INTERNET HEALTH INFORMATION AND PATIENT-HEALTH PROFESSIONAL RELATIONSHIP

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The purpose of this study was to investigate patient use and presentation of Internet health information and its effect on patient-health professional relationship from a sample of residents at active adult communities in Texas.

Five sites were used to recruit the 260 participants between November 2012 and January 2013. The data were received using a self-administered survey. Using Cronbach's alpha, logistic regression and regression analysis through SAS, the data revealed that older respondents are less likely to discuss web-based information with health professionals. In addition, logistic regression analysis indicated that four of the variables, IHI Sharing, educational status (bachelor degree), marital status (married), and perceived health status (excellent and very good health) predicted varied of the 20 indicators making up the patient-health professional relationship scale. Further studies are needed to enhance this research.

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I honorably dedicate this dissertation to my namesake parents − Timothy and Marie Williams. Thanks for giving birth to me, nurturing the “gombunction” legacy, PK spiritual support, and for honestly believing that I can do anything. Lastly, I offer my regards and blessings to all those who supported me in any respect during the completion of this journey.

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

CHAPTER 1

INTRODUCTION TO THE STUDY

In this chapter, I introduce the study, define the research statement and the research questions, and give the purpose, the rationale, and the assumptions for the study. The theoretical framework, the definition of terms, the limitations, and the delimitations are also discussed.

Due to the combination of technological and medical advances, there is a reshaping of how health care is organized and delivered. This revolutionary shift is impacting the relationship between patients and health professionals in ways traditionally unimaginable. For instance, from the traditional view, patients received diagnosis, prognosis, and treatment information from their physician without challenging their advice or their prescribing of treatments (Jacobson, 2007). In this type of relationship, patients were passive recipients of information given to them by the physician. Now, with easily accessible and affordable Internet service, patients are able to obtain medical health and well-being information at the click of a computer button. This practice is rapidly growing with the potential to restructure health care organization, delivery, and the patient-health professional relationship (Diaz et. al., 2002; Powell et. al., 2003).

Research Statement

The frequency of patients assessing the Internet for medical health and well-being information is creating a shift in the traditional patient-health professional relationship. Within the United States, more patients are utilizing Internet Health Information (IHI) prior to consulting with a health professional. For instance, the Centers for Disease Control and Prevention report that managing one's health by means of the Internet is on the rise among patients. Accordingly, research on health information technology indicates that slightly less than three fourths of adults in the United States access the Internet and 61% of adults in the United

States surf the Internet to obtain medical or health information. This is a 36% increase from the year 2000 (Fox & Jones, 2009). Therefore, upon visiting the doctor's office, patients all too often have diagnosed themselves and have already thought of treatment measures.

Research Questions

Based upon the review of literature the research questions for this study are:

1. Do factors of age, gender, race/ethnicity, educational status, marital status, and perceived health status when taken together predict patient IHI sharing with health professionals?
2. Do factors of age, gender, race/ethnicity, educational status, marital status, and perceived health status affect the patient-health professional relationship?
3. Does IHI sharing affect the patient-health professional relationship among patients?

Purpose of the Study

The purpose of this study was to gain insight into the patient-health professional relationship among patients that use IHI. Specifically, I explored patient use and presentation of Internet health information and examined its effect on patient-health professional relationship. I focused on residents at active adult communities in Texas.

Rationale for the Study

There were practical reasons for conducting this study. Several previous studies indicated there is substantial evidence that patients are obtaining health information from sources other than health professionals (Bylund et al., 2007; Bundorf, Wagner, Singer, & Baker, 2006; Basch, Thaler, Shi, Yakren, & Schrag, 2004). One source that is rapidly increasing is public use of the Internet for health information. As a result, some patients are bringing IHI to doctor

appointments and presenting it to health professionals. However, there is limited research on the impact of IHI on the patient-health professional relationship.

This study is of direct importance for health professionals and patients as the use of the Internet has the potential to transform the organizational structure and delivery of a variety of health services. Currently, the consequences of the Internet informed patients on patient-health professional relationship are under researched. In this study, I report the views of patients who use IHI relationship with health professionals. Furthermore, the results of this study covered new grounds and may provide grounds for further research for the kinds of patient-health professional relationships that are likely to emerge via the Internet now and in the future of health care in an increasing aging society.

Assumptions

The following assumptions were made for this research study:

- Theory assumption: It was assumed that through the use of the health belief model, the expanded conceptual model of health information seeking behaviors and the use of information for healthcare decisions, and the diffusion of innovations theory was able to adequately describe patients who use Internet health information.
- Instrument assumption: It was assumed that through the use of the research survey instrument was able to adequately capture the data needed to categorize and describe patients who use the Internet for health information and their relationship with health professionals.
- Topic assumption: It was assumed that the adoption of Internet health information among patients is an issue relevant to the health education and health promotion field.

- Sampling assumption: It was assumed that the sample of respondents is reflective of current IHI users living in communities for older people.

Theoretical Framework

Breen, Wan, and Ortiz (2010) stated that theories can be tools used to explain why phenomena occur. The issue of this research covers three research areas: the area of health behavior, the adoption and use of new technologies, and patient-health professional relationship. For the purpose of this study, a combination of the conceptual framework of the health belief model, the expanded conceptual model of health information seeking behaviors and the use of information for healthcare decisions, and the diffusion of innovations theory were used as the theoretical basis on which this study was based.

Each theory is discussed separately but was used closely together in order to capitalize on the individual strength of the theory and provide additional support for the weaknesses. The health belief model and the expanded conceptual model of health information seeking behaviors and the use of information for healthcare decisions were used to guide and develop the survey/questionnaire questions. The questions specifically assessed the perception of the patients toward the use of IHI and their perception of the use by demographic and background variables included in the study. The diffusions of innovations theory was used to develop survey/questionnaire questions that helps understand why the participants adopt the Internet as a part of their lifestyle for health information. In this study, three theories were used in order to evaluate the adoption of technology as an avenue for improving health care, health behavior, and health in general.

Health Belief Model

The health belief model is a psychological model used by researchers to attempt to explain and predict health behaviors (Janz & Becker, 1984, Rosenstock, 1974). The model's precept is in order for someone to perform a recommended health behavior; the person must first believe that he or she is at risk for acquiring a serious and severe negative health outcome. At the same time, the person must believe the benefits of performing the recommended protective behavior outweigh the costs of performing that behavior (Fishbein & Yzer, 2003). The health belief model is based on the understanding that a person will take a health-related action if that person: (a) feels that a negative health condition can be avoided, (b) has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition, and (c) believes that he/she can successfully take a recommended health action. Based upon this model, there are six factors that influence certain behavioral changes: (a) perceived susceptibility, (b) perceived severity, (c) perceived benefits, (d) perceived barriers, (e) cues to action, and (f) self-efficacy.

According to Glanz, Rimer, and Viswanath (2008), perceived susceptibility refers to an individual's belief that they can be affected by a new idea, innovation, or system change. Perceived severity refers to an individual's belief that a system change could be detrimental. Perceived benefits refer to an individual's belief that if they take steps in the implementation of a new innovation they will benefit from it. Perceived barriers stem from an individual's belief that negative consequences could be the result of implementing a certain health behavior. Cues to action are strategies that prepare individuals to become ready to implement a new innovation and self-efficacy refers to an individual believing in him or herself in taking action to adopt a new innovation.

Expanded Conceptual Model of Health Information Seeking Behaviors and the Use of Information for Healthcare Decisions

The expanded conceptual model of health information seeking behaviors and the use of information for healthcare decisions proposed by Longo (2005) is a model based upon the patient's perspective, that is, their experiences and reports. This model allows a researcher to examine variables that cause patients to seek and use information (Cutilli, 2010). Therefore, patient centeredness is the foundation of this model. The expanded conceptual model of health information seeking behaviors and the use of information for healthcare decisions adapts medical care to current social norms and communication patterns. Based upon the model, there are two types of patients: (a) active seekers; and/or (b) passive receivers of information (Longo et al., 2009).

Diffusion of Innovations Theory

The diffusion of innovations theory, formalized by Everett M. Rogers, draws upon the "presentation and adoption of new ideas by members of a social system" (Hayden, 2009, p. 93). Diffusion, as defined by Rogers, occurs after an innovation is communicated through specified channels over a period to time to members of society. In this theory, Rogers (1983) implies there are four central elements: "(1) innovation, (2) communication channels, (3) time, and (4) the social system" (p. 10).

In the diffusion of innovations theory, Rogers (1983) explains that innovation is the concept perceived as new by a person or group of people to be adopted. According to Rogers, an innovation can be an idea, product, or practice considered as new to an individual or system that is considering adoption. This idea, product or practice in itself does not have to be actually new, rather new to the potential adopter. Additionally, the newness of the idea, product, or practice

extends beyond knowledge of its existence. In other words, it is possible for an individual to have knowledge of an idea, product, or practice but yet at the same time never considered it for him or herself or just may not have given it much thought.

Communication channel is the source the perceived new concept is communicated through. It is how information is transferred from person to person which could involve face-to-face interaction. Mass media and interactive communication through the Internet are among other types of communication channels.

Time is important as it occurs through all aspects of the communication process such as knowledge, persuasion, decision, implementation, and confirmation. This plays a major role in the adoption or rejection of an innovation. Rogers (1983) suggests that time consist of five categories: (a) innovators; (b) early adopters; (3) early majority; (4) late majority; and (5) laggards. Those who are first to adopt a new idea, product, or practice are innovators. In general, these individuals are more educated compared to others and tend to cope with a higher level of uncertainty. On the other hand, early adopters are less able to deal with uncertainty, yet are educated. Compared to the average individual, those who fall into the early majority category will adopt a new innovation slightly earlier while members of the late majority adopt new innovations slower. Laggards are the last to adopt a new idea, product, or practice due to suspiciousness.

The social system refers to the individuals, groups or organizations that endeavor to solve problems in order to accomplish a goal (Rogers, 1983).

Definition of Terms

The following are operational definitions for the study terms of this research.

Internet Health Information (IHI): health literature, and health education, knowledge and research presented over the Internet.

Patient-health professional relationship: a degree of bonding or trust and/or lack of bonding or trust between the patient and the health professional administering treatment.

Patient: any recipient of medical attention, care or treatment.

Health professional: any person who has completed a course of study in a field of health, such as a registered nurse, physical therapist, or physicians who is usually licensed by a government agency or certified by a professional organization.

Limitations

Several factors may influence the results of this research study. First, the sample of 260 patients may be too small to detect independent effects in the multivariate logistic analysis. A second limitation is that the study sample is comprised of residents at five active adult communities located in north and central Texas. Third, the self-report survey instrument may introduce bias as to the accuracy and level of Internet use for health information among the participants and the patient-health professional relationship. Respondents could answer the questions in a way they think the researcher would like for them to answer or in a way that makes them look innovative and contemporary. Fourth, the study uses a survey instrument that will measure one point in time in order to produce descriptive data and test hypotheses. The descriptive data will neither establish causality nor predict behavior change in regard to patients' use of the Internet for health information or the patient-health professional relationship. A fifth

limitation is that the study only investigates one source of consumer health information and does not take into consideration others such as newspapers, magazines, and television.

Delimitations

It is assumed that this study will be generalizable to patients residing at five active adult communities in Texas. No other participants were used. Therefore, the data collected may not be generalizable to other residents across the state or across the nation.

Also, this study did not attempt to determine whether or not patients were receiving quality health care or quality IHI. Additionally, this study focused only on medical health and wellness information found on the Internet.

Summary

The purpose of this study was to examine how the patient-health professional relationship is being affected by the IHI use of patients by focusing on residents at active adult communities in the state of Texas. In this chapter, I introduced the study, defined the research problem statement and the research questions, and gave the purpose, the rationale, and the assumptions for the study. The theoretical framework, the definition of terms, the limitations, and the delimitations were also discussed. In the next chapter, I present a review of the literature relating to demographic and background factors associated with IHI sharing with health professionals, demographic and background factors affecting the patient-health professional relationship, and the patient-health professional relationship among patients who share and do not share IHI.

CHAPTER 2

REVIEW OF THE LITERATURE

A literature search was conducted to review available information on patient-health professional relationship, IHI, and IHI use and patient-health professional relationship. While there is extensive literature on the use of IHI, there is limited research on demographic factors associated with patients who share IHI with health professionals. Even less is found on the impact of IHI sharing on the patient-health professional relationship. The literature review is presented under the subheadings of (a) demographic factors associated with sharing IHI with health professionals, (b) demographic factors affecting the patient-health professional relationship, and (c) the patient-health professional relationship among patients who share and do not share IHI.

Demographic Factors of IHI Sharing

Considering the Internet has resulted in increased access to consumer health information, some studies shed light on demographic factors related IHI sharing. In this section, demographic factors of IHI sharing were investigated. It was hypothesized that sharing IHI will differ by demographic and background variables included in the study. The following five literature reviews attempt to demonstrate support of this hypothesis.

It appears that race/ethnicity is associated with demographic factors of IHI Sharing. Cooley, Mancuso, Weiss, and Coren (2011) investigated the IHI use among patients with osteopathic doctors. The focus of the investigation was to determine why patients use IHI, and if using IHI affects the patient-doctor relationship. The sample consisted of 285 participants.

They found that the majority (89%) of the residents have searched for IHI. Of this group, 54% reported changing some of their health behaviors due to IHI found. Patients aged 50 to 64

years were more likely to report their behavioral changes to their doctor. Of 248 patients, 59 (24%) reported sharing IHI to their doctor. In reference to race/ethnicity, African Americans were less likely than Caucasians, Hispanics, Asian/Pacific Islanders, and other race/ethnic groups to share IHI with their doctor. Thus, according to Cooley et al. (2011), race/ethnicity is associated with IHI Sharing. However, since the study included a small sample size and was located in a small geographical area, we cannot know if it is generalizable to larger populations.

Hong (2008) conducted a study examining two specific questions for guiding the study. First, does the patient-provider communication about IHI vary by ethnicity? Second, among Internet users who are first-generation immigrants, does patient-provider communication about IHI vary by ethnicity? The focus of the investigation was on the discussion of IHI among the patient and provider. The study consisted of two subsamples: (a) 3,244 Internet users and (b) 563 first-generation immigrant Internet users.

The results of the study revealed that approximately 48% of Internet users and 51% of first-generation immigrant users had IHI conversations with their provider. In reference to demographic, education and ethnicity were the only significant predictors. Those who were more educated and those who reported themselves as White were more likely to engage in patient-provider conversations on IHI. Among first-generation immigrant users, White immigrants were more likely to discuss IHI with their provider (Hong, 2008). Thus, according to Hong (2008) common associations to demographic factors of IHI Sharing are race/ethnicity and educational status.

Houston and Allison (2002) addressed two specific questions for guiding the study. First, among IHI seekers, are they mostly individuals with poor health and/or current illnesses, or individuals looking to stay well? Second, is the IHI experience of patients with poor health

different from those without disease? The focus of the investigation was on the use of IHI among those who were sicker compared to those who reported being healthier. The sample consisted of 521 IHI users of which 64% were females, 87% were white, and a median age of 42 years.

They found that the majority of the respondents (52%) trusted most Internet information. Also, 81% reported learning new information from the Internet. Additionally, 52% of those reporting fair/poor health status claimed sharing IHI with a health professional. However, less than one third of those with a higher health status shared IHI with a health professional. Even when adjusting for age, gender and education, those who reported having fair/poor health were more likely to share IHI with a health professional compared to those who reported having excellent health (Houston & Allison, 2002). In regards to this finding, sharing of IHI varies among those reporting a fair/poor health status and those reporting a higher health status. Thus, according to Houston and Allison (2002), the perceive health status of fair/poor health is associated with IHI Sharing. However, this study was not generalizable to non IHI users.

In an article by Murray et al. (2003), they investigate the impact of IHI on the physician-patient relationship. The main focus was to explore users of IHI, their perception of IHI quality and how it effects information available, and the impact it has on the doctor-patient relationship and health service utilization. The sample consisted of 3,209 participants.

They found that 31% of the respondents had searched for IHI. Demographically, IHI seekers tended to be younger, more educated, and had a higher annual household income. The majority of IHI users reported that it was easy to find high quality information. Overall, 50% of the 513 respondents who found relevant information pertaining to their own health shared IHI with their doctor. In reference to health status and IHI sharing, those who considered themselves

to be in poor health (62%) were more likely to share IHI with their doctor in comparison to those who rated their health as good (47%) (Murray et al., 2003). Thus, Murray et al. demonstrated that perceived health status is associated with IHI Sharing.

Diaz et al. (2002) investigated patient use of the Internet as a source of medical information. The main focus was four dimensional: (a) to determine the percentage of patients at a primary care practice IHI use, (b) to determine the type of information sought, (c) to evaluate patients perception of the quality of IHI found, and (d) to determine if patients discuss IHI with their doctor. The sample consisted of 512 patients of which 56% were females and a mean age of 47 years old for all respondents.

The results indicated that demographically, users of IHI were more educated and possessed higher annual household incomes. Also, types of IHI sought by patients were broad. In reference to perceptions of the quality of IHI found, 62% reported IHI quality as excellent or very good. Likewise, 60% of respondents found IHI to be the same or better than information provided by their doctor. Additionally, 59% of IHI users reported they did not discuss information with their doctor. Demographic factors of gender, educational status, or age less than 60 years were not associated with patients sharing or not sharing IHI with health professionals (Diaz et al., 2002). Thus, according to Diaz et al. (2002), demographic factors of gender, educational status, and age less than 60 years did not predict IHI Sharing. However, since the study included a small sample from one private practice in the United States, we cannot know if it is generalizable to larger populations. Additionally, the majority of the respondents were white, educated and possessed a higher socioeconomic status.

It appears that race/ethnicity, educational status and perceived health status are demographic factors associated with IHI Sharing. Findings of two separate studies revealed that

respondents who identified themselves as Caucasian were more likely to share IHI with health professionals than those who identified themselves as African American, Asian/Pacific Islander and Hispanic. However, of these two studies, one claimed that African Americans were the least likely to share IHI among all the indicated race/ethnic groups. In addition to race/ethnicity, findings from one of the studies revealed educational status as a predictor of IHI Sharing. Specifically, having more education was associated with IHI Sharing with a health professional.

Other research discovered that perceived health status is associated with IHI Sharing. Findings of two separate studies revealed that respondents who reported having fair/poor health were more likely to share IHI with health professionals than those who reported having a higher health status.

Contrary to findings of the studies mentioned above, results of one study revealed that gender, educational status and age less than 60 years were not associated with IHI Sharing.

However, the direction of the relationship between demographic factors and IHI Sharing seems to be that IHI sharing is based upon race/ethnicity, educational status and perceived health status. Taken as a whole, it appears that exposing the demographic factors as demographic factors exist in IHI Sharing has an even more powerful affect.

Demographic Factors Affecting the Patient-Health Professional Relationship

In this section, demographic factors of the patient-health professional relationship are investigated. It is hypothesized that the patient-health professional relationship will differ by demographics and background variables in the study. The following five literature reviews attempt to demonstrate support of this hypothesis.

It appears that age and perceived health status are associated to the patient-health professional relationship. Al-Windi (2005) investigated predictors of satisfaction with health

care. The focus of the investigation was to determine the overall satisfaction with health care among a multi-ethnic primary healthcare practice population as well as determining the association between satisfaction/dissatisfaction and the socio-demographic variables of health status, health care utilization, and medicine in Jurdbro, Haninge, Sweden. The sample consisted of 1,055 participants.

The results of the study indicated that variables associated with the population in relation to dissatisfaction and unmet health needs were age, perceived health status, and complaint symptoms. Significant predictors of dissatisfaction with health care when adjusted for age, sex, marital status, education, occupation, country of birth, perceived health, chronic disease, complaint symptoms, healthcare need, and consultations with a general practitioner were age and healthcare need (Al-Windi, 2005). Thus, according to Al-Windi (2005) age and perceived health status are associated with the patient-health professional relationship.

Crocker and associates (2013) explore factors affecting patients' trust and confidence in general practitioners. The main focus was to investigate demographic factors, namely age, gender, and ethnicity between patient ratings of interpersonal aspects of their consultation and their confidence and trust in the doctor. The sample consisted of 2,163,456 patients.

They found that older patients reported having definite concordance and trust in their doctor more than younger patients. Also, patients with White ethnic backgrounds tended to claim having definite concordance and trust in their doctor more than non-White patients. Additionally, patients who perceived their health status as excellent reported having definite concordance and trust in their doctor more than those reporting poor health (Crocker et al., 2013). Thus, Crocker et al. demonstrated that age, race/ethnicity and perceived health status are associated with the patient-health professional relationship.

In an article by Xiao and Barber (2008), they investigated the effects of perceived health status on patient satisfaction. The main focus was to understand the relationship between perceived health status and patient satisfaction from three components of patient satisfaction: (a) access, (b) provider, and (c) quality of care. The sample consisted of 4,417 patients, 71% female, 65% married, and 68% non-Hispanic White.

The results revealed that patients who reported their physical health as excellent to good were more likely to be satisfied with access, provider, and quality of care compared to those who reported their health as fair or poor. Other predictors associated to access were being married, higher level of education, higher income, and provider listening to the patient. Also, age and listening to the patient were associated with provider. Older patients were more satisfied with their provider than those younger. Additionally, age was associated with quality of care. Older patient were more satisfied than younger patients (Xiao & Barber, 2008). Thus, according to Xiao and Barber (2008), age, educational status, marital status, and perceived health status are associated with the patient-health professional relationship.

In a research article by Banerjee and Sanyal (2012), two specific questions were addressed for guiding the study. First, what are the sociocultural determinants of concordance, trust, and patient enablement of the doctor-patient relationship? Second, what are the interrelations between concordance, trust, and patient enablement of the doctor-patient relationship? The sample consisted of 198 patients: 110 females and 88 males.

They found that patients who were males, those with higher economic status, those who believed in alternative medicine, those who were urban residents, those with higher education, and those having the same first speaking language as the doctor had better concordance with their doctor. In reference to sociocultural factors and trust in the doctor, females had less trust in

their doctors than males. Also, patients from the lower socioeconomical status highly trusted their doctor compared to those from the higher socioeconomical status. Results of the sociocultural factors of enablement revealed that patients from the lower socioeconomical status benefited more (Banerjee & Sanyal, 2012). Thus, according to Banerjee and Sanyal (2012), gender, educational status, and economical status are associated with the patient-health professional relationship.

In a research article by Cooper-Patrick et al. (1999), three specific questions were addressed for guiding the study. First, do minority patients rate their physicians' decision-making styles as less participatory than White patients? Second, do the patients of minority physicians rate their physicians' decision-making styles as less participatory than the patients of White physicians? Third, what is the association between race and gender concordance or discordance in the patient-physician relationship and participatory decision-making styles. The focus of the investigation was to determine how the race/ethnicity and gender of patients and physicians are associated with the participatory decision-making style of the physician. The sample consisted of 1,816 participants: 66% were females, 43% were White, and 25% were African American. The physician sample included 63% male, 56% White, and 25% African American.

They found that in reference to patient characteristics to the participatory decision-making style, patients aged 40 to 65 years reported their physician visits more participatory compared to patients under age 30 years. In addition, patients with graduate school educations reported their physician visits as more participatory in comparison to those with a high school education or less. Also, they found that patients who reported higher health status had more participatory visits with health professionals. Additionally, when adjusting for patient age,

gender, education, marital status, health status, and length of the patient-physician relationship, African Americans claimed less participatory physician visits than White patients. In reference to patient satisfaction and participatory decision-making style, within all race/ethnic groups, patient satisfaction was highly associated with participatory decision-making (Cooper-Patrick et al., 1999). Thus, Cooper-Patrick et al. demonstrated that age, educational status, race/ethnicity, and perceived health status are associated with the patient-health professional relationship.

It appears that age, race/ethnicity, gender, educational status, marital status, economic status, and perceived health status are associated with the patient-health professional relationship. Findings of four separate studies revealed that younger patients were more likely to report a weaker relationship with health professionals compared to older patients (Al-Windi, 2005; Cooper-Patrick et al., 1999; Crocker et al., 2013, Xiao & Barber, 2008).

Research also discovered that perceived health status is associated with the patient-health professional relationship. For instance, findings of four separate studies indicated that respondents who reported having a higher health status claimed to have a stronger relationship with health professionals compared to those who reported having a lesser health status (Al-Windi, 2005; Cooper-Patrick et al., 1999; Crocker et al., 2013, Xiao & Barber, 2008).

Also, research revealed that race/ethnicity is associated with the patient-health professional relationship. Of the studies included in this section, two indicated that respondents who reported themselves as Caucasian claimed a stronger relationship with health professionals compared to non-Caucasian respondents (Cooper-Patrick et al., 1999; Crocker et al., 2013).

Three separate research studies indicated that educational status is associated with the patient-health professional relationship. Specifically, respondents who reported having more years of education claimed a stronger relationship with health professionals compared to those

who indicated having less education (Banerjee & Sanyal, 2012; Cooper-Patrick et al., 1999; Xiao & Barber, 2008).

One research study discovered that gender is associated with the patient-health professional relationship (Banerjee & Sanyal, 2012). Specifically, men reported having a stronger relationship with health professionals compared to women. Another study revealed that being married has an association to the patient-health professional relationship. Other research indicated that respondent who reported having a higher economical status claimed a stronger relationship with health professionals compared to those who indicated having a lower economical status (Banerjee & Sanyal, 2012; Xiao & Barber, 2008).

The direction of the relationship between demographic factors and the patient-health professional relationship seems to be that the patient-health professional relationship is based upon age, gender, race/ethnicity, marital status, educational status, economical status and perceived health status. Taken as a whole, it appears that exposing the demographic factors as they exist in the patient-health professional relationship has an even more powerful effect.

Impact of the Patient-Health Professional Relation among IHI Sharers and Non-Sharers

The impact of the patient-health professional relationship among IHI sharers and non-sharers has received relatively little attention. To my knowledge, only two published works have examined this question. In this section, the relationship between sharing of IHI and the patient-health professional relationship was investigated. It was hypothesized that the patient-health professional relationship will differ among those who share IHI and those who do not share IHI. The following two literature reviews attempt to demonstrate support of this hypothesis.

Murray et al. (2003) investigated the impact of IHI on the physician-patient relationship. The main focus was to explore users of IHI, their perception of IHI quality and how it effects

information available, and the impact it has on the doctor-patient relationship and health service utilization. The sample consisted of 3,209 participants.

In reference to the relationship between sharing of IHI and the patient-health professional relationship, patients who shared IHI (50% of 513 respondents who found IHI relevant to their health) reported that doctors responded positively in 67% of cases, neutrally in 27%, and negatively in 7%. Also, 15% claimed that when sharing IHI, their doctor acted as if they were being challenged. Doctors of uninsured patients, patients who claimed they were excellent or very good at evaluating Internet information, and patients who perceived their overall care from their doctor as fair or poor; all reported doctors acting challenged when they presented Internet health information. Additionally, 30% of the respondents claimed improved relationship, 66% reported no change in the relationship, and 4% stated that the relationship had worsened (Murray et al., 2003). Thus, Murray et al. demonstrated that the relationship between sharing IHI and the patient-health professional relationship varies. However, since the study included a small number of patients who shared IHI with their doctor, we cannot know if it is generalizable to larger populations.

In a research article by Cooley et al. (2011), they investigated the IHI use among patients with osteopathic doctors. The focus of the investigation was to determine why patients use IHI, and if using IHI affects the patient-doctor relationship. The sample consisted of 285 participants.

In reference to the relationship between sharing of IHI and the patient-health professional relationship, the results indicated 59 (24%) of 248 patients reported sharing IHI with their doctor. From this group, 55 (93%) claimed their doctor responded well to shared IHI. On the other hand, 7% of patients who shared IHI with their doctor reported a perceived negative reaction

(Cooley et al., 2011). Thus, Cooley et al. demonstrated that the relationship between sharing IHI and the patient-health professional relationship varies.

Summary

To summarize, in this chapter I described trends of demographic and background factors of both IHI sharing with health professionals and the patient-health professional relationship. Also, the patient-health professional relationship among patients who share and do not share IHI was addressed.

Chapter 3 describes the general research approach, the research design, and the data collection and analysis strategies used in this research study to investigate IHI and patient-health professional relationship among residents at active adult communities.

CHAPTER 3

METHODS

The collection of data and treatment of data are presented in this chapter. Descriptions are provided regarding the (a) sample, (b) instruments, (c) pilot study, (d) protection of human subjects, (e) variables, (f) hypotheses, (g) data collection, and (h) data analysis.

Sample

This investigation sought to survey residents at five active adult communities in the state of Texas. Participants included male and females of all races/ethnicities. Patients were recruited for this cross-sectional study. Several senior citizen organizations were contacted about having members complete a survey/questionnaire. None of the organizations agreed to distribute the survey/questionnaire. Five active adult communities within the North and Central Texas region were contacted to find participants for this research study. All five agreed to make the survey/questionnaire available to residents.

A convenience sampling strategy was employed to recruit participants from these active adult communities for this exploratory study. The sample consisted of 260 participants. Resident participants were selected from the population who (a) live in the active adult community; (b) could read, write, and speak English; and (c) are competent. The sample size was determined by those able and willing to participate in the exploratory study at the time.

Instruments

One instrument was developed by the principal investigator to collect data for this research study (Appendix A). The instrument used to conduct the study consisted of 39 questions: 16 Internet use questions, 20 Likert scaled questions, and 13 questions regarding

sociodemographic items, such as, age, gender, race/ethnicity, education level, marital, and employment status. The current research developed a scale of patient-health professional relationship by adopting, with a few modifications, the medical interview satisfaction scale (MISS-21) (Kuteyi, Bello, Olaleye, Ayeni, & Amedi, 2010) and the patient-doctor relationship questionnaire (PDRQ-9) (Van der Feltz-Cornelis, Van Oppen, Van Marwijk, De Beurs, & Van Dyck, 2004). To measure the patient-health professional relationship, respondents indicated their level of agreement on a five-point Likert scale, 1 = *strongly agree*, 2 = *agree*, 3 = *neither agree nor disagree*, 4 = *disagree*, and 5 = *strongly disagree*. Patient-health professional relationship questions explored five aspects of the patient-health professional relationship: (1) patient confidence, (2) health professional communication skills, (3) time spent with the doctor, (4) information provision, and (5) patient adherence. The self-administered survey was the participant's perception of Internet use and patient-health professional relationship.

Pilot Study

Prior to the survey being sent to residents at active adult communities, the survey was pilot tested. The pilot study consisted of 15 participants who were residents of a retired military community in the state of Texas. The pilot study was formed to ensure that the survey instrument was easy to complete, all areas were covered, and to gauge participant comprehension and time needed for completion. Questions that did not provide useful data were discarded and final revisions of the questionnaire were made. The questionnaire/survey for residents contained questions regarding demographics, the use of the Internet for medical and well-being reasons, frequency of use, and whether or not they share their IHI knowledge with health professionals. All measurements were measured by a five-point Likert scale of agreement.

Protection of Human Subjects

This protocol was submitted and approved by The University of North Texas Institutional Review Board (see Appendix B). Permission to conduct the pilot and dissertation study was requested and received from all the active adult communities involved in my research (see Appendix C). A newsletter recruitment advertisement was distributed at the communities asking for participants (see Appendix D). By completing the survey (Appendix A), participants provided implied consent to participate in the research (see Appendix E). Participants were provided information on the purpose of the research, the time involved, the assessment of minimal risk, a statement regarding benefit to participants, contact information for questions about the research, and contact information about the rights as a research participant.

There were no foreseeable risks associated with the participation in this research study. Participation in the study was voluntary and participants were able to choose not to participate or to stop at any time without penalty or loss of benefits that they currently receive. The risk of loss of confidentiality was minimized through the use of number codes. No names were required, which protected participants' identity.

Variables

The independent variables, dependent variables, and control variables for this study were:

Dependent: patient-health professional relationship.

Respondents were asked about their patient-health professional relationship using a 5-point Likert scale, ranging from *Strongly Agree* (1), *Agree* (2), *Neither Agree nor Disagree* (3), *Disagree* (4), and *Strongly Disagree* (5). Those who responded with a lower score had a higher level of agreement, while those who responded with a higher score were in more disagreement with the statement. Cronbach's alpha was used to determine the reliability of the 20 items that

made up the patient-health professional relationship scale. The patient-health professional relationship was operationalized using the scale summing 20 variables and dividing by 20.

Independent: Sharing of internet health information (IHI).

Respondents were asked if they share IHI with a health professional. In this study, the binary variables were used as predictors. Specifically, the dummy variable "share IHI" was utilized. Those who responded "yes" were coded "1" on this variable and those who said "no" were coded "0".

Control: age, gender, race/ethnicity, marital status, educational status, employment status, household annual income, health care coverage, perceived health status, and chronic illness. Respondents were asked demographic and background information questions that were used as such in cumulative logistic regression.

Hypotheses

Hypotheses tested were:

H1) Sharing of IHI will differ by demographic and background variables included in the study.

H2) The patient-health professional relationship will differ by demographic and background variables included in the study.

H3) The patient-health professional relationship will differ among those who do not share IHI and those who do share.

Data Collection

For the purpose of this research, data were collected in the form of a structured questionnaire/survey which was self-administered. A confidential survey was submitted to a

contact member of the five active adult communities in the state of Texas. These contact members assisted with the distribution of surveys to residents.

Residents who chose to participate were informed that completion of the survey was voluntary and would not ask for any personally identifying information. Their identification would be completely anonymous. All surveys were number-coded and no names were required.

Data Analysis

In this section, I present the statistical techniques used to interpret the data. Descriptive statistics were used for analysis in order to provide a description of the sample from which data were collected. This allowed me to summarize the socio-demographic characteristics of respondents as well as the means, mode, range, and standard deviations for the independent (IHI) and dependent variables (patient-health professional relationship). Relational statistics in the form of multivariate analysis was used in order to answer the research questions. A multivariate linear regression (OLS) was conducted to predict the values of the dependent variable (patient-health professional relationship) given a set of independent (predictor) variables. A multivariate logistic regression was conducted to explain the variability of the binary variable (patients who present IHI to health professionals and those who do not) by the independent (predictor) variables. Since patient-health profession relationship scale (dependent variable) is an interval variable, ordinary least squares regression measured the effect of different variables on the dependent variable, holding all other variables in the analysis constant.

Summary

The purpose of this study was to investigate patient use and presentation of Internet health information and examine its effect on patient-health professional relationship among

residents at active adult communities. This chapter focused on the basic methodological approach of this research.

CHAPTER 4

RESULTS

In this chapter, I present the data analyses conducted for this research study. Data were procured from a survey questionnaire from residents at five active adult communities in Texas during the years 2012- 2013. A convenience sample was used to enlist the participants in this study. The study consisted of a total of 260 participants. There were 49 questions to answer on the survey.

The statistical software program SAS version 9.2 was used to analyze the data and to identify the relationship between the independent and dependent variables. It was also used to provide a clear foundation of the values that confirmed the strengths and weaknesses of the relationships.

The results were broken down into four areas: descriptive data, Cronbach's alpha, multiple logistic regression, and multiple linear regression. Descriptive data tables were used to summarize the results of the survey and break down the results into socio-demographic data, Internet use data, and patient-health professional relationship data. Cronbach's alpha was used to measure the internal consistence and reliability of the composite measures. A multivariate logistic regression was conducted to explain the variability of the binary variable (patients who share IHI to health professionals and those who do not) by the independent (predictor) variables. Logistic regression tables show the predictions that were made about the variables and whether there was a statistically significant correlation. A multivariate linear regression was conducted to predict the values of the dependent variable (patient-health professional relationship) given a set of independent (predictor) variables. Linear regression tables show the predictions that were made about the variables and whether there was a statistically significant correlation. Since

patient-health professional relationship scale is an interval variable, ordinary least squares regression measured the effect of different variables in the dependent variable, holding all other variables in the analysis constant.

Demographic Data

The descriptive characteristics of the entire sample (n = 260) are presented in Table 1. Age ranged from 52 to 95 years, with a mean of 71.59 (SD = 7.71) years. More than half of the participants (59.2%, n =154) were female. Additionally, 33.5% had completed graduate or professional education and 28.5% completed a 4-year degree. Almost all of the participants (92.7%) reported themselves as Caucasian. More than half of the participants (78.5%) were married and 10.8% were widowed while 5.8% were divorced.

Over half of the participants (82.3 %) were retired and 6.9% were employed part-time. One hundred and twenty-one participants (46.5%) had an annual household income ranging from $50,001 - $100,000, and 20.8% (n = 54) reported under $50,000. Only .4% (n = 1) of the participants reported no health insurance. However, all others had health insurance: 35% private insurance offered through an employer or union, and 77.7% Medicare. One hundred and thirty-six participants (52.3%) reported a chronic illness diagnosis with 25.8% reported cases of circulatory disease. Slightly over half of the participants (50.8%) reported being treated for a chronic illness and 95 (36.5%) reported visiting the doctor two or three times within the past six months.

Some of the measures had inadequate variations (e.g., race/ethnicity), inadequate numbers of cases in some categories (e.g., marital status, except for “married” versus all other categories), or simply did not predict either IHI sharing or patient-health professional

relationship (e.g., the disease categories). These measures were omitted from the multivariate analyses.

Table 1

Frequency and Percentage of Patient Socio-demographic Data (n = 260)

Variable	Frequency (*N*)	Percentage
Age	71.59 yrs. ± 7.71 yrs. (52-95)	
Gender		
Female	154	59.2
Male	102	39.2
Missing	4	1.5
Race/ethnicity		
African American (not of Hispanic origin)	8	3.1
Hispanic/Latino	1	.4
Caucasian (not of Hispanic origin)	241	92.7
Other	4	1.5
Marital status		
Single	8	3.1
Married	204	78.5
Divorced	15	5.8
Widowed	28	10.8
Missing	5	1.9
Education level		
Less than High School	2	.8
High School Diploma (GED)	26	10.0
Some College	65	25.0
4-year college degree	74	28.5
Graduate or Professional Education	87	33.5
Missing	6	2.3
Employment status		
Employed full-time	12	4.6
Employed part-time	18	6.9
Unemployed	8	3.1
Retired	214	82.3
Other	1	.4
Missing	4	1.5
Annual household income		
Under $50,000	54	20.8
$50,001-$100,000	121	46.5
$100,001-$250,000	48	18.5
Over $250,000	9	3.5
Missing	28	10.8

(*table continues*)

(table continued)

Variable	Frequency (*N*)	Percentage
Health care coverage		
Private insurance (employer/union)	91	35.0
Private insurance (self-purchase)	54	20.8
Medicare	202	77.7
Medicaid	3	1.2
Other sources-including Medigap, military or veteran's coverage	37	14.2
No health insurance	1	.4
Perceived health status		
Excellent	58	22.3
Very good	119	45.8
Good	57	21.9
Fair	21	8.1
Poor	2	.8
Very Poor	1	.4
Missing	2	.8
Chronic illness diagnosis		
Yes	136	52.3
No	116	44.6
Missing	8	3.1
Type of chronic illness		
Circulatory disease (heart disease/hypertension/stroke)	67	25.8
Respiratory disease (asthma/chronic bronchitis)	11	4.2
Cancer	35	13.5
Diabetes (including borderline)	36	13.8
Arthritis	46	17.7
Other	51	19.6
Currently being treated for chronic illness		
Yes	132	50.8
No	120	46.2
Missing	8	3.1
Doctor visits in the past six months		
None	14	5.4
1 time	80	30.8
2 or 3 times	95	36.5
More than 3 times	65	25.0
Don't know	2	.8
Missing	4	1.5

Internet Use Data

Residents of the five active adult communities responded to closed-ended questions. These questions were included to help identify personal Internet use for health information found among the participants. The responses were analyzed using frequency and are shown in Table 2.

Table 2

Frequency and Percentage of Patient IHI Use (n = 260)

IHI Use Data	Frequency (*N*)	Percentage
IHI use		
Yes	224	86.82
No	34	13.18
Learn new information		
Yes	219	84.88
No	39	15.12
Self-diagnose from IHI		
Yes	124	48.06
No	134	51.94
More comfort in health information given by health professional after reading IHI		
Yes	199	78.04
No	56	21.96
IHI improved self-health care		
Yes	152	58.91
No	106	41.09
Talked to health professional about IHI		
Yes	133	51.75
No	124	48.25

Of the 258 participants who answered Question 1, almost all (86.82%) self-reported using the Internet to find health information about a personal health problem. Because so few of the respondents did not report using IHI, distinguishing non-users from users who were non-sharers was judged to not be a viable approach to analysis. Such an overwhelming majority using IHI suggests that the sample is far-more computer-and internet savvy than elders in general.

Additional survey questions were asked to further reveal frequency of accessing IHI, intensity (motivation), engagement, and health professional reception of patient engagement with

the Internet. The question regarding sharing IHI with a health professional revealed almost 52% (133/257) reported they talked to health professionals about IHI at the time of the survey. This distribution allows for maximal power as a predictor of the patient-health professional relationship.

Outcomes for the Relationship Indicators

On the questionnaire, several questions relating to patient confidence were asked with the intent of developing a scale for the patient-health professional relationship. Residents were asked if they trust their doctor. The most frequent response was 240 (94.87%) stating that they agree or strongly agree with trusting their doctor. According to the residents, 204 (81.92%) agree or strongly agree that their doctor understands them, while 226 (87.93%) agree or strongly agree that they agree with their doctor on the nature of their medical symptoms. Also, 239 (92.63%) of the residents agree or strongly agree that they are content with their doctor's treatment. Of the 260 participants, 226 (87.93%) agree or strongly agree that their doctor is able to diagnose them with the right illness. Additionally, 241 (94.51%) of the residents agree or strongly agree that the doctor's advice and treatment is appropriate for their situation. Likewise, 238 (93.33%) residents agree or strongly agree that they would refer their doctor to others. These results are reflected in Table 3.

Several questions relating to health professional communication skills were asked. According to the residents, 250 (96.90%) agree or strongly agree that the doctor helps them, 218 (84.83%) agree or strongly agree that the doctor clearly explains the reason for any ill health, and 236 (92.55%) agree or strongly agree that they find their doctor easy to talk to. Furthermore, 242 (95.28%) agree or strongly agree that the doctor answers their questions. These results are displayed in Table 3.

Table 3

Frequency and Percentage of Patient-Health Professional Relationship (n = 260)

Perception of Patient-Health Professional Relationship	Frequency (*N*)	Percentage
My doctor helps me.		
Strongly agree	132	51.16
Agree	118	45.74
Neither agree or disagree	8	3.10
My doctor has enough time for me.		
Strongly agree	105	40.70
Agree	118	45.74
Neither agree or disagree	22	8.53
Disagree	13	5.04
I trust my doctor.		
Strongly agree	119	47.04
Agree	121	47.83
Neither agree or disagree	11	4.35
Disagree	2	0.79
My doctor understands me.		
Strongly agree	96	38.55
Agree	108	43.37
Neither agree or disagree	42	16.87
Disagree	3	1.20
I feel my doctor's treatment will be worth the trouble it will take.		
Strongly agree	111	43.53
Agree	101	39.61
Neither agree or disagree	29	11.37
Disagree	9	3.53
Strongly disagree	5	1.96
My doctor and I agree on the nature of my medical symptoms.		
Strongly agree	74	28.79
Agree	152	59.14
Neither agree or disagree	30	11.67
Disagree	1	0.39
I feel content with my doctor's treatment.		
Strongly agree	90	34.88
Agree	149	57.75
Neither agree or disagree	16	6.20
Disagree	2	0.78
Strongly disagree	1	0.39
The doctor is able to diagnose me with the right illness.		
Strongly agree	75	29.189
Agree	151	58.75
Neither agree or disagree	28	10.89
Disagree	3	1.17

(*table continues*)

(table continued)

Perception of Patient-Health Professional Relationship	Frequency (*N*)	Percentage
I do not feel embarrassed when talking with my doctor.		
Strongly agree	101	39.45
Agree	109	42.58
Neither agree or disagree	32	12.50
Disagree	11	4.30
Strongly disagree	3	1.17
I have a better understanding of my illness after seeing the doctor.		
Strongly agree	83	32.30
Agree	153	59.53
Neither agree or disagree	20	7.78
Disagree	1	0.39
It is easy to follow my doctor's advice.		
Strongly agree	81	31.52
Agree	148	57.59
Neither agree or disagree	24	9.34
Disagree	4	1.56
My doctor clearly explains the reason for any ill health.		
Strongly agree	82	31.91
Agree	136	52.92
Neither agree or disagree	35	13.62
Disagree	4	1.56
The doctor does not use medical terms without explaining what they mean.		
Strongly agree	69	27.17
Agree	135	53.15
Neither agree or disagree	40	15.75
Disagree	8	3.15
Strongly disagree	2	0.79
I find my doctor easy to talk to.		
Strongly agree	109	42.75
Agree	127	49.80
Neither agree or disagree	15	5.88
Disagree	4	1.57
The doctor's advice and treatment is appropriate for my situation.		
Strongly agree	86	33.73
Agree	155	60.78
Neither agree or disagree	13	5.10
Disagree	1	0.39
I follow instructions provided by my doctor.		
Strongly agree	91	35.69
Agree	145	56.86
Neither agree or disagree	18	7.06
Disagree	1	0.39
The doctor answers my questions.		
Strongly agree	102	40.16
Agree	140	55.12
Neither agree or disagree	11	4.33
Disagree	1	0.39

(*table continues*)

(table continued)

Perception of Patient-Health Professional Relationship	Frequency (*N*)	Percentage
I would refer my doctor to others.		
Strongly agree	113	44.31
Agree	125	49.02
Neither agree or disagree	14	5.49
Disagree	2	0.78
Strongly disagree	1	0.39
The doctor gives me different treatment options available for my condition.		
Strongly agree	54	21.43
Agree	119	47.22
Neither agree or disagree	67	26.59
Disagree	11	4.37
Strongly disagree	1	0.40
The doctor provides me with written or printed information.		
Strongly agree	76	30.04
Agree	113	44.66
Neither agree or disagree	41	16.21
Disagree	22	8.70
Strongly disagree	1	0.40

Note. Categories with zero responses omitted

According to residents, 223 (86.44%) agree or strongly agree that the doctor has enough time for them (see Table 3). Questions relating to information provision were asked. According to the residents, 236 (91.83%) agree or strongly agree that they have a better understanding of their illness after seeing the doctor. Also, 173 (68.65%) agree or strongly agree that the doctor gives them different treatment options available for their condition. Interestingly, 67 (26.59%) neither agree nor disagree that the doctor gives them different treatment options for their condition. Additionally, 189 (74.70%) agree or strongly agree that the doctor provides them with written or printed information. Interestingly, 41 (16.21%) neither agree nor disagree that the doctor provides them with written or printed information (see Table 3).

Two questions relating to patient adherence were asked. According to the residents, 229 (89.11%) agree or strongly agree that it is easy to follow their doctor's advice. Likewise, 236

(92.55%) agree or strongly agree that they follow instructions provided by their doctor (see Table 3).

In summary, residents are aware of the importance of patient-health professional relationship. Residents trust their doctor and believe that the doctor's advice and treatment is appropriate for their situation. Also, they believe they can talk to their doctor and it is easy to follow instructions provided by their doctor.

Cronbach's Alpha

Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The closer Cronbach's alpha is to 1.0 the greater the internal consistency of the items in the scale.

The composite measures patient-health professional relationship included 20 items to determine reliability. The results were a Cronbach's alpha of 0.949 (N = 20) and a Cronbach's alpha based on standardized items of 0.955 (N = 20). This reliability is considered very good, indicating strong consistency among the indicators. Therefore, the instrument was found to be highly reliable with high internal consistency. The coefficient alpha for the overall scale is shown in Table 4. No appreciable improvement in the Alpha would result from eliminating any of the indicator variables (see Table A.1). Alphas and logistic regression tables are found in Appendix F.

Table 4

Coefficient Alpha: Overall Scale

N of Items	Standardized	Unstandardized
20	0.955	0.949

Operationalization of the Patient-Health Professional Relationship Data

Residents of five active adult communities responded to questions regarding the perception of their patient-health professional relationship using a 5-point Likert scale, ranging from *strongly agree* (1), *Agree* (2), *Neither Agree nor Disagree* (3), *Disagree* (4), and *strongly disagree* (5). The residents who responded with a lower score have a higher level of agreement, while those who responded with a higher score are in more disagreement with the statement. Frequencies and percentages were presented in Table 3. Given the excellent coefficient alpha (see Table 4), a scale was created by adding the response "scores" and dividing by 20, creating a scale that could vary from 1 to 5, interpretable in terms of item categories. In fact, the maximum value on the scale was 3.15, only slightly edging into the "disagree" area.

Relationship

Table 5 shows means, standard deviation, and range of the patient-health professional relationship among resident respondents. The average score on patient-health professional relationship is 1.78 with a standard deviation of 0.51. The minimum score is 1.00 and the maximum score is 3.15. Note that even the very-worst indication of the relationship is only slightly into the negative ("disagree") range. There was nevertheless sufficient variation on the items to employ them in the creation of the patient-health professional relationship scale.

Table 5

Means, Standard Deviation, and Range of Patient-Health Professional Relationship (n = 235)

Variable	Mean	Standard Deviation	Minimum	Maximum
Patient-HP	1.78	0.51	1.00	3.15

Multivariate Analysis Predicting IHI Sharing

Multivariate logistic regression analysis was used to predict IHI sharing among residents from the independent variables including age, gender, race/ethnicity, educational status, marital status and perceived health status.

Table 6 presents the logistic regression among resident respondents (aged 52-95). When examining the effects of the independent and independent predictor variables on the likelihood of IHI sharing among residents in general, one of six variables was identified as statistically significant ($p < 0.05$ and $p < 0.01$).

The odds ratio of age among respondents is 0.93, which means that with each year of age, the predicted likelihood of sharing IHI with health professionals among residents decreases about 7%. The remaining variables in the model, namely gender, marital status, educational status, and perceived health status, were not statistically significant predictors of patients sharing IHI with health professionals ($p > 0.05$).

Table 6

Logistic Regression Analysis: IHI Sharing

Independent Variables	Odds Ratio	Lower Bound	Upper Bound
Gender	1.077	0.601	1.931
Married	0.971	0.474	1.993
Some College	1.010	0.378	2.698
Bachelor Degree	1.288	0.675	2.459
Age	**0.931**	0.894	0.970
Excellent Health	0.875	0.446	1.718
Very Good Health	1.235	0.652	2.341
	N	Degrees of Freedom	Model Chi-square
	232	7	**15.45**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Multivariate Analysis Predicting the Patient-Health Professional Relationship

A multiple linear (OLS) regression analysis was conducted to examine the association between the dependent variable given a set of independent (predictor) variables.

Specifically, the regression analysis compared the effect of patient-health professional relationship with factors of age, gender, race/ethnicity, educational status, marital status, and perceived health status. Since patient-health professional relationship is an interval variable, ordinary least squares (OLS) regression measured the effect of different variables in the dependent variable, holding all other variables in the analysis constant.

The multiple regression model did not detect any significant effect on demographic factors of age, gender, educational status, marital status, and perceived health status when predicting patient-health professional relationship at the $p < .05$ level. The overall F test is not significant (F (8,201) = 1.54, p = 0.14) with an adjusted $R^2 = 0.020$ indicating that the model as a whole does not account for a significant portion of variability in the patient-health professional relationship. Nor did any specific background variable predict the relationship variable. The results are shown in Table 7.

Table 7

Ordinary Least Squares Results for Demographic Factors Predicting Patient-Health Professional Relationship

Variables	Coefficients	Standard Error	t Value	p – value
Gender	-0.0621	0.0745	-0.83	0.4062
Married	-0.1400	0.099	-1.41	0.1589
Some College	0.112	0.130	0.86	0.3892
Bachelor Degree	-0.118	0.086	-1.37	0.1708
Age	0.001	0.005	0.11	0.9159
Excellent Health	-0.1101	0.088	-1.25	0.2113
Very Good Health	-0.0872	0.084	-1.04	0.2993

Note. Adjusted $R^2 = 0.0203$, Bolded Ratios are significant at the .05 level and underlined at the .01 level, p – value = 0.1445, n = 260

Multivariate Analysis: IHI Sharing Predicting Patient-Health Professional Relationship

Ordinary least squares regression was run predicting the relationship scale by the IHI-sharing measure with the control variables. Results failed to indicate a significant effect of IHI sharing with health professionals on the patient-health professional relationship at the $p < .05$ level. The overall F test is not significant (F (8, 201) = 1.54, $p = 0.14$) with an adjusted R^2 = 0.020 indicating that the model as a whole does not account for a significant portion of the variability in the patient-health professional relationship. The results are shown in Table 8.

Table 8

Ordinary Least Squares for IHI Sharing Predicting Patient-Health Professional Relationship

Variable	Coefficient	Standard Error	t Value	p – value
IHI Sharing	-0.073	0.073	-1.00	0.316
Gender	-0.062	0.074	-0.83	0.406
Married	-0.140	0.099	-1.41	0.159
Some college	0.112	0.130	0.86	0.389
BA degree	-0.118	0.857	-1.37	0.171
Age	0.001	0.005	0.11	0.916
Excellent health	-0.110	0.879	-1.25	0.211
Very good health	-0.087	0.839	-1.04	0.299

Note. Adjusted R^2 = 0.0203, Bolded Ratios are significant at the .05 level and underlined at the .01 level, p - value = 0.1445, n = 260

As was done with the socio-demographic background variables, the prediction of individual indicators for the relationship scale by IHI sharing, along with the background variables, was explored using logistic regression (see Table A.2). On only one of the 20 relationship indicators did IHI sharing show a significant effect – which would be expected by pure chance were the 20 items independent.

Multivariate Logistic Analysis Predicting Patient-Health Professional Relationship Indicators

Given the lack of prediction of the patient-health professional relationship, logistic regression was used to examine effects of socio-demographic factors on the individual indicators used in the relationship scale. The variables in the model, namely IHI sharing, bachelor degree, excellent health, very good health, and married were statistically significant predictors of patient-health professional relationship for several individual items that made up the questionnaire Patient-Health Professional relationship scale. However, only one or two predictors were significant in any of the 20 models, and none were in nine of the models.

Respondents who shared IHI (odds ratio, 1.79) were twice as likely to have a more positive response to the "My doctor helps me" indicator (see Table A.2).

Respondents with a bachelor degree were twice as likely to have a more favorable response as opposed to only some college to the following indicators: (1) "My doctor helps me"; (2) "I do not feel embarrassed when talking with my doctor"; (3) "I have a better understanding of my illness after seeing the doctor"; (4) "The doctor does not use medical terms without explaining what they mean"; (5) "I find my doctor easy to talk to"; and (6) "I follow instructions provided by my doctor". Also, this same group was three times as likely to have a more favorable response as opposed to only some college to the indicator "The doctor answers my questions (see Tables A.2; A.7 – A.12).

Respondents who were married were 86% more likely to provide a more favorable response to the indicator "My doctor has enough time for me" and 75% more likely to provide a more favorable response to the following indicators: (1) "The doctor is able to diagnose me with the right illness" and (2) "The doctor does not use medical terms without explaining what they mean" (see Tables A.3; A.6; A.9).

Respondents who reported having excellent health were 69% more likely to provide a more favorable response to the indicator "I trust my doctor" (see Table A.4). However, this is the only patient-health professional relationship variable of 20, for which excellent health showed a significant relationship – so that the result could be purely by chance.

Respondents who reported having very good health were twice as likely to have a more favorable response as opposed to excellent health for the indicators of "I feel my doctor's treatment will be worth the trouble it will take" and "I do not feel embarrassed when talking with my doctor" (see Tables A.5; A.7).

Summary

In this chapter, descriptive statistics were used to summarize the results of the survey and break down the results into socio-demographic data, Internet use data, and patient-health professional relationship data. Multivariate analysis was used in order to answer the research questions. A multivariate linear regression was conducted to predict the values of the dependent variable (patient-health professional relationship) given a set of independent (predictor) variables. A multivariate logistic regression was conducted to explain the variability of the binary variable (patients who present IHI to health professionals and those who do not) by the independent (predictor) variables. Since patient-health professional relationship scale is an interval variable, ordinary least squares regression measured the effect of different variables in the dependent variable, holding all other variables in the analysis constant.

The results of Cronbach's alpha reliability measuring the patient-health professional relationship indicated a Cronbach's alpha of 0.949 (N = 20) and a Cronbach's alpha based on standardized items of 0.955 (N = 20). This reliability is considered very good. Therefore, the instrument was found to be highly reliable with high internal consistency.

A multivariate logistic regression analysis of IHI sharing revealed that the patient-health professional relationship was predicted by one of six variables – age: the older the respondent, the lower the likelihood of sharing IHI with the health professional.

A multiple linear regression (OLS) did not detect any significant effect on demographic and background factors in predicting the patient-health professional relationship. Given the lack of prediction, logistic regression was used to examine effects of demographic and background factors on the individual indicators used in the relationship scale. Results revealed that IHI sharing increased with the indicator "My doctor helps me." The following indicators increased with the education status of bachelor degree: (1) my doctor helps me, (2) I do not feel embarrassed when talking with my doctor, (3) I have a better understanding of my illness after seeing the doctor, (4) the doctor does not use medical terms without explaining what they mean, (5) I find my doctor easy to talk to, (6) I follow instructions provided by my doctor, and (7) the doctor answers my questions. Also, results revealed that the following indicators increased with the marital status of being married: (1) my doctor has enough time for me, (2) the doctor is able to diagnose me with the right illness, and (3) the doctor does not use medical terms without explaining what they mean. Additionally, from the relationship scale, results showed that the indicators of "I trust my doctor" increased with the perceived health status of excellent health. The results also indicated that very good health increased with the following: (1) I feel my doctor's treatment will be worth the trouble it will take and (2) I do not feel embarrassed when talking with my doctor. OLS results for IHI sharing predicting patient-health professional relationship did not predict any of the 20 indicators that made up the relationship scale.

CHAPTER 5

DISCUSSION OF FINDINGS

While there is extensive literature on IHI, there is limited research on the impact of IHI on the patient-health professional relationship. Therefore, in the current study, I focused on this under-researched topic. The main objective of this study was to explore patient use and presentation of IHI and examine its effect on patient-health professional relationship. In this chapter, I present a discussion of the findings from data collected through the survey questionnaire. The purpose of the questionnaire was to glean information about what the participant's demographic data was, what the participant's use of the Internet for seeking medical health and wellness information was, and the participant's perception of their relationship with their doctor.

The descriptive data revealed that of the 260 surveys received, the majority of the respondents were females. Additionally, the majority of the participants self-reported their race/ethnicity as Caucasian (92.7%). The demographics of gender and race/ethnicity for this research mirrored other studies addressing this topic (Bylund et al., 2007; Cooley et al., 2011; Houston & Allison, 2002; Murray et al., 2003). Over half of the residents had a graduate or professional degree (33.5%) or a 4-year college degree (28.5%) combined.

For this research study, 224 (86.82%) respondents reported IHI use and 34 (13.18%) claimed sharing IHI with a health professional. With the majority of the respondents being IHI users, there were too few negative responders for the model to determine significant predictors of searching for health information. In fact, reported use was so overwhelming that the variable also could not be used as a predictor of patient-health professional relationship. Rather, the research sought predictors of sharing IHI with health professionals. However, when looking at

IHI sharing, it must be noted that distinguishing non IHI users from users who were non-IHI sharers was judged to not be a viable approach to analysis.

The first hypothesis to be tested was the relationship between demographic and background variables and sharing of IHI with health professionals. Although IHI has been documented in the literature (Rice, 2006), it was important to evaluate the relationship between demographic and background variables as defined by this study and IHI sharing. It was found that age is significantly associated with sharing of IHI with health professionals. Older individuals are less likely to share IHI information with their providers. This is supported by prior research indicating older patients to be less likely to share IHI with health professionals (Iverson, Howard & Penney, 2008). No other demographic variables were statistically significant ($p < 0.05$) when analyzing the likelihood of IHI. There might be two reasons for such association of age and IHI sharing. First, it is possible that younger people trust Internet sources more than their older counterparts, and therefore find it worthy to share that information with the provider. Second, it is possible that older patients do not want to invade the health professional's turf (Imes, Bylund, Sabee, Routsong, & Sanford, 2008).

The next hypothesis to be tested was the relationship between demographic and background variables and the patient-health professional relationship scale. No significant association with the patient-health professional relationship was found. This is not supported by prior research indicating that demographic factors such as race/ethnicity, age, gender, educational status and perceived health status are predictors in the patient-health professional relationship (Al-Windi, 2005; Cooper-Patrick et al., 1999; Crocker et al., 2013). A reason why demographic and background variables in this study did not predict patient-health professional relationship might be based upon the under-representation of some of the predictors such as

race/ethnicity, marital status with the exception for married and disease indicators. Another reason might be that all patients prefer to have a relationship with their provider. Regardless of the objective finding, demographic and background factors are still important and do influence the patient-health professional relationship.

Due to the non-results for the prediction of the overall relationship variable, logistic regressions were resorted to for the purpose of examining any relationships of the demographic and background factors on the 20 indicators employed in the relationship scale.

With respect to the individual items from the relationship scale, results revealed that IHI sharing increased with the indicator "My doctor helps me." However, this is the only patient-health professional relationship variable of 20, for which IHI sharing showed a significant relationship, so the result could be purely by chance.

The following indicators increased with the education status of bachelor degree: (1) my doctor helps me, (2) I do not feel embarrassed when talking with my doctor, (3) I have a better understanding of my illness after seeing the doctor, (4) the doctor does not use medical terms without explaining what they mean, (5) I find my doctor easy to talk to, (6) I follow instructions provided by my doctor, and (7) the doctor answers my questions. Also, results reveal that the following indicators increased with the marital status of being married: (1) my doctor has enough time for me, (2) the doctor is able to diagnose me with the right illness, and (3) the doctor does not use medical terms without explaining what they mean.

Additionally, from the relationship scale, results showed that the indicator of "I trust my doctor" increased with the perceived health status of excellent health. Higher perceived health status is consistent with previous study findings (Al-Windi, 2005; Croker et al., 2013) as well as

educational status (Banerjee & Sanyal, 2012). The marital status of married may have occurred by chance.

The following indicators increased with the perceived health status of very good health: (1) I feel my doctor's treatment will be worth the trouble it will take and (2) I do not feel embarrassed when talking with my doctor.

Because the bachelor's degree, married, and very good health variables predict more than one of the relationship indicators, all such odds ratios are unlikely to be purely by chance. Overall then, there is some limited evidence that some socio-demographic factors and perhaps IHI sharing, did in fact influence the patient-health professional relationship. However, it is surprising that age and gender were not predictors of the patient-health professional relationship scale considering literature affirmation that it has been shown to influence the patient-health professional relationship (Al-Windi, 2005; Croker et al., 2013).

The final hypothesis to be tested was the relationship between sharing of IHI and the patient-health professional relationship. It was found that the IHI sharing measure did not predict any of the 20 indicators that made up the relationship scale. Thus, results failed to provide any support for the central hypothesis of the study: that sharing of IHI with health professionals would improve patient-health professional relationships.

Literature, on IHI sharing and its effect on the patient-health professional relationship, was limited. However, literature confirmed doctors' positive reception of patients sharing IHI (Cooley et al., 2011). Yet, other literature pointed to positive and negative impacts on the patient-health professional relationship among IHI sharers. Whether or not the impact is positive or negative might be based upon the reaction and communication skills (Murray et. al., 2003).

CHAPTER 6

CONCLUSION

This study was designed to explore patient use and presentation of IHI and examine its effect on the patient-health professional relationship. I was specifically interested in patient sharing of IHI and the effect on the patient-health professional relationship. The results of this study should be viewed in light of the fact that the sample size used for the study was very small. Small sample sizes can affect the results of a study, possibly failing to detect independent effects. While this is not necessary true regarding my results, it should be noted when interpreting the results.

To summarize the research project, the Conclusion chapter is broken down into three areas: Summary of Findings, Implications for Practice, and Recommendation for Future Research.

Summary of Findings

Listed are the research questions for this study.

1. Do factors of age, gender, race/ethnicity, educational status, marital status, and perceived health status when taken together predict patient IHI sharing with health professionals? Findings suggest that age does influence sharing, with IHI sharing decreasing with years of patient age.

2. Do factors of age, gender, race/ethnicity, educational status, marital status, and perceived health status affect the patient-health professional relationship? No effect was found on the overall patient-health professional relationship scale, although individual indicators used in that scale were predicted by varied background variables.

3. Does IHI sharing affect the patient-health professional relationship? No effect was found.

The data received from the surveys and hypotheses did not affirm all three of the research questions.

Listed are the three hypotheses statements and results from the data analysis.

H1) Sharing of IHI will differ by demographic and background variables included in the study. This hypothesis was supported for only one of the variables − age.

H2) The patient-health professional relationship will differ by demographic and background variables included in the study. This hypothesis was not supported for the overall relationship variable. However, when logistic runs on individual indicators making up the patient-health professional relationship scale were made, five of the variables, IHI Sharing, educational status (bachelor degree), marital status (married), and perceived health status (excellent health and very good health) predicted varied of the several indicators, providing tenuous support for the hypothesis.

From the relationship scale, results indicate that IHI sharing increased with the indicator "My doctor helps me."

From the relationship scale, results indicate that the following indicators increased with the education status of bachelor degree: (1) my doctor helps me, (2) I do not feel embarrassed when talking with my doctor, (3) I have a better understanding of my illness after seeing the doctor, (4) the doctor does not use medical terms without explaining what they mean, (5) I find my doctor easy to talk to, (6) I follow instructions provided by my doctor, and (7) the doctor answers my questions.

Respondents who shared IHI were twice as likely to report that their doctor helps them. Also, those with a bachelor degree were twice as likely to report that their doctor helps them, they do not feel embarrassed with talking with their doctor, they have a better understanding their doctor does not use medical terms without explaining what they mean, and their doctor is easy to talk to. This same group was three times as likely to report that they follow instructions provided by their doctor and their doctor answers their questions.

Also, results revealed that the following indicators increased with the marital status of being married: (1) my doctor has enough time for me, (2) the doctor is able to diagnose me with the right illness, and (3) the doctor does not use medical terms without explaining what they mean. Those who were married were twice as likely to report that their doctor has enough time for them, their doctor is able to diagnose them with the right illness and their doctor does not use medical terms without explaining what they mean.

Additionally, from the relationship scale, results showed that the indicator of "I trust my doctor" increased with the perceived health status of excellent health. Respondents who reported having excellent health were twice as likely to report that they trust their doctor.

Respondents who reported having very good health were twice as likely to report that they feel their doctor's treatment will be worth the trouble it will take and that they do not feel embarrassed when talking with their doctor.

H3) The patient-health professional relationship will differ among those who use IHI but do not share and those who use IHI and do share. This hypothesis was not supported at all. Results failed to indicate a significant effect of IHI sharing with health professionals on the patient-health professional relationship at the $p < .05$ level. The overall F test was not significant (F (8, 201) = 1.54, p = 0.14) with an adjusted $R^2 = 0.020$ indicating that the model as a whole did

not account for a significant portion of the variability in the patient-health professional relationship.

Implications for Practice

The study findings suggest there are some practical implications to address. In the United States and worldwide, the practice of IHI is rapidly growing just as the aging population is on the rise. Therefore, patients accessing the Internet for medical health and well-being information have the potential to restructure healthcare organization, delivery, and the patient-health professional relationship. This research should be beneficial to health professionals, health educators, policy makers, and patients as they acknowledge patients' search of medical health and well-being information. Particularly, physicians need to permit and encourage patients to share information they obtained outside of the medical clinic or hospital. This research may provide grounds for further research for the kinds of patient-health professional relationships that are likely to emerge via the Internet in the future environment of medical practice.

Recommendations for Future Research

After conducting this exploratory study and reviewing the results, questions have risen that needs to be examined in future studies to enhance this research. Further research studies are needed that:

- Replicate the study using a larger sample of residents so the sample is more representative, i.e., gender, race/ethnicity.
- Replicate the study using a larger variety of senior communities in Texas, i.e., nursing facilities, assisted living, retirement communities, etc.

- Replicate this study in combination with other age cohorts.
- Replicate the study one year later to determine if there is a change in the use and sharing of IHI and to determine if patient perceptions of the patient-health professional relationship have changed.
- Replicate the study in other geographical areas.
- Further explore perceptions by using a qualitative approach for residents.

Limitations

The central issue was the general nonsupport of the study hypotheses, particularly Hypothesis 3, involving the relationship of IHI sharing with the patient-provider relationship. However, there are additional limitations that should be noted.

First, almost all of the sampled respondents were Caucasian. Second, the respondents appear to be of fairly-high status and computer sophistication, with an overwhelming majority supporting accessing of IHI and about half reporting the sharing of IHI with providers. The former prevented employing the IHI-access measure to predict the patient-provider relationship. And the high degree of IHI access and sharing suggest that the study sample cannot be generalized to the larger elder population – at most to higher-status elders residing in higher-cost active adult communities.

Third, only one relationship supported any of the three hypotheses in the format pre-specified: the negative association of IHI access with age. The limited support for Hypothesis 2 was obtained not for any hypothesized association with the relationship scale, only for associations with individual indicators used in that scale.

Finally, regarding Hypothesis 3, any association of the patient-provider relationship to IHI access could not even be reasonably tested, given the extreme skew of the IHI-access measure; and no association was found between patient-provider relationship and IHI sharing.

APPENDIX A

SURVEY INSTRUMENT

Instructions

1. Please answer all questions,
2. Complete questionnaire by circling or placing an x in the appropriate answer box or providing the information requested.
3. Please complete the questions as honestly, frankly and objectively as possible.
4. Please answer the questions as they apply to you personally
5. Please return questionnaire by placing in the designated return container box.

Section A – INTERNET USE

Q1 Have you ever used the Internet to find medical health and wellness information about a personal health problem you may have had?

- ❍ Yes
- ❍ No

Q2 If you selected yes to question 1, how often do you use the Internet for health information? (select one)

- ❍ More than once a week
- ❍ Once a week
- ❍ More than once a month
- ❍ Once a month
- ❍ Don't know

Q3 If you selected no to question 1, what is your reason for not using the Internet? (select one and GO TO Q17 - Q30)

- ❍ Already adequately informed
- ❍ Use other resources
- ❍ No Internet access
- ❍ Uncomfortable with Internet
- ❍ Do not trust Internet information

Q4 Why did you choose the Internet to look for medical health and wellness information? (select all that apply)

- ❑ Information is free/seeing a physician is expensive
- ❑ Information is quickly acquired/had a serious problem and needed answers quickly
- ❑ Privacy/avoiding embarrassment/sensitive issues
- ❑ Easy to find
- ❑ Wide availability of information

Q5 Did you learn something useful from the medical health and wellness information you found on the Internet? (select one)

- ❍ Yes
- ❍ No

Q6 When do you access the Internet for medical health and wellness information? (select one)

- ❍ Before your appointment
- ❍ After your appointment
- ❍ Before and after your appointment
- ❍ Never
- ❍ Other (please specify)_____

Q7 Have you ever tried to diagnose a problem based upon health and wellness information found on the Internet? (select one)

- ❍ Yes
- ❍ No

Q8 Have you ever tried to treat a health problem based upon health and wellness information found on the Internet? (select one)

- ❍ Yes
- ❍ No

Q9 After reading health and wellness information found on the Internet, did you feel more comfortable with information given to you by your doctor? (select one)

- ❍ Yes
- ❍ No

Q10 Has the medical health and wellness information you found from the Internet improved the way you take care of your health? (select one)

- ❍ Yes
- ❍ No

Q11 Have you ever wanted to discuss information you found on the Internet to your doctor but did not have enough time? (select one)

- ❍ Yes
- ❍ No

Q12 Have you ever talked to a doctor or nurse about the medical health and wellness information you found from the Internet? (select one: If No is selected, then go to Q17)

- ❑ Yes
- ❑ No

Q13 In discussing information you found on the Internet, did your doctor think you were challenging his/her authority? (select one)

- ❍ Yes
- ❍ No

Q14 Did your doctor feel that the information you found on the Internet is relevant to your case or your medical issues? (select one)

- ❍ Yes
- ❍ No

Q15 After discussing information you found in the Internet, did your doctor modify his/her approach in light of what you presented? (select one)

- ❍ Yes
- ❍ No

Q16 Did your doctor think that your request based upon the information you found on the Internet was not appropriate for your health? (select one)

- ❍ Yes
- ❍ No

Section B – PATIENT-HEALTH PROFESSIONAL RELATIONSHIP

Q17 As a patient:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
My doctor helps me.	❍	❍	❍	❍	❍
My doctor has enough time for me.	❍	❍	❍	❍	❍
I trust my doctor.	❍	❍	❍	❍	❍
My doctor understands me.	❍	❍	❍	❍	❍
I feel my doctor's treatment will not be worth the trouble it will take.	❍	❍	❍	❍	❍
My doctor and I agree on the nature of my medical symptoms.	❍	❍	❍	❍	❍
I feel content with my doctor's treatment.	❍	❍	❍	❍	❍
The doctor is able to diagnose me with the right illness.	❍	❍	❍	❍	❍
I feel embarrassed when talking with my doctor.	❍	❍	❍	❍	❍
I have a better understanding of my illness after seeing the doctor.	❍	❍	❍	❍	❍
It is easy to follow my doctor's advice.	❍	❍	❍	❍	❍
The doctor clearly explains the reason for any ill health.	❍	❍	❍	❍	❍

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The doctor use medical term without explaining what they mean.	❍	❍	❍	❍	❍
I find my doctor easy to talk to.	❍	❍	❍	❍	❍
The doctor's advice and treatment is appropriate for my situation.	❍	❍	❍	❍	❍
I follow instructions provided by my doctor.	❍	❍	❍	❍	❍
The doctor answers my questions.	❍	❍	❍	❍	❍
I would refer my doctor to others.	❍	❍	❍	❍	❍
The doctor gives me different treatment options available for my condition.	❍	❍	❍	❍	❍
The doctor provides me with written or printed information.	❍	❍	❍	❍	❍

Q18 On a scale of 1 -10 (1 = very poor, 10 = excellent) your relationship with your doctor.

- ❍ 0
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❑ 0

Section C - DEMOGRAPHICS

Q19 What is you gender? (select one)

- ❍ Male
- ❍ Female

Q20 What is your current marital status? (select one)

- ❍ Single
- ❍ Married
- ❍ Divorced
- ❍ Separated
- ❍ Widowed

Q21 What is your race/ethnicity? (select all that apply)

- ❑ Asian or Pacific Islander
- ❑ African American (not of Hispanic origin)
- ❑ Hispanic/Latino
- ❑ Caucasian(not of Hispanic origin)
- ❑ Other (please specify)_____

Q22 What is your current educational level? (select one)

- ❍ Less than High School
- ❍ High School Degree/GED
- ❍ Some College
- ❍ 4-year college degree
- ❍ Graduate or Professional Education

Q23 What is your current employment status? (select one)

- ❍ Employed full-time
- ❍ Employed part-time
- ❍ Homemaker
- ❍ Unemployed
- ❍ Retired
- ❍ Other (please specify)_____

Q24 Which of the following categories best describe your household's annual income? (select one)

- ❑ Under $50,000
- ❑ Over $250,000
- ❑ $100,001 - $250,000
- ❑ $50,001 - $100,000

Q25 Which category best describe your health care coverage? (select all that apply)

- ❑ Private insurance offered through an employer or union
- ❑ Private health insurance plan that you bought yourself
- ❑ Medicare
- ❑ Medicaid
- ❑ Health insurance through any other source including Medigap, military, or veteran's coverage
- ❑ No health insurance

Q26 In general, compared to other persons your age, would you say your health is (select one)

- ❍ Excellent
- ❍ Very Good
- ❍ Good
- ❍ Fair
- ❍ Poor
- ❍ Very Poor

Q27 Have you ever been diagnosed with any chronic illnesses?

- ❍ Yes
- ❍ No

Q28 If you have been diagnosed with any chronic illness, select all that apply.

- ❑ Circulatory disease (heart disease/hypertension/stroke)
- ❑ Respiratory disease (asthma/chronic bronchitis)
- ❑ Cancer
- ❑ Diabetes (including borderline)
- ❑ Arthritis
- ❑ Other (please specify)_____

Q29 Are you currently being treated for any chronic illness?

- ❍ Yes
- ❍ No

Q30 In the past six months, how many times have you been to the doctor? (select one)

- ❍ None
- ❍ 1 time
- ❍ 2 or 3 times
- ❍ More than 3 times
- ❍ Don't know

Q31 What is your birth year?

APPENDIX B

IRB APPROVAL

UNT

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Office of the Vice President of Research and Economic Development
OFFICE OF RESEARCH SERVICES

June 27, 2013

Supervising Investigator: Dr. James Swan
Student Investigator: TimMarie Williams
Department of Applied Gerontology
University of North Texas

RE: Human Subjects Application No. 12-551

Dear Dr. Swan:

In accordance with 45 CFR Part 46 Section 46.101, your study titled "Internet Health Informatin and Patient-Health Professional Relationship" has been determined to qualify for an exemption from further review by the UNT Institutional Review Board (IRB).

No changes may be made to your study's procedures or forms without prior written approval from the UNT IRB. Please contact Shelia Bourns, Research Compliance Analyst, ext. 4643, if you wish to make any such changes. Any changes to your procedures or forms after three years will require completion of a new IRB application.

We wish you success with your study.

Sincerely,

Brad Henderson for PLK

Patricia L. Kaminski, Ph.D.
Associate Professor
Chair, Institutional Review Board

PK:sb

APPENDIX C

PERMISSION REQUEST AND APPROVAL LETTERS –

ACTIVE ADULT COMMUNITIES

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NORTH TEXAS
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COLLEGE OF PUBLIC AFFAIRS AND COMMUNITY SERVICES
Department of Sociology

August 21, 2012

Ms. Debbie Hargett
Director of Residence Services
Army Residence Community
7400 Crestway Drive
San Antonio, TX 78239

RE: Permission to Conduct Pilot Study

Dear Ms. Hargett:

The purpose of this letter is to request your permission to submit surveys to residents of your community for the purpose of conducting a Pilot Study. As a Doctoral candidate at the University of North Texas in Denton, I am currently conducting research under the supervision of Professor James Swan, Ph.D. in Sociology. The title of the study is "Internet health information and patient-health professional relationship". Attached is a copy of the provisional survey for your perusal.

Study Overview

The aim of this study is to investigate patient use and presentation of Internet health information and examine its effect on patient-health professional relationship. The overall goal is to gain insight into the patient-health professional relationship by focusing on residents at active adult communities in Texas.

Your Involvement

This project consists of a survey to be distributed to ten residents of your community. Participant's names will not be required and the name of your community will be held confidentially and will not be disclosed to anyone other than the researcher.

The survey results will not be pooled for this project. Should this study be published, only pooled results will be documented.

Your approval to conduct this pilot study would be greatly appreciated. Kindly submit a signed letter of permission on your community's letterhead acknowledging your consent and permission to conduct this study and return to TimmarieWilliams@my.unt.edu.

1155 Union Circle #311157 | Denton, Texas 76203-5017 | TEL 940.565.2296 | FAX 940.369.7035
TTY 940.369.8652 | www.unt.edu

Thank you for your contribution to my research as it will benefit patients and health professionals now and in the future. Together, we can learn more about the role of the Internet in managing health conditions and its effect on the delivery of health services. Upon the completion of the research study, I would be happy to provide you with a presentation and full report.

Sincerely,

TimMarie C. Williams

TimMarie C. Williams, PhDc
University of North Texas

The Army Residence Community
San Antonio

August 21, 2012

University of North Texas
Department of Sociology
Attention: Ms. TimMarie Williams
1155 Union Circle, #311157
Denton, Texas 76203-5017

Dear Ms. Williams:

It is my pleasure to acknowledge receipt of your proposed and prospective study at the Army Residence Community (ARC). COL Bruce Furbish, Executive Director of the ARC, has personally granted permission to conduct this study at our community under your leadership. We appreciate that the contents of the information will be used for your research purposes specifically.

Please let me know how I can personally assist you in distributing the surveys to our residents in independent living. My contact information is (210) 646-5222 or email dhargett@armyresidence.com

We wish you success in your endeavor to complete your dissertation.

Best regards,

Debbie Hargett

Debbie Hargett
Director of Resident Services

7400 Crestway • San Antonio, Texas 78239-3098 • (210) 646-5300
website: www.armyresidence.com • e-mail: marketing@armyresidence.com
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COLLEGE OF PUBLIC AFFAIRS AND COMMUNITY SERVICES
Department of Sociology

October 31, 2012

Ms. Jamie Chamberlain
Lifestyle Director
Frisco Lakes Community Association
7277 Frisco Lakes Drive
Frisco, TX 75034

RE: Permission to Conduct Research Study

Dear Ms. Chamberlain:

The purpose of this letter is to request your participation in conducting a research study. As a Doctoral candidate at the University of North Texas in Denton, I am currently conducting research under the supervision of Professor James Swan, Ph.D. in Sociology. The title of the study is "Internet health information and patient-health professional relationship". Attached is a copy of the provisional survey for your perusal.

Study Overview

The aim of this study is to investigate patient use and presentation of Internet health information and examine its effect on patient-health professional relationship. The overall goal is to gain insight into the patient-health professional relationship by focusing on residents at active adult communities in Texas.

Your Involvement

This project consists of a survey to be distributed to independent living residents of your community. Participant's names will not be required and the name of your community will be held confidentially and will not be disclosed to anyone other than the researcher. All participants will be given a letter containing survey information and consent. Participants will be advised that they have the right to withdraw from the study at any time without it affecting their relationship with your community or with me.

The survey results will be pooled for this project. Should this study be published, pooled results will be documented.

Your approval to conduct this pilot study would be greatly appreciated. Kindly submit a signed letter of permission on your community's letterhead acknowledging your consent and permission to conduct this study and return to TimmarieWilliams@my.unt.edu.

1155 Union Circle #311157 | Denton, Texas 76203-5017 | TEL 940.565.2296 | FAX 940.369.7035
TTY 940.369.8652 | www.unt.edu

Thank you for your contribution to my research as it will benefit patients and health professionals now and in the future. Together, we can learn more about the role of the Internet in managing health conditions and its effect on the delivery of health services. Upon the completion of the research study, I would be happy to provide you with a presentation and full report.

Sincerely,

TimMarie C. Williams

TimMarie C. Williams, PhDc
University of North Texas

Frisco Lakes

COMMUNITY ASSOCIATION

December 10, 2012

Re: TimMarie Williams

To: University of North Texas Institutional Review Board

As Community Manager of the Frisco Lakes Community Association, Inc., I hereby consent and grant permission to TimMarie Williams to perform a research study at our Community to learn more about the role of the Internet in managing health conditions and its effect on the delivery of health services.

Sincerely,
THE VILLAGE AT FRISCO LAKES COMMUNITY ASSOCIATION

Judy Dreis, PCAM
Community Manager

Cc: Master File/Correspondence

7277 Frisco Lakes Drive • Frisco, Texas 75034 Phone: 972.370.0404 • Fax: 972.370.2600

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COLLEGE OF PUBLIC AFFAIRS AND COMMUNITY SERVICES
Department of Sociology

August 31, 2012

Mr. Rob James
General Manager
Holly Lake Ranch Association
220 Holly Lake Ranch, TX 75765

RE: Permission to Conduct Research Study

Dear Mr. James:

The purpose of this letter is to request your participation in conducting a research study. As a Doctoral candidate at the University of North Texas in Denton, I am currently conducting research under the supervision of Professor James Swan, Ph.D. in Sociology. The title of the study is "Internet health information and patient-health professional". Attached is a copy of the provisional survey for your perusal.

Study Overview

The aim of this study is to investigate patient use and presentation of Internet health information and examine its effect on health professional-patient relationship. The overall goal is to gain insight into the health professional-patient relationship by focusing on residents at active adult communities in Texas.

Your Involvement

This project consists of a survey to be distributed to residents of your community. Participant's names will not be required and the name of your community will be held confidentially and will not be disclosed to anyone other than the researcher. All participants will be given a letter containing survey information and consent. Participants will be advised that they have the right to withdraw from the study at any time without it affecting their relationship with your community or with me.

The survey results will be pooled for this project. Should this study be published, pooled results will be documented.

David Wagner, a member of your community will assist me with participant recruitment and distribution of surveys. Please feel free to contact him at (903) 613-2053.

Your approval to conduct this pilot study would be greatly appreciated. Kindly submit a signed letter of permission on your community's letterhead acknowledging your consent and permission to conduct this study and return to TimmarieWilliams@my.unt.edu.

1155 Union Circle #311157 | Denton, Texas 76203-5017 | TEL 940.565.2296 | FAX 940.369.7035
TTY 940.369.8652 | www.unt.edu

Thank you for your contribution to my research as it will benefit patients and health professionals now and in the future. Together, we can learn more about the role of the Internet in managing health conditions and its effect on the delivery of health services. Upon the completion of the research study, I would be happy to provide you with a presentation and full report.

Sincerely,

TimMarie C. Williams

TimMarie C. Williams, PhDc
University of North Texas

Holly Lake Ranch Association

Dear Timmarie Willliams,

Thank you for your interest of Holly Lake Ranch. This letter letter serves as acknowledgement of receipt of your request and our agreement to allow you to survey our homeowners. As part of the agreement, you agree not to go door to door. I wish you luck in your endeavor and let me know if I can help you further.

Sincerely,

Robert W. James
General Manager
Holly Lake Ranch Association

Holly Lake Ranch Association
220 Holly Lodge Circle * Holly Lake Ranch, TX 75765 * Fax (903) 769-3685 * Office (903) 769-3646

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Department of Sociology

October 29, 2012

Ms. Althea Parent
Activity Coordinator
Robson Ranch Community Association
9501 Ed Robson Blvd.
Denton, TX 76207

RE: Permission to Conduct Research Study

Dear Ms. Parent:

The purpose of this letter is to request your participation in conducting a research study. As a Doctoral candidate at the University of North Texas in Denton, I am currently conducting research under the supervision of Professor James Swan, Ph.D. in Sociology. The title of the study is "Internet health information and patient-health professional relationship". Attached is a copy of the provisional survey for your perusal.

Study Overview

The aim of this study is to investigate patient use and presentation of Internet health information and examine its effect on patient-health professional relationship. The overall goal is to gain insight into the patient-health professional relationship by focusing on residents at active adult communities in Texas.

Your Involvement

This project consists of a survey to be distributed to independent living residents of your community. Participant's names will not be required and the name of your community will be held confidentially and will not be disclosed to anyone other than the researcher. All participants will be given a letter containing survey information and consent. Participants will be advised that they have the right to withdraw from the study at any time without it affecting their relationship with your community or with me.

The survey results will be pooled for this project. Should this study be published, pooled results will be documented.

Dr. Ben Dickerson, a member of your community referred me to you. Please feel free to contact him at (940) 231-7883.

Your approval to conduct this pilot study would be greatly appreciated. Kindly submit a signed letter of permission on your community's letterhead acknowledging your consent and permission to conduct this study and return to TimmarieWilliams@my.unt.edu.

1155 Union Circle #311157 | Denton, Texas 76203-5017 | TEL 940.565.2296 | FAX 940.369.7035
TTY 940.369.8652 | www.unt.edu

Thank you for your contribution to my research as it will benefit patients and health professionals now and in the future. Together, we can learn more about the role of the Internet in managing health conditions and its effect on the delivery of health services. Upon the completion of the research study, I would be happy to provide you with a presentation and full report.

Sincerely,

TimMarie C. Williams

TimMarie C. Williams, PhDc
University of North Texas

ROBSON RANCH
DENTON HOMEOWNERS ASSOCIATION
9428 ED ROBSON CIRCLE
DENTON, TEXAS 76207
940-246-1023 940-246-1045 (FAX)

November 5, 2012

TimMarie C. Williams PhDc
Applied Gerontology
Unversity of North Texas

Dear TimMarie,

Robson Ranch is pleased to assist you with your dissertation research project on Thursday, November 29, 2012 from 9:00 a.m. – 4:00 p.m.

We will have the Patriot Room in the Clubhouse setup with tables and chairs for the residents to complete the survey. Your presence I required in case there are any questions from the residents regarding the survey questions.

Looking forward to meeting you and if you have any questions please don't hesitate to contact me.

Sincerely,

Althea Parent

Althea Parent
Activities Coordinator

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Department of Sociology

October 18, 2012

Ms. Krystal Wilson
Director of Communications
Sun City Texas Community Association
2 Texas Drive, Bldg. A
Georgetown, TX 78633

RE: Permission to Conduct Research Study

Dear Ms. Wilson:

The purpose of this letter is to request your participation in conducting a research study. As a Doctoral candidate at the University of North Texas in Denton, I am currently conducting research under the supervision of Professor James Swan, Ph.D. in Sociology. The title of the study is "Internet health information and patient-health professional relationship". Attached is a copy of the provisional survey for your perusal.

Study Overview

The aim of this study is to investigate patient use and presentation of Internet health information and examine its effect on health professional-patient relationship. The overall goal is to gain insight into the health professional-patient relationship by focusing on residents at active adult communities in Texas.

Your Involvement

This project consists of a survey to be distributed to residents of your community. Participant's names will not be required and the name of your community will be held confidentially and will not be disclosed to anyone other than the researcher. All participants will be given a letter containing survey information and consent. Participants will be advised that they have the right to withdraw from the study at any time without it affecting their relationship with your community or with me.

The survey results will be pooled for this project. Should this study be published, pooled results will be documented.

George Williams, a member of your community will assist me with participant recruitment and distribution of surveys. Please feel free to contact him at (512) 868-8296.

Your approval to conduct this pilot study would be greatly appreciated. Kindly submit a signed letter of permission on your community's letterhead acknowledging your consent and permission to conduct this study and return to TimmarieWilliams@my.unt.edu.

1155 Union Circle #311157 | Denton, Texas 76203-5017 | TEL 940.565.2296 | FAX 940.369.7035
TTY 940.369.8652 | www.unt.edu

Thank you for your contribution to my research as it will benefit patients and health professionals now and in the future. Together, we can learn more about the role of the Internet in managing health conditions and its effect on the delivery of health services. Upon the completion of the research study, I would be happy to provide you with a presentation and full report.

Sincerely,

TimMarie C. Williams

TimMarie C. Williams, PhDc
University of North Texas

Sun City Texas
Community Association

October 31, 2012

Dear Ms. TimMarie Williams,

The Sun City Texas Community Association is happy to support your efforts in conducting a research study to investigate patient use and presentation of Internet health information and examine its effect on heath professional-patient relationships.

The survey will be conducted between November and December of 2012. The goal of the survey is to receive between 50 and 225 submissions from Sun City Texas residents.

Participant Recruitment and Publicity provided by SCTXCA:
Resident participation may be solicited through a flyer placed on the bulletin boards at the Social Center, Activity Center and Cowan Creek Amenity Center during the approved survey period. . If requested, a 30-word survey invitation may be included in one of the community-wide emails (CA-Communicator) sent out each Friday (deadline for content submission Wednesdays). Sun City Resident George Williams will also assist with recruitment. Participation may not be solicited door to door.

Availability and Location:
Surveys will be conducted on paper and made available at the Social Center Monitors' desk during the approved survey period. Surveys will also be returned to the Social Center Monitor's desk for collection by Ms. Williams. Ms. Williams is responsible for providing copies of the survey to the Monitors Desk.

At the end of the survey, we would be very interested to see the final report. Thank you for your interest in Sun City Texas and please contact me at 512-948-7731 if I can answer any additional questions.

Kind Regards,

Krystal Wilson
Director of Communications
Sun City Texas Community Association

2 Texas Drive, Georgetown, TX 78633 | 512-948-7700 | www.sctxca.org

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Department of Sociology

October 29, 2012

Ms. Lana Van Giesan
Executive Director
The Legacy at Willow Bend
6101 Ohio Drive
Plano, TX 75024

RE: Permission to Conduct Research Study

Dear Ms. Van Giesan:

The purpose of this letter is to request your participation in conducting a research study. As a Doctoral candidate at the University of North Texas in Denton, I am currently conducting research under the supervision of Professor James Swan, Ph.D. in Sociology. The title of the study is "Internet health information and patient-health professional relationship". Attached is a copy of the provisional survey for your perusal.

Study Overview

The aim of this study is to investigate patient use and presentation of Internet health information and examine its effect on patient-health professional relationship. The overall goal is to gain insight into the patient-health professional relationship by focusing on residents at active adult communities in Texas.

Your Involvement

This project consists of a survey to be distributed to independent living residents of your community. Participant's names will not be required and the name of your community will be held confidentially and will not be disclosed to anyone other than the researcher. All participants will be given a letter containing survey information and consent. Participants will be advised that they have the right to withdraw from the study at any time without it affecting their relationship with your community or with me.

The survey results will be pooled for this project. Should this study be published, pooled results will be documented.

Your approval to conduct this pilot study would be greatly appreciated. Kindly submit a signed letter of permission on your community's letterhead acknowledging your consent and permission to conduct this study and return to TimmarieWilliams@my.unt.edu.

1155 Union Circle #311157 | Denton, Texas 76203-5017 | TEL 940.565.2296 | FAX 940.369.7035
TTY 940.369.8652 | www.unt.edu

Thank you for your contribution to my research as it will benefit patients and health professionals now and in the future. Together, we can learn more about the role of the Internet in managing health conditions and its effect on the delivery of health services. Upon the completion of the research study, I would be happy to provide you with a presentation and full report.

Sincerely,

TimMarie C. Williams

TimMarie C. Williams, PhDc
University of North Texas

October 30, 2012

TimMarie C. Williams, PhDc
Applied Gerontology
University of North Texas

TimMarie,

We are happy to work with you on your graduate program. Lisa Harris, our Lifestyle Coordinator, will be your direct contact here and will assist you in getting independent living residents to answer your questionnaires.

We look forward to this mutual project.

Lana Van Giesen
Executive Director

6101 Ohio Drive Suite 400 Plano, Texas 75024 P 972.468.6200 F 214.291.9880 www.thelegacywb.org

APPENDIX D

NEWSLETTER RECRUITMENT ADVERTISEMENT

Volunteers Needed for a Research Study

"Internet health information and patient-health professional relationship"

The study is open to residents at active adult communities in Texas.

The purpose of the research study is to examine how the patient-health professional relationship is being affected by the use of the Internet health information.

Participation involves completing a survey.

Time commitment: It should take approximately 10 minutes to complete the survey.

For additional information, please contact TimMarie Williams at 940- 565-3454 or email TimMarie at: TimmarieWilliams@my.unt.edu.

Principal Investigator: Dr. James Swan, Ph.D.

University of North Texas, Department of Sociology

APPENDIX E

PARTICIPANT INFORMATION AND IMPLIED CONSENT LETTER

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COLLEGE OF PUBLIC AFFAIRS AND COMMUNITY SERVICES
Department of Sociology

November 29, 2012

Dear Participant:

I am a Ph.D. candidate in Applied Gerontology at the University of North Texas in Denton, Texas. I am inviting you to participate in a research study that I am conducting under the supervision of Dr. James Swan, Professor of Sociology. The focus of my study is to examine how Internet health information affects the patient-health professional relationship.

The criteria for participation in this study are that you must be a resident at an active adult community in Texas.

You will be asked to participate in a survey that may take about 10 minutes to complete. There are no foreseeable risks involved in this study. Your participation in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits that you currently receive. All surveys will be number-coded, and your name will not be required. Your participation will be treated as confidential. No one will know how you responded to the survey questions. The results of the research study may be published or used in a professional journal article or presentation, but your name or any personal identifiable information about you will not be included. Published results will be presented in summary form only, and your identity will not be associated with your responses in any published format. All study data will be retained in a secure location for a minimum of three years before being destroyed. You will not be paid for your participation.

The risk of loss of confidentiality is minimized through the use of number codes. Completing this survey may give you the opportunity to express your opinions about how Internet health information affects the patient-health professional relationship that may benefit other adults in the future.

Thank you for taking time to consider participating in this study. If you have any questions about this research project, please feel free to contact me at (940) 565-3454 or TimmarieWilliams@my.unt.edu. You may also contact the Supervising Investigator, Dr. James Swan at (940) 565-3454 or swan@unt.edu. This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

By completing this survey, you are agreeing to participate in this research project. Please keep this letter for your records.

Sincerely yours,

TimMarie C. Williams

TimMarie Williams

1155 Union Circle #311157 | Denton, Texas 76203-5017 | TEL 940.565.2296 | FAX 940.369.7035
TTY 940.369.8652 | www.unt.edu

APPENDIX F

COEFFICIENT ALPHAS AND LOGISTIC REGRESSION

Table F.1

Coefficient Alphas: Individual Scale Items

Scale Item	N of Items	Standardized	Unstandardized
My doctor helps me.	20	0.946	0.953
My doctor has enough time for me.	20	0.946	0.953
I trust my doctor.	20	0.945	0.952
My doctor understands me.	20	0.944	0.951
I feel my doctor's treatment will be worth the trouble it will take.	20	0.952	0.957
My doctor and I agree on the nature of my medical symptoms	20	0.945	0.952
I feel content with my doctor's treatment.	20	0.944	0.952
The doctor is able to diagnose me with the right illness.	20	0.945	0.952
I do not feel embarrassed when talking with my doctor.	20	0.951	0.957
I have a better understanding of my illness after seeing the doctor.	20	0.945	0.952
It is easy to follow my doctor's advice.	20	0.945	0.952
The doctor clearly explains the reason for any ill health.	20	0.944	0.951
The doctor does not use medical terms without explaining what they mean.	20	0.948	0.955
I find my doctor easy to talk to.	20	0.944	0.952
The doctor's advice and treatment is appropriate for my situation.	20	0.945	0.952
I follow instructions provided by my doctor.	20	0.946	0.953
The doctor answers my questions.	20	0.944	0.951
I would refer my doctor to others.	20	0.945	0.952
The doctor gives me different treatment options available for my condition.	20	0.947	0.954
The doctor provides me with written or printed information.	20	0.949	0.955

Table F.2

Logistic Regression Analysis: Socio-Demographic Factors That Predict "My Doctor Helps Me"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	**1.789**	1.029	3.112
Gender	1.461	0.821	2.599
Married	1.717	0.844	3.493
Some College	1.234	0.473	3.216
Bachelor Degree	**2.090**	1.099	3.975
Age	1.013	0.975	1.053
Excellent Health	1.485	0.755	2.918
Very Good Health	0.760	0.403	1.434
	N	Degrees of Freedom	Model Chi-Square
	230	8	19.08

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.3

Logistic Regression Analysis: Socio-Demographic Factors That Predict "My Doctor Has Enough Time For Me"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	1.275	0.760	2.137
Gender	0.785	0.458	1.347
Married	**2.367**	1.212	4.622
Some College	0.649	0.265	1.592
Bachelor Degree	1.712	0.934	3.139
Age	1.002	0.967	1.039
Excellent Health	1.485	0.787	2.802
Very Good Health	1.066	0.592	1.922
	N	Degrees of Freedom	Model Chi-Square
	230	8	**13.17**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.4

Logistic Regression Analysis: Socio-Demographic Factors That Predict "I Trust My Doctor"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	1.254	0.732	2.149
Gender	1.260	0.721	2.201
Married	1.073	0.531	2.165
Some College	0.772	0.298	1.999
Bachelor Degree	1.548	0.824	2.907
Age	1.006	0.969	1.045
Excellent Health	**1.997**	1.029	3.878
Very Good Health	0.814	0.440	1.504
	N	Degrees of Freedom	Model Chi-Square
	225	8	**8.40**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.5

Logistic Regression Analysis: Socio-Demographic Factors That Predict "I Feel My Doctor's Treatment Will Be Worth The Trouble It Will Take"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	1.627	0.972	2.722
Gender	0.812	0.475	1.388
Married	1.417	0.734	2.736
Some College	0.894	0.365	2.189
Bachelor Degree	1.325	0.726	2.420
Age	1.031	0.995	1.069
Excellent Health	1.082	0.574	2.041
Very Good Health	**1.981**	1.102	3.562
	N	Degrees of Freedom	Model Chi-Square
	228	8	**12.93**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.6

Logistic Regression Analysis: Socio-Demographic Factors That Predict "The Doctor Is Able To Diagnose Me With The Right Illness"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	0.856	0.500	1.466
Gender	1.460	0.830	2.567
Married	**2.123**	1.041	4.331
Some College	1.142	0.444	2.940
Bachelor Degree	1.362	0.721	2.573
Age	0.980	0.944	1.018
Excellent Health	1.389	0.721	2.677
Very Good Health	0.733	0.394	1.361
	N	Degrees of Freedom	Model Chi-Square
	229	8	**12.60**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.7

Logistic Regression Analysis: Socio-Demographic Factors That Predict "I Do Not Feel Embarrassed When Talking With My Doctor"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	1.249	0.747	2.089
Gender	1.342	0.782	2.302
Married	1.514	0.784	2.924
Some College	0.771	0.319	1.862
Bachelor Degree	**1.852**	1.015	3.380
Age	1.020	0.984	1.057
Excellent Health	1.673	0.884	3.166
Very Good Health	**1.832**	1.018	3.296
	N	Degrees of Freedom	Model Chi-Square
	229	8	**20.67**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.8

Logistic Regression Analysis: Socio-Demographic Factors That Predict "I Have A Better Understanding Of My Illness After Seeing The Doctor"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	1.558	0.901	2.695
Gender	1.222	0.694	2.151
Married	1.329	0.656	2.693
Some College	0.877	0.333	2.306
Bachelor Degree	**1.932**	1.004	3.716
Age	1.023	0.984	1.063
Excellent Health	1.243	0.645	2.398
Very Good Health	1.012	0.541	1.894
	N	Degrees of Freedom	Model Chi-Square
	230	8	**10.30**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.9

Logistic Regression Analysis: Socio-Demographic Factors That Predict "The Doctor Does Not Use Medical Terms Without Explaining What They Mean"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	1.230	0.730	2.073
Gender	0.816	0.474	1.405
Married	**2.120**	1.074	4.184
Some College	1.077	0.438	2.647
Bachelor Degree	**2.207**	1.185	4.112
Age	0.994	0.958	1.031
Excellent Health	1.088	0.577	2.049
Very Good Health	1.405	0.771	2.560
	N	Degrees of Freedom	Model Chi-Square
	229	8	**18.60**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.10

Logistic Regression Analysis: Socio-Demographic Factors That Predict "I Find My Doctor Easy To Talk To"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	1.482	0.872	2.525
Gender	1.132	0.650	1.970
Married	1.398	0.705	2.771
Some College	0.960	0.380	2.424
Bachelor Degree	**1.891**	1.011	3.536
Age	0.999	0.963	1.037
Excellent Health	1.090	0.572	2.080
Very Good Health	1.346	0.732	2.475
	N	Degrees of Freedom	Model Chi-Square
	230	8	**12.01**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.11

Logistic Regression Analysis: Socio-Demographic Factors That Predict "I Follow Instructions Provided By My Doctor"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	1.325	0.772	2.275
Gender	1.028	0.586	1.805
Married	1.551	.770	3.127
Some College	0.620	0.237	1.622
Bachelor Degree	**2.745**	1.419	5.308
Age	1.000	0.963	1.039
Excellent Health	0.990	0.516	1.897
Very Good Health	1.721	0.918	3.224
	N	Degrees of Freedom	Model Chi-Square
	230	8	**17.36**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

Table F.12

Logistic Regression Analysis: Socio-Demographic Factors That Predict "The Doctor Answers My Questions"

Socio-Demographic Predictors	Odds Ratio	Lower Bound	Upper Bound
IHI Sharing	1.311	0.758	2.270
Gender	1.275	0.721	2.255
Married	2.010	0.979	4.126
Some College	0.587	0.221	1.556
Bachelor Degree	**2.923**	1.492	5.725
Age	0.989	0.952	1.028
Excellent Health	1.354	0.696	2.636
Very Good Health	1.048	0.558	1.967
	N	Degrees of Freedom	Model Chi-Square
	229	8	**20.57**

Note. Bolded Ratios are significant at the .05 level and underlined at the .01 level

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Banerjee, A., & Sanyal, D. (2012). Dynamics of doctor-patient relationship: A cross-sectional study on concordance, trust, and patient enablement. *Journal of Family and Community Medicine, 19,* 12-19.

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