obtain much of the patient's personal information. It is this ambiguity that makes the concept of privacy of parsimonious significance in the healthcare sector.

The terms "patient," "consumer," "customer," and "client" are currently being used interchangeably by health care providers, which reflects the complexity of the contemporary healthcare system. The term "consumer" refers to anybody who has a potential to utilize health care products and services. The "customer" is someone who actually uses health care services. The "client" is a customer who uses health care services rather than products. A client-provider relationship may entail a continuing, symmetrical and personal relationship with the health care physician or doctor. The term "client" entails more respect than the term "patient" (Thomas, 2008). However, the term "patient" is more relevant when it comes to describing the help-seeking behavior. In addition, patient also has a positive connotation. Patient-driven health care facilitates the collaboration of physicians and patients, when the physician is considered a colleague and an advisor (Swan, 2009). Therefore, in this thesis the term "patient" is used with respect to individuals receiving health care services.

Patient is a person who asks for or being given medical care. In medical help-seeking behavior, a patient decides to change his or her health condition, makes an appointment, and visits the doctor. Help-seeking behavior may become far more complex and may vary considerably depending on many factors. The patient's personal characteristics, such as socioeconomic class, age, religion and origin, stress, previous experience, and influence from relatives or friends, affect the ways the patient behaves. Society provides specific sick-role expectations and exemptions. The patient who becomes ill adopts sick-role behavior that accords with societal expectations. The physician and the patient usually share common social expectations (Leigh & Reiser, 1980).

Trust

In this study, it is suggested that trust in the physician is the key consequence of privacy perceptions. Researchers from a variety of disciplines, such as psychology, economics, sociology, political science and management, have examined the concept of trust in different contexts over the years (Bhattacharya, Devinney, & Pillutla, 1998; Grabner-Kräuter & Kaluscha, 2003). There is no universal definition of the concept of trust. Generally, it has been defined differently depending on the field of study. Health researchers have approached the conceptualization and definition of trust in the patient-physician relationship in various ways.

Anderson (1990) defines a *patient's trust* as a belief that the physician acts in the best interests of the patient; the physician is able to provide the necessary support and help relating to diagnosis and treatment. This definition of interpersonal trust is practical in the context of a patient-physician relationship and can be used to study the patient's behaviour that is related to the continuity and management of care. Trust refers to positive expectations regarding the doctor's conduct, including privacy expectations (Lewicki, Mcallister, & Bies, 1998).

Empirical research on patient trust is still limited and not well-understood (Pearson & Raeke, 2000). It is not clear how to combine measures of trust with measures of confidentiality (Hall et al., 2001). Vulnerability is an essential component of trust. Barney and Hansen (1994) define trust as a shared belief that exchange parties will not exploit one another's *vulnerabilities*. Vulnerability is inevitable in health care. The patient may experience physical pain and psychological discomfort. Often, the patients do not have sufficient insights about the causes of their illness or concerns. Thus, the patient constantly experiences situations when she or he feels vulnerable.

Researchers from many disciplines recognize the value of trust and trust relationships (Corritorea, Krachera, & Wiedenbeck, 2003), especially, in uncertain and risky situations (Bhattacharya et al., 1998). Physicians may not have definitive answers about many medical conditions, and some diagnoses may sound unpleasant or life-threatening. Physicians may need more information from patients to come up with better treatments and diagnoses. The patient and the physician have to be involved in an extensive process of communication that requires some level of intimacy and trust. Trust is an essential condition of privacy (Churchill, 2009) because the patient may not share private information without having trust in the physician. Thus, interpersonal trust between the patient and the doctor is considered an important outcome of health care.

Currently, only about 46% of Canadians have a great deal of trust in their doctors (EKOS Research Associates, 2007). Trust plays an important role when patients disclose their personal and sensitive information. It is important for patients to be able to reveal their personal information. Patients have to believe that their physicians will be able to protect their personal information. Thus, when patients believe that their physician is highly motivated to ensure their

privacy, they trust this physician to a greater extent. Therefore, it is suggested that the overall privacy perceptions have a positive direct effect on the degree of trust in the physician.

Trust is also critical because it helps patients overcome a sense of vulnerability and risk, and become involved in health-beneficial behaviours. Trusting relationships encourage patients to ask for medical help, to adhere to treatments, and to return for follow-up appointments (Thom, Hall, & Pawlson, 2004). Trust influences the patient's intentions to remain with the same physician and to recommend his or her services to others (Hall et al., 2001). Therefore, there are three major outcomes of trust, such as commitment to the physician, positive word-of-mouth, and intentions to stay with the same physician in future, which are discussed in more detail below.

Commitment

Commitment and trust are significant components of patients' privacy. Commitment and trust lead to behavior that is beneficial to both the patient and the provider. *Commitment* to the health care service provider is defined as the patient's need to maintain a relationship with a particular provider. It includes *an affective* and *continuance component* (Fullerton, 2003; Morgan & Hunt, 1994). *The affective component* entails patients' emotional attachment to their provider. *The continuance component* or *continuity* in primary care refers to the relationship that develops between a doctor and a patient that continues further than a particular incident of illness (Haggerty et al., 2003). Continuity of care has been related to satisfaction with doctor-patient relationships and health care. Continuity positively influences patients' adherence to treatment and acceptance of preventive services (Stokes et al., 2005). Continuity of care facilitates the development of an ongoing relationship between the doctor and the patient (personal continuity), helps keeping track of important health information (informational continuity), and provides

coordinated and consistent approach to the management of care (management continuity) (Crooks & Agarwal, 2008).

Informational continuity allows the transfer of important health information about patient diseases, preferences, and values from one physician to another. It also helps to keep track of health care events and provide specific services. *Management* continuity is crucially important for patients with chronic conditions and complex illnesses. It allows developing management plans, providing a sense of predictability and offering access to a broad range of services.

Personal continuity, also referred to as *relational* continuity, is important for primary and mental health care because it facilitates the development of a consistent relationship between the physician and the patient (Haggerty et al., 2003). Thus, continuity allows the patient to have a sense of predictability, consistency and flexibility that benefits the patient-physician relationship over time.

Personal continuity is characterised by the presence of commitment, trust and responsibility (Pandhi & Saultz, 2006). The patient's commitment to a particular provider helps the doctor to work efficiently with the patients that facilitates the improvement in patients' quality of care. Health care providers are able to keep and update information relevant to the particular patient, optimize outcomes of care and minimize the overuse of health care resources.

Trust strongly predicts patients' commitment to their service providers. The study that assessed the strength of physician-patient relationships found that patients' trust in their physicians was a strong predictor of their commitment, defined as continuity of care (Safran et al., 2001). Keating et al. (2002) established that most patients who trusted their healthcare providers were less likely to think about changing their primary care providers. As such, commitment leads to a cooperative and continuous relationship (Morgan & Hunt, 1994), and it

reflects a repeated use of the same service or repeated use of the same doctor. In addition, commitment has a direct effect on positive word-of-mouth.

Word-of-Mouth

In the literature, communication sources are divided into *informal and formal*. Family, friends, and associates are the primary informal source of health care information. Physicians, other health care providers, pharmacists, social workers, psychologists, and counselors are the formal source of health care information. Mass media, newspapers, magazines, radio, television, Internet, and books are informal sources (Thomas, 2006).

Prior research demonstrates that trust facilitates the presence of word-of-mouth communication (Torres, Vasques-Parraga, & Barra, 2009). *Word-of-mouth* (WOM) refers to oral, person-to-person communication among peers, friends or family members with the purpose of sharing information. WOM is potentially considered important by both information communicators and information receivers. Word-of-mouth studies are also relevant in health care. Recently, researchers have realized that positive WOM has a strong effect on the long-term success of service providers. In contrast, negative word-of mouth may hurt the physician's reputation and practice (Gelb & Johnson, 1995).

Research shows that positive experience with a health care provider increases trust which in turn creates positive word-of-mouth. Consequently, negative WOM increases patients' complaining behaviour. Outcomes of WOM communication include increased awareness, belief, attitudes and decisions related to health. Most importantly, word-of-mouth leads to action; for example, a person is likely to become a patient of the doctor after receiving positive feedback from others (Gelb & Johnson, 1995). In fact, recommendations from friends and relatives are crucial for the initial decision whether to see a particular doctor first time. WOM is often

mentioned as the most commonly used information source for primary care physician selection (Tu & Lauer, 2009).

Behavioral Intentions

Trust in the health care provider has a significant influence on patients' behavioral intentions to use the provider's services in future. The theory of reasoned action (TRA) is a popular model that predicts human behavior (Belanger & Carter, 2008). It suggests that behavior is a direct result of behavioral intentions (Ajzen & Fishbein, 1980). Fishbein and Ajzen (1975) define behavioral intentions as a measure of strengths of one's intentions to perform a particular behavior.

In this study, it is hypothesized that behavioral intentions are one of the key outcomes of patients' trust in their provider. There is evidence to suggest that privacy perceptions indirectly affect behavioral intentions through trust. For example, Zhou (2008) examined perceptions of privacy and trust of mobile service users, and concluded that users with high privacy concerns exhibited low trust. High level of trust, in turn, influenced behavioral intentions to employ mobile services in future. Another study explored user perceptions of online privacy and trust and found that privacy perceptions had a positive effect on trust which in turn positively affected behavioral intentions to make online transactions (Liu et al., 2005). In a similar vein, it may be assumed that patients may intend to use services of those health care providers who protect their privacy and whom they can trust.

Prior research also supports the link between privacy perceptions and the actual behavior (Shin, 2010). A study that examined consumers' privacy perceptions and their shopping behavior found that privacy concerns are negatively related to purchases (Phelps, D'Souza, & Nowak, 2001). People who were highly concerned about their privacy were less likely to make a

purchase. Consumers' attitude towards their need to have control over their personal information was also related to their level of privacy. The greater the need for control over information, the more people expressed their privacy concerns. Klein (2006) explored the role of trust in electronic patient-physician communication, and found that patients' trust shape their behavioral intentions, which triggered the actual behavior (i.e., to use internet-based communication tools).

Similar findings were reported in the health care field. For example, cancer patients who expressed positive feelings towards their providers were more willing to participate in clinical trials (Yang et al., 2010). Based on this evidence, it is hypothesized that trust in the health care provider may shape patients' behavioral intentions. In other words, a positive relationship between the degree of trust and intentions to use the provider's health care services is proposed.

Model and Hypotheses

Based on the literature presented above and the multi-dimensional conceptualization of privacy, the following model was developed (see Figure 8).

This model demonstrates that the overall privacy (first-order construct) is comprised of three independent dimensions: informational privacy, physical privacy, and psychological privacy (second-order constructs). These constructs in turn consist of two dimensions each: information acquisition and information ownership (informational privacy), personal space and interactional space (physical privacy), and personal values and decisional autonomy (psychological privacy), which are third-order constructs. Overall privacy has a positive direct effect on trust in the primary health care provider, for example, the physician. Trust influences three dependent variables, such as commitment to the physician, word-of-mouth, and intentions to use this physician's services in future. Commitment also has a positive effect on word-of-mouth.

Third-Order Constructs

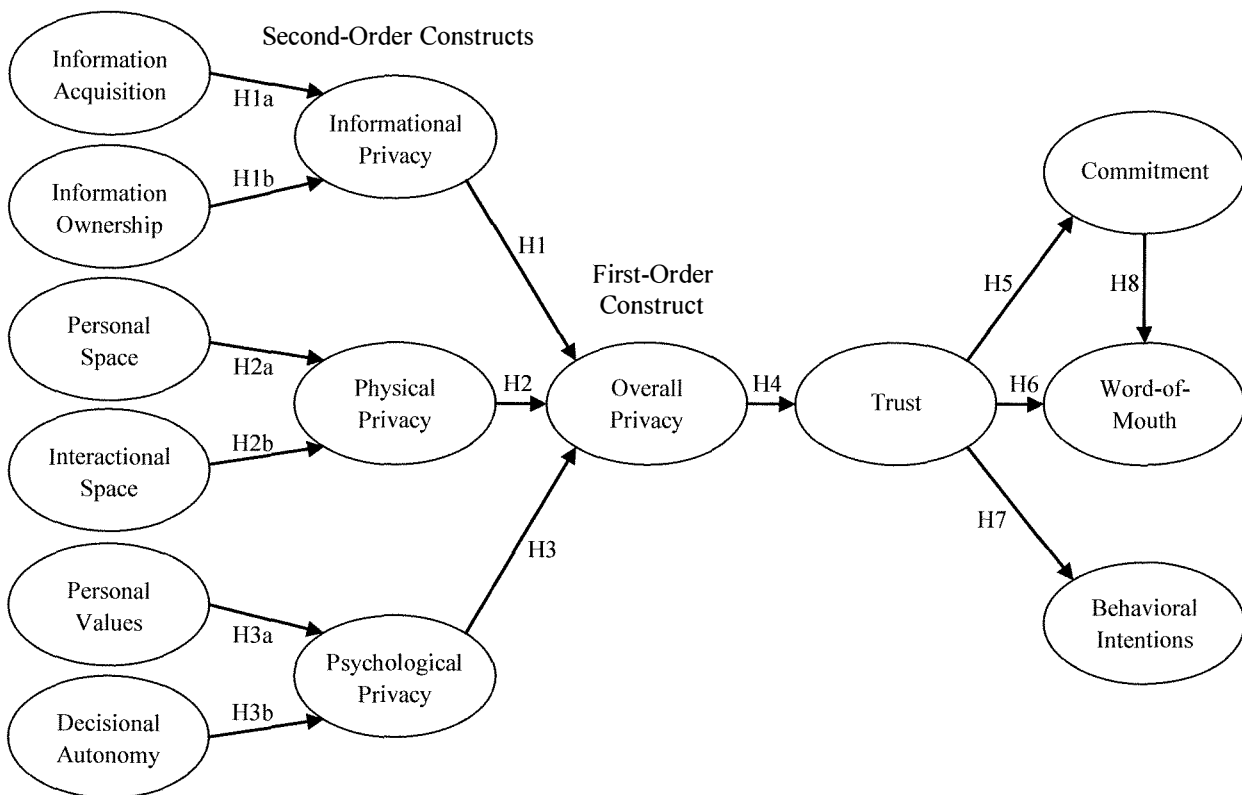


Figure 8. Structural model.

Based on the model, the following hypotheses are suggested:

H1: Informational privacy is an important dimension of overall privacy perceptions of health care service clients.

H1a: Information acquisition is an important dimension of informational privacy perceptions of health care service clients.

H1b: Information ownership is an important dimension of informational privacy perceptions of health care service clients.

H2: Physical privacy is an important dimension of overall privacy perceptions of health care service clients.

H2a: Personal space is an important dimension of physical privacy perceptions of health care service clients.

H2b: Interactional space is an important dimension of physical privacy perceptions of health care service clients.

H3: Psychological privacy is an important dimension of overall privacy perceptions of health care service clients.

H3a: Personal values are an important dimension of psychological privacy perceptions of health care service clients.

H3b: Decisional autonomy is an important dimension of psychological privacy perceptions of health care service clients.

H4: Overall privacy perceptions of health care service clients have a positive direct effect on their trust in health care service providers.

H5: Trust of health care service clients in their service providers has a positive direct effect on their commitment to these service providers.

H6: Trust of health care service clients in their service providers has a positive direct effect on their positive communication of these providers' services to other people (word-of-mouth).

H7: Trust of health care service clients in their service providers has a positive direct effect on their intention to use the services of these providers.

H8: Commitment of health care service clients to their service providers has a positive direct effect on their positive communication of these providers' services to other people (word-of-mouth).

In order to empirically test the suggested model, a survey of 100 health care users in Canada was conducted. The following section outlines this study's methodology.

Methodology

Questionnaire Items

In order to measure all privacy constructs, the questions developed in the previous sections of this thesis were utilized. The draft privacy instrument was subjected to extensive face validity assessment by consulting a group of ten researchers, such as university faculty members, and potential respondents. The initial draft questionnaire was given to only one person at a time, and his or her feedback was addressed before the questionnaire was presented to the next person. At least two rounds of revisions with each expert or potential respondent was done until they all agreed that all questions were clear, unambiguous, and relevant.

All other scales were adapted from the previously established instruments that prior research found to be reliable and valid. Trust items were adapted from Anderson and Dederick (1990). To measure patient commitment, items created by Torres, Vasquez-Parraga and Barra (2009), and Morgan and Hunt (1994) were used. Positive word-of-mouth was measured by adapting the scale of Zeithaml, Berry and Parasuraman (1996). Behavioral intentions to use the provider's services in future were adapted from Davis (1989) who developed these items based on the Theory of Planned Behavior.

In addition, data on a number of demographic variables were collected. These included: 1) the type of doctor the respondent referred to in the survey (family doctor, Lakehead University campus clinic doctor, walk-in clinic doctor, etc.); 2) the period of time the respondent had been this doctor's patient; 3) the average number of yearly visits; 4) the average appointment length; 5) time of the last visit; 6) the doctor's gender; 7) the respondent's highest level of education; 8) the respondent's age; and 9) the respondent's gender.

The respondents were asked to answer all questions with respect to their family doctor (i.e., their family physician). If they did not have a family doctor on the day the survey was administered, they answered these questions with respect to the doctor they visited most frequently in the past. They were informed that there was no right or wrong answers, and the researcher was interested in their honest opinion based on their previous experience. Please refer to the questionnaire in Appendix A.

Since this study involved the use of human subjects, ethics clearance from the Ethics Research Board of Lakehead University has been obtained. Please refer to Appendix B and Appendix C for cover letter and consent forms.

Study Participants and Survey Administration

In order to test the developed privacy scale and the proposed model, the questionnaire was administered to 100 randomly selected individuals, such as faculty, staff and students at Lakehead University, as well as acquaintances of the researcher who volunteered to participate in the study. The participation was optional, and no incentives were offered. These individuals represented a broad population of current health care users. On the one hand, this is a convenience sample. On the other hand, the usage of convenience samples is permissible when researchers are not interested in the parameters of a particular population; they only need to assess the psychometric properties of a particular research instrument and establish causal relationships in the suggested model. Only those individuals who were actually using health care services in Canada were allowed to participate in the survey. It was believed that these individuals were able to develop a report with their doctors and establish valid perceptions of various aspects of privacy.

The questionnaire was administered to the target sample by the researcher in-person for the period of October – December 2010 in a semi-supervised manner; when respondents had questions about the survey they were able to ask the researcher. Some of the individuals were personally approached by the researcher, presented with the questionnaire and consent form, asked to complete it at their own convenience, and return it to the researcher later. A number of Lakehead University students were approached during class time given the instructor's permission at the beginning or end of a regular class.

Respondents completed a paper-based questionnaire by using a pen or a pencil. The amount of time to complete questionnaire was around 10-20 minutes. Once completed, the questionnaires were returned to the researcher. No respondent reported difficulty understanding

and answering the questions. The consent forms were detached from the survey questions to ensure anonymity of respondents immediately after respondents handed in their surveys.

Results

Descriptive Statistics

In total, 100 utilizable responses were collected. Ninety eight surveys were fully completed, and two surveys were partially completed (a few demographic questions were left unanswered). Only a few missing variables in the privacy variables were found. In this case, they were treated as missing values and assigned the value of -1 (minus one) to remove this variable from analysis.

There were 75% and 25% of female and male respondents, respectively. They were 36 year old on average, ranging from 19 to 81 years old. Out of them, 14% had a secondary/high school diploma, 11% - a college diploma, and 75% - a university degree.

Most patients referred to their family doctor (78%), followed by the Lakehead University campus clinic doctor (7%), walk-in-clinic doctor (6%), and other types of doctors, for example, neurologists, nephrologists, and optometrists (9%). Fifty-six and forty-four percent of their doctors were male and female, respectively. 48% and 52% of all patients referred to the doctor of different or the same gender, respectively. Table 6 offers additional information.

Table 6

Patient Information

	Avg.	Min	Max	Std. Dev.
Period of time the respondent had been this doctor's patient (years)	13	0.2	40	10
Average number of yearly visits	4	1	52	6
Average appointment length (minutes)	21	2	60	14
Time of the last visit (months ago)	6	today	72	10

Overview of Statistical Techniques and Tools

This study uses Structural Equation Modeling (SEM) to test the measurement and structural model. SEM is also referred to as causal modeling because it helps researchers establish cause-and-effect relationships among dependent and independent constructs. It has several advantages over the first generation regression models, for example, LOGIT, ANOVA, and MANOVA. SEM allows to analyse relationships among multiple independent and dependent constructs as well as to test many research hypotheses simultaneously (Gefen, Straub, & Boudreau, 2000). For example, in order to test how the informational, physical and psychological dimensions of privacy influence overall patients' privacy, linear regression analysis requires multiple steps. SEM completes the same analysis in a single run. In addition, it also analyzes the validity and reliability of the measurement model simultaneously.

All Structural Equation Models include two inter-related models: the measurement model (i.e., the outer model) and the structural model (i.e., the inner model). The measurement model identifies the indicators for each construct and calculates the loading of the observed items. The structural model identifies the causal relationships among research constructs. The combined evaluation of measurement and structural models facilitates a more accurate analysis of the entire research model (Chin, 1998b; Rigdon, 1998).

There are two types of SEM techniques: variance-based and covariance based. The most known covariance-based SEM packages include LISREL, AMOS and EQS, and the most frequently employed variance-based tools are PLS-Graph and SMART PLS. Among the many differences between these statistical techniques, perhaps the most salient is that variance-based approaches, such as PLS, are better suitable for measuring higher-order constructs, which are

used in the current study (Wetzels et al., 2009). Therefore, PLS was chosen as a statistical technique to analyze the measurement and structural models.

As a variance-based data analysis technique, PLS was introduced by Swedish scientist Herman Wold (Wold, 1982). PLS-Graph was the first statistical package to employ this technique. Later, SMART PLS was introduced. Both statistical packages utilize the same algorithms and produce identical results. In this investigation, SMART PLS was chosen because it is freely available online from the developers, whereas PLS-GRAPH requires a licence to operate.

PASW Statistics v.18, formerly known as SPSS, was the second statistical package employed in this study. It was selected since it offers efficient facilities to measure item and construct statistics, for example, mean, standard deviation, item-to-total correlation, and Cronbach's Alpha.

The Measurement Model

The initial step to test the measurement model is to estimate the reliability of all constructs. Table 7 and Table 8 show item and construct statistics, reliability, and validity assessment. It was concluded that all items and constructs were reliable and valid. First, Cronbach's Alphas exceeded the cut-off value of 0.7 (Cronbach, 1951). Standard errors were very low, and corrected item-to-total correlations were over 0.5 (Nunnally & Bernstein, 1994). The internal consistency and average variance extracted (AVE) values exceeded the suggested threshold of 0.7 and 0.5, respectively (Fornell & Larcker, 1981). The loading of only one item (GLP6) was slightly below 0.7, but it was retained since it was a negatively worded item and its loading is expected to be somewhat lower (Harvey, Billings, & Nilan, 1985; Podsakoff & Organ, 1986).

Table 7

Item Statistics, Reliability, and Validity Assessment

Item	Mean	Std. Dev.	Loading	Error	Item-total correlations
PPS1	5.81	1.07	0.801	0.032	0.62
PPS2	6.28	0.77	0.898	0.019	0.76
PPS3	6.48	0.58	0.809	0.031	0.60
PPS4	5.97	1.13	0.704	0.064	0.55
PPI1	5.58	1.29	0.924	0.015	0.70
PPI2	5.55	1.47	0.917	0.014	0.70
PSI1	6.02	1.20	0.889	0.029	0.79
PSI2	6.25	0.92	0.875	0.027	0.76
PSI3	6.21	0.94	0.869	0.024	0.76
PSI4	6.32	0.88	0.835	0.027	0.73
PSA1	5.80	0.96	0.866	0.018	0.68
PSA2	5.74	1.02	0.895	0.016	0.75
PSA3	5.96	0.96	0.846	0.035	0.68
IA1	5.86	1.42	0.866	0.021	0.69
IA2	6.08	1.05	0.888	0.018	0.76
IA3	6.12	1.03	0.775	0.036	0.65
IA4	5.98	1.20	0.779	0.038	0.65
IO1	5.74	1.38	0.869	0.026	0.66
IO2	5.96	1.12	0.905	0.012	0.77
IO3	5.89	1.13	0.706	0.052	0.57
IO4	5.48	1.35	0.738	0.033	0.58
GLPH1	6.11	0.95	0.917	0.018	0.69
GLPH2	5.91	1.23	0.921	0.018	0.69
GLPS1	6.12	1.00	0.876	0.019	0.63
GLPS2	5.91	0.99	0.925	0.010	0.63
GLPI1	5.92	1.21	0.925	0.017	0.83
GLPI2	5.82	1.30	0.877	0.021	0.74
GLPI3	5.77	1.35	0.950	0.009	0.87
GLP1	6.15	0.91	0.902	0.015	0.85
GLP2	5.87	1.04	0.937	0.009	0.90
GLP3	5.87	1.06	0.903	0.016	0.84
GLP4	5.70	1.32	0.868	0.022	0.80
GLP5	5.94	1.11	0.874	0.019	0.81
GLP6	6.20	1.07	0.683	0.047	0.61
T1	5.85	1.31	0.719	0.039	0.70
T2	5.77	1.20	0.725	0.046	0.65
T3	5.32	1.27	0.804	0.036	0.74
T4	4.58	1.54	0.820	0.027	0.77
T5	4.54	1.65	0.720	0.039	0.65

Item	Mean	Std. Dev.	Loading	Error	Item-total correlations
T6	5.61	1.03	0.891	0.017	0.86
T7	5.10	1.64	0.786	0.030	0.73
T8	5.46	1.24	0.816	0.037	0.76
T9	5.40	1.20	0.859	0.025	0.80
T10	5.28	1.51	0.808	0.021	0.71
C1	5.86	1.48	0.928	0.012	0.88
C2	5.46	1.60	0.935	0.010	0.90
C3	5.07	1.72	0.838	0.039	0.77
C4	5.40	1.69	0.917	0.014	0.87
C5	5.06	1.54	0.901	0.014	0.85
C6	4.66	1.75	0.782	0.030	0.70
WOM1	5.82	1.46	0.992	0.003	0.98
WOM2	5.82	1.49	0.993	0.002	0.98
WOM3	5.83	1.48	0.997	0.001	0.99
BI1	6.27	0.92	0.989	0.005	0.96
BI2	6.28	0.93	0.990	0.005	0.96

Table 8

Construct Statistics, Reliability, and Validity Assessment

Construct	Mean	Cronbach's Alpha	Internal consistency	AVE
Personal Space (PPS)	6.13	0.82	0.880	0.650
Interactional Space (PPI)	5.56	0.82	0.918	0.848
Personal & Cultural Values (PSI)	6.20	0.89	0.923	0.752
Decisional Autonomy (PSA)	5.83	0.84	0.903	0.756
Information Collection (IA)	6.01	0.85	0.897	0.686
Information Ownership (IO)	5.77	0.82	0.882	0.655
Physical Privacy – Second Order construct (GLPH)	6.01	0.81	0.916	0.844
Psychological Privacy – Second Order construct (GLPS)	6.02	0.77	0.896	0.812
Informational Privacy – Second Order construct (GLPI)	5.84	0.91	0.942	0.843
Overall Privacy – Third Order construct (GLP)	5.96	0.93	0.945	0.744
Trust (T)	5.29	0.93	0.945	0.634
Commitment (C)	5.25	0.94	0.956	0.783
Word-of-Mouth (WOM)	5.82	0.99	0.996	0.988
Behavioral Intentions (BI)	6.28	0.98	0.989	0.979

The matrix of loadings and cross-loadings was constructed to test the discriminant validity of the measures, where the value on the diagonal represents the square root of the average variance extracted, as recommended by Fornell and Larcker (1981) (see Table 9). Since in almost all cases this value exceeded the inter-construct correlations, some confidence in the degree of discriminant validity was obtained. In several cases the square root of AVE was slightly below inter-construct correlations. Those, however, were independent and dependent constructs. As stated by Straub, Boudreau, and Gefen (2004, p. 25), “loadings across what are traditionally known as independent and dependent variables are not relevant to the issue of construct validity and such tests may/should be avoided in PCA [principle component analysis].”

Table 9

Matrix of Cross-Loadings and Discriminant Validity Assessment

	PPS	PPI	PSI	PSA	IA	IO	GLPH	GLPS	GPLI	GLP	T	C	WOM	BI
PPS	0.806													
PPI	0.411	0.921												
PSI	0.641	0.411	0.867											
PSA	0.612	0.273	0.634	0.869										
IA	0.610	0.399	0.556	0.480	0.828									
IO	0.534	0.289	0.518	0.506	0.863	0.809								
GLPH	0.561	0.738	0.545	0.452	0.516	0.458	0.919							
GLPS	0.477	0.098	0.484	0.719	0.314	0.330	0.311	0.901						
GPLI	0.651	0.405	0.523	0.523	0.809	0.800	0.562	0.243	0.918					
GLP	0.629	0.547	0.602	0.507	0.777	0.760	0.662	0.286	0.853	0.862				
T	0.448	0.353	0.510	0.622	0.418	0.419	0.318	0.457	0.477	0.513	0.796			
C	0.435	0.356	0.456	0.535	0.442	0.473	0.354	0.336	0.486	0.565	0.850	0.885		
WOM	0.488	0.399	0.491	0.606	0.506	0.512	0.408	0.436	0.549	0.643	0.789	0.856	0.994	
BI	0.640	0.334	0.525	0.547	0.544	0.489	0.499	0.524	0.553	.638	0.574	.680	0.688	0.989

The Structural Model

Since the measurement model has met the minimum reliability and validity requirements, the structural model was analyzed. For this, the bootstrapping procedure with 350 re-samples was used in SMART PLS. Bootstrapping is a statistical technique in Structural Equation

Modeling analysis which employs a re-sampling algorithm to obtain t-values of the model's beta coefficients (Chin, 1991; Chin, 1998a).

Figure 9 shows the final model where values along the arrows represent betas. Based on the findings, twelve hypotheses were supported and two rejected (see Table 10).

Third-Order Constructs

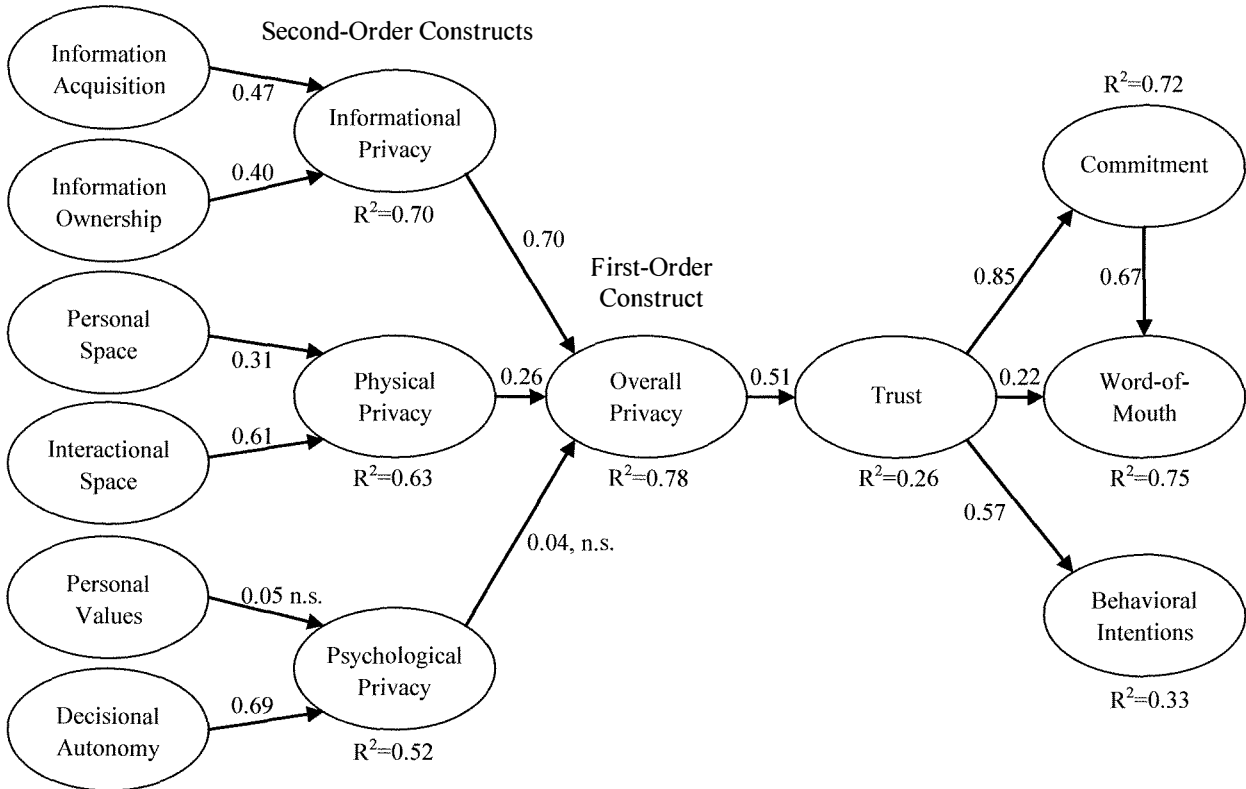


Figure 9. The final model. All links are significant at p<0.001 unless indicated otherwise.

Table 10

Hypotheses Validation

Hypothesis	Beta	t-value	p-value	Outcome
H1: Informational privacy is an important dimension of overall privacy perceptions of health care service clients.	0.70	19.473	0.001	supported
H1a: Information acquisition is an important dimension of informational privacy perceptions of health care service clients.	0.47	6.305	0.001	supported
H1b: Information ownership is an important dimension of informational privacy perceptions of health care service clients.	0.40	5.236	0.001	supported
H2: Physical privacy is an important dimension of overall privacy perceptions of health care service clients.	0.26	5.849	0.001	supported
H2a: Personal space is an important dimension of physical privacy perceptions of health care service clients.	0.31	5.421	0.001	supported
H2b: Interactional space is an important dimension of physical privacy perceptions of health care service clients.	0.61	12.262	0.001	supported
H3: Psychological privacy is an important dimension of overall privacy perceptions of health care service clients.	0.04	0.863	n.s.	rejected
H3a: Personal values are an important dimension of psychological privacy perceptions of health care service clients.	0.05	0.589	n.s.	rejected
H3b: Decisional autonomy is an important dimension of psychological privacy perceptions of health care service clients.	0.69	10.585	0.001	supported
H4: Overall privacy perceptions of health care service clients have a positive direct effect on their trust in health care service providers.	0.51	8.095	0.001	supported
H5: Trust of health care service clients in their service providers has a positive direct effect on their commitment to these service providers.	0.85	34.077	0.001	supported
H6: Trust of health care service clients in their service providers has a positive direct effect on their positive communication of these providers' services to other people (word-of-mouth).	0.22	3.934	0.001	supported
H7: Trust of health care service clients in their service providers has a positive direct	0.57	15.770	0.001	supported

Hypothesis	Beta	t-value	p-value	Outcome
effect on their intention to use the services of these providers.				
H8: Commitment of health care service clients to their service providers has a positive direct effect on their positive communication of these providers' services to other people (word-of-mouth).	0.67	11.135	0.001	supported

The model also demonstrated high explanatory power. The R-squared values, which refer to the percentage of variance that is captured by all independent constructs, were high in all cases. For example, the two privacy dimensions (GLPI and GLPH) explain 78% of the total variance in total privacy construct, which in turn explains 26% of variance in trust.

Other Exploratory Analysis

Given that little is known about the role of personal demographic variables in perceptions of health care privacy, the following exploratory analysis was done. First, correlations between the patient's age and perceptions of overall, informational, physical, and psychological privacy dimensions were calculated. The following correlations were obtained: age – overall privacy: $r=-0.01$; age – informational privacy: $r=0.02$; age – physical privacy: $r=-0.02$; and age – psychological privacy: $r=-0.01$, all statistically non-significant.

Second, the role of gender was investigated. For this, an independent samples t-test was done on the overall privacy perceptions variable for male and female samples, and no difference in construct means was observed ($t(97)=-0.352$, n.s.). After this, a MANOVA test on the three privacy constructs, such as informational, physical and psychological privacy, was done with gender as fixed factor. Again, no difference was observed (Wilks' Lambda= 0.982 , n.s.). Wilk's Lambda is a multivariate test statistics demonstrating whether the group means are different. It ranges from 0 to 1, with 0 indicating that the means are different and 1 that the means are identical. A lack of statistical significance shows that the group means are the same.

Third, a similar analysis was done on the same four privacy constructs. However, the purpose was to assess the impact of the doctor's gender on privacy perceptions. An independent sample t-test on the overall privacy perceptions revealed that patients whose gender matched their doctor's gender reported higher overall privacy scores (no gender match mean=5.73; gender match mean=6.19; $t(97)=2.491$, $p<0.01$). A MANOVA test on informational, physical, and psychological privacy constructs also demonstrated some mean differences (Wilk's Lambda=0.934, $p<0.1$). Table 11 presents the findings in detail.

Table 11

Patient-Doctor Gender Match – Construct Means

Construct	No match mean	Match mean	F-value	p-value
Informational privacy (GLPI)	5.64	6.04	2.857	0.10
Physical privacy (GLPH)	5.83	6.20	2.829	0.10
Psychological privacy (GLPS)	5.82	6.22	4.962	0.05

Fourth, patients with different levels of education reported the same level of privacy. An ANOVA test on the overall privacy scores revealed no difference ($F(2,95)=0.116$, n.s.). A MANOVA test on informational, physical, and psychological privacy constructs confirmed the same pattern (Wilks' Lambda=0.952, n.s.).

Fifth, correlations between the degree to which the patient used the doctor's services (tenure with this doctor, average number of yearly visits, and average appointment length) and his/her privacy perceptions were calculated (see Table 12). Since no identifiable pattern in the correlation values was observed, it was concluded that privacy perceptions do not depend of the degree to which the patient uses the doctor's services.

Table 12

Correlations between the Extent of Service Utilization and Privacy Perceptions

Construct	Tenure with This Doctor	Average Number of Yearly Visits	Average Appointment Length
GLP	-0.14 (n.s.)	0.12 (n.s.)	0.16
GLPH	0.02 (n.s.)	0.18 (p<0.1)	0.25 (p<0.05)
GLPS	-0.05 (n.s.)	0.18 (p<0.1)	0.15 (n.s.)
GLPI	-0.07 (n.s.)	0.13 (n.s.)	0.10 (n.s.)

Discussion

The purpose of this study was two-fold. The first was to design an instrument to measure the degree of privacy perceptions of health care clients. The second objective was to develop and empirically test a nomological network explicating the effect of privacy on critical health care outcomes. For this, relevant literature in the field of social work, psychology, management and sociology was reviewed. Based on the existing body of knowledge, a survey instrument was proposed and a theoretical model was developed. The instrument was subjected to extensive face-validity assessment to ensure its adequate psychometric properties. After this, a survey of 100 health care services users was conducted. The model was tested by using a Structural Equation Modeling approach by means of PLS, and other related quantitative analysis was done. Based on the findings, a number of interesting phenomena emerged that warrant discussion.

Theoretical Contribution

The privacy instrument. In this study, it was hypothesized that the overall privacy construct in the healthcare domain (i.e., first-order construct) consists of three distinct second-order constructs: informational privacy, physical privacy, and psychological privacy. Informational privacy is defined as the patients' perceptions of the degree of control over their personal information when the physician collects, uses, disseminates and stores this information. Physical privacy refers to the patients' perceptions of the extent of their physical inaccessibility

to others. Psychological privacy is the extent to which the physician allows patients to participate in their health care decisions and maintain their personal and cultural values, such as inner thoughts, feelings, cultural beliefs and religious practices.

An empirical assessment of the developed privacy scale demonstrated that the instrument was reliable and valid. Therefore, these constructs may be used in the proposed model to study the effect of privacy on several outcomes. On the one hand, the overall effect of these three independent components on overall privacy was very high because they explain 78% of the variance in the overall privacy construct. On the other hand, the empirical findings revealed only a partial support for the hypothesized relationships.

First, it was found that informational privacy is the key component of the overall privacy perceptions of health care users with $\beta=0.70$. It demonstrates that information privacy is the key factor by which health care patients judge whether their overall privacy is assured. Informational privacy, in turn, consists of two theoretically independent yet highly correlated components: information acquisition and information ownership, which together explained 70% variance in the informational privacy construct. It was discovered that information acquisition is more important for patients ($\beta=0.47$) than information ownership ($\beta=0.40$), which may be explained theoretically. It is likely that patients form their perceptions of informational privacy when their personal information is being collected since they have more control over this process. When their personal information is owned by the doctor, patients may feel less in control which reduces the effect of the information ownership construct on informational privacy. In other words, information acquisition is more important than information ownership from the patient's perspective.

Second, physical privacy had a moderate effect on the overall privacy construct ($\beta=0.26$). As such, its effect was almost three times weaker than that of informational privacy. This demonstrates that even though physical privacy is still important, patients are more tolerant to physical privacy violations when they see their doctor. In fact, they may expect to give up some of their physical privacy in return for getting the best possible care. It is also likely that they feel mentally prepared to give up their physical privacy well in advance, for example, when they book a medical appointment. The physical privacy construct consists of two third-order components: interactional space and personal space. The results revealed that interactional space is more important than personal space; the strength of the relationship between these constructs and the physical privacy construct was $\beta=0.61$ and $\beta=0.31$, respectively. This demonstrates that patients expect their doctor to be in the very proximity to them during the visit. At the same time, they want to feel very comfortable and be in control over the immediate office space. They want to believe that the physical environment in the doctor's office was designed in a way to protect their privacy, and they have some authority over it.

Third, it was found that psychological privacy has no effect on the overall privacy construct ($\beta=0.04$, not significant). Recall that psychological privacy is the degree to which patients believe that their doctor allows them to participate in their health care decisions and to maintain their personal, cultural and religious values. Psychological privacy consists of two third-order dimensions: personal values and decision autonomy. Personal values have no effect on the overall psychological privacy ($\beta=0.05$, not significant). In contrast, decision autonomy strongly influences psychological privacy ($\beta=0.69$). This suggests that patients are ready to give up some of their personal values when they see their doctors, but they want to feel in control over their health decisions.

Overall, even though one of the proposed dimensions did not have an effect on the overall privacy perceptions, it was concluded that the major objective of this study has been reached.

Privacy outcomes. In this investigation, a nomological network of the effect of privacy perceptions was proposed and empirically validated. First, it was observed that privacy has a positive strong effect on the patient's level of trust in his or her doctor ($\beta=0.51$). This link is consistent with the existing body of literature. In addition, the presence of this theoretically justified relationship further confirms the validity of the privacy construct because each construct should not only meet the minimum reliability and validity requirements, but also predict other dependent variables, especially the ones justified by the literature. If for example, the link between privacy and trust was not observed, this would question the validity of the suggested privacy measurement instrument.

Second, trust influences three very critical outcomes: commitment to the current service provider, positive word-of-mouth, and intentions to use the services of this doctor in future. The link between trust and commitment was the strongest of all three relationships ($\beta=0.85$). This shows that in order to build a network of very committed patients, doctors should first establish a high degree of trust, which may be achieved by assuring the patients' informational and physical privacy. Trust also had a very strong positive impact on word-of-mouth. It was observed that the relationship between trust and word-of-mouth is partially mediated by commitment. The overall effect of trust on word-of-mouth was $\beta=0.79$ (i.e., $0.85 * 0.67 + 0.22$). The fact that commitment serves as a partial mediator of the trust – word-of-mouth relationship is not surprising. It demonstrates that in order to assure the promotion of their services through the word-of-mouth, doctors should both instill trust in their patients and make their patients very committed. Trust

also exhibited a strong impact on the patients' intentions to use the services of their doctor in future. The strength of the respected link was 0.57. Based on this observation, it may be concluded that trust is the key requirement to ensure future visits of the patients.

Overall, it was concluded that, consistent with the theory in reference disciplines, trust is a key antecedent of the three parsimonious outcomes that are of interest to the health service providers. As such, the model behaved as expected that demonstrated the rigor of the utilized methodology and provided further assurance in the validity of the developed privacy measurement instrument.

Practical Contribution

In addition to offering critical insights to improve the state of theory, it is important to generate a set of practical recommendations that may be utilized by various stakeholders, particularly by doctors, health care administrators and policymakers. Doctors should be aware that informational privacy is the key component of the overall privacy perceptions of their patients. They should also know that, from the patient's perspective, the information acquisition stage is more important than the information ownership phase. Therefore, they should pay special attention to the information acquisition process. For example, they may review the extant literature on the topic and discover the best information collection approaches. They may also create internal policies and provide privacy training to their office assistants and nurses who also collect people's private information. When patients visit the doctor's office first time, they are frequently asked to complete a form specifying the doctor's privacy policy. It may be critical to ensure that the patients are clearly explained every detail of this policy. The policy should be also written in simple language, avoid ambiguity, and complicated legal terms. After the

information is being collected, it is also important to remind the patients from time to time how their private information is used to ensure a high level of their information ownership privacy.

Doctors and medical office personnel should also establish a high level of privacy related to the interactional space. Their key objective should be to allow the patients to develop a feeling of having some authority over the space. For example, wall colors, chairs, tables, room temperature, and necessary equipment should be selected and positioned appropriately to make patients feel like home. In addition, sound isolation measures should be used to demonstrate the boundaries of the interactional space. Personal space is a less significant yet important component of the overall perceptions of physical privacy. Therefore, doctors need to follow the principles and norms to show their patients that their personal space is respected and protected during the visit. At the same time, patients are ready to give up some of their physical privacy to receive the best treatment possible.

Medical professionals may also want to administer the privacy instrument developed in the present study to their patients to monitor their level of privacy perceptions. The best approach is to conduct a longitudinal investigation. This instrument may be administered to each patient yearly when they are routinely waiting for their appointment in the doctor's office. If, for example, a sudden decrease in the privacy scores on specific constructs is observed for some patients, the office personnel may discuss their privacy concerns and take appropriate action if needed.

Policymakers at hospitals and various government levels should be also aware that informational privacy and, to a lower extent, physical privacy are the key factors by which patients judge whether their overall privacy is assured. In sharp contrast, psychological privacy is non-existent during the privacy perceptions establishment processes. Therefore, they should first

devote their efforts to develop privacy policies regarding the protection of patients' personal information. Especially, they need to emphasize the importance of the information collection phase in the doctor-patient relationship. After this, they may focus their attention on the policies relating to physical privacy. In addition, they may also require hospitals, medical centers and individual health care professionals to regularly conduct patient surveys to measure their privacy perceptions, and report the results to the authorities, who may intervene if needed.

All stakeholders should be aware that in order for patients to commit to a particular health care service provider, to engage in positive word-of-mouth and to stay with this provider in future, a high level of trust should be developed. Therefore, they should focus their attention on various trust development approaches. As demonstrated in the present study, privacy is a very important factor affecting patient trust.

Recall that no difference in the level of privacy perceptions was found based on several demographic variables, including gender and age of patients. At the same time, patients whose gender matched the gender of their doctor demonstrated a statistically significant increase in their levels of privacy perceptions. Therefore, it is critical to match the gender of patients with that of their primary health service providers to improve privacy perceptions, which in turn may further influence important outcomes.

Limitations and Future Research Directions

Despite its innovativeness and contribution, this study has several limitations that may be addressed in future research. First, the results are based on self-report measures. However, it may be argued that self-reports could be different from the measures of actual behavior. For example, even though respondents strongly agree that they will be using the services of their physician in future, this verbal statement does not prevent them from switching to another provider later. To

address this limitation, future research may rely on more objective measures. For instance, an experiment may be conducted to monitor the switching behaviors of the patients involved in the study.

Second, most survey items were positively worded. It is possible that by answering negatively-framed questions people may perceive the absence of privacy as more significant (Smith, 1982). Ultimately, the value of privacy becomes more apparent when people perceive themselves in situations when their privacy is threatened or lost. To address this issue, future researchers may include more negatively-worded items and observe whether this makes a difference in the way people respond to privacy statements. Third, the survey asked respondents about their past experience. Since some time had passed since a person visited his or her physician, a recall of his or her experience might be incomplete. To avoid the confounding effect of recall bias, future scholars may survey individuals immediately after they visit their doctor.

Fourth, this study was done by using a cross-sectional survey method. It is possible that a longitudinal design may reveal a slightly different perspective. Fifth, the subjects who are physically located in only one city were surveyed. Therefore, future research should ensure the generalizability of this project's findings by replicating this study in other cities and provinces of Canada, as well as other countries. Sixth, even though all R-squared values of the dependent constructs were very high, there may be other variables that also influence the proposed relationship. For example, in this study privacy explained only 26% of variance in the trust construct. Therefore, future researchers should identify other antecedents of trust and include them in the proposed model. At the same time, despite the limitations above this investigation has made a significant contribution to the state of theory and practice.

Conclusion

Patient privacy is an extremely important issue in the health care domain. At the same time, this line of research is still in its developing stage. In this study, it was theoretically proposed and empirically confirmed that it is best to approach the conceptual definition and measurement of the patients' perceptions of privacy from a multi-dimensional perspective. To the best knowledge of the author, this is the first documented attempt to do so. It was concluded that informational privacy is the major factor impacting the patients' formation of privacy perceptions, followed by physical privacy. In contrast to prior expectations, psychological privacy had no effect on the overall privacy construct.

The predictive power of the privacy construct was demonstrated within a theoretically developed nomological network. It was concluded that privacy has a strong, positive effect on trust. Trust, in turn, influences the three important outcome variables, namely commitment, word-of-mouth, and future service usage intentions. It was also observed that patient commitment partially mediates the relationship between trust and word-of-mouth.

Based on the findings, a number of theoretical and practical implications were proposed, which may be of interest to various stakeholders, including doctors, health care administrators, and government policymakers. The author hopes that future researchers will continue this line of inquiry in future.

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APPENDIX A: THE QUESTIONNAIRE

Please answer the questions below with respect to **your family doctor** (i.e., your family physician). If you don't currently have a family doctor, answer these questions with respect to the **doctor you visited most frequently** in the past. Note that there is **no right or wrong answer**; all we are interested in is **your honest opinion** based on your previous experience.

Note: all items were measured on a 7-point Likert-type scale (1 – strongly disagree; 2 – disagree; 3 – somewhat disagree; 4 – neutral; 5 – somewhat agree; 6 – agree; 7 – strongly agree). Question codes (e.g., IA1) did not appear in the actual questionnaire.

The questions below pertain to your experience with how your doctor collects and keeps your personal (i.e., private) information.

IA1. When my doctor collects my personal information, I am not worried about my privacy.

IA2. I am comfortable with the amount of personal information my doctor collects about me.

IA3. My doctor only collects my personal information that is related to my health concerns.

IA4. My doctor collects my personal information only with my consent.

IO1. When my doctor keeps my personal information, I am not worried about my privacy.

IO2. I am comfortable with the amount of my personal information my doctor keeps.

IO3. My doctor keeps my personal information that is only related to my health concerns.

IO4. My doctor keeps my personal information only with my consent.

GLPI1. Generally, I am comfortable with the way my doctor collects and keeps my personal information.

GLPI2. Overall, I feel at ease sharing my personal information with my doctor.

GLPI3. When my doctor collects and keeps my personal information, I feel that my privacy is ensured.

The questions below pertain to your experience when you visit your doctor's office.

PPS1. When I interact with my doctor, I feel a sense of control over my body and personal space.

PPS2. My doctor chooses appropriate physical distance during my appointments.

PPS3. My doctor only examines or treats parts of my body that are related to my health concerns.

PPS4. My doctor verbally informs me every time he/she touches me.

PPI1. The space and furniture arrangement in my doctor's office creates a sense of privacy.

PPI2. When I am in my doctor's office, my actions and conversations may not be observed or overheard by people outside.

GLPH1. When my doctor examines me and my body, I feel that my privacy is ensured.

GLPH2. I feel a sense of privacy in my doctor's office.

The questions below ask whether your doctor respects your personal and cultural values, and allows you to participate in decisions about your health.

PSI1. When I interact with my doctor, I don't have to hide my personal and cultural values.

PSI2. My doctor does not question my personal and cultural values.

PSI3. My doctor acts in a way that is respectful of my cultural norms and customs.

PSI4. My doctor does not impose his/her personal and cultural values on me.

PSA1. I am in control of my health decisions.

PSA2. My doctor considers my opinion in his/her decisions about my health.

PSA3. My doctor makes decisions about my health with my consent.

GLPS1. When I visit my doctor, I always remain true to my personal and cultural values.

GLPS2. During my interactions with my doctor, I always participate in all decisions on my health.

The questions below pertain to your general perception of privacy when you interact with your doctor.

GLP1. Overall, my doctor provides an acceptable level of privacy.

GLP2. My doctor ensures my privacy very well.

GLP3. I am fully satisfied with how my doctor addressed my privacy issues.

GLP4. Every time I visit my doctor, I feel that my privacy is fully protected.

GLP5. My doctor addresses my privacy concerns in a very professional manner.

GLP6. Every time I interact with my doctor, I feel that my privacy is invaded.

The questions below ask whether you would recommend this doctor to other people looking for a doctor.

WOM1. I would say positive things about my doctor to other people who wish to see him/her.

WOM2. I would recommend my doctor to someone looking for a doctor.

WOM3. I would encourage friends and relatives, who need a doctor, to become a patient of my doctor.

The questions below ask whether you are going to continue using the services of your doctor.

BI1. Assuming I have access to my doctor, I intend to use his/her health care services in future.

BI2. Given that I have access to my doctor, I think that I will use his/her health care services in future.

The questions below ask whether you trust your doctor.

T1. I don't believe that my doctor cares about me as a person.

T2. My doctor is usually considerate of my needs.

T3. I trust my doctor so much that I always try to follow his/her advice.

T4. I believe everything my doctor tells me.

T5. I sometimes distrust my doctor's opinion and would like a second one.

T6. I trust my doctor's judgment about my health.

T7. I feel my doctor does not do everything he/she should for my health.

T8. I trust my doctor to put my health needs above all other considerations when treating my medical problems.

T9. My doctor is an expert in taking care of my health problems.

T10. I trust my doctor to tell me if a mistake was made about my treatment.

The questions below ask you whether you are truly committed to your relationship with your doctor.

C1. I want to keep the relationship with my doctor in future.

C2. I am very committed to my doctor.

C3. The relationship I have with my doctor deserves all my effort to keep it.

C4. Even if I have new alternatives, I would not quit visiting my doctor.

C5. If somebody criticizes my doctor, I would defend him/her.

C6. I would NOT abandon my doctor's services even though he/she makes small mistakes.

The doctor you referred to in this survey is:

- your family doctor
- Lakehead University campus clinic doctor
- walk-in-clinic doctor
- other (please specify _____)

How long have you been a patient of this doctor? _____ years

On average, how many times per year do you see this doctor? _____ times per year

On average, how long does your appointment last? _____ minutes

When did you see this doctor last time? _____ days/weeks/months/years ago

What is your doctor's gender? male female

What is your highest level of education?

- elementary school
- secondary/high school
- college diploma
- university degree

What is your age? _____ years old

What is your gender? male female

APPENDIX B: COVER LETTER

Dear Potential Participant:

We are conducting a study entitled “Measuring Patients’ Perceptions of Privacy and Its Outcomes in Health Care.” The purpose of this study is two-fold. The first is to develop a measurement instrument of patients’ perceptions of privacy in the healthcare sector. The second goal is to empirically investigate how the patients’ perceptions of privacy affect their intentions to use the service, word-of-mouth, commitment and trust.

The researchers are:

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Ethics Approval

This research project has been reviewed and approved by the Research Ethics Board at Lakehead University. If you have concerns or questions about your rights as a participant or about the way the research project is conducted, you may contact the:

Sue Wright

Research Ethics & Administration Officer

The Research Ethics Board, Office of Research

Lakehead University

955 Oliver Road, Thunder Bay, Ontario P7B 5E1, Canada

Phone: 807 343-8283

Fax: (807) 346-7749

Your Tasks

If you volunteer to participate in this study, we would ask you to answer the survey questions as best as you can by using a pen or pencil. You may skip any questions if you consider them personal or inappropriate. The survey will take approximately 10 minutes to complete.

Confidentiality

We will make every attempt to report the results so that it is not possible to identify any particular individual on the basis of information included in the study’s results. The data will be kept confidential and stored in Dr. L. Fan’s locked safe box in his locked room for five years. Electronic data will be stored on secure servers and/or secure laptops/personal computers. Only members of the research team will have access to raw data.

Potential Harms or Risks

There are no anticipated risks expected as a result of participation in this research project.

Potential Benefits

It is the expectation of the researchers that the results from this study will provide some further insight into the patients' perceptions of psychological, social, physical and informational privacy dimensions that may influence patients' intentions to use the service, commitment, trust and word-of-mouth. The development of a measurement instrument of the patients' perceptions of privacy in the healthcare sector is very important since it may assist health care researchers and practitioners to improve the quality of care and to promote the interactional process of privacy between patients and physicians in the medical settings. Participants may feel some fulfillment in helping to carry out research that may lead to practical recommendations and theoretical advancements.

Participation and Withdrawal

You can choose whether to be in this study or not. Your participation is voluntary, and your decision whether to participate or will have no impact on your grades. This will not also affect your relationship with the researchers. If you do not wish to participate, you may leave the room or return a blank questionnaire. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer and still remain in the study.

APPENDIX C: CONSENT FORM

Dear Potential Participant:

We value your participation. Please read the information below:

- I have read the information presented about this research project, and I agree to participate.
- I have had the opportunity to ask questions about my involvement in this research project and to receive any additional details I wanted to know.
- I understand that my confidentiality and anonymity will be maintained.
- I understand that the data collected for this project will be kept in a secure place for five years and will only be accessible to members of the research team.
- I understand that I may withdraw any time and skip any questions.

Date:

Signature of Participant:

Name of Participant (please print)

Signature of Researcher (witness)
