Cultural Competence in Health Care: Examining the Role of Information and Communication Technologies in Reducing Healthcare Disparities for Immigrant Patients

Idris Alghazali

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Faculty of Engineering
University of Ottawa

Abstract

Background: Much research consistently shows that there are disparities in healthcare delivery. Healthcare disparities affect individuals across a broad range of demographics such as gender, race or ethnicity, and it is also related to socioeconomic factors such as income levels, access to health benefits and insurance, and health literacy. Recent immigrants to Canada encounter a different and unfamiliar healthcare system. This situation presents challenges to the practice of health care delivery. Therefore, it is crucial that innovative strategies be identified to reduce disparities in health care to promote the overall quality of care and public health services.

Purpose: The purpose of this dissertation research was two-fold: (1) to examine cultural competence strategies, if any, that are used by healthcare organizations to improve interaction and communication between healthcare providers and their immigrant patients with the purpose to reduce healthcare disparities; and specifically, (2) to explore the use of Information and Communications Technologies (ICTs) to improve communication between healthcare providers and immigrant patients with the objective of reducing healthcare disparities.

Methods: This dissertation research employed a mixed methods approach for data collection and analysis. The research was carried out in three phases. In the first phase, a series of focus group discussions with a sample of recent immigrants was conducted. In the second phase, an online survey was conducted to gain insights from healthcare providers regarding the role of ICTs in improving communication with immigrant patients to help reduce healthcare disparities. In the third phase, healthcare providers who participated in the survey were invited to participate in face-to-face, in-depth semi-structured interviews to further reflect on and extend the survey responses.

Campinha-Bacote's Cultural Competence Model and Unified Theory of Acceptance and Use of Technology were employed for this dissertation research as its theoretical framework.

Results: The findings indicated that the absence of effective communication as well as cultural and language barriers were major issues related to communication between healthcare providers and immigrant patients. The findings also indicated that immigrant patients might need to improve their digital and health literacy skills in order to improve their communication with their healthcare providers. Further, the findings indicated that it was important for healthcare providers to have access to more demographic data on immigrant patients because such data will allow healthcare providers to be better informed on how to most effectively tailor their healthcare services to this population group.

Conclusion: Findings obtained from this dissertation research shed light on cross cultural communication issues related to working with immigrant patients that may lead to disparities in health care. Healthcare organizations may use these findings to better inform their decision making with regard to effective patient-provider communication. Finally, the findings bear important implications for the line of research that examines patient-provider communication from immigrant patients' perspectives. They can inform the design of cultural competence strategies for healthcare organizations.

Keywords: Cultural competence, healthcare disparities, immigrant patients, information and communication technologies, patient-provider communication

Dedication

This dissertation research is dedicated to my beloved parents, who have supported and encouraged me throughout my academic journey.

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List of Abbreviations

Cultural Competence Model	CCM
Electronic Medical Records	EHRs
Focus Group Discussion	FGD
International Organization for Migration	IOM
Immigration, Refugees and Citizenship Canada	IRCC
Innovation Diffusion Theory	IDT
Information Technology Usability Evaluation Scale	ITUES
Motivational Model	MM
National Bureau of Economic Research	NBER
Information and Communication Technologies	ICTs
Primary Care Provider	PCP
Post-Traumatic Stress Disorder	PTSD
Research Ethics Board	REB
Social Cognitive theory	SCT
Statistics Canada	SC
Technology Acceptance Model	TAM
Theory of Reasoned Action	TRA
Theory of Planned Behavior	TPB
Unified Theory of Acceptance and Use of Technology	UTAUT

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Chapter 1: Introduction

In recent years, immigration has been regarded as an inevitable consequence of globalization and advancements in transportation and communication technologies (International Organization for Migration [IOM], 2020). The increase in immigration globally is, in part, due to greater awareness among potential immigrants that there are several countries around the world that provide greater opportunities to newcomers (IOM, 2020). Canada is a country where significant immigration has occurred in recent years (Immigration, Refugees and Citizenship Canada [IRCC], 2020). Immigrants in Canada represent approximately 21.5% of the total population (Statistics Canada [SC], 2021). Immigration enhances diversity of the population (National Bureau of Economic Research [NBER], 1998) and one of the contexts in which this cultural diversity is observable is the health care setting.

Recent immigrants to Canada encounter a different and unfamiliar health care system (Clarke et al., 2021, Isaacs et al., 2013; Salami et al., 2019). This situation presents challenges to the practice of health care delivery. For example, challenges such as limited language proficiency, low health literacy, limited access to immigrant-specific health services affected immigrant patients' ability to cope with the COVID-19 pandemic (Clarke at el., 2021). Recent immigrants are individuals who have immigrated to Canada or have been granted refugee status and are in the process of settling in Canada (Rubens-Augustson et al., 2019). An immigrant patient with language barriers, certain health beliefs and values, and different communication styles, may not be able to properly express their symptoms to a healthcare provider; these factors can impede their ability to communicate with their healthcare provider and thus negatively affect patient satisfaction (Brunett & Shingles, 2018). This instance demonstrates how

misunderstandings because of cultural and language barriers can affect immigrant patients' experience when seeking health care in the host country.

Canada accepts approximately 300,000 immigrants each year (SC, 2021). Given the rapid influx of immigration into Canada, there is an urgent need to study how communication between healthcare providers and new immigrants can be improved so that immigrant patients have better access to health care services, leading to better patient understanding of health problems and treatments available, and contributing to better adherence to treatment plans. In 2011, approximately 6.3 million people in Canada stated that they belong to a minority population (SC, 2017). Furthermore, as reported by Statistics Canada (2017), "immigrants will represent between 24.5% and 30.0% of Canada's population by 2036" (p. 6).

The rapid influx of immigration into Canada thus underscores the importance of finding innovative approaches for managing the challenges associated with increasing diversity in the health care sector, especially for addressing disparities in health care delivery. Providing health care services to recent immigrant patients requires health care organizations to be aware of their patients' cultural needs and to be able to provide them with culturally competent services. Existing research has shown that providing culturally competent health care improves patient satisfaction (Ahmed, et al., 2016). Cultural competence training also improves healthcare providers' cultural knowledge, communication skills, and attitudes toward their patients (Di Stefano et al., 2017).

Healthcare Disparity

Existing research consistently demonstrates that there are disparities in health care delivery (Al Hadidi, et al., 2021; Bates & Ahmed, 2012; Fossum et al., 2021; Lee, 2015; Reese

& Beckwith, 2015). Healthcare disparities affect individuals across a broad range of demographics such as gender, race or ethnicity, and education or income; and it is also related to socioeconomic factors such as employment, access to insurance, and health literacy (Pereira, et al., 2021). Worldwide, addressing healthcare disparities for racial and ethnic groups at the federal government level began in the U.S. in 1985, and it was initiated by the Heckler Report (Douglas, et al., 2015). Almost 34 years later, racial, and ethnic minority groups in the U.S. continue to experience healthcare disparities, and it was estimated that healthcare disparities cost $243 billion yearly (Nanney, et al., 2019). Therefore, it is crucial that innovative strategies be identified to reduce disparities in health care to promote the overall quality of care and public health services.

According to Manuel (2018), healthcare disparity refers to "difference or inequality that occurs in health status or in the provision of and access to health care that is often linked with social, economic, and environmental disadvantage" (p.1407). For example, Figueroa and colleagues (2020) conducted a cross sectional study of 351 Massachusetts cities to determine which demographic and economic factors contributed to healthcare disparities in COVID-19 acquisition rates. These researchers concluded that the black population of foreign-born non-citizens in some Massachusetts communities could benefit from improved public health policies. They believed that improving policies related to crowded housing and that reducing barriers to medical care for immigrant populations would have lowered the COVID19 acquisition rates for this disadvantaged group. Another study by Millett and colleagues (2020) found that minority groups (e.g., African Americans) were linked to more severe cases of COVID-19. The study concluded that this could be due to limited access to health care, and due to a lack of adequate health insurance coverage. The study also concluded that race and ethnicity data were necessary

for health officials to further explore healthcare disparities among minority groups and to design tailored public health interventions. This inequality in treatment and access to health care may result in increased health risk.

Healthcare providers may also not be culturally competent to provide appropriate care for immigrant patients. Moreover, immigrant patients may not be adequately trained to deal with cultural and health-related issues (Brunett, & Shingles, 2018). For example, compared to women who are not immigrants, recent immigrant women encounter more adverse birth outcomes, including higher rates of infant mortality and lower birth weights (Khanlou et al., 2017). Another example of healthcare disparities affecting immigrant patients was their inability to use health information technologies (Villadsen et al., 2020). Language barriers and poor computer and Internet skills, generally explain why immigrant patients do not use digital health services (Villadsen et al., 2020).

To meet the health care needs of immigrant population groups, health care organizations should also pay closer attention to cross cultural issues (Almutairi et al., 2015). Healthcare providers should be trained in applying their awareness of cultural knowledge, awareness of personal biases, and communication skills in multicultural environments (Brunett, & Shingles, 2018). These skills will help them to effectively work in a multicultural environment. To elaborate, health care organizations should provide newly arrived immigrants with services that meet their unique needs. For example, Salami et al. (2019) conducted a study to examine immigrant service providers' perceptions of access to and use of mental health services for immigrant patients in Alberta, Canada. Interviews and focus group discussions with 53 immigrant service providers in Alberta were conducted. Participants in that study reported concerns regarding providing health care to immigrants. Cultural interpretations of mental health

and language emerged as some of the barriers to accessing health care. The study suggested that to overcome cultural and language barriers, professional cultural translators and interpreters should be hired, and immigrant service providers should attend special training to improve their knowledge of mental health issues as it relates to immigrant patients. This study indicated that such actions can help contribute to avoiding any serious healthcare issues due to language barriers, miscommunication, or cultural incompetency.

Cultural Competence

Cultural competence has been recognized as essential process in reducing racial and ethnic healthcare disparities and improving equity of care (Chang et al., 2019). The concept of cultural competence first appeared in the U.S. in 1980s, and its focus was on improving communication between individual healthcare providers and immigrants coming from countries where English was not the spoken language (Clifford, et al., 2015). Since 1980, researchers and experts have presented a variety of frameworks and models to conceptualize cultural competence, and its domain has extended to include optimizing the ability of hospitals and clinics at both organizational and system levels to improve access to health care for vulnerable populations (Clifford et al., 2015).

For this research project it was important to thoroughly understand the concept of cultural competence. There are several definitions found in the literature that define cultural competence at various levels in health care settings. For example, Ahmed and Bates (2017) defined cultural competence at an interpersonal level as a series of actions that promotes understanding, awareness, and recognition of individual differences and differences within and between cultures for the purpose of making cultural accommodations. Cultural competence is also defined by

Delphin-Rittmon et al. (2013) at an organizational level as integration and transformation of cultural facts and information about a certain group of people into specific clinical standards, practice, and policies utilized in appropriate cultural contexts to improve the quality of health care services. Finally, at a system level, Reese and Beckwith (2015) defined cultural competence as the capability of a system to provide care to patients with different values, belief systems and attitudes, including personalizing delivery to meet the social, cultural, and linguistic requirements of patients. Previous research indicated that quality of care can be compromised when healthcare providers do not respond appropriately to language and cultural factors impacting health and health behaviour (Delphin-Rittmon et al., 2013; Lindbere et al., 2019; Young et al., 2016). Cultural competence is therefore critical to providing quality of care at all levels of the health care organization.

Initially, cultural competence was conceptualized as an approach for improving individual practitioners' competence and ability at the service level to provide care to diverse populations, while cultural competence of managers and other system administrators levels were given less attention (Clifford et al., 2015; Delphin-Rittmon, et al., 2013). The impact of cultural competence is likely to have a direct influence on the quality of care at the patient, provider, organizational, and system levels. Health care organizations at system, organizational, and interpersonal levels need to work with this understanding of cultural competence to create provisions for providing culturally competent care to immigrant patients. Hence, studying immigrant patient-provider communication patterns, as well as language and cultural factors bear important implications for expanding the scope of cultural competence in health care.

Information and Communication Technologies (ICTs)

Information and Communication Technologies (ICTs) provide access to information through various types of technologies and tools including Internet, email, social networking sites, and mobile phones. Health care organizations should pay closer attention to challenges facing both healthcare providers and their immigrant patients navigating ICTs. Research has shown that ICTs have the potential to reduce healthcare disparities and thereby optimize quality of treatment (Chen et al., 2020). For example, culturally adapted app-based approaches have been utilized to stop substance abuse relapse among Latin individuals, illustrating high treatment adherence (Muroff, et al., 2017). Additionally, recent immigrant patients with limited health literacy and/or limited English proficiency may benefit where ICTs can improve patient-provider communication through the use of visual aids and the use of video systems that allows for video interpretation (Lion et al., 2015).

In addition, in recent years, social media sites have become spaces to disseminate health information and to reach underserved demographics (Anderson-Lewis et al., 2018; Farsi, 2021). Health care organizations, however, need to be careful in their use of social media platforms to disseminate health information to underserved demographics, including immigrant patients. This is because existing evidence indicates that social media play an important role in spreading misinformation (Wang et al., 2019). Online tools (e. g., fact-checking tools) that have been developed by private sector companies, non-profit organizations, and civil society organizations can be used to mitigate the negative consequences of spreading misinformation on social media.

Another example of the use of ICTs to reduce healthcare disparities is telemedicine, which affords healthcare providers to reach rural populations for medical consultations in various

regions (Hirko et al., 2020). Research suggests telemedicine is an approach that reduces health care disparities among vulnerable populations. For example, providing medical services remotely (e.g., for the patient at home) can reduce transportation barriers that may be challenging for patients with limited transportation access (Samules-Kalow et al., 2021). However, vulnerable populations, including immigrant patients, may face barriers to using telemedicine due to facing challenges related to access to electronic devices, equipment, and internet connectivity, as well as having lack of digital literacy (Allison et al., 2021; Villadsen et al., 2020). Digital literacy refers not only to technical skills for using digital devices, but it also refers to the ability of an individual to use digital platforms to find, understand, appraise, produce, and communicate information (Seo, et al., 2019).

Although integration of ICTs (e.g., telemedicine) into delivering health care services can be useful to address disparities in the health care process, the adoption and use of ICTs have been limited among many patients (Zhang et al., 2021). Individuals might struggle navigating their electronic devices and entering the health care system virtually (Clarke at el., 2021). Therefore, given this limitation, it is important to explore innovative strategies that need to be considered during the design and implementation of new ICTs that are accessible and user-friendly to all individuals.

Purpose of the Study

It is important to note that this dissertation focused on the cultural competence of health care organizations to help improve immigrant patients-provider communication. In the context of health care, patient–provider communication refers to the sharing of information between a healthcare provider and a patient in which both parties comprehend each other's meaning (Li et

al., 2017). Canada is a multicultural country, and while it is important for healthcare providers to understand the cultures of their immigrant patients, it is also important for immigrant patients to understand the health care system and the cultures of their healthcare providers to facilitate effective cross-cultural communication in the health care setting. Gushulak, et al. (2011) investigated demographics and health status data for immigrant populations in Canada. They found that refugees, low-income immigrants, and recent non-European immigrants were more likely to experience risk of being unhealthy. In a more recent study, Arya et al. (2021) found that refugees and newcomers in Canada were more likely to face challenges obtaining access to health care and settlement services amid the COVID-19 pandemic. Therefore, more research is needed to better understand immigrant patients' experience navigating the health care system and communicating with their healthcare providers, as well as the role of cultural competence and innovative technologies in improving immigrant patients' health care experience in Canada. Accordingly, the purpose of this dissertation research was two-fold: (1) to examine cultural competence strategies, if any, that are used by healthcare organizations to improve interaction and communication between healthcare providers and their immigrant patients with the purpose to reduce healthcare disparities, and specifically, (2) to explore the use of ICTs to improve communication between healthcare providers and immigrant patients with the objective of reducing healthcare disparities.

Significance of the Study

As explained above, it is important to study how health care organizations implement communication strategies, cultural competence programs, and the type of technology, if any, they use to communicate with their immigrant patient populations. By employing mixed methods approaches (focus groups, survey, and interviews) to collect data, the researcher obtained

immigrant patients' perspectives regarding their experiences accessing health care services and communicating with their healthcare provides. The researcher also obtained healthcare providers' perspectives on communication approaches and cross-cultural issues associated with providing care to immigrant patients. In addition, the researcher investigated the use of ICTs by both healthcare providers and their immigrant patients, to explore challenges and opportunities related to integrating such tools to promote better health care delivery. In doing so, the findings of this dissertation research are expected to advance understanding of patient-provider communication approaches and cross-cultural issues associated with working with multicultural patients that may lead to disparities in health care, as well as provide insights into innovative information and communication technologies that may increase access to health care for immigrant groups and optimize the way healthcare providers and their immigrant patients interact and communicate with each other in order to improve health care outcomes.

Chapter Summary

In chapter one, the researcher highlighted the importance of addressing healthcare disparities for immigrant patients. The researcher also discussed importance of examining the role that cultural competence strategies and ICTs can play in improving communication between health care providers and immigrant patients. The key terms (healthcare disparities, cultural competence, and Information and Communication Technologies have been conceptualized to provide frames of references within which this research has been conducted. Lastly, the researcher identified the purpose and significance of this dissertation research. In chapter two, the theoretical framework employed for this dissertation research is presented.

Chapter 2: Review of Literature

This chapter provides a comprehensive review of literature related to cultural competence and ICTs in the context of healthcare disparities for immigrant patients. In addition, the chapter presents an overview of the theoretical framework employed for this dissertation research and its significance when examining healthcare issues of immigrant patient population.

With regard to cultural competence and on the use of ICTs, existing literature underscores the importance of addressing healthcare disparities for immigrant populations. This is because immigrant populations are often made up of individuals with limited health literacy, with limited language proficiency, or with different health beliefs (Acosta-Mosquera et al., 2017; Andrulis & Brach, 2007; Ng & Newbold, 2011; Shen, 2015). Through evidence-based research, healthcare organizations have begun to realize the important role that culture plays in health care delivery. Healthcare organizations have begun to utilize innovative approaches and cultural competence strategies that help overcome communication barriers which may result from cultural differences between healthcare providers and diverse patients (Almutairi et al., 2015). It is suggested in the literature that healthcare providers should promote health care delivery by providing supportive, meaningful, and beneficial health care that is accessible and equitable to all individuals from immigrant populations (Almutairi et al., 2017; Jang et al., 2018).

Cultural Competence in Health Care

In this section, the focus of the literature search was on cultural competence strategies and programs that met diverse patients' needs and promoted a healthy work environment to enhance health care delivery to immigrant patients. The literature search was guided by the following question: what are the cultural competence strategies that healthcare organizations in

European and North American countries adopt to promote a work environment that enhances health care delivery to immigrant patients? To address this question, a search through Scopus, PubMed/Medline, Web of Science, and PsycINFO databases was performed, using keywords such as cultural competence, cultural sensitivity, intercultural healthcare, healthcare delivery, healthcare practices, and immigrant patients. In addition, a manual search of the literature on cultural competence was conducted to retrieve more relevant studies.

The search for literature yielded many studies that addressed the use of cultural competence in healthcare organizations. Cultural competence training, integrating diversity into the healthcare workforce through proactive staffing practices, and cultural competence assessment tools were identified as the most important factors when considering cultural competence interventions.

Cultural Competence Training

The body of literature reviewed underscored the extent to which cultural competence training could be an effective strategy in promoting a healthy work environment that enhances health care delivery to immigrant patients. For example, Pearson et al. (2007) conducted a systematic literature review to evaluate evidence on frameworks and processes that support strategies aimed at developing a culturally competent work environment. These researchers found evidence to suggest that cultural competence training may improve the skills and attitudes of healthcare providers, and therefore recommended that healthcare organizations should include intercultural education in their training to healthcare providers.

Similarly, Young and Guo (2016) conducted a literature review on cultural competence in the field of nursing. Their study suggested that realistic education and training techniques,

which could be developed through cultural competence programs, could lead to better professional health care deliveries to immigrant patients. Additionally, Cicolini et al. (2015) conducted a study to assess Italian nurses' cultural competence. They surveyed 1,432 Italian nurses and reported that even though the cultural competence of Italian nurses was acceptable, they needed further cultural competence training to meet the changing health requests of the growing diversity of their patient groups. The researchers concluded that cultural competence training was associated with both enhanced provider–patient communication and better use of the health care system.

Betancourt and Green (2010) also discussed the role of cultural competence training in improving the skills of healthcare professionals. They determined that, in order to improve health care delivery to immigrant patients, cultural competence training should be viewed as critical and should be held to the same standards as other activities and educational programs.

In another example, Livingston et al. (2008) discussed the need to re-evaluate cultural competence training among mental healthcare professionals working with African American and Latino populations. They indicated that cultural competence training which includes addressing the role of cultures in impacting behaviour and developing skills that enable healthcare providers to conduct successful interventions was crucial, especially for those trying to understand structural levels of cultures, and the intersection of race, and ethnicity.

Studies have also focused on the experiences of the immigrant patients themselves. Lindberg et al. (2019) conducted a cross-sectional patient satisfaction survey with 686 non-Western migrants with Post-Traumatic Stress Disorder (PTSD). They found that a healthcare provider's perceived understanding of and respect for their patients' cultural backgrounds was

directly associated with an immigrant's level of satisfaction with their treatment. Based on this finding, the researchers suggested that healthcare organizations prioritize cultural competence training for their healthcare providers.

In a different context, Carmack and Ahmed (2019) conducted an online survey with 284 college students who visited a university health center in the US to examine the relationships between a patient's inclination to communicate with healthcare providers, their level of anxiety related to communication with healthcare providers, and their perception of the healthcare providers' cultural competence. The researchers found that students were more willing to communicate and interact with their healthcare providers if they felt that those healthcare providers were culturally competent. This finding has important implications for how cultural competence training can lead to better communication between healthcare providers and immigrant patients.

Similarly, Brunett and Shingles (2018) conducted a critical review to examine the association between the cultural competence of healthcare providers and patient satisfaction. The findings in their study indicated that "the more culturally competent a patient considers their provider, the more satisfied the patient" (p. 285). This finding has implications for how healthcare organizations should focus on culturally competent care in order to meet the healthcare needs of their immigrant patients.

The feasibility and practical application of these programs has also been the focus of various studies. Balcazar et al. (2009) conducted a systematic literature review to examine feasible conceptual frameworks for cultural competence. After reviewing 18 cultural competence models, they proposed a conceptual framework that combined the most important elements

described in the literature. One of the elements that they included in their proposed framework was “practice/application” (p. 1155). They stated that healthcare providers should be trained to apply cultural knowledge, awareness of personal biases, and communication skills in multicultural environments. This would help them to provide health care services to their immigrant patients.

Additionally, Aggarwal et al. (2016) analyzed cultural competence training methods that clinicians in various countries have used to enhance the quality and effectiveness of their health care delivery. Interviews with 75 clinicians in five different continents were analyzed which revealed that case-based behavioral simulations were the most useful training methods. The researchers stated that most of the interviewees preferred this method because they were experiential-learning based; therefore, the study suggested that effective cultural competence training should combine active behavioral simulations methods, written guidelines, and watching videos related to intercultural issues pertaining to diverse patients.

In a more focused study, Acosta-Mosquera et al. (2017) described a model of cultural competence training that was implemented by two researchers at the Faculty of Nursing at the University of Seville in Spain. One of the strategies that this model proposed was that healthcare providers should be involved in critical thinking development that would increase their capacity to take the proper actions when dealing with diverse patients. Critical thinking refers to a process of analyzing and evaluating information in a way that is objective, reflective, and independent. In this way, they could build new professional skills based upon collaborative work.

Furthermore, some studies have examined the effects of cultural competence education. Delgado et al. (2013) conducted a pilot project to assess the cultural competence of staff working

in a patient care unit. 98 participants took an hour-long class on cultural competence in which they explored cultural competence strategies, implications for healthcare providers, and how to deal with issues related to healthcare disparities. A follow-up assessment was conducted at 3 months and 6 months post-education. The results revealed that the participants subsequently self-reported a significant improvement in cultural competence. This demonstrated that cultural competence training could better equip healthcare practitioners to provide care to immigrant patients.

Additionally, Prescott-Clements et al. (2013) assessed 76 trainees at a healthcare center after attending patient-centered cultural training. The assessment was conducted using standardized patient scenarios, and a questionnaire evaluated the training. The results demonstrated that their cultural competence training was a positive experience, and that many trainees indicated their intention to change their future behaviour. This result highlights the importance of cultural competence training.

Similarly, Chipps et al. (2008) conducted a systematic literature review to explore studies that addressed the effectiveness of cultural competence training in community-based rehabilitation settings. Their review of several studies indicated positive outcomes when training programs focused on cultural competence issues.

In summary, the above research studies suggest that healthcare providers' knowledge and attitudes could benefit from receiving cultural competence training, resulting in higher quality care for immigrant patients. The experiences of immigrant patients also indicate that healthcare providers' perceived understanding and respect for their cultural backgrounds are related to their satisfaction with treatment.

Integrating Diversity into the Healthcare Work Force

In addition to cultural competence training, some studies have explored diversity and its role in promoting culturally competent practices in the workplace. Castillo and Guo (2011) discussed the importance of diversity in healthcare organizations. They stated that a lack of diversity in higher positions (e.g., minority leaders) may be a major contributing factor to healthcare disparities among immigrant patients. This is a concerning issue because diverse healthcare providers are more likely to understand healthcare needs of immigrant patients. The researchers proposed a framework in which a number of strategies were identified that supported cultural competence in healthcare organizations. One of the strategies that was proposed was to integrate cultural competence into every facet of the organization, "from the board of directors, to the organization's top management, to clinicians and support staff" (p. 210). They concluded that doing so could result in improved health care delivery to immigrant patients, leading to a direct impact on health outcomes.

This finding was consistent with Gomez and Bernet's (2019) meta-analysis of sixteen studies which assessed the association between diversity and patient health outcomes. The researchers found that diversity was associated with a higher quality of patient care, which also led to better health outcomes for diverse patients. They suggested that healthcare organizations should embrace diversity as a core strategy for improving performance and healthcare outcomes.

Diversity at all levels was highlighted as essential. Oelke et al. (2013) argued that as the world becomes increasingly diverse, it is imperative to integrate diversity and cultural competence into each aspect of health care provision at all levels. This particularly includes higher positions (e.g., senior executives) in order to enhance interprofessional functioning, as

well as to meet immigrant patients' needs. Further, Silver (2017) examined healthcare executives' perspectives on diversity in leadership by conducting semi-structured interviews with twenty-four healthcare executives. Twenty of the twenty-four executives stated that racial diversity in higher positions such as senior executives had a positive impact on guiding access to care by diverse groups.

Several studies demonstrated areas where diversity was lacking and how this might be improved. Reese and Beckwith (2015) conducted a mixed method study to identify major barriers to cultural competence in hospices. The study was conducted in 2 phases: first, 207 hospice directors were surveyed using an online survey; then, a symposium of 100 people participated in an interactive discussion. The discussion provided qualitative data regarding approaches to address the barriers. One of the barriers the study identified was a "lack of diversity of healthcare staff" (p. 686). Findings revealed that there were no diverse employees in key positions. Reese and Beckwith (2015) concluded that diverse managers were more likely to support policies and interventions aimed at promoting cultural competence programs and reducing healthcare disparities in hospices.

Continuing with this theme, Soule (2014) conducted 20 interviews with multidisciplinary experts in cultural competence from the U.S. and elsewhere to examine the present state of cultural competence. The findings suggested that diversity and cultural competence strategies should be explicitly stated in the mission statement of the organization. Study participants indicated that diversity in the workplace should be included in policies, strategic plans, and hiring processes, because a diverse healthcare organization is one with strategic plans and

policies that promote equality and support for all employees in the workplace. It is also one that reflects the characteristics of the population it serves (e.g., hiring local community members).

In addition, Clifford et al. (2015) reviewed interventions intended to improve cultural competence in health care for Indigenous people in Canada, USA, Australia, and New Zealand. One of the of intervention strategies identified in Australia was to increase Indigenous community involvement in health care delivery. Clifford et al. (2015) discussed a study that explored hiring Indigenous healthcare employees to improve the quality of care provided to Indigenous Australians in remote areas who were suffering from diabetes. The findings of this study revealed that recruitment of Indigenous healthcare workers improved healthcare providers' adherence to their work guidelines.

Awareness of the issue was also important in finding solutions. Fung et al. (2012) evaluated organizational cultural competence within a mental health institution. Their study included focus group discussions involving 133 participants and in-depth interviews with 26 people. The study presented an approach for improving cultural competence in healthcare organizations. One of the strategies that they introduced was to raise awareness regarding the importance of diversity in health care delivery. Delphin-Rittmon et al. (2013) argued that this strategy could be completed by launching initiatives that focused upon enhancing a sense of belonging among workers.

However, integrating diversity into health care provisions could be challenging. McCalman et al. (2017) discussed a study that compared diversity management approaches by leading hospital executives in Pennsylvania with their counterparts in Sydney, Australia. The study explored how well the hospital executives applied diversity management. The researchers

stated that in spite of their efforts to diversify, hospitals in both countries had not achieved best practices and their diversity management objectives. For example, “Australian hospitals scored higher on organisational change indicators; US hospitals on human resource indicators” (p. 14). This improvement was identified as being related to the implementation of systems approaches (client care; ancillary services; professional staff; and administrative subsystems) to diversity and cultural competence (McCalman et al. 2017).

A study by Almutairi et al. (2015) developed an approach for managing the complexity of culturally diverse healthcare providers. This approach used four cultural competence components, namely “critical awareness, critical knowledge, critical skills and critical empowerment” (p. 319), to mitigate the potential conflicts within a culturally diverse practice environment. These four components referred to recognition of sociocultural differences, individual values and attitudes, and any other potential conflicts related to cross-cultural interactions.

Another study by Ambtman et al. (2010) reviewed programs developed to improve the cultural competence of healthcare organizations that provided health care services to Aboriginal populations in a midsized city in Canada. The study reported that providing support to Aboriginal staff, as well as providing cross-cultural training for existing staff were essential factors for managing a culturally diverse healthcare organization.

Assessment of Cultural Competence

Many studies assessed the strategies, methods, and interventions used to improve cultural competence so that healthcare providers are adequately trained to care for immigrant patients. For example, Zuwang (2015) examined the cultural competence models and assessment tools

that were developed and published by nurse academics since 1982. Focusing on theoretical backgrounds, psychometric evaluation, and empirical validation, this study reported that the existing models and instruments lacked rigorous psychometric tests that would lead to desired levels of validity and reliability. This finding was aligned with the systematic literature review performed by Lin et al. (2017), which examined the psychometric properties of different instruments commonly utilized to assess cultural competence among healthcare providers. Ten instruments were identified and analyzed. The six cultural dimensions addressed by these instruments were attitudes, knowledge, skills, behaviors, desires, and encounters. The review revealed that no single instrument was suitable to evaluate cultural competence in all dimensions. This finding has implications for how researchers can choose suitable instruments to assess cultural competence of healthcare providers.

Additionally, Bernhard et al. (2015) developed and evaluated an instrument to assess the cultural competence of healthcare providers. Their cross-cultural competence instrument was derived from an expert survey (n =23), interviews with 12 healthcare providers, and a narrative literature review on assessment instruments and conceptual models of cultural competence. The study revealed that cultural competence dimensions such as cross-cultural motivation/curiosity (i.e., the ability to provide culturally responsive care; curiosity to engage in cross-cultural encounters) have the ability to distinguish between groups that are expected to differ in cultural competence. The study suggested that such instrument has the potential to foster professional development for healthcare providers by using systematic self-assessment tools.

Furthermore, Alizadeh and Chavan (2016) conducted a systematic literature review to identify the evidence that supported the efficacy of cultural competence. Their review revealed

that many of the proposed conceptual models had not been empirically tested, and that there was a shortage of patient-rating tools for measuring cultural competence.

Another study by Almutairi et al. (2017) assessed the critical cultural competence scale with a random sample of 170 registered nurses employed in multiple hospitals across the province of British Columbia, Canada. Four cultural competence components were measured: critical knowledge, critical awareness, critical empowerment, and critical skills. Almutairi et al. (2016) defined theses four components. Critical knowledge refers the concept of cultural knowledge, as well as knowledge of communication challenges when interacting with patients from different cultural backgrounds. Critical awareness pertains to the ability to recognize sociocultural differences and individual attitudes in cross-cultural interaction. Critical empowerment is related to the perception of healthcare providers about their own empowerment within their workplace system, specifically in terms of whether they have been disempowered because of their cultural background or their economic circumstances. Critical skills is related to healthcare providers' ability to determine the most ethical and culturally appropriate approach to care.

Data were analyzed utilizing descriptive as well as inferential statistics. The researchers concluded that since exposure to caring for patients from different cultural backgrounds is needed in order to obtain cultural competence, a nurse's experience and country of origin might influence their perceptions of critical cultural competence. The findings of this study revealed that healthcare organizations should provide continuing cultural competence education programs to improve the cultural competence skills of their nursing employees in order to enable them to deal with the issues that may arise during cross-cultural interactions.

Other studies focused on patients' perception of cultural competence and the influence on health outcomes. For example, Gaston (2013) assessed African American patients' perceptions of the cultural competence of their HIV healthcare providers. A survey was employed to determine these patients' perceptions of their healthcare providers' cultural competence. The finding of this study revealed that patients who believed that their healthcare providers possessed cultural awareness in HIV treatment trusted their healthcare providers and followed their advice and instructions. This result demonstrates the important role of cultural competence in HIV/AIDS care and treatment adherence.

Similarly, Saha et al. (2013) evaluated whether healthcare providers' cultural competence was congruent with the quality of care and outcomes for patients suffering from HIV/AIDS. 45 healthcare providers and 437 patients at 4 urban HIV hospitals in the U.S. completed post-encounter surveys. The findings from this survey revealed that healthcare providers' cultural competence was associated with quality of care for patients with HIV/AIDS. The authors measured cultural competence dimensions such as awareness, attitudes, and skills, and found that higher scores on measures among healthcare providers in HIV care settings were associated with more equitable care and outcomes across diverse groups. This finding suggests that enhanced cultural competence of healthcare providers could lead to reduced racial disparities in healthcare quality.

Moreover, Isaacs et al. (2013) determined that belief in cultural competence among healthcare providers was essential for a culturally competent primary health care system that is provided to recent immigrants. They explored how a healthcare organization's trust in the cultural competence of counterparts can impact the effectiveness of a service's network in

meeting the needs of recently arrived immigrants in Canada. Twenty-one organizations responded to an online social network survey, and 14 key interviews were conducted. To analyze the data, social network analysis and qualitative inquiry were used. The findings of this study revealed that belief in cultural competence among the partnering agencies increased their desire to collaborate and work together, while lack of belief in cultural competence resulted in avoidance between partnering agencies. The researchers captured how trust in cultural competence both interplays within and supports a system that is collaborative and prepared for diversity. Healthcare organizations, working collaboratively with recent immigrants, should pay special attention to belief in cultural competence among service providers. The study concluded that developing cultural competences within a service network may improve collaborations and access to health services for recently arrived immigrants.

In another study, Paez et al. (2008) evaluated whether primary care providers' cultural competence is associated with the clinics where they work. 49 providers from 23 clinics in Baltimore, Maryland and Wilmington, Delaware, USA responded to an online survey. The survey items assessed provider and clinic cultural competence. Data were analyzed using simple linear regression. This study found that healthcare providers who had greater cultural motivation to learn about cultural diversity showed greater desire to work in clinics where most of the staff were not Caucasian. These healthcare providers were more likely to work in clinics that offer cultural diversity training and culturally tailored patient education materials. The study revealed that culturally appropriate healthcare provider behavior was associated with a higher percentage of diverse employees at the clinic, and culturally tailored patient education materials. This study also suggested that addressing provider and clinic cultural competence may reduce healthcare disparities.

Additionally, Capell et al. (2008) examined the relationship between cultural competence and ethnocentrism among nurses, occupational therapists, and physical therapists. Ethnocentrism refers to considering one's own views and culture as a frame of reference to judge other cultures (Capell et al., 2008). In their study, 71 healthcare professionals from three hospitals in Vancouver, British Columbia, Canada, completed a survey. The survey items assessed internal coherence of the cultural competence and ethnocentrism scales. This study found an inverse relationship between cultural competence scores and ethnocentrism scores. This study suggested that cultural competence might not be completely separate from ethnocentrism, and argued that more research on the relationship between cultural competence and ethnocentrism of healthcare professionals was warranted.

The question of the effects of cultural competence on improving health outcomes for immigrant patients was also considered in several studies. Renzaho et al. (2013) conducted a systematic literature review to examine the effectiveness of patient-centered care models which integrated a cultural competence perspective in improving health outcomes for patients from different cultural and linguistic backgrounds. They found that patient-centered care models that integrated cultural competence components enhanced healthcare providers' awareness of communicating differently with patients from different cultural backgrounds. Renzaho et al. (2013) concluded that there was limited literature investigating whether an increase in healthcare providers' knowledge resulted in better health care delivery for culturally diverse patients.

Conversely, Castro and Ruiz (2009) examined the association between the degree of cultural competence among nurse providers and measures of patient satisfaction among Latino groups. A sample of 15 licensed nurses from 11 hospitals and clinics in a large southwestern city

completed 2 self-administered questionnaires, and a sample of 218 Latino patients completed 3 self-administered questionnaires. To analyze the data, descriptive statistics and correlations were used. Castro and Ruiz (2009) found that Latina patients were more satisfied with English- and Spanish-speaking providers who had attended master's level programs and had taken cultural competence training. Moreover, Latin patients reported greater satisfaction when there were reduced hospital waiting times. Castro and Ruiz (2009) concluded that cultural competence training led to improved patient-provider communication.

In today's multicultural society, in order to work effectively with culturally diverse patients, and to achieve better health care delivery, healthcare providers must become culturally competent. This necessity has encouraged researchers to define the concept of cultural competence, as well as to develop conceptual models that describe strategies and interventions that are most effective for improving cultural competence in health care. The reviewed studies discussed many strategies that have been used to promote a healthy work environment so as to deliver culturally competent health care more effectively.

Therefore, recognizing the importance of cultural competence at all levels of health care delivery, the literature reviewed in this section revealed a gap in existing studies that addressed cultural competence training in Canada. Cultural competence efforts should not be directed only to healthcare practitioners, but they should also be directed at administrative and executive levels. Managers and administrative staff need to be trained in cultural competence. Cultural competence strategies, training, standards, and guidelines must receive support from executives, as well.

Information and Communication Technologies

In addition to reviewing literature related to cultural competence in the context of health care, especially health care delivery, this chapter presents a comprehensive review of literature related to the use of Information and Communication Technologies (ICTs) to improve access to health care services and to reduce healthcare disparities for vulnerable populations. In this section, the literature search was guided by the following question: How can information and communication technologies be used to optimize access to health care for vulnerable populations within North America in order to reduce healthcare disparities? To address this question, a search through Scopus, PubMed/Medline, CINAHL, Web of Science, and PsycINFO databases was performed, using keywords such as access to health care, health care disparities, health information and communication technologies, innovative strategies, immigrant patients. In addition, a manual search of the literature on ICTs was conducted to retrieve more relevant studies. Based on inductive thematic analysis, five themes were identified relating to the challenges and opportunities associated with the use of ICTs to reduce healthcare disparities for vulnerable populations with implications for immigrant groups in particular: 1) access, 2) e-health literacy, 3) patient education, 4) a culturally informed health care system, and 5) communication.

Access

Several studies examined the factors that impede access to online health information and/or health care services for individuals from low socioeconomic backgrounds. McCloud et al. (2016) found that when patients were confronted with internet connectivity issues, they became frustrated, which impacted their desire to seek heath information. Alternatively, Kim et al. (2009) found that poor computer and internet skills are reasons why patients do not use

electronic health records. Similarly, McInnes et al. (2013) posited that lack of skill in utilizing the internet or a computer were some of the barriers to the use of ICTs for health care that many homeless populations faced. Chae et al. (2021) investigated the level of access to health information technology among Korean American women. They found that Korean American women had low internet and text messaging confidence. Less use of these technologies was associated with older women, lower education, and limited English proficiency.

Additionally, Montague and Perchonok (2012) stated that historically underserved populations were the least likely to have access to the internet because of financial limitations. In a separate study, Lorence and Park (2008) opined that availability of publicly accessible internet portals and decreasing costs of personal computers would result in increased access to online health information for those confronting financial issues.

Location may also limit the use of technology and affect how this technology may benefit patients. For example, Krakow et al. (2019) examined the use of ICTs within rural settings versus urban settings. To estimate the prevalence of ICTs across rural and urban populations, the researchers analyzed data from the National Cancer Institute's 2017 Health Information National Trends Survey and found that patients in rural areas were less likely to access their online medical records. They concluded that healthcare providers should encourage rural residents to consult their online medical records.

With respect to access to health care services, Gibson et al. (2011) conducted an online survey and interviews among mental healthcare workers in Canada. These workers reported their recent experience providing telemental health care for individuals from rural and remote First Nations communities. The majority of these participants indicated that telehealth improved

access to services for their community members, allowing them to remain in their communities while receiving services.

Furthermore, in his study, Lee (2015) concluded that investment in health information technologies played an important role in reducing disparities in delivering health care. Lee examined the relationship between ICT investments and wait times among various racial and ethnic patients. He collected and evaluated patient and hospital data from the California Office of Statewide Health Planning and Development, which was well known for its data collection relating to health IT spending and depreciation. Lee found that more investment in ICTs reduced wait times, and that the reductions in wait times for racialized patients was higher than it was for Caucasian patients. This finding demonstrated that diverse groups could benefit from ICT investment with respect to reducing disparities in health care.

Finally, Zhang et al. (2019) convened a scientific workshop to examine patient, healthcare provider, and system perspectives on the potential role that ICTs could play to address healthcare disparities. The researchers concluded that in order to increase access to health care and to reduce healthcare disparities, it was essential to collect and record health disparity data (e.g., education level, income, country of origin). Doing so could help predict immigrant healthcare needs and outcomes.

E-Health Literacy

E-Health literacy is defined as “the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem” (Norman & Skinner, 2006, p. 2). Other reviewed studies discussed e-health literacy as a barrier in accessing health information among vulnerable populations.

For example, Gibson et al. (2011) conducted a study to explore the perspectives on telemental health of community members living in two rural and remote First Nations communities in Ontario, Canada. 59 community members were interviewed. A majority of the participants reported that they possessed limited e-health literacy with regard to navigating technology for health-related matters. Zibrik et al. (2015) conducted a study to identify barriers and enablers to using eHealth for chronic disease self-management among immigrant Chinese and Punjabi seniors in British Columbia, Canada. The findings indicated that age, gender, income, and education significantly affect eHealth literacy outcomes. Cultural and accessibility barriers also compound these challenges. The study suggested improving eHealth literacy among diverse populations to address their health needs.

Additionally, Chen et al. (2020) conducted a scoping review to examine the digital divide among older immigrants and found that digital literacy and level of education were among the most common factors causing healthcare disparities among older immigrants. Similarly, Nouri et al. (2019) conducted 20 interviews with primary care patients at a public healthcare center to assess mobile phone use, digital literacy barriers, and engagement among this vulnerable population. They found that although mobile phones were widely used, digital literacy barriers were common among vulnerable populations.

Some studies have examined solutions to digital literacy barriers. Jensen et al. (2010) suggested that developing technology interfaces that were user-friendly to those with limited literacy skills could result in a significant increase in technology access and use. The study surveyed 131 low-income adults from the Midwestern United States to explore their technology use and access. They concluded that providing low-literacy individuals with computer assistance

was important because it helped them overcome their computer skill limitations. Further, the authors reported that participants who had computer assistance were more likely to search for health information online.

Huh et al. (2018) conducted a literature review to explore the empirical evaluations involving consumer health informatics used by immigrant populations and found that there was digital divide among immigrant populations. Digital divide refers to the gap between individuals with access to the tools of ICTs and relevant knowledge to utilize such tools and those without such access and knowledge (Feng & Xie, 2015). Although the digital divide, remained, many of the reviewed studies showed that there was motivation among consumers with regard to health informatics use. These findings support future interventions that could be aimed at addressing the digital divide among immigrant populations.

In another study, Ginossat and Nelson (2010) demonstrated that training sessions in internet use and access to culturally appropriate health information can increase patients' efficacy in using computers and the internet to seek health information. This study revealed that websites run by community members (such as https://mhpsalud.org/) provided educational tools that helped patients overcome barriers associated with navigating the health care system.

In another study regarding the use of ICTs to reduce healthcare disparities, Vargas et al. (2010) evaluated "an interactive computer-based questionnaire to assess asthma symptoms in children of parents with limited health literacy and/or limited English proficiency" (p. 889). Participants (the parents of the children, N = 48) were asked to complete either the paper-and-pencil or the electronic form of the questionnaire. The researchers found that parents who chose to complete the electronic version found it easy to utilize. This finding demonstrated that when

assessing asthma symptoms, lack of health literacy and English proficiency may pose a barrier to the use of health information technology tools.

Patient-Education

Several reviewed studies explored how patient-education provided by using ICT tools might promote behavioral change and improve healthcare for immigrant patients. Lu et al. (2010) found that "websites such as MyPyramid could provide useful tools for nutritional self-assessment and education to pregnant women" (p. 213S). Similarly, Graham and Ostrowski's study (2016) revealed that developing web-based resources for healthy eating helped individuals improve their eating habits (e.g., My Healthy World Program). They found that there was a ubiquity of smartphones in low-income, underserved communities and posited that when smartphones were combined with strategic policies, these electronic devices had the potential to become powerful tools for improving health and reducing health disparities.

Knowles et al. (2007) tested the feasibility of tele-education as a way to address short comings in the dissemination of health disparities education. Tele-education is defined as a method of teaching that utilizes different forms of media such as video, audio technology tools and computers (Knowles et al., 2007). The authors found that tele-education was a beneficial approach in imparting health disparities education. In another study, McIlhenny et al. (2011) examined the use of a publicly accessible internet information portal to deliver healthcare education to rural patients and found that creating an internet portal (i.e., My Health Education & Resources Online) contributed to improving their knowledge of various diseases and their knowledge of blood glucose monitoring.

However, some studies noted the limitations of these approaches, as in the study of Molyneaux and O'Donnell (2009), which examined the use of ICTs for health and wellness services and activities in rural and remote First Nations communities in Canada, the United States, and Australia. They reported that First Nation people tend to learn through watching and listening more than through written media.

Finally, Grossman et al. (2019) conducted a systematic review to assess the impact of interventions aimed at increasing patient portal use in underserved populations. Patient portals were identified as secure websites that people used to access their health records, schedule appointments, and monitor medication (Grossman et al., 2019). The researchers found that there was limited research on effective interventions. They reported that interventions aimed at improving e-health literacy and enhancing online health education for the underserved population would reduce healthcare disparities. This finding demonstrated that developing strategies and designing interventions to reduce disparities in patient portal use in underserved populations was needed.

A Culturally Informed Healthcare System

The importance of developing culturally informed healthcare systems to address healthcare disparities was also discussed in the literature. In order for healthcare organizations to reduce healthcare disparities, López et al. (2011) offered three recommendations. First, they suggested automating and standardizing the collection of race/ethnicity and language data. Second, they suggested using the collected data to identify disparities and to tailor improvement efforts. Third, they suggested developing focused computerized clinical decision support systems targeting clinical areas with notable disparities.

In addition, Burns et al. (2013) indicated that a culturally informed healthcare system should specify patients' needs because this is associated with framing the other intervention components. For example, Reuland et al. (2021) conducted research to determine the level of access to information and communication technology, as well as the frequency of use of common applications/programs, among low-income immigrant Latino parents with infants. The aim was to gather information that could be used in the development of mHealth interventions that would be suitable for this population. The study found that less than 10% of the immigrant Latino parents used health-oriented applications frequently. Consequently, the study suggested that mHealth interventions utilizing an application interface might not achieve the intended impact or reach among low-income immigrant Latino parents. Similarly, Montague and Perchonok (2012) recommended that when designing ICTs for vulnerable populations, it was critical to carefully choose the type of technology that was suitable for that particular population. Furthermore, Maar et al. (2010) conducted a study aimed at developing an Aboriginal e-health research agenda to address gaps that impede e-health deployment and adoption in rural and remote Aboriginal communities in Canada. This study emphasized the importance of community-based Aboriginal models of practice and culturally competent models of care that take into consideration the cultural background of Aboriginal patients. In another study, Jones et al. (2017) examined literature regarding the adaptation, use, and development of assistive technologies for Indigenous populations and found that mobile technologies were prominently used by this group. The researchers reported that the high use of mobile technologies by Indigenous peoples offered an opportunity for meaningful user involvement in technology development.

Finally, Douglas et al. (2015) reported that if more granular data on diverse patients are collected when developing electronic health records, decisions to enhance health equity would be better made. Important to note is that Gibbons and Rivera (2010) reported that "health IT should not be seen as [the] solution—rather, health IT is an enabler" (p. 158S), when considering its use for reducing health care disparities.

Communication

Several studies investigated the extent to which ICTs can be an effective means of communication between healthcare providers and their immigrant patients. Sicotte et al. (2011) examined the health care utilization of patients receiving tele-haemodialysis services in an Amerindian First Nation community living in the remote James Bay region of Canada. 19 patients were followed over a two-year period. Analysis of each patients' health showed that tele-haemodialysis was able to sustain the quality of care afforded to the patients within their community. This result emphasized the role of telecommunication (in this case Telehaemodialysis) in reducing healthcare disparities in remote areas because it could allow remote monitoring of patients receiving haemodialysis. Similarly, Levine et al. (2022) conducted a study to explore the experiences of immigrant patients with telehealth and in-person visits at a university internal medicine practice in Connecticut. The study found that immigrants preferred telehealth visits because these visits allowed them to spend more time with their providers and avoid logistical barriers associated with in-person visits, particularly for non-English speakers.

Technology can also be useful in other ways. Chilukuri et al. (2015) investigated technology use among low-income pregnant and postpartum women and found that mobile phones were commonly used among this group. This provides an opportunity to design

healthcare interventions that allow diverse pregnant and postpartum women to experience convenient communication with healthcare providers in clinical contexts. Similarly, Khoong et al. (2020) surveyed 1027 English-, Spanish-, and Chinese-speaking San Francisco residents to assess how smartphone ownership effected technology use for health-related communication and found that smartphone ownership increased the usage of many forms of technology for health communication purposes. Moser (2009) suggested that ICTs should be seen as a text "superpower" (p. 705) in facilitating social relations and health communication among vulnerable patients.

However, the use of technology in medical interactions have challenges. For example, Winbush et al. (2013) investigated the use of ICTs in empowering older African American patient-doctor relationships. They found that plans to integrate technology in an attempt to enhance older African American patient-doctor communication were met with resistance from doctors (e.g., "use of health empowerment technology may lead to uncompensated and increased time communicating with the patient," p. 114). The researchers suggested that the focus should be on addressing the challenges and opportunities encountered in building technology-based interventions devoted to empowering patients in their communication with doctors.

In another study, Ratanawongsa et al. (2013) investigated multivariate associations of patient race/ethnicity, language, and education and their perceptions of Primary Care Provider (PCP) computer use. In their study, the majority of non-English-speakers reported that their PCPs listened less carefully to them during their clinical encounter because they were busy at their computers. The researchers suggested that PCPs should ensure that using computers in their

examination room does not have a negative impact on their communication with patients who possess limited English proficiency.

Some of these challenges could be mitigated through training for the healthcare professionals. For example, Ryan et al. (2015) suggested that medical students be exposed to intensive trainings to better communicate with patients in "the digital arena" (p. 92).

In conclusion, the findings from this section of the literature review provide important insights into the necessity for healthcare organizations to be proactive in addressing key issues related to access, e-health literacy, patient education, culturally informed healthcare system, and communication as they contribute to challenges and opportunities associated with the use of ICTs to reduce healthcare disparities for vulnerable populations. Failure to be proactive could impede access to health care for immigrant patients. When properly addressed, however, these five issues will have implications for practice and help improve access to health care for vulnerable populations, as well as enhance patient-provider communication.

Theoretical Framework

It is widely acknowledged that poor communication with regard to health issues results in poor health outcomes (Watson, Jones, & Hewett, 2016). Successful patient-provider communication is essential to good management of healthcare-related issues because patients' perspective is an important factor in advancing better understanding of healthcare issues (Col et al., 2020). Over the past several decades, scholars, researchers, and practitioners in the field of health communication have studied health-related issues to better understand the ways in which communication in health care can be improved. Since communication with regard to health issues is a form of human interaction, research in the field of communication highlights the

importance of developing and using theoretical frameworks to explain how health communication can be better improved (Stewart and Klein, 2016).

A theory is a set of statements, laws, or concepts, that are generally held as describing phenomena, events, and behavior (Sekhon, Cartwright, & Francis, 2018). Using a theoretical lens when conducting research is important because it helps researchers plan their research, connect their pieces of data, and enhance the credibility of their findings (Creswell, 2014). Many factors come into play when choosing the most relevant theory to employ in research. First, researchers consider the field of study, as theories vary from field to field. Second, researchers consider consciously their research problem. Third, researchers may conduct a literature review to determine how related theories have been utilized in the past (Stewart & Klein, 2016).

Researchers utilize theories in quantitative, qualitative, and mixed methods research. Creswell (2014) describes the quantitative method as an approach for testing theories to examine the relationships between variables; this method involves numerical data, and statistical analysis. Theories are usually tested to answer proposed questions. In the qualitative method, theories can be drawn from the inquiry as an outcome of a study (e.g., grounded theory). Moreover, in qualitative methods, theories can also be used at the beginning of the study as a lens for understanding the research undertaken, and for shaping the questions that have been asked.

In mixed methods studies, researchers may also place their theoretical models at the beginning of the study as a priori theoretical model that guide the research questions and/or the hypothesis (Haynes-Brown, 2022). Then, they provide a description of how their theoretical models inform the quantitative and qualitative components (Creswell, 2014). The theoretical framework for this dissertation research has been informed by the Cultural Competence Model

(CCM) and Unified Theory of Acceptance and Use of Technology (UTAUT) within the qualitative and quantitative research umbrella, with an emphasis on the qualitative component.

Cultural Competence in Health Care

Cultural competence in healthcare settings is the adaptation toward recognizing diversity and cultural differences. Cultural competence assumes that for healthcare practice to be meaningful, beneficial, and supportive of all patients, it has to take an inclusive approach which enables the healthcare system to preserve the human rights and dignity of each patient and each community (Soulé, 2014). It is associated with valuing, respecting, and appreciating cultural diversity. The characteristics of cultural competence assist healthcare providers to understand how patients' attitudes and perspectives affect the way in which they seek healthcare.

Carmack and Ahmed (2019) state that interactions between healthcare providers and patients are considered a form of cross-cultural communication, where patients and providers, even if they grew up in the same nation, have different cultural beliefs and practices. Henderson et al. (2018) described cultural competence in health care as the ongoing process of integrating cultural knowledge, attitudes, and communication skills that improve cross-cultural communication. Although cultural competence can improve cross cultural communication and help reduce healthcare disparities, Henderson and his colleagues argued that improving skills and increasing knowledge about patients' culture is not the sole answer to becoming a culturally competent healthcare provider. For healthcare providers to sustain their culturally competent healthcare practice, they need to ensure that they always apply their cultural knowledge and communication skills in practice. Similarly, Balcazar and colleagues (2009) argued that applying

cultural knowledge, awareness of personal biases, and communication skills in healthcare practice helps in providing culturally competent healthcare services.

Campinha-Bacote's Cultural Competence Model (CCM)

Several theoretical frameworks and models of cultural competence have been developed to meet the challenges of providing care to diverse groups (Balcazar et al., 2009; Doorenbos & Schim, 2004; Papadopoulos, 2006; Kim-Godwin et al., 2001). Although several models of cultural competence exist, one particular model was more appropriate to the purpose of the dissertation research which relates to examining cultural competence strategies, if any, that are used by healthcare organizations to improve interaction and communication between healthcare providers and their immigrant patients with the objective to reduce healthcare disparities. This model was Campinha-Bacote's Cultural Competence Care Model. The Process of Cultural Competence for the Delivery of Health Care Services. The reason this model was more applicable to the purpose of this dissertation research was because this model described the process that healthcare providers must experience to become culturally competent.

This model was developed by Campinha-Bacote (Quach, 2021). It was developed to improve healthcare providers' ability to effectively work within the cultural context of patients (Campina-Bacote, 2002).

According to Campinha-Bacote (2002), CCM assumes that cultural competence is a process in which healthcare providers strive to attain the ability to work efficiently with patients from different cultural backgrounds. Healthcare providers cannot attain cultural competence only through training and self-study; in addition to training and studying, healthcare providers need to frequently interact with patients from diverse cultural backgrounds in order to improve their

cultural competence skills (Sharifi et al., 2019). This implies that the process of being a culturally competent healthcare provider improves through frequent encounters with diverse patients.

Initially, this model consisted of four interrelated constructs: cultural awareness, cultural knowledge, cultural skill, and cultural encounters. A few years later, the fifth construct of cultural desire was added (Quach, 2021). The model views these constructs as the five essential components of cultural competence. To better explain this model, each construct is defined.

Almutairi et al. (2015) asserts that cultural awareness refers to individuals' ability to recognize cultural differences as well as their ability to examine their own personal biases and prejudices. Cultural awareness involves deep and honest self-examination and self-reflection (Campinha-Bacote 2002). Sharifi et al. (2019) claim that cultural awareness is associated with individuals' ability to understand the effect of their own culture. This ability helps them assess their biases and prejudices. It also helps them form a basis for recognizing others' beliefs, and values. This means that healthcare providers need to identify their own individual beliefs, biases, and prejudices about certain cultures. Failure to identify personal belief about certain cultures may create a cultural imposition toward a patient by imposing the healthcare provider's own cultural values and beliefs on the patient. (Campinha-Bacote, 2002).

An example of cultural assumption is when a patient does not make eye contact during a patient–healthcare provider encounter. Avoiding eye contact during medical encounters may be interpreted as a lack of interest in the topic that is being discussed. Avoiding eye contact by the patient could be related to their cultural background. In some cultures, people tend to avoid eye

contact when talking to an individual of authority, for example, physicians (Ingram, 2012). This is an instance of cultural differences that healthcare providers should be aware of.

Cultural knowledge is "is the process of seeking and obtaining a sound educational base about culturally diverse groups" (Campinha-Bacote, 2007 p. 37). Cultural knowledge is associated with acquiring information about other cultures and health beliefs (Sharifi et al., 2019). This cultural knowledge may also include understanding patients' language and the way they perceive their illness. According to Campinha-Bacote (2002), seeking cultural knowledge about diverse patients help healthcare providers in preventing unintentional cultural offences, and it fosters trust between healthcare providers and diverse patients. For healthcare providers to increase their cultural competence, they may need to go beyond acquiring knowledge about immigrant patients' health beliefs and cultural practice and incorporate that knowledge when caring for those patients. Knowledge of such factors assists healthcare providers understand how their patients may behave when dealing with health-related issues.

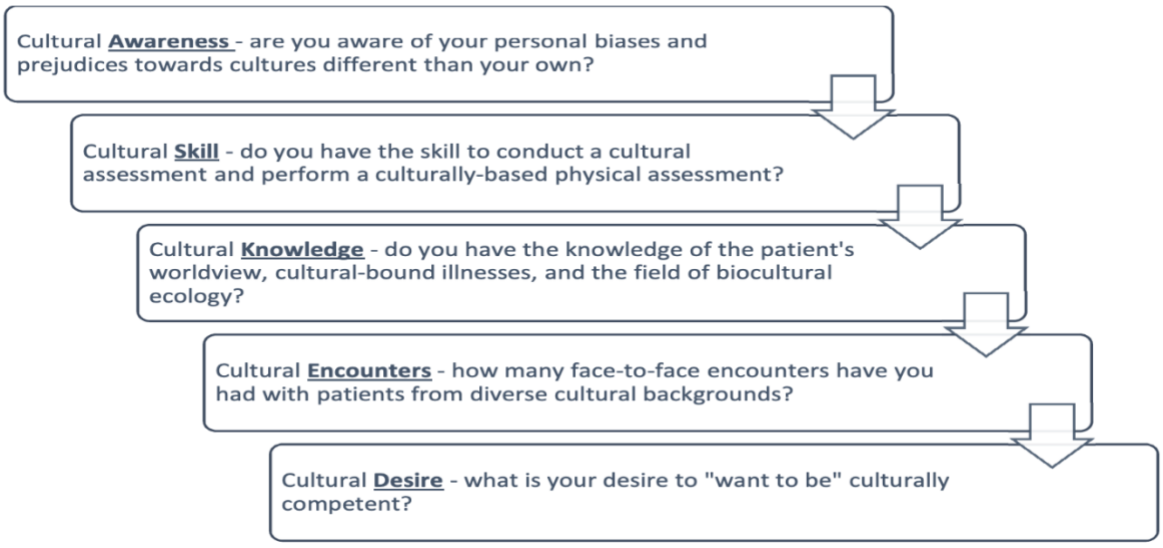
Cultural skill refers to "the ability to collect relevant cultural data regarding the client's presenting problem, as well as accurately conducting a culturally based physical assessment in a culturally sensitive manner" (Campinha-Bacote, 2007, p.49). This process includes identifying a patient's values, beliefs, and health practices. This can be done by conducting cultural assessment, which includes collecting data such as gender, ethnicity, sexual orientation, and socioeconomic status (Campinha-Bacote, 2007). Cultural skill is also associated with establishing successful communication with persons from other cultures. This established communication helps healthcare providers to effectively develop meaningful relationships with patients of different cultural backgrounds (Sharifi et al., 2019).

Cultural encounter takes place when healthcare providers interact directly with a patient from a diverse cultural background (Campinha-Bacote, 2007). Interactions that occur during patient-provider encounters play an important role in refining existing knowledge and health beliefs about a diverse group and in preventing possible stereotyping. Campinha-Bacote (2007) states that patient-provider encounters should be considered a cultural encounter. This is because healthcare providers are also considered a cultural group with their own beliefs, cultural values, and practices.

Cultural desire is defined as healthcare providers' genuine interest or motivation to engage in the process of becoming culturally competent (Quach, 2021). It is associated with healthcare providers' willingness to respect and accept cultural differences.

Campinha-Bacote advises that these five constructs of the cultural competence care model are associated with each other, and regardless of when the healthcare providers enter the process, all five constructs should be addressed and experienced. George et al. (2015) assert that the five constructs of this model could be employed as a framework in all healthcare settings including medical, management, policy development, and research.

Figure 1
The Process of Cultural Competence. Adapted from the Cultural Competence Five Constructs (Campinha-Bacote, 2002, p. 187).



Four of the model's constructs, which are cultural awareness, cultural skills, cultural knowledge, and cultural encounter were used to guide the formulation of the first three research questions of the study. They were also used to guide the discussion of the focus group data analysis. These four constructs served as a relevant framework for understanding communication between immigrant patients and their healthcare providers. The four constructs further helped the researcher understand the potential reasons for ineffective communication in healthcare. They offered an explanation for understanding the interconnection of care and culture with regard to providing healthcare services to immigrant patients. The concepts of cultural competence model helped the researcher to understand immigrant patients' experiences while they were receiving healthcare services. Therefore, the model could provide healthcare providers and researchers a useful model for addressing issues associated with providing culturally competent care.

Unified Theory of Acceptance and Use of Technology (UTAUT)

This theory was formulated by Venkatesh and colleagues in 2003 (Nistor, Lerche, Weinberger, Ceobanu, & Heymann, 2014). It was developed to explore the users' intents and behaviours when operating information technology. It was also developed to unify eight existing acceptance models that have been widely employed to assess technology usage behavior: the Technology Acceptance Model (TAM), the Motivational Model (MM), the Theory of Reasoned Action (TRA), the Social Cognitive theory (SCT), Theory of Planned Behavior (TPB), combined TAM and TPB model, Model of PC Utilization, and Innovation Diffusion Theory (IDT) (Devine, 2016).

After reviewing and combining the eight existing acceptance models, the UTAUT was implemented. Venkatesh and colleagues (2003) conducted longitudinal field studies with new users of technology in workplace settings, and they examined the effects of these constructs on behavioral intention. The UTAUT model was validated and found to account for 70 percent variance of users' behavioural intention. This theory suggests that there are four key determinants that influence the users' intents and desire in accepting and using technology: performance expectancy, effort expectancy, social influence, facilitating conditions (Al-Qeisi et al., 2014; Venkatesh et al., 2016).

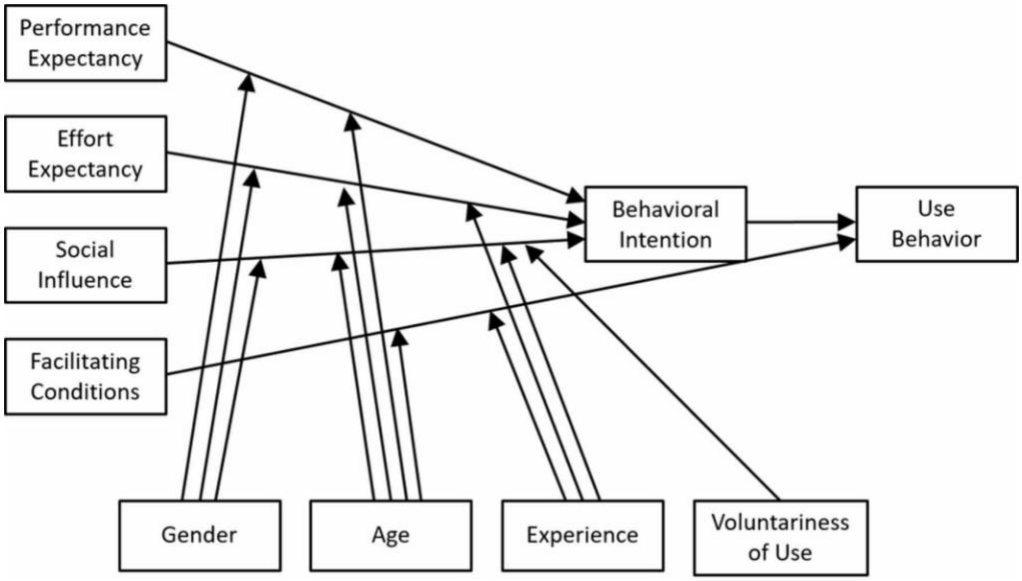
As Al-Qeisi, Dennis, Alamanos, and Jayawardhena, (2014) explained, performance expectancy related to the extent to which people perceive that using information technology will assist them in completing certain activities. When new users believe that using technology will improve their job performance, there is a strong likelihood that they will use a new technology.

Effort expectancy relates to the ease with which users utilize technology. This determinant has a direct influence on behavioral intention (Devine, 2016; Venkatesh et al., 2016). Social influence relates to the extent to which users believe that their family and friends should utilize specific technology. With regard to facilitating conditions, this theory suggests that users expect support will be available to them. This determinant was important for older people with limited experience using technology. The UTAUT proposes four moderating variables between the determinants and the behavioral intention. These variables are gender, age, voluntariness, and experience (Devine, 2016; Venkatesh et al., 2016).

Several researchers have applied UTAUT theory as a conceptual framework for their studies. For example, Kim, Lee, Hwang, & Yoo (2016) utilized this theory to analyze factors influencing healthcare professionals' adoption of mobile electronic medical records. Another study by Mutlu Murat Hanifi & Der Ali, (2017) applied UTAUT theory to identify the main determinants of technology acceptance behavior when developing mobile messaging applications. Moreover, Al-Qeisi et al. (2014) utilized this theory as a lens for understanding social influence on the use of clinical decision support systems. These researchers found that when users were asked to use new technology, their decisions on when and how to use this technology were influenced by several factors. For example, a users' intention to utilize technology increased when there was a perceived usefulness of the new technology (Dohan & Tan, 2014). However, to our knowledge, there are no studies that used this theory to study healthcare providers and immigrant patients' use and acceptance of ICTs.

Figure 2

The UTAUT Model. Adapted from (Venkatesh et al., 2003, p. 447)



This dissertation employed UTAUT theory for understanding factors that influence healthcare providers, as well as immigrant patients' intents and desire to accept and use technology to communicate with each other. The four constructs of UTAUT (performance expectancy, effort expectancy, social influence, and facilitating conditions) were used to guide the formulation of the fourth and fifth research questions. Those constructs were also used to guide the discussion of the survey and interview data analyses. The concepts inherent in UTAUT helped the researcher to understand factors that influenced the participants intents, and their desire to accept and use technology. They provided the lens for examining immigrant patients 'technology acceptance and behaviour toward using information technology to communicate with their health care providers.

Research Questions

Overall, the body of literature reviewed in this chapter revealed the scarcity of evidence regarding the role of ICTs in improving communication between immigrant patients and

healthcare providers with the objective of reducing healthcare disparities in Canada. Therefore, there is a need for more evidence-based research so that healthcare organizations can be better informed about how to best communicate with immigrant patients using ICTs. At the same time, they can be better informed with respect to how they can collaborate with immigrant patients in ways that will meet their unique healthcare needs so that they have a better access to health care services. This review of previous literature presented in this chapter is not exhaustive but representative. It provides a background for this dissertation research and sheds light on its importance. The literature review demonstrates the challenges and opportunities associated with addressing healthcare disparities for immigrant patients, based on which the following research questions are posed to help guide the study:

RQ1: How does cultural competence in health care improve communication between immigrant patients and healthcare providers?

RQ2: What are the major challenges and issues that immigrant patients face navigating the health care system?

RQ3: What are immigrant patients' perceptions about ICTs in improving their access to health care?

RQ4 What are healthcare providers' perceptions about ICTs in improving access to health care for immigrant patients?

RQ5: What are healthcare providers' perceptions about ICTs being effective in improving their communication with immigrant patients?

The above research questions were used to explore the extent to which cultural competence and ICTs facilitate health care delivery for immigrant patients. Answers to these questions will enrich our understanding of the health care experiences of participating immigrant patients and the health care delivery experience of participating healthcare providers when caring for immigrant patients specifically in the Ottawa region. The city of Ottawa serves as Canada's capital and is the country's fourth-largest metropolitan area (Services, 2022). According to Statistics Canada (2022), immigrant groups, not of white or European descent, represent 32.5% of the population. This includes Black Canadians (8.5%), Arab Canadians (5.8%), South Asian Canadians (5.8%), and Chinese Canadians (4.6%). The city's demographic profile makes it an important location for research on immigrant health and healthcare access. The findings will also shed light on the status of cultural competence training for healthcare providers at all levels of healthcare organizations. These answers will help explore the type of ICTs, if any, that healthcare organizations adapt to facilitate communication with immigrant patients and how these technologies can play an effective role in improving access to health care for immigrant patients. Finally, the answers will help stakeholders to better recognize the health care needs of immigrant patients and how to work on meeting these needs, and thus provide immigrant patients with culturally competent health care.

Chapter Summary

This chapter provided a review of related literature on the role of cultural competence and ICTs in reducing healthcare disparities. Relevant study findings and the challenges and opportunities associated with addressing healthcare disparities for immigrant patients were discussed. Additionally, the researcher provides an overview of the theoretical framework used in this dissertation research and its significance to studying healthcare issues of immigrant

patient population. Lastly, based on the gaps in the literature reviewed, research questions to guide this dissertation were posed. In chapter three, the methodology to carry out this study is described.

Chapter 3: Methodology

Research approaches are the procedures and plans for conducting research that explain the steps involved in collecting, analysing, and interpreting data (Creswell, 2014). In this chapter, the methodological approach taken in this dissertation research is described. This includes thoroughly describing the research design that was employed for data collection, analysis, and the process by which this methodology was implemented. It is important to note that this research project was carried out in three phases -- focus groups were held in the first phase, surveys were administered in the second phase, and interviews were conducted in the third phase. The research questions will be addressed throughout the three phases of data collection and analysis.

Research Design

This dissertation research employed a mixed methods approach for data collection and analysis, predominantly using a qualitative approach (Creswell, 2014; Plano-Clark et al., 2008). Specifically, Exploratory Sequential Mixed Method was used. In exploratory sequential design, researchers first collect qualitative data and then quantitative data (Creswell, 2014). The aim of the exploratory sequential mixed methods design involves the process of first collecting qualitative data to examine a phenomenon, and then gathering quantitative data to further explore the relationships between the two forms of data (Creswell, 2014). Exploratory research was employed to help the researcher explore immigrant patients' experience interacting with their healthcare organizations and navigating the healthcare system. The exploratory research approach also helped the researcher investigate the type of technology that healthcare organizations use to communicate with their immigrant patients, (mainly newcomers) and how it would be improved.

Employing the exploratory sequential mixed methods design (Howe et al., 2015) the researcher carried out the dissertation project in three phases. In the first phase, a series of focus group discussions with a sample of recent immigrants was conducted to gain insights from immigrant patients' perspectives with regard to accessing healthcare services and communicating with their healthcare providers using ICTs. The focus group discussions were analyzed using thematic analysis approach. In the second phase, an online survey was conducted to gain insights from healthcare providers regarding the role of ICTs in improving communication with immigrant patients to help reduce healthcare disparities. Building on the survey results in the third phase, a qualitative approach was used. In this third phase, healthcare providers who participated in the survey were invited to participate in face-to-face in-depth semi-structure interviews. These interviews were conducted with a sample of healthcare providers (e.g., doctors and nurses) from various levels within the healthcare system. Then a between-method triangulation, which combined both survey and interview data was used to analyze the data from the second and third phases (Flick et al., 2012).

Ethical Procedures

It is important for researchers to ensure that they perform procedures with ethical behaviour. However, taking procedural ethics into consideration is not adequate; researchers should also ensure the aim of the study, method, data collection, and analysis also adhere to ethical practices (Cohen et al., 2013). Accordingly, the researcher ensured this dissertation research caused no harm to participants. Ethics approval was obtained from the Social Science and Humanities Research Ethics Board (REB) at the University of Ottawa (See Appendix A).

Role of the Researcher

The role of the researcher is central in any research study as he or she is responsible for shaping the research design, implementing the methodology, and analyzing the data. In mixed methods research, the researcher is responsible for integrating qualitative and quantitative components. This process includes making decisions about the sequencing, priority, and combination of qualitative and quantitative data (Creswell, 2014). It is the researcher who interprets and analyzes the data collected. Also, he or she synthesizes the findings by identifying patterns, themes, and relationships that emerge from the data (Braun & Clarke, 2012). When conducting a mixed methods research study, it is the researcher's responsibility to apply their knowledge, patience, and skills to gather all the necessary data and use this information to produce empirically sound findings.

With this in mind, it becomes crucial for researchers to consciously acknowledge and critically examine their biases and personal backgrounds, taking explicit measures to identify and reflect upon them (Creswell, 2014). In the current study, the researcher's background as an immigrant himself, born and raised in Libya and now residing in Canada, provided a unique perspective and personal understanding of the challenges faced by recent immigrants in accessing health care in Canada. The researcher’s own experience likely shaped his motivation and empathy towards the subject matter, emphasizing the importance of addressing healthcare disparities for immigrant populations.

However, the researcher stayed committed to ethical considerations, acknowledging personal biases, and maintaining transparency throughout the research process. It was imperative for the researcher to ensure the validity of this dissertation research by being aware of any

potential biases that could influence data analysis and interpretation. By acknowledging these biases and striving for objectivity, the researcher strived to offer an objective examination of the role of cultural competence strategies and ICTs in improving communication and reducing healthcare disparities for participating immigrant patients in Canada.

Throughout the course of this dissertation research, the researcher maintained a researcher journal, which served as a valuable resource for self-reflection and documentation of personal experiences and thoughts. This journal played an important role in capturing the researcher's own journey as an immigrant, including any challenges faced, observations made, and insights gained. By documenting these experiences, the researcher could gain a deeper understanding of the issues encountered by immigrant patients when accessing health care and communicating with their healthcare providers.

First Phase of Data Collection – Focus Group Discussions

There are several methods to collect qualitative data. These methods include interviews, observations, focus groups, narratives, and case studies (Naderifar et al., 2017). The data collection process utilized for this phase consisted of focus group discussions. Focus groups were chosen because they are considered an effective approach for obtaining valuable input from many participants. They allow for exploring participants' perceptions and viewpoints with regard to the problem under investigation (Benetoli, et al., 2017). Focus groups also allow participants to build on the other participants' responses (Benetoli, et al., 2017; Onwuegbuzie et al., 2009). A focus group discussion that is small in size consisting of 6 to 12 participants, makes it easier and more comfortable for all participants to share their thoughts and contribute to the discussions (Onwuegbuzie et al., 2009). An efficient and dynamic focus group discussion should last

between one and two hours because after two hours participants may feel fatigued leading to lower energy and quality of feedback (Onwuegbuzie et al., 2009).

Four focus group discussions were conducted in this phase of the research, involving a total of thirty-two recent immigrant patients from various cultural and racial ethnic backgrounds. Demographic data were collected, including age, gender, English language proficiency, income level, as well as educational background. The inclusion criteria for participants in this phase were immigrant patients aged 18 years or older, who could speak, read, and understand English, and who had settled in Canada during the last 7 years. This is because the use of modern information technology in healthcare settings is a recent movement (Higgins et al., 2015). The researcher wanted to discuss with the immigrant patients their perceptions of healthcare providers' cultural competence and communication skills, their experience navigating the healthcare system, and their use of ICTs to communicate with healthcare providers.

Recruitment of Participants

Recruiting participants requires several steps, including identifying eligible participants, explaining the purpose of the study to the eligible participants, recruiting a research sample based upon study objectives and design, obtaining signed consent forms, and keeping participants active in the study until it has been completed.

The researcher asked peers and researchers in the field of health communication to share his contact information with any potential participants and/or introduce the researcher to possible participants residing in the Ottawa/Gatineau area. The researcher also relied on professional networks to recruit participants. For example, one of the researchers' contacts happened to be a Cultural Communications Facilitator at the Catholic Centre for Immigrants. The researcher asked the cultural communications facilitator could find some interested individuals. The facilitator did

not provide the researcher with any personal contact information of members to complete this work. The cultural communications facilitator simply posted the recruitment letter on the board at the Catholic Centre for Immigrants, where it was visible to their clients and staff. Then, interested participants contacted the researcher.

Also, snowball sampling and chain referral sampling techniques were used. The snowball sampling technique normally begins with researchers recruiting one person who meets the desired characteristics and using that person's connection to recruit other individuals with shared characteristics (Lee & Spratling, 2019). Sampling is the process by which researchers choose a part of a group to be representative of the rest of the group (Naderifar et al., 2017). Researchers use snowball sampling when samples with the target characteristics are not easily accessible. Snowball sampling was utilized in this dissertation research because immigrant patients may be difficult to reach through other sampling methods.

Using this process, the current study participants were asked to assist in identifying additional participants from among their acquaintances. These existing participants, however, were not asked to divulge the name and contact information of potential participants; but rather, they were asked if they possibly could inform potential participants of the research project and share the researcher's contact information for more information and to communicate interest to participate in the research study. To recruit more participants, the researcher also reached out to their own personal and professional networks through utilizing email as well as platforms such as LinkedIn, Facebook, and Twitter.

Focus Group Procedures

Focus group procedures were explained to the participants prior to each focus group discussion. Next, the researcher explained the purpose of the study and answered any questions

the participants had. Consent forms were explained by the researcher and signed by all participants acknowledging that they understood the risk and benefits of participation, and that they were willing to participate in the study (See appendix C). All focus group participants received $10 in appreciation of their participation. Compensation was meant to offset the time and inconvenience for participation, as well as to serve as an incentive for participants to participate. All focus groups were held in private meeting rooms at the University of Ottawa, Canada or, in some cases, at a location chosen by the participants. For example, the second focus group discussion took place at Algonquin College of Applied Arts and Technology, which is a college located in Ottawa, Ontario, Canada.

Guiding questions for the focus group discussions were pilot-tested with 5 individuals to clarify key notions and to ensure that the questions for the focus group discussions were effective – appropriate and comprehensible -- thereby validating the research. The questions in these focus groups were open-ended to generate relevant themes and to enrich discussion among the participants. The qualitative approach allowed the researcher to openly investigate the participants' perspectives, and at the same time, enrich their knowledge and understanding of how recent immigrant patients communicate with their healthcare providers. Finally, participants were offered opportunities to recommend their own thoughts for solutions and improvements. When needed, follow-up questions were asked to elaborate and/or expand the points that the participants had made (see Table 1). These focus group discussions ranged in length from 90 to 120 minutes and were audio-recorded with consent, de-identified, and transcribed verbatim.

Thematic Analysis

The focus group discussions were analyzed using thematic analysis. Thematic analysis is a qualitative data analysis approach which allows researchers to describe and interpret collected

data using coding techniques (Braun & Clarke, 2006). It is a technique used to identify, analyze, and report themes within data, and it is utilized commonly because this approach can address a variety of research questions and topics (Castleberry & Nolen, 2018; Creswell, 2014; Nowell et al., 2017). The final step of thematic analysis is to identify categories, themes, and patterns derived from the data (Braun & Clarke, 2012). Thematic analysis is categorised into inductive, deductive, and summative approaches (Nowell et al., 2017). Many researchers use the inductive approach because it helps with the development of theories and /or conceptual frameworks (Fereday & Muir-Cochrane, 2006). For this phase of the dissertation research, an inductive approach with a thematic analysis and coding technique was used to identify common themes within the focus group transcripts. According to Creswell (2014), "Coding is the process of analyzing qualitative text data by taking them apart to see what they yield before putting the data back together in a meaningful way" (p. 156).

Specifically, the process of making sense of collected data involved a sequence of interconnected steps. First, all audio-recorded focus group discussions were transcribed verbatim (Stewart & Shamdasani, 2014). Second, the researcher performed a thorough reading and reviewing of focus group transcripts many times to achieve full immersion in the textual data and to discover themes and repeated patterns. Thirdly, participants' responses to questions that stood out as quotable were coded to be used as illustrative instances of a theme or sub-theme later (Rogers, 2018). Based on comparisons among different coded groups, similar codes were grouped together. Based on potential relationships among codes, the researcher then identified emerging themes (Saldana, 2016).

Second Phase of Data Collection – Survey

In the second phase of this dissertation research, an online survey that included fixed response options and open-ended questions was administered. The population group for this phase of the study were healthcare providers working in the hospitals within the city of Ottawa. These healthcare providers included physicians who treat, prevent illnesses, and interpret medical tests, nurses who provide direct patient care, and administrative staff who manage day-to-day operations. The inclusion criteria for participants in this phase of the study were (a) healthcare providers 18 years and older (b) working in a healthcare setting within the city of Ottawa (c) who provided care for recent immigrant patients. The researcher chose to conduct a survey with healthcare providers over other data collection tools because healthcare providers are a specific population that can be challenging to access through other data collection tools. A survey allowed the researcher to reach a large and diverse group of healthcare providers across different locations and experience levels. This survey was conducted to gain insight from healthcare providers with regard to the role of ICTs in improving communication with immigrant patients to help reduce healthcare disparities.

Recruitment of Participants

Participants were recruited through a combination of strategies: a letter of information was shared with healthcare providers, an email survey was sent to healthcare providers through professional networks, and subsequent interest was garnered via word of mouth. Selected participants received an invite to participate in a web-based survey. They were asked first to read the informed consent form. Once the participants consented to participate in the survey, they advanced to fill out the survey. A total number of 106 healthcare providers completed the survey.

Protection of Participants

Several measures were used in this dissertation research to ensure that the participants received the ethical considerations required when working with human subjects. First, participation in the study was voluntary and confidentiality of the participants was strictly maintained. Second, the researcher used REB-approved informed consent form to allow each participant to consent or reject to participate in research voluntarily. Participants had the choice to decline to participate or quit the survey at any time per the requirements for protecting research participants. Finally, no personal identifiable information was collected. The researcher ensured anonymity of the participants. The researcher did not include any questions that asked the respondents for personally identifiable information.

Survey Instrument and Measures

A considerable amount of time was spent to carefully plan the surveys and to ensure that survey design, data collection, coding, and analysis adhered to best practices. From January to May 2019, we administered an internet-based survey to a sample of healthcare providers who were based in Ottawa.. The survey was distributed to healthcare providers working in the Ottawa Hospital General Campus, The Ottawa Hospital Civic Campus, and the Ottawa Hospital Riverside Campus. The recruitment process involved reaching out to administrative staff at Ottawa Hospital General Campus who shared the survey link with healthcare providers working in these hospitals, using internal communication channels such as email. Healthcare providers who were interested in participating completed the survey anonymously.

The survey questions were adapted from a scale published in Schnall, Cho, and Liu's (2018) article: Health information technology usability evaluation scale (Health-ITUES) for usability assessment of mobile health technology: Validation study. In addition to socio-

demographic questions, the survey included open-ended and fixed-choice questions. The open-ended questions were able to capture information about several topics including healthcare providers' experience using ICTs, healthcare providers' information needs, communication with their immigrant patients. Participants were asked to describe their use of ICTs in healthcare delivery, and to specifically discuss their previous experiences communicating with their immigrant patients using ICTs. Individuals were able to discuss any factors that they considered to be opportunities or challenges to effective communication with their immigrant patients. Responses to those questions were assessed and selected for analysis. Additionally, any other comments that pertained to opportunities or challenges to the effective use of ICTs in communication with immigrant patients were also selected for analysis.

The closed-ended questions captured *the impact of ICTs on communication, perceived usefulness, perceived ease of use, and user control*. The closed-ended questions of the survey consisted of 12 items rated on a five-point Likert scale from strongly agree (1) to strongly disagree (5). This survey also provided empirical evidence intended to assist in improving patient-provider communication. Completion of the survey took approximately 10-15 minutes.

Prior to implementation, the survey was peer-reviewed. The draft methodology was reviewed by the researcher's supervisor. From this review, the researcher responded to the feedback that was received so as to strengthen the survey design. Additionally, the survey was pilot tested on a sample of 5 healthcare providers to assess its readability and readiness. After the surveys were completed, the final output was downloaded from Google Docs to create a raw data spreadsheet. In order to build a dataset to serve the purpose of thorough analysis, the data was cleaned, edited, and sorted.

Third Phase of Data Collection – Semi-structured Interviews

In the third phase of this dissertation research, semi-structure interviews were conducted. Surveyed healthcare providers were asked if they were interested in participating in a follow-up interview. Initially, a total of 13 surveyed healthcare providers expressed their interest in participating in the follow-up interviews. However, ultimately, six participants from the survey agreed to participate in the follow-up interviews. Follow-up interviews were chosen because they could provide an opportunity for healthcare providers to share their insights in a more open and detailed manner than may be possible in a structured survey. All interviews were held in private meeting rooms at the Ottawa Hospital General Campus, The Ottawa Hospital Civic Campus. The interviews were conducted in private offices in order to provide participants with privacy during their interviews. Prior to each interview, the researcher reminded each participant of the purpose of the study and eligibility criteria, which was any healthcare provider who worked in a healthcare setting within the city of Ottawa, and who provided care for recent immigrant patients. The researcher asked each participant to confirm that they met the eligibility criteria before proceeding with the interview. Each participant was advised, prior to signing the study's consent form, that the time to complete the interview would be approximately one hour.

All participants were informed that they could skip any question that they felt uncomfortable answering. To ensure that each participant understood the study's consent form, the researcher read each section of the form out loud, and then asked if the participants had any questions. Upon answering all of the questions that the participants had, the participants were then asked to sign the consent form. These interviews ranged in length from 45 to 60 minutes and were audio-recorded with consent, de-identified, and transcribed verbatim. Demographic information collected for these interviews included gender, age, and education.

Guiding questions for the one-on-one interview were open-ended to generate relevant themes and enrich discussion with the interviewees. When needed, follow-up questions were asked to elaborate and/or expand the points that the interviewees were making. Example of the type of questions that were asked during the interviews included "What are some of the major challenges and problems that you face when communicating with immigrant patients?" and "What specific contribution do you think ICTs can make to improve healthcare delivery for immigrant patients?" (See Table 2).

These interviews provided a deeper understanding of the perspective and experience of healthcare providers using ICTs to communicate with recent immigrant patients. Additionally, the interviewed participants reflected on their experience interacting with their recent immigrant patients. For this exploratory study, the responses to questions about healthcare providers' experience using ICTs for communication with immigrant patients were selected for analysis.

Survey and Interviews Analysis

When analyzing the survey findings, descriptive statistics was used that relied on a combination of table and charts. In particular, descriptive statistics were used to illustrate what the data revealed. Additionally, text responses to open-ended questions about healthcare providers' experience using ICTs were transcribed and analyzed thematically. The open-ended questions were meant to capture coherent narratives that accurately showed the current use of ICTs by a range of health care providers. Finally, to better integrate and analyze our findings, a data analysis triangulation was used. Using the principles of Unified Theory of Acceptance and Use of Technology, the researcher followed a thematic analysis approach, which allowed the themes to straight emerge directly from the data. A between-method triangulation, which combined both survey and interview data, was used (Flick et al., 2012). These steps included:

first, transcribing all audio-recorded interviews verbatim. Second, the researcher performed a thorough reading and review of interview transcripts several times to achieve a thorough understanding of the text and to discover themes and repeated patterns. Third, participants' responses that stood out as quotable were coded to be used to compare with the survey responses. This approach allowed the researcher to arrange the emerging themes based on both interview and survey data.

This approach complemented and validated the findings for a more inclusive understanding of the role of ICTs in improving communication between healthcare providers and recent immigrant patients. In this analysis, the researcher focused on issues that related to use of ICTs to communicate with immigrant patients.

Safeguarding Interview Data

For the one-on-one interviews that were conducted, participant responses and identities were strictly maintained. The researcher had the names, e-mails, and phone numbers of the people who were interviewed. However, the researcher coded the interviews by number as Interview 1, 2, 3, etc. and did not retain the names of participants in any paper files. The same coding technique and process was applied to the focus group discussions. The researcher had the names, emails, and phone numbers of participants in electronic records and on the audio recordings. However, the researcher will destroy the audio recordings of interviews and focus group discussions at the conclusion of the dissertation project. The researcher will also delete all personally identifiable information from electronic files. All data are kept in a secure location, and only the researcher and supervisor have access to the data. Any information shared was purely to accomplish the objectives of this dissertation research.

Chapter Summary

In chapter three, the researcher outlined the methodology used to carry out this dissertation research. By detailing the procedures, recruitment of participants, data collection and data analyses methods, a clearer understanding of the research design was provided. The chapter also highlighted the ethical considerations that guided this dissertation research and confirmed that the identity of the participants was safeguarded.

In the following chapter, a detailed account of the research findings will be reported.

Chapter 4: Results

In this chapter, the findings of this dissertation research are presented in two sections. The first section reports the results of our focus group discussions. The second section reports the results of our survey and the semi-structured interviews. After that, a between-method triangulation, which combined the survey and the interview data analysis, is presented (Flick et al., 2012). Figure 3 shows primary themes emerged from the focus group discussions, survey, and interviews.

Focus Group Results

A series of focus group discussions with a sample of recent immigrants was conducted. As mentioned in Chapter 4, snowball sampling and chain referral sampling techniques were used to recruit study participants. A qualitative approach was used for this part of the study because the research problem required understanding how immigrant patients perceive their experience accessing healthcare services and communicating with their healthcare providers. An inductive approach with a thematic analysis and coding technique was chosen because it allowed to explore perceptions, thoughts, beliefs, and concerns among a purposeful sample of 32 immigrant patients regarding their communication with their healthcare providers.

Focus Group Guide Development

The focus group discussion questions were developed to answer the following research questions:

> **RQ1:** How does cultural competence in health care improve communication between immigrant patients and healthcare providers?

RQ2: What are the main challenges and issues that immigrant patients face navigating the healthcare system?

RQ3: What are immigrant patients' perceptions about ICTs in improving their access to health care?

The first research question focused on examining the role of cultural competence in improving communication between immigrant patients and their healthcare providers. The second research question focused on identifying issues that immigrant patients encounter when navigating the healthcare system in Canada. The third research question focused on exploring immigrant patients' perceptions of ICTs in relation to their access to healthcare services.

Twelve open-ended focus group questions (see Appendix D) were formulated to elicit participants' responses regarding their experiences accessing healthcare and communicating with their healthcare providers (e.g., how would you describe your experience interacting with healthcare providers?). Many participants shared personal experiences, while some participants also recounted the experiences of other people (e.g., their spouses, children, friends, and so on) when responding to the focus group questions. The insights shared by the immigrant patients who participated in this study can help healthcare providers, executives, and policymakers gain a better understanding of how recent immigrant patients communicate with their healthcare providers.

Participant Characteristics

A total of 32 individuals participated in the focus group discussions (see Table 3). Of the 32 immigrant patients who attended the focus group discussions, 15 were female and 17 were male; none of the participants identified their gender as "other." Participants' ages ranged from

18 to 64; a majority of participants were in their 20s. Only recent immigrants, defined as individuals who arrived in Canada within the last 7 years, were recruited (Statistics Canada [SC], 2016). This is because the use of modern information technology in healthcare settings is a more recent movement (Higgins et al., 2015). Most participants had been in Canada for four years. Eleven participants were from the Middle East (e.g., Syria, Lebanon, Iraq, and Yemen) and living with family members, mostly their spouses and children. Ten participants were from South Asia (e.g., Afghanistan, India, Nepal, and Pakistan), and four participants were from Southeast Asia (e.g., Malaysia, the Philippines, and Thailand). Four participants were from Africa (e.g., Somalia, Eritrea, Chad), including one from North Africa (e.g., Libya). Only two participants identified themselves being from Europe (e.g., Russia), and one participant was from Latin America (e.g., Colombia). Some participants had postsecondary education. Many participants were students pursing a bachelor's degree. The income level of the participants ranged between earning less than $10,000 (mainly for participants who were students and working part-time) to $50,000 or more. The focus group discussions were conducted in English. While the majority of participants spoke English, many of them did not speak English fluently.

Table 3
Demographic Characteristics of Focus Group Participants (N 32)

Variables	Range/Level	Focus Group 1 (n= 9)	Focus Group 2 (n= 7)	Focus Group 3 (n= 8)	Focus Group 4 (n= 8)
Age Range	18 – 29	6	4	3	5
	30 – 49	3	2	5	3
	50 – 64	--	1	--	--
No response	--				
Gender	Male	4	3	5	3
	Female	5	4	3	5
Geographic Region	Middle East	4	2	3	2
	South Asia	2	4	4	--
	Southeast Asia	2	--	1	1
	Africa	1	1	--	2
	Europe	--	--	--	2
	Latin America	--	--	--	1
Length of Stay	1 Year	--	--	3	2
	2 Years	--	1	2	1
	3 Years	3	1	2	1
	4 years	4	5	1	3
	5 Years	2	--	--	1
English Language Proficiency	Elementary	2	1	1	--
	Intermediate	3	2	4	3
	Advanced	4	4	3	5
Level of Education	Hight school graduate	2	4	5	1
	College Degree	5	2	3	5
	Graduate degree	2	1	--	2
Household Income	Less than $10,000	2	4	--	2
	$ 20,000 – $29,000	5	2	5	4
	$ 30,000 - $39,000	1	1	3	2
	$ 50,000 – 59,000	1	--	--	--

Focus Group Themes

The inductive thematic analysis resulted in the emergence of three main themes and six sub-themes (see Table 4). The first theme, communication with healthcare providers, discusses immigrant patients' perceptions of their healthcare provider's cultural competence. This theme is divided into two sub-themes: experience with receiving care and language barriers. The second theme, navigating the healthcare system, discusses the ways in which immigrant patients navigate the healthcare system, and whether they find it useful. This theme is divided into two sub-themes: lack of access to health resources and information and delays in receiving treatment. The third theme, use of ICTs by immigrant patients to access healthcare, discusses immigrant patients' perception and willingness to use ICTs for access to healthcare. This theme is divided into two sub-themes: types of ICTs used to access healthcare and perceived effectiveness of ICTs.

Communication with Healthcare Providers

The immigrant patient participants were asked about their perceptions of their healthcare providers' cultural competence. The participants were also asked about their experience communicating with their healthcare providers. More than 90% of participants stated that the absence of effective communication as well as cultural and language barriers were major issues related to interacting and/or communicating with healthcare providers. Participants highlighted the importance of developing awareness, knowledge, skills, and attitudes about different cultural factors associated with providing healthcare.

Experience With Receiving Healthcare. When asked about their experience receiving healthcare, immigrant patients indicated that communicating with their healthcare providers was frustrating. 90 % of participants believed that ineffective communication such as lack of active

listening and/or one-sided interactions was attributable to the providers' limited cultural competence, communication skills, and language barriers.

The participants mentioned that healthcare services offered by healthcare providers did not meet their expectations. They expected more attention and empathy from their healthcare providers than what was received. One participant shared an experience where her doctor was not willing to listen to her when she was in a vulnerable state. This patient expected more from what the doctor was willing to provide in terms of attentive and empathetic care:

> Another case I want to talk about is once I had depression. I waited for half an hour and when I saw my doctor, she gave me less than 10 minutes to talk. It was hard for me to express my ideas in English, I had to speak slowly, and I needed to talk to her, but she was not listening to me. I guess, because my English was not good enough, or maybe she did not understand me. She spoke very fast and used some technical words that were really hard to understand. This was a bit frustrating. (FGD#2: South Asian female living in Canada, between the ages of 30 - 49)

Overall, the participants highlighted the importance of active listening during patient-provider encounters. They thought that their healthcare providers were not receptive to what they were saying. The participants shared that active listening could make them feel fulfilled, understood, and validated.

Some participants had mixed responses when asked about their experiences with receiving care. These participants indicated that, while for the most part, their experience with receiving care had been good, there were nevertheless some unpleasant situations that arose

when dealing with their healthcare providers. As a result, one of the issues the participants emphasized was the need to increase awareness about cultural sensitivity. For example, one participant shared his experience where the doctor reacted differently when they noticed the patient's accent. This participant shared:

> I took my daughter to see a doctor because she had some wax in her ear. I explained the situation to the doctor and the way the doctor responded was inappropriate. He said, "here in Canada" we use mineral oil to treat ear wax. For me, saying here in Canada was inappropriate. The doctor did not know when I came to Canada … if I came here or not. I might be a Canadian already and living in Canada for a long time and just had this accent. That sounded really judgmental. (FGD#1: Southeast Asian male living in Canada, between the ages of 30 - 49)

Irrespective of patient background, the participants indicated that being culturally competent and showing empathy during a patient-provider encounter was an important component for patient satisfaction. Overall, the participants believed that some healthcare providers, without noticing, were projecting their own cultural values. The participants underscored that cultural sensitivity was vital because it could help healthcare providers become more competent in their ability to communicate with patient from different cultural backgrounds.

Language Barriers. A number of participants stated that they had a difficult time communicating with their healthcare providers during their medical encounter. Language barriers can be a major challenge for both patients and healthcare providers (Al Shamsi et al., 2020). More than 90% of the participants stated that it was challenging for them to overcome communication barriers and to explain their medical issues to their healthcare providers. The

following quotes illustrate how problematic it was for recent immigrant patients to communicate with healthcare providers during their medical encounters:

> I cannot communicate with them. I usually take my cousin with me. He has been here for a long time. He speaks the language and knows the culture. So, to avoid any miscommunication and/or misunderstanding, I just ask him to go with me. He translates everything for me. But he sometimes does not understand some medical terms. (FGD#4: Middle Eastern male living in Canada, between the ages of 18 - 29)

> It is hard to communicate with them [healthcare providers], but we have no option. Sometimes it is hard to get them to understand what you are saying but for the most part, we try to explain what we need to explain. I am aware of some people who use translators, but it makes things slow, and I also do not want to share my personal health information with translators. (FGD#4, Middle Eastern female living in Canada, between the ages of 30 - 49)

Many participants described their experience communicating with their healthcare providers as challenging. These immigrant patients elaborated that they struggled to explain their health issues or had to find someone to translate for them when interacting with healthcare providers. The participants believed that language barriers caused misunderstanding and frustration for both the patients and healthcare providers during patient-provider communication.

Navigating the Healthcare System

Navigating the healthcare system involves dealing with different parts of the system including gaining access to health services and being aware of the treatment options available to them (Tsai & Lee, 2016). For example, patients need to find their entry point to the healthcare

system, to familiarize themselves within a multitude of healthcare organizations, and to identify the right place for their own health issues (Mckenney at el., 2018). Not every patient has the ability to meet such navigation requirements.

Lack of Access to Health Resources and Information. All immigrant patients participating in this study agreed that the healthcare system in Ottawa was useful and provided good quality healthcare services compared to the healthcare systems in their home countries. However, a majority of participants (80%) stated that they nevertheless also faced issues such as lack of access to healthcare resources and delays in treatment. Many participants discussed the lack of access to sufficient healthcare resources and information for newcomers about locating the right doctor for certain health issues. For example, a young female immigrant stated:

> When I first came, no one told me how to navigate the healthcare system. It was very difficult and time consuming to look for health related issues. So, I just ask my mother what to do if I have something. Like what medicine should I take? The problem here was when you are new here nobody introduces you to the healthcare system and other systems like how to get driving licence and what not. It is really big missing item here. (FGD#2: African female living in Canada, between the ages of 18 - 29)

Our participants shared that they had problems in finding their way within the healthcare system and in dealing with their health-related issues. In some cases, they had to ask their family members to help them because they did not know how to access healthcare resources.

The lack of access to healthcare resources was particularly highlighted among immigrants who were attending university. Our findings revealed that those immigrants attending university looked for tools and resources showing them how to access healthcare during the orientation at the beginning of the school year. Our participants argued that this would have been useful, and

indicated that lack of access to such resources and health information led to a lack of awareness of important health care services that were existed.

Many participants indicated that they were exposed to the healthcare system for the first time. Those participants explained that they were seeking instructions on how to find healthcare information. They believed that community health centers and service organizations should provide the required information rather than leaving it for the immigrants to find healthcare information on their own. As one participant shared:

> You know… I wish there was any workshops or webinars where we could learn about health services available for new immigrants. Technology can help. For example, community centers can host webinars for us to learn about healthcare services. This could help a lot. (FGD # 2: South Asian male living in Canada, between the ages of 18 - 29)

Our participants emphasised the role of community centers in increasing access to healthcare resources for immigrant patients. They expressed their willingness to receive training as to where to find healthcare resources and/or information. The participants felt that having access to this kind of information could help in acquiring knowledge on the healthcare services available in their communities.

Delays in Treatment. A number of participants (85%) spoke about delays in being seen by their healthcare provider. The participants mentioned the challenges associated with the availability of interpretation services, eligibility for healthcare coverage, and wait times. In particular, healthcare eligibility was a serious barrier to healthcare for some newcomers to Canada, as noted by this participant:

> When I arrived, I could not get health insurance coverage. I had to wait for three months to be eligible for healthcare services. To be honest, health insurance rules were not easy

> for me to navigate. (FGD#2: South Asian female living in Canada, between the ages of 30 -49)

The participants stated that as newcomers to Canada, they were subject to a 3-month waiting period before the effective date of health insurance coverage. They highlighted the importance of having immediate health insurance coverage because it was essential for promoting and maintaining their health. They believed that delays in obtaining health insurance coverage made it difficult for them to access certain healthcare services.

Furthermore, the participants talked about the process of meeting a healthcare provider (e.g., a family physician). They stated that it could take several months of waiting. A young male participant stated:

> The system is organized, I agree, but they are very relaxed and take things very slowly. It is easy for them to say, 'Come after 4 months.' In my case, it took longer because I tried to find a doctor who could speak my language. (FGD#2: Middle Eastern male living in Canada, between the ages of 18 – 29)

Another participant said:

> If I want to see a doctor, it takes a long time, especially if I want to see a specialist. It may take about 3 months because interpretation services are limited. They really should increase the use of telemedicine. (FGD#3: Southeast Asian female living in Canada, between the ages of 30 - 49)

Participants expressed frustration when discussing the challenges that they encounter when navigating the healthcare system, particularly regarding eligibility, wait times, accessing

healthcare information and resources, booking an appointment, and receiving the proper treatment quickly. Many participants felt they had limited access to satisfactory health services and found the requirements and procedures to be demanding and difficult. Seeking proper healthcare was more challenging when immigrant patients, or their loved ones, were faced with a serious health problem. Many of the immigrant patients who participated in this study indicated that programs aimed at helping immigrants navigate the healthcare system in Canada should consider alleviating these challenges and do their best to satisfy the health needs of immigrant patients.

Use of ICTs by Immigrant Patients to Access Healthcare

Two subthemes related to the use of ICTs for communication with healthcare providers were identified in our analysis: the type of ICTs that are being used by recent immigrant patients for health-related matters, and the perceived effectiveness of ICTs in accessing healthcare.

Type of ICTs. Among the available ICT tools, our participants stated that they all had mobile phones and access to the Internet. Some participants also had laptops or computers, and many used social media platforms such as Facebook, Twitter, Instagram, Viber, and WhatsApp. In addition, they used a variety of web-based tools like “Google” to look for health services (e.g., www.publichealthontario.ca). Some participants also indicated that they had used ICT tools to look for healthcare services. For example, text messages via digital platforms such as group chat Apps (WhatsApp) were used by participants to both send and receive health information about the lived experiences of particular conditions, as well as to communicate with online health bloggers, clinicians, and other health professionals who were willing to offer advice and support as to what to do when they had health issues. A majority of participants strongly agreed that

ICTs could serve as a means for communication with their healthcare providers and/or accessing healthcare services.

The following quotes are some examples of participants' accounts of how ICTs helped them:

> I recently joined a group online, "Syrian Doctors". It is on Facebook. So, what I do is I post my questions and they answer me in my own language. I think it is really good. (FGD#3: Middle Eastern male living in Canada, between the ages of 18 – 29)

> I also joined a group on WhatsApp. They answer all my questions and if they do not know, they will tell me that they are not sure. Sometimes people who have faced the same experience answer the question. So, it is really good. (FGD#3: South Asian female living in Canada, between the ages of 18 -29)

These participants explained that they heavily relied on health information found online and they used social media sites (e.g., WhatsApp) to find information about healthcare specialists and to connect with other patients to seek social support by sharing similar experiences and learning from them. Our participants indicated that social media sites helped them in the process of selecting specialists, allowing them to make informed decisions on the best practices to seek care.

Perceived Effectiveness of ICTs in Access Healthcare. During the focus group discussions, participants were asked to indicate how effective applications of ICTs were for improving access to healthcare. Participants indicated that ICTs could enhance the quality of healthcare services by speeding up health services. For example, by using ICTs to access health

services (e.g., telemedicine), patients could save money and time because they do not need to travel for long distances to see their healthcare providers. Participants also indicated that ICTs could provide a platform for all patients to search for medical or health-related information. The participants also believed that ICTs made it easier for them when they attempted to self-diagnosis and/or check for wait times before seeing their healthcare providers for medical consultations:

> Yes, ICTs [are] good. For example, in the Ottawa clinic, they have some websites that have features that tell you the wait times, which I think is a good thing for me to be able to plan ahead. (FGD#4: Latin American male living in Canada, between the ages of 18 - 29)

> When we do blood test, we can see the result online. We also use google a lot to look for health information. Nowadays, we do go online to look for health information. There is this website that we access to look for immunization. When you go there, you put your name and health card number, and you access your immunization record. You do not have to pay for it. It is easy to do. (FGD#4: European female living in Canada, between the ages of 30 -49)

It was highlighted by all participants that ICTs were beneficial to use for checking appointment wait times, accessing lab results, and for online medical consultations. However, a majority of participants (80%) believed that the use of ICT applications could only complement, not replace, a face-to-face meeting. The participants argued that even though ICTs could increase access to healthcare services, it was still more important to use face-to-face encounters because such communications allowed for a better exchange of information, and they allowed healthcare

providers to ascertain patients' specific care needs. While the participants perceived effectiveness of ICTs positively, many participants nevertheless also discussed issues related to their ability to use ICTs for healthcare purposes. It was important for the immigrant patients to improve their digital literacy competence as they use those ICT tools to access healthcare. They believed that being able to properly utilize digital technologies, for example, smartphones, laptops, and computers, could assist them to better manage and track their healthcare seeking activities.

Table 4
Themes, Sub-Themes, and Example Quotes

Themes and Sub-Themes	Example Quotes	
Communication with Healthcare Providers	Just last month, I was sick, and my family doctor did not give me enough time to speak about my issue. I tend to speak slowly, and she talked in a way that indicated he was too busy. He also asked my husband to leave the room. (FGD#2: South Asian female living in Canada, between the ages of 30 – 49.	Communication has always been an issue for me. I prefer to see doctors who are from my culture. They speak fast, I am not comfortable to ask them to speak a bit slowly so that I understand. FGD#4: Middle Eastern male living in Canada, between the ages of 18 – 29.
Experience with Receiving Care	I just pretend that I understand. They should explain medical terms' meanings. Also, they did not have pen and paper available for me to write down questions or notes. FGD#4, Middle Eastern female living in Canada, between the ages of 30 – 49.	It is a bit frustrating when my doctor does not listen to me. It happened a lot. I understand that they see a lot of patients, but they should make time for us. FGD#1: Southeast Asian male living in Canada, between the ages of 30 – 49.
Language Barriers	I am not comfortable explaining health issues in English. There are many medical terms that I do not understand. FGD#2: South Asian male living in Canada, between the ages of 18 - 29	Due to my limited language, my doctor will be less likely to understand my concerns. FGD#1: Middle Eastern male living in Canada, between the ages of 30 -49.

Navigating the Healthcare System	The healthcare system is confusing, and it is hard to find a family physician who is ready to take you. I found a physician who spoke my language, but his office was too far from my place. FG#2: African female living in Canada, between the ages of 18 – 29.	I think we all had problems finding the right health services. You can find information about physicians' genders, the languages they speak, the areas they practise, but not all the listed physicians accept new patients. FG # 2: South Asian male living in Canada, between the ages of 18 – 29.
Lack of Health Resources and Information	If I got sick, I just ask my family where to go. It is hard to find reliable information online that is easy to read and understand. FGD#1: Middle Eastern female living in Canada, between the ages of 18 -29.	Yes. there is too much health information online. But the thing is where can I find reliable health information posted for newcomers. FGD#1: Middle Eastern female living in Canada, between the ages of 18 -29.
Delays in Treatment	Oh, it is scary to get sick. It may take six months to see a specialist. I am new to Canada. I do not have healthcare benefits at work and medication is expensive. FGD#1: Middle Eastern female living in Canada, between the ages of 30 -49.	The process of meeting a healthcare provider is too long. I had to find a family doctor who had to make a referral for me and then I had to wait for a long time to be seen. FGD#3: South Asian female living in Canada, between the ages of 30 – 49.
Use of ICTs to Access Healthcare	I actually rely on social media to look for healthcare services. they are very helpful. FGD#3: Middle Eastern male living in Canada, between the ages of 30 – 49.	Joining groups on Facebook and WhatsApp was help. we discuss health issues. FGD#3: Middle Eastern male living in Canada, between the ages of 18 – 29.
Types of ICTs Used to Access Healthcare	I use my cellphone. health apps are very easy to download. FGD#4: European female living in Canada, between the ages of 18 -29.	I have used telemedicine, I loved it. FGD#4: European male living in Canada, between the ages of 30 -49.
Perceived Effectiveness of ICTs	I got to check my blood work online. It was pretty straightforward. FGD#1: Southeast Asian female living in Canada, between the ages of 18 -29.	Booking appointment online saved a lot of time (FGD#4: Latin American male living in Canada, between the ages of 18 -29).

Survey and Interview Results

As previously mentioned in Chapter 3, survey and interview data were collected from healthcare providers utilizing: (1) online survey with a sample of healthcare providers and (2) semi structured interviews with a sample of healthcare providers. Then, a between-method triangulation, which combined both survey and interview data analysis, was employed (Flick et al., 2012). Triangulation was used for this dissertation research because this approach allows for a concomitant examination of a phenomena with different data sources (Cooper & Hall, 2016). It is a strategy that researchers use to increase the validity of the research findings (Kern, 2018). The researcher collected the data from two sources, namely survey and interviews. Data from the survey were triangulated with the interview data to reinforce findings. This approach allowed us to integrate and analyze our findings to better understand healthcare providers' demographics and their perceptions as they related to their experience communicating with immigrant patients.

Research Questions

Two research questions were addressed during this phase of the study:

RQ4: What are healthcare providers' perceptions about ICTs in improving access to health care for immigrant patients?

RQ5**:** What are healthcare providers' perceptions about ICTs being effective in improving their communication with immigrant patients?

The fourth research question was developed to identify healthcare providers' perceptions with regards to using ICTs to improve access to healthcare for immigrant patients, while the fifth

research question was developed to explore healthcare providers' opinions about using ICTs to improve their communication with immigrant patients.

For the semi-structured in-depth interviews, 11 interview questions were developed for healthcare providers to guide this part of the research (see Table 2). These 11 focused interview questions were analyzed against other healthcare providers' survey responses.

Demographic Characteristics of Survey Participants

A total of 106 healthcare providers completed the survey (see Table 5). Of the 106 healthcare providers who completed the survey, seventy-two (67.9%) were female, thirty-three (31.1%) were male, and one person identified as gender fluid. The majority (63, 59.4%) of the survey participants self-identified as Caucasian, 13 (12.3%) participants as Middle Eastern/Arab, 10 (9.5%) participants as Southeast Asian, seven (6.6%) participants as African, six (5.6%) participants as South Asian, two (1.9%) participants as Latin American, and only one (0.94%) participant as East Asian. Two (1.9%) participants identified themselves being from the First Nations community and two (1.9%) participants identified themselves as mixed race (See Table 5). Participants who were between the ages of 18 and 29 represented 38.7% of the total sample. Those between the ages of 30 and 49 represented 43.4%. Those 50 years of age and older represented 17.9%. All of the participants (100%) used ICTs for communication in their everyday lives. Many of them also used ICTs to communicate with their patients.

Table 5
Demographic Characteristics of Survey Participants (N 106)

Age Range	Gender	Ethnic/cultural origin	Total
18-29 years	Female	African	4
		Caucasian	18
		East Asian	1
		Middle Eastern/Arab	2
		Mixed race	1
		South Asian	2
		Southeast Asian	4
	Female Total		32
	Male	Caucasian	5
		South Asian	2
		Southeast Asian	2
	Male Total		9
18-29 years old Total			**41**
30-49 years	Female	African	2
		Caucasian	17
		half French and half Arabic	1
		Latin American	2
		South Asian	2
		Southeast Asian	2
	Female Total		26
	genderfluid	Caucasian	1
	genderfluid Total		1
	Male	Caucasian	8
		First Nation	1
		Middle Eastern/Arab	8
		Southeast Asian	2
	Male Total		19
30-49 years old Total			**46**
50-64 years	Female	African	1
		Caucasian	9
		First Nation	1
		Middle Eastern/Arab	3
	Female Total		14
	Male	Caucasian	5
	Male Total		5
50-64 years old Total			**19**
Grand Total			**106**

Demographic Characteristics of Interview Participants

As mentioned previously, this dissertation research conducted in-depth interviews with 6 healthcare providers of whom two participants were male and four were female. Two participants were between the ages of 18 and 29 and four participants were between the ages of 30 and 49. Three participants self-identified as Caucasian, two as Middle Eastern/Arab, and one as Southeast Asian. With regard to educational background, two participants had a post-secondary degree and four participants had completed graduate school (see Table 6).

Table 6
Demographic Characteristics of Interview Participants (N 6)

Age Range	Gender	Education	Ethnic/Cultural Origin	Occupation
30-49 years	Female	Graduate Degree	Caucasian	Nurse Practitioner
18-29 years	Female	Post-Secondary Degree	Middle Eastern/Arab	Administrative Staff
18-29 years	Male	Graduate Degree	Caucasian	Nurse
30-49 years	Female	Post-Secondary Degree	Southeast Asian	Nurse
30-49 years	Male	Graduate Degree	Caucasian	Physician
30-49 years	Female	Graduate Degree	Middle Eastern/Arab	Administrative Staff

When analyzing the survey findings, descriptive statistics were used, mainly a combination of table and charts to illustrate what the data revealed. Additionally, text responses to open-ended questions about healthcare providers' experience using ICTs were transcribed and analyzed thematically. The open-ended questions were meant to capture coherent narratives that

accurately showed the current use of ICTs by a range of health care providers. Finally, to better integrate and analyze our survey and interviews findings, data triangulation was used. In particular, a between-method triangulation, which combined both survey and interview data, was used (Flick et al., 2012). This approach helped to complement and validate the findings for a more inclusive understanding of the role of ICTs in improving communication between healthcare providers and recent immigrant patients.

Use of ICTs for Health Care to Communicate with Immigrant Patients

To understand the role of ICTs for healthcare communication with immigrant patients, surveyed healthcare providers were asked questions related to their use of ICTs in healthcare delivery. These healthcare providers were asked to provide information regarding their use of ICTs to communicate with immigrant patients. The surveyed healthcare providers who answered yes to this question were asked to provide more information about the type of ICTs that they had used to communicate with immigrant patients. Those who said they had not used ICTs to communicate with immigrant patients were asked to explain why.

Out of the 106 surveyed healthcare providers, 65 (61.3%) responded to this question. The respondents generally felt that using ICTs to communicate with immigrant patients was important because ICTs could foster communication between providers and patients. Nevertheless, a majority of respondents (67.1%) said they only used the telephone, or in some cases, email to communicate with immigrant patients. With regard to ICTs, online patient portal, Electronic Health Record, Email newsletter, and virtual group meetings were the most types of ICTs that surveyed healthcare providers recommended. Many surveyed healthcare providers said that they would like to use ICTs to communicate with immigrant patients because they believed

that ICTs would allow them to better reach these patients. However, these healthcare providers expressed doubts about immigrant patients' ability to use ICTs to communicate with healthcare providers. Several respondents suggested that prior to using ICTs for communication with immigrant patients, it was more important to develop clarity regarding the type of ICTs that were suitable for communicating with them.

Table 7
Use of ICTs by Surveyed Healthcare Providers

ICTs Used	Type of ICTs
Documentation and sending information to patients	Online patient portal
Translation Services	Google translate
Interpretation services	Telephone interpretation
Email communication	Email
Follow ups and appointment reminders	SMS text message via mobile phones
Medical consultations	Tele/video conference
Booking appointments	Telephone/phone calls

All interviewed healthcare providers shared that using ICTs such as an online patient portal, text messaging, and email would be challenging for immigrant patients. They believed that accessibility issues as well as limited knowledge of technology for many immigrant patients meant that ICTs would not be a good way to communicate with them, unless immigrant patients

were taught or provided with more information about using technology to communicate with their healthcare providers. For example, as one Caucasian male nurse, living in Canada, between the ages of 18 and 29 shared:

> I don't think many of them would be able to use technology or anything like online patient portals…. you know… any electronic. They have to first learn how to use it… teaching them [immigrant patients] the benefit of the technology and how to use it first, then we can maybe come with a technology-based method to communicate with them. (Interview #6)

Interviewed healthcare providers thought that immigrant patients had issues navigating technology to communicate with their healthcare providers. Interviewed healthcare providers believed that training immigrant patients on how to use technology for communication could result in advances in their technology access and use.

Our findings showed that among both interviewed and surveyed healthcare providers there were no differences in preferences for communicating with the immigrant patients. Some surveyed healthcare providers, and a majority of interviewed healthcare providers (90%), preferred face-to-face communication with patients, especially for health issues that were of critical concern.

> Face to face meetings with immigrant patients help facilitate appropriate counseling, and it can also reduce the chances of misinterpretation of messages or emails. (Interview #3: Caucasian male physician, living in Canada, between the ages of 30 and 49)

Interviewed healthcare providers argued that it was important for patients to meet face-to-face with their doctors because some doctors were concerned about using technology (e.g., communication via telephone or email) to address urgent symptoms, and also to avoid medical errors due to the absence of physical examinations.

Both interviewed and surveyed healthcare providers were positive about their ability to use ICTs for communication with immigrant patients. They only expressed doubt about the ability of immigrant patients to use ICTs for health-related communication.

> We use technology in our daily work. We have no issues with technology, but the thing is that navigation of technology may be challenging for immigrant patients with less technological experience. (Interview #1: Southeast Asian female nurse, living in Canada, between the ages of 30 and 49)

Both interviewed and surveyed healthcare providers further indicated that they have been using ICTs to communicate with patients. However, these healthcare providers believed that immigrant patients might need to improve their digital literacy skills in order to improve their online communication with their healthcare providers. Moreover, these healthcare providers thought that without addressing immigrant patients' digital literacy skills, online communication with healthcare providers would be an added layer of burden for the immigrant patients and it would be an obstacle for the healthcare providers if they want to integrate ICTs in their communication with immigrant patients.

Surveyed healthcare providers were asked to offer recommendations regarding the type of ICTs that could be used to communicate with immigrant patients. Out of the 106 healthcare

providers surveyed, 51 (48.1%) responded to this question. The most common responses were related to using ICTs to further overcome language barriers. Many surveyed healthcare providers (85%) stated that it was challenging for them to overcome communication barriers and to explain medical issues to their immigrant patients. These healthcare providers indicated that this was because immigrant patients with limited language proficiency were more likely to have difficulties in understanding the instructions of their healthcare providers; therefore, using interpretation services offered remotely was necessary. Surveyed healthcare providers recommended augmenting their use of ICTs with videos/images with demonstrations to overcome language barriers. They believed that language-based information videos were very helpful for instructing immigrant patients. This technology can allow immigrant patients to understand important information that they ordinarily would not have comprehended had their healthcare providers provided the information verbally.

Many findings from the survey were aligned with findings from our interviews. A majority of interviewed healthcare providers (90%) stated that technology could enhance quality of care by providing better access to medical information. Technology assisted immigrant patients to overcome communication barriers, and to explain their medical issues to their healthcare providers, for example the use of Google translate.

> We do offer interpreter services here, but when you are calling the patients to figure out if they need an interpreter, it is difficult to communicate with them and say what you want to say unless there is someone in the office that speaks that language. Like you cannot say anything to the patients besides like…. ok someone else will call you back for interrupter

> services. (Interview #4: Middle Eastern/Arab female administrative staff, living in Canada, between the ages of 18 and 29)

Interviewed healthcare providers stated that it was important for them to have more information about their immigrant patients. They mentioned issues with their interpretation services that they offer for their immigrant patients. For example, it would be helpful for healthcare providers to have access to information about language skills before contacting their patients. These healthcare providers stated that having access to such information would help them determine if the patients needed interpretation services or not.

The healthcare providers who participated in the interviews recommended the use of electronic translation services like Google translate, as well as Electronic Health Records (EHRs) that could produce patient information materials in multiple languages. The healthcare providers suggested that such services would allow for translations, or visual representation, of what was being described by the healthcare provider. According to our interviewed healthcare providers, a language translation tool such as an iPad was especially useful if translation options were available within the program. Video based translation services (e.g., Skype) increased accessibility in hospital settings (e.g., the emergency department).

Lastly, both surveyed and interviewed healthcare providers recommended using social media, online patient portals, and text messaging for easy access to health information as long as the language barrier issue was sufficiently addressed to avoid loss of information. For example, electronic medical record systems that could arrange appointment booking requests and reminder calls in the client's language of preference helped in scenarios where language was an issue. Additionally, many interviewed healthcare providers recommended using email addresses to

reach out to immigrant patients so that immigrant patients with language barriers could translate the email, and then write their response later. For example, as one of the interviewed healthcare providers shared:

> There is one thing that a lot of people at this hospital ask for, which is email. We are not allowed to communicate with patients with email because it could breach privacy very easily, and I feel like we have to do that, like if the patient is deaf, then we cannot call them right? Sending email to deaf patients had to be approved by our manager! Also, a lot of patients with limited language proficiency asked us to send them an email because they can just use Google to translate to their first language. (Interview #5: Caucasian female nurse practitioner, living in Canada, between the ages of 30 and 49)

Interviewed healthcare providers highlighted the importance of using email to communicate with patients with limited language proficiency. They believed that using email to reach out to immigrant patient enhanced communication by giving the immigrant patients adequate time to translate what was sent to them in their mother tongue.

Healthcare Providers' Perceptions About ICTs in Improving Access to Health Care for Immigrant Patients

To understand healthcare providers' perceptions about ICTs in improving access to health care for immigrant patients, surveyed healthcare providers were asked to respond to close-ended questions related to the role of ICTs in facilitating health care delivery for immigrant patients. The close-ended questions consisted of 12 items rated on a five-point Likert scale ranging from strongly agree (1) to strongly disagree (5). The following themes emerged as a result of our analysis of the responses: (1) Impact of ICTs on communication with immigrant

patients; (2) perceived usefulness of ICTs for healthcare providers; (3) challenges related to perceived ease of use of ICTs for communication with immigrant patients; and (4) user control and perceived usability of ICTs for healthcare providers (see Appendix I). As mentioned in Chapter 3, the survey items were adapted from a scale utilized by Schnall et al., (2018).

Impact of ICTs on Communication with Immigrant Patients

Surveyed healthcare providers were markedly positive about using ICTs to communicate with immigrant patients. They believed that such technology would be useful and would improve access to healthcare services for all patients including recent immigrants. A majority of surveyed healthcare providers (85.7%) agreed that using ICTs would improve their communication with immigrant patients. Only 14.3 percent either disagreed (10.5%), or strongly disagreed (3.8%) that ICTs would be a positive addition to healthcare providers' communication with recent immigrant patients.

The interview findings complemented and enhanced the survey data related to using ICTs to communicate with immigrant patients. For example, interviewed healthcare providers indicated that their knowledge and awareness of how to navigate electronic health systems could help immigrant patients as new users. These healthcare providers mentioned that they could engage their immigrant patients in a conversation about electronic health records and answer any questions that immigrant patients may have. This was important for immigrant patients who had low digital and health literacy skills. Overall, the findings revealed that healthcare providers had a positive attitude toward using ICTs to deal with their patients.

> [Technology] makes everybody feel better. It makes the patients feel better. It stops the frustration. It is a very positive contribution because it makes interaction with patients so

> much better. Especially with the physicians, a lot of the physicians want to communicate with the patients. They do not want to deal with somebody else, and if we have better way of communicating with our patients, it would be great. (Interview #1: Southeast Asian female nurse, living in Canada, between the ages of 30 and 49)

Many interview participants mentioned their willingness to use ICTs to communicate with their patients. They believed that using technology to deliver healthcare increased access to healthcare services for all patients and in turn improved their health outcomes. Further, healthcare providers believed that once they are well trained in using ICTs, they would have the potential to provide faster healthcare services to recent immigrant patients. This finding also supported the notion that there was minimal negative sentiment among healthcare providers regarding the possibility that ICTs would impede their communication with healthcare providers.

Survey participants were asked whether ICTs would be an important part in meeting their information needs related to communication with immigrant patients. 53 percent either agreed (20.8%) or strongly agreed (33%) that ICTs were important in meeting their information needs related to communicating with recent immigrant patients. The distribution of participants who were neutral about this question was considerably higher at 33 percent. 13.2 percent either disagreed (9.4%) or strongly disagreed (3.8%) that ICTs were important with regard to their communication with recent immigrant patients. Many interview participants indicated that ICTs could facilitate access to information that can help healthcare providers in their communication with the immigrant patients However, these healthcare providers were not entirely sure that many immigrant patients had the digital skills needed to use ICTs to share important information (e.g., language preferences and preferred method of contact). Interview participants emphasized

the importance of acquiring information related to their communication with immigrant patients. For example, one of the interviewed healthcare providers shared some concerns about obtaining information to arrange appointment booking requests:

> Like I said, when everything is put in the system, you are saving a lot of time and it is more effective and more efficient when it comes to patient care. For me in my position, I do the booking, and a lot of the time, they sent a fax, and when the patient called, I could not communicate with them, and I did not get any paper. So, I would have to call the doctor, and locate the documentation, and that was a waste of time. (Interview #2: Middle Eastern/Arab female administrative staff, living in Canada, between the ages of 30 and 49)

Many interviewed healthcare providers shared that several medical errors occurred because the healthcare providers did not have sufficient information about the health issues facing the immigrant patients they were treating. Electronic Health Records, have drastically improved access to reference information (Tieu et al., 2017). ICTs have become an integral part in both delivering and giving access to healthcare (Lindberg et al., 2013). Moreover, previous research showed that family-centered care interventions improve health outcomes (Goldfarb et al., 2017). The survey assessed participants comfort with family/patient involvement in care (e.g., consultation about habits related to health)., and whether ICTs could be used to support patient/family participation in care. All participants (106) responded to this question. 62.2 percent either agreed (29.2%) or strongly agreed (33%) that ICTs would increase the presence and participation of family members in care. 23.6 percent neither agreed nor disagreed that ICTs

would allow for patient/family participation in care. 14.1 percent either disagreed (9.4%), or strongly disagreed (4.7%) that ICTs would increase family/patient involvement in care.

Many interviewed healthcare providers highlighted the need to involve patients and their family members in treatment because it would lead to better informed patients with regard to their treatment options, and it would improve their access to information. These interview participants further believed that family members have an important role in the management and guidance of using ICTs. For example, the participants shared that some patients required special assistance due to certain diseases and/or disabilities. For many interviewed healthcare providers, ICT tools like video technology helped with issues such as guiding the patients and their families in the use of medical equipment such as wearable heart monitors. Additionally, some interviewed healthcare providers shared that immigrant patients could use video calls to connect with their close family members who lived in their countries of origin, which could provide some level of family and social support for these immigrant patients to alleviate the stress related to their health issues (Ahmed et al, 2020).

Perceived Usefulness of ICTs for Healthcare Providers

Perceived usefulness of ICTs in healthcare delivery refers to whether healthcare providers believe ICTs are of assistance in relation to supporting access, exchange, and sharing of information, and whether ICTs improve healthcare providers' overall job performance (Aceto et al., 2018). As we recall from UTAUT, when integrating ICTs into healthcare services, perceived usefulness is a crucial determinant because it predicts healthcare providers' intentions to use ICTs, as well as their attitudes towards technology usage. Hence, it was important to ask our participants about their perception in relation to the usefulness of ICTs for

the healthcare services that they provided to immigrant patients. Out of the 106 healthcare providers who were surveyed, 105 participants responded to this question. 64.7 percent either agreed (35.2%) or strongly agreed (29.5%) that ICTs were useful and that ICTs allowed them and their patients to save time. 29.0 percent neither agreed nor disagreed. 16.2 percent either disagreed (9.5%), or strongly disagreed (6.7%) that ICTs allowed them and their patients to save time.

Many interviewed healthcare providers stated that the use of electronic health records could help healthcare providers improve immigrant patients' care. These healthcare providers believed that EHRs were useful in allowing them to obtain information about health services and their patients. For example, healthcare providers had access to patients' electronic health records, where they could quickly locate information about their immigrant patients' special notes (e.g., certain cultural and health beliefs), health issues, and medications that their patients had taken in the past. One of the interviewed healthcare providers stated:

> Using ICTs made sharing information easier. As health information is more readily passed between healthcare providers and their patients, our job gets better… something that helps all of us within the chain of care, from staff and physicians to pharmacists and patients. (Interview #3: Caucasian male physician, living in Canada, between the ages of 30 and 49)

Additionally, interviewed healthcare providers indicated that educational materials offered online about the healthcare system could help immigrant patients understand how to access healthcare services. Interviewed healthcare providers highlighted the importance of offering these

educational materials in multiple languages. Having access to such educational materials in multiple languages can help in reducing healthcare disparities.

The findings showed that ICTs could help to access and share specific information about immigrant patients, e.g., information on certain health practices. Such information can assist healthcare providers in providing tailored healthcare for immigrant patients, which can contribute to reducing healthcare disparities (Douglas et al., 2015).

With regard to how convenient ICTs were for healthcare providers in communicating with immigrant patients, only 63.8 percent of healthcare providers who were surveyed either agreed (31.4%) or strongly agreed (34.4%) that using ICTs provided more convenience in their communication with recent immigrant patients. 22.9 percent neither agreed nor disagreed. 13.3 percent either disagreed (9.5%) or strongly disagreed (3.8%) that ICTs provided added convenience in communicating with recent immigrant patients. Many interviewed healthcare providers pointed out that it would be convenient if they could use mobile applications for communication with immigrant patients. Interviewed healthcare providers believed that these technologies provide more convenience and can help in situations where patients had a language barrier. These healthcare providers indicated that mobile applications containing software with translation abilities have promising potential to improve communication with immigrant patients who have language barriers.

Many interviewed healthcare providers mentioned that digital decision support systems gave healthcare providers access to medical guidelines for evidence-based healthcare, and this improved the quality of their healthcare services. As one interview participant shared:

> Digital clinical guidelines make providing care consistent. Regardless of location or who is the healthcare provider, patients will be cared for in the same manner. (Interview #5: Caucasian female nurse practitioner living in Canada, between the ages of 30 and 49)

Interviewed healthcare providers thought that digital clinical guidelines could improve immigrant patients' care by helping healthcare providers make informed decisions regarding the unique healthcare needs of immigrant patients.

With respect to the role of ICTs in facilitating both patient care and administrative processes, 67 percent of surveyed healthcare providers agreed that ICTs would be useful in both providing care to patients and facilitating administrative processes.19.8 percent neither agreed nor disagreed. 13.2% percent either disagreed (5.7%) or strongly disagreed (7.5%). Many interviewed healthcare providers shared that their ability to use ICTs to facilitate both health care and administrative process meant that ICTs could facilitate and simplify their work-related tasks. Using ICTs, healthcare providers can quickly reach out to their colleagues, share work related information, and minimize travel time. These participants pointed out that they did not have access to certain important demographic data on immigrant patients. For example, access to information such as age, gender, language preference, and ethnicity, which could be a part of the patient's medical record, save time and can help healthcare providers to quickly understand the different characteristics of their patients. More demographic data on immigrant patients can help healthcare providers know how to tailor services to this population group (e.g., language preferences).

Challenges Related to Perceived Ease of Use of ICTs for Communication with Immigrant Patients

Factors determining challenges related to immigrant patients and healthcare providers' perceived ease of use of ICTs were examined. 60 percent of surveyed healthcare providers strongly agreed that they were comfortable with their ability to use ICTs to communicate with immigrant patients. 21.7 percent, however, neither agreed nor disagreed, and 17.9 percent either disagreed (13.2%) or strongly disagreed (4.7%) that they were comfortable with their ability to use ICTs to communicate with recent immigrant patients.

Interviewed healthcare providers were invited to share the challenges that they faced when they used ICTs to communicate with immigrant patients. They indicated that telephone interpretation services that they had used generally improved their communication with immigrant patients. However, these participants explained that even though this technology was easy to use, and even though it was free of charge for all patients who needed it, patients did not get to provide their input into this technology. As one participant shared:

> It felt like that they had to agree with everything that was going on, or they might feel that they were wasting the interpreter time, so they might be scared to say extra information because they did not know how it would get communicated. (Interview #4: Middle Eastern/Arab female administrative staff, living in Canada, between the ages of 18 and 29)

Many interviewed healthcare providers thought that many immigrant patients were not comfortable using the telephone interpretation services. These providers believed that this could

be because the immigrant patients were reluctant to share some health information with interpreters.

Interviewed healthcare providers indicated that the employing Electronic Health Records was another challenge they faced when they used ICTs to communicate with immigrant patients. These healthcare providers stated that the use of EHRs among immigrant patients was low. These providers mentioned that this could be due to lack of digital and health literacy skills that many immigrant patients face when using EHRs. Interviewed healthcare providers said that EHRs were generally easy to use when it came to viewing certain patient health information. For healthcare providers, EHRs provided access to timely information about their patients such as shared health reports, prescriptions, and lab results. The information provided on EHRs was largely text-based, and many immigrant patients may struggle reading text-based health information. The healthcare providers stated that digital literacy and navigation of online e-health platforms were challenging for many immigrant patients. EHRs required patients to be able use electronic devices to find, understand, and assess health information available via EHRs.

> Here at the hospital, we have MyChart, it is an online portal that gives patients access to their health information at any time. So, what it is… we would get the patient email address and they would get a PIN number and they would access all their charts from home. But if they do not have email address, there is nothing we can do for them. We do offer the service and they need to learn how to use it. (Interview #2: Middle Eastern/Arab female administrative staff, living in Canada, between the ages of 30 and 49)

Interviewed healthcare providers emphasized that to achieve high levels of satisfaction among both healthcare providers and immigrant patients with regard to using EHRs, it was important to

identify digital literacy skills and usability preferences, which could assist in tailoring and facilitating digital patient-provider communication, which refers to using ICT tools such as patient portals and secure messaging tools to facilitate patient provider communication (Kim et al., 2021). The healthcare providers concluded that understanding the challenges that immigrant patients were experiencing using EHRs should be at the centre of any future interventions.

User Control and Perceived usability of ICTs for Healthcare Providers

User control in ICTs refers to the perceived usability among healthcare providers with regard to the digital healthcare system that they have at their disposal. Usability refers to a measure of how users can utilize a system (product or service) to achieve a defined goal efficiently and effectively (Bitkina et al., 2020). Motivating healthcare providers in using digital healthcare systems remains challenging (Tang et al., 2018). Previous research shows that poor usability has had a negative impact in allowing healthcare providers to achieve their objectives relating to improved communication and processing their workflow quicker (Cresswell & Sheikh, 2013). UTAUT suggests that users' motivation and skills be explored when using ICTs. To ensure that immigrant patients were benefiting from ICTs that were managed by healthcare providers, factors associated with healthcare providers' ability to correct mistakes when using ICTs were examined. 45.7 percent of survey participants either agreed (16.2%) or strongly agreed (29.5%) that they required a short amount of time to recover when they had made a mistake using ICTs. The distribution of participants who were neutral regarding this theme was considerably higher at 38 percent. 16.2 percent either disagreed (14.3%) or strongly disagreed (1.9 %) that it did not take a long time for them to recover when they make a mistake using ICTs. These results indicate that many healthcare providers reported that their problem-solving skills (e.g., correcting mistakes while using EHRs) was the most common

challenge they encountered. Although the many of healthcare providers strongly agreed that they would be comfortable with their ability to use ICTs to communicate with immigrant patients, it was apparent from the survey data that a significant portion of healthcare providers were concerned about their ability to recover whenever a mistake was made. Therefore, to achieve effective and efficient digital patient-provider communication, it is critical to build ICTs that are easy to use by healthcare providers.

Interviewed healthcare providers were asked to list ICTs that they used to help them achieve their objectives to better communicate with immigrant patients. These participants recommended that immigrants increase the use patient portals as a tool to communicate with their healthcare providers. According to these healthcare providers, these tools created an additional opportunity for patient-provider communication in that these technologies allow the patients to better understand their treatment plans. For example, patient portals can help patients to access their health reports, and to send messages to their healthcare providers when they had a health matter. Interviewed healthcare providers also recommended encouraging immigrant patients to use health apps on smartphones to access healthcare services and resources. Health apps provide patients with the ability to share some of their health information with their healthcare providers.

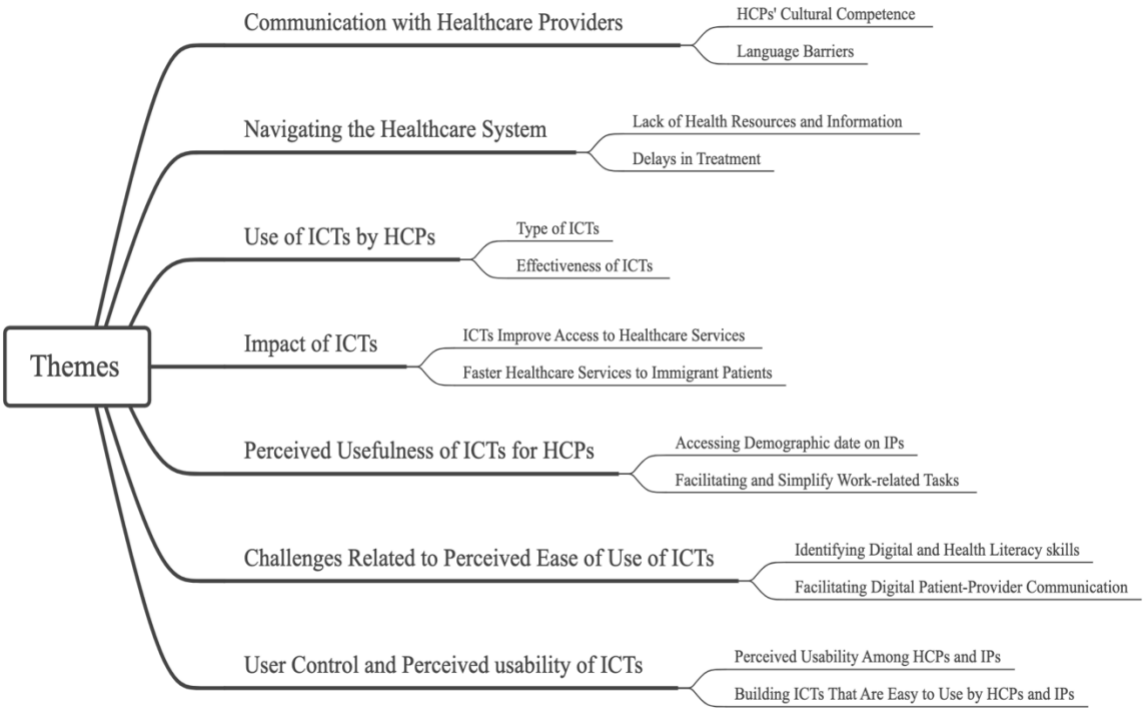
Healthcare providers also recommended investigating immigrant patients' ability to perform healthcare related tasks utilizing ICTs. Interviewed healthcare providers expressed doubt that some immigrant patients possessed the ability to use the patient portal on their own to communicate with their providers, or to look up a lab test result. As one participant shared:

> In the case of MyChart, patients can use it in their mother tongue language. But even with this option, many immigrant patients, especially seniors would still say that using MyChart is really hard…. I guess for some patients, even when the language barrier is addressed, they still struggle with using technology. (Interview #2: Middle Eastern/Arab female administrative staff, living in Canada, between the ages of 30 and 49)

Many healthcare providers believed that many immigrant patients were resistant to using ICTs such as MyChart, which is a free online portal that patients can use to access their medical information (Langford et al., 2021). These immigrant patients faced digital literacy issues and felt that ICTs led to more confusion. They simply chose not to use these tools.

Figure 3

Primary Themes from the Focus Group Discussions, Survey, and Interviews



Chapter Summary

This chapter reported the findings of the three phases of this dissertation research. Specifically, the chapter analyzed findings from the focus group discussions, survey, and semi-structured interviews that were conducted for this dissertation research. The findings of the focus group discussions revealed themes and sub-themes related to improving interaction and communication between healthcare providers and immigrant patients. The first theme was communication with healthcare providers which had two sub-themes under it: experience with receiving care and language barriers. The second theme, navigating the healthcare system, had two sub-themes: lack of access to health resources and information and delays in receiving treatment. Use of ICTs by immigrant patients to access healthcare was the final theme and the sub-themes under it included types of ICTs used to access healthcare and perceived effectiveness of ICTs.

The findings of the survey and semi-structured interviews explored the use of ICTs to improve communication between healthcare providers and immigrant patients with the objective of reducing healthcare disparities. Four themes emerged as a result of our analysis of the responses: Impact of ICTs on communication with immigrant patients; (2) perceived usefulness of ICTs for healthcare providers; (3) challenges related to perceived ease of use of ICTs for communication with immigrant patients; and (4) user control and perceived usability of ICTs for healthcare providers.

In chapter 5, a discussion of the findings of this dissertation research, limitations, and implications of the research, and directions for future research will be presented.

Chapter 5: Discussion

This chapter describes, analyzes, and interprets the findings of this dissertation research. It also focuses on theoretical considerations that were used to guide this study. In addition, the implications and the limitations of the findings are presented.

The purpose of this dissertation research was two-fold: a) to examine cultural competence strategies that are used by healthcare organizations to improve interaction and communication between healthcare providers and their immigrant patients, and b) to explore the role of ICTs in improving communication between healthcare providers and immigrant patients with the objective of reducing healthcare disparities. To address the first part of the purpose, challenges and cultural issues that immigrant patients face when communicating with their healthcare providers, as well as the difficulties they experience while navigating the healthcare system were examined. Immigrant patients' perceptions about using ICTs in improving their access to health care were also explored.

To address the second part of the purpose, healthcare providers' experience using ICTs for communication with immigrant patients, as well as their' perceptions of the role of ICTs in improving access to healthcare for immigrant patients were explored. Healthcare providers' perception of the effectiveness of using ICTs in improving their communication with immigrant patients was also examined.

Campinha-Bacote's Cultural Competence Model (CCM) and Unified Theory of Acceptance and Use of Technology (UTAUT) were employed for this dissertation research as its theoretical framework (See chapter 2). Our findings are most compatible with the perspective of CCM and UTAUT for two reasons: first, understanding the way in which healthcare providers

communicate with patients from different cultural backgrounds can be best explored through applying the elements of CCM. This is because these elements discover cultural care meanings and use in order to gain knowledge about immigrant patients. The focus of this model is to improve healthcare providers' ability to effectively work within the cultural context of patients. It is also because CCM focuses on social structural factors such as language, cultural awareness, cultural knowledge, cultural skill, and cultural encounters which are important factors that have a great influence on the health and well-being of immigrant patients.

Second, the acceptance and use of ICTs by both healthcare providers and immigrant patients can be best explored through applying elements of UTAUT. This theory explains users' intentions to utilize ICTs. It also measures four important factors, which are performance expectancy, effort expectancy, social influence, and facilitating conditions. Understanding these factors can help to determine immigrant patients and healthcare providers' behavioral intention to use ICTs in healthcare communication.

A mixed methods approach was employed to conduct this dissertation research (see chapter 3). The focus group discussion findings were derived from a sample of 32 immigrant patients who participated in 4 different focus group discussions, and the survey findings were derived from 106 healthcare providers working in the Ottawa area. Six surveyed healthcare providers agreed to participate in follow-up semi structured interviews to further reflect on and extend the survey responses.

Principal Findings

In the following section, the principal findings are discussed in relations to the research questions.

RQ1: How does cultural competence in health care improve communication between immigrant patients and healthcare providers

The findings with regard to the first research question emphasizes that healthcare providers ought to be culturally competent when communicating with immigrant patients. Effective communication is a key competency for healthcare providers (Moudatsou et al., 2020). The findings indicated that it is essential for healthcare providers to understand their immigrant patients' feelings, concerns, and experiences in order to assess their health needs and provide proper healthcare services. The findings also showed that although healthcare providers were respectful when communicating with immigrant patients, many of them needed to improve their ability to effectively interact, communicate, and develop meaningful relationships with patients of different cultural backgrounds. These findings showed that the healthcare providers who participated in this dissertation research had more issues in areas related to cultural competence and language barriers when providing healthcare to immigrant patients.

These findings are consistent with previous research on the role of cultural competence in healthcare (Ahmed & Bates, 2017; Brunett & Shingles, 2018; Chang et al., 2019; Kaihlanen et al., 2019). For example, Ahmed and Bates (2017) examined how doctors interact with patients from different cultural backgrounds. These researchers found that when doctors take steps to understand and respect their patients' cultural beliefs and practises, patients may feel more at ease and less fearful when interacting with their doctors. Brunett and Shingles (2018) reported

that having a culturally competent health care provider, or one whom patients perceive to be culturally competent, improves patient satisfaction. Several immigrant patients who participated in this dissertation research shared that they felt satisfied when their healthcare providers took the time to understand the patient's cultural health beliefs and values. For example, the healthcare provider asks about the immigrant patient's traditional foods and dietary restrictions, and makes recommendations accordingly.

The findings identified two aspects as key factors in improving immigrant patients' communication with their healthcare providers. These factors were highlighted by most immigrant patients who participated in the focus group discussions. The first factor was related to improving healthcare provides' cultural competence. Many of the immigrant patient participants seemed to believe that taking into consideration intercultural sensitivity can have important impact on their communication with their healthcare providers, and on the quality of care that these immigrant patients received. Intercultural sensitivity refers to the ability to use knowledge, consideration, understanding, and adaptation after recognizing one's own and others' cultural perspectives; it is a component of cross-cultural communication skills that serves as a foundation when developing cultural competence skills (Chen & Young, 2012).

The findings showed that lack of cultural competence training could contribute to poor communication between healthcare providers and immigrant patients. However, in contrast, previous research (Volland & Fryda, 2015) found that poor patient experiences when communicating with healthcare providers were not due to a lack of cultural competence, but rather were the result of poor-quality services by the healthcare organizations. Specifically, a lack of effort to improve the transition of care within healthcare delivery systems. Identifying

how cultural competence can be translated into quality measures thus can help in improving immigrant patients' communication with their healthcare providers, and in turn, help reducing healthcare disparities for immigrant patients.

Building upon prior literature on the role of cultural competence in improving communication between healthcare providers and immigrant patients (Almutairi et al., 2017; Carmack & Ahmed, 2019; Cicolini et al., 2015), the findings of this dissertation research suggest that healthcare organizations may need to enroll their healthcare providers in cultural competence training that can help increase their cultural awareness, cultural skills, cultural encounter, and cultural knowledge about patients whose culture backgrounds differ from their own (see chapter 2). This suggestion supports the findings of Almutairi et al.'s (2017) study on culture competence, which concluded that healthcare organizations must provide cultural competence training programs to increase their healthcare providers' level of cultural competence so they are better able to deal with the issues that might occur during cross-cultural communication. Kaihlanen et al. (2019) examined the perceptions of healthcare providers about the content and utility of cultural competence training. This study reported that increased cultural awareness among healthcare providers can facilitate communication with immigrant patients. We may recall from the CCM that to improve communication with patients from different cultural backgrounds, in this case, immigrant patients, health care providers and organizations should recognize cultural differences, and try to be culturally competent to attune their communication to their immigrant patients (Suh, 2004). The CCM posits that culturally sensitive doctor-patient communication has important implications for healthcare outcomes (Quach, 2021). The findings of this dissertation research suggest that employing cultural competence strategies by healthcare organizations can help improve trust and understanding between

healthcare providers and immigrant patients, which can result in better adherence to treatment plans and overall improved health outcomes. Bhat and colleagues (2015) reported that web-based cultural competence training for healthcare providers can translate cultural competence knowledge into healthcare practice. When immigrant patients feel that their healthcare providers understand and respect their cultural values and beliefs, the patients might be more open to discussing their health issues and follow treatment plans that their healthcare providers recommend.

The second aspect that was identified as a key factor in improving immigrant patients' communication with their healthcare providers was related to language barriers. Language barrier was a leading impediment to communication with healthcare providers. This finding is consistent with previous research that investigated the impact of language barriers on healthcare delivery (Al Shamsi et al., 2020; Lim et al., 2021; Tulli et al., 2020; De Moissac & Bowen, 2019). For example, Al Shamsi et al. (2020) reported that language barriers contributed to reducing both patient and healthcare provider satisfaction, and negatively affected the overall quality of healthcare delivery. De Moissac and Bowen (2019) found that language barriers contributed to impaired confidence in the healthcare services that immigrant patients felt they received.

The findings of this dissertation research indicated that in order to meet immigrant patients' healthcare needs, healthcare organizations are required to deliver high-quality healthcare that takes language barriers into consideration. Many of the immigrant patients who participated in this dissertation research believed that due to their limited language proficiency, healthcare providers were less likely to understand immigrant patients' health concerns. On the

other hand, inadequate language proficiency limited immigrant patients' ability to understand and act on healthcare providers' instructions. Based on these findings, it may seem prudent for healthcare organizations to increase the use of interpretation services for immigrant patients who have language barriers. This strategy can be implemented through increasing the use of in-person interpreters, phone interpreters, or virtual interpretation services. Using interpreters, however, comes with challenges of its own (Powell et al., 2017). Even though professional interpreters may be able to translate properly, they may not be able to convey cultural nuances or differences (e.g., phrases and beliefs which differ between nations and regions). Providing additional training and resources can help interpreters better understand and convey these nuances. Nevertheless, resource constraints such as lack of fundings, staff, or time may limit the availability and effectiveness of interpretation services offered by healthcare organizations (Farley et al., 2014). Healthcare organizations may not always be able to provide accurate and timely interpretation for patients who have limited language proficiency. For example, Eklof et al. (2015) reported that using phone interpretation services can increase the workload of healthcare staff. This dissertation research suggests that healthcare organizations partner with community service organizations that serve immigrant groups. Such partnership can help to identify the specific needs and preferences of immigrant patients to better coordinate appropriate healthcare services for them.

Additionally, the findings of this dissertation research identified confidentiality and trust as key challenges with regard to using interpretation services. Many immigrant patients who participated in this dissertation research feared that the interpreters would violate confidentiality by divulging sensitive information to other people in their community. These findings support Ali & Watson's (2018) research study which found concerns about the confidentiality and

privacy implications of using interpretation services, and the effect it had on the patients' comfort level. Also, many immigrant patients indicated that they used family members and friends to translate for them during their medical encounters. Those family members and friends would be unfamiliar with medical terminologies. Utilizing untrained interpreters, such as a family member, might lead to omitting or adding certain information in error (De Moissac & Bowen, 2019). Choosing trusted interpretation service providers and recruiting staff members who have appropriate linguistic and cultural skills can help to ensure that conversations stay confidential when using interpretation services. It is important to note that language is one of the key drivers of successful integration of immigrants. Addressing language barriers should not only be a responsibility for healthcare organizations, but immigrant patients may also improve their language skills by attending schools that teach one of Canada's official languages. Settlement agencies may be able to provide language classes for immigrant patients. Immigrant patients should take advantage of such opportunities to improve their language skills and better communicate with their healthcare providers.

Many of the immigrant patients who participated in this dissertation research expressed a strong desire to have the opportunity to communicate with culturally diverse healthcare providers who recognize cultural differences and speak multiple languages. Dreachsline et al. (2017) in their study found that culturally diverse healthcare providers played a crucial role in delivering a high quality of care to immigrant patients. Culturally diverse healthcare providers who speak the patient's language can facilitate communication and help to ensure that the patient understands their treatment plan and can participate in their own care. These findings indicate that healthcare organizations at managerial levels should be aware that many immigrant patients may have language and/or communication barriers, and that healthcare organizations may need to tailor

their healthcare services to meet those barriers. As mentioned earlier, hiring culturally diverse staff and providing cultural competence training for healthcare providers have the potential to assist them to understand and respect the cultural and linguistic differences of immigrant patients. Such training may include training on how to communicate effectively with patients from different cultural backgrounds, and how to respect cultural differences in healthcare practices. Considering language and/or communication barriers, decision makers in healthcare organizations may consider investing adequate funding to train and support healthcare providers as they provide healthcare services to patients with language and communication barriers. By allocating such funding, healthcare organizations may be able to reduce healthcare disparities for immigrant patients.

RQ2: What are the major challenges and issues that immigrant patients face navigating the healthcare system?

The findings of this dissertation research with regard to the challenges and issues that immigrant patients faced when navigating the healthcare system revealed interesting trends. An analysis of the responses of the immigrant patients who participated in the focus group discussions revealed that the majority of those immigrant patients reported facing barriers to accessing healthcare services. They faced issues such as lack of access to healthcare resources and information, and delays in being seen by their healthcare providers. To address these barriers, the findings of this dissertation research offered several suggestions that healthcare organizations may wish to consider. Although following these suggestions may not guarantee that immigrant patients will not face any issues accessing healthcare services, by following these suggestions healthcare organizations may notice some improvement in their healthcare service

delivery experience. Since those suggestions are based upon previous real-life experiences that the immigrant patients shared during the focus group discussions, healthcare organizations may take the initiative to include such suggestions with regard to their strategies aimed at improving access to health care for immigrant patients.

The findings of this dissertation research suggest that healthcare organizations may review the health resources that they offer to immigrant patients. For example, many of the immigrant patients who participated in this dissertation research suggested extending eligibility to public health insurance programs. These immigrant patients spoke about confusion with regard to eligibility policies. They stated that it took them a few months before they were entitled to receive health insurance coverage; this issue made it difficult for the immigrant patients to access certain healthcare services when they needed them the most. It has been noted in the literature (Pinto at el., 2018) that patients without healthcare coverage report higher levels of stress, anxiety, and advanced diseases. Extending eligibility for public health insurance programs to include more immigrant patients may help healthcare organizations address disparities in the level of access to healthcare for this population.

The findings also suggest addressing immigrant patients' lack of familiarity with the Canadian health care system. Many of the immigrant patients who participated in this dissertation research indicated that being new to Canada made it difficult for them to access some healthcare services. For example, an examination of the responses of the immigrant patients revealed that many immigrant patients were uncertain where to find healthcare-related assistance when they first came to Canada. This finding aligned with Lanes et al.'s (2021) study which found that the greatest barrier to accessing healthcare services for immigrant patients was

difficulty in navigating the healthcare system. Challenges in finding one's way through the healthcare system mean that many immigrant patients may struggle to access the care they need, which can lead to poorer health outcomes and potentially serious consequences. For example, Millett et al. (2020) found that diverse patients, such as African Americans, tend to have more severe cases of COVID-19. The researchers suggest that this may be the result of their limited access to healthcare services. Educating immigrant patients about the healthcare system and their rights as patients can assist these immigrant patients navigate the healthcare system more effectively, which can lead to reducing healthcare disparities. For example, Ghahari et al. (2020) developed and pilot tested a healthcare access program named as Accessing Canadian Health care for Immigrants, which was designed to improve immigrants' access to Canadian health services. After participants completed the programme, they showed an increase in health navigation and understanding of the Canadian healthcare system. Accordingly, educating immigrant patients may include using ICT tools such social media sites to provide more information about how to locate and choose a healthcare provider. Social media sites have been used as means to disseminate health information and to reach underserved demographics (Anderson-Lewis et al., 2018; Farsi, 2021).

The findings of this dissertation research also revealed that delays in being seen by healthcare providers was another challenge that caused a barrier to accessing healthcare services for immigrant patients. This finding aligns with previous research regarding wait times and treatment for immigrant patients (Thøgersen et al., 2020) which found that immigrant patients with breast and lung cancer appeared to have slightly longer wait times for treatment. Many of the immigrant patients who participated in this dissertation research shared that there was a shortage of family physicians with appropriate language or cultural skills who were willing to

accept new patients. This finding reinforces the findings of previous studies (Kohler at el. 2018; Wang & Kwak, 2015) which reported that a shortage of doctors and wait times led to delays in seeking care for immigrant patients in Canada. Shortage of doctors may result in higher use of health emergency services. It may also lead to increased wait times, which in turn may cause another burden on the healthcare system.

Similar to Salami at el.'s (2020) study, this dissertation research identified delays in being seen by healthcare providers as an impediment to seeking care for immigrant patients. To overcome this issue, the findings of this dissertation research suggest implementing ICTs in ways that reduce wait times. For example, using electronic health records to collect information such as language preferences helps in preventing delays at check-in (e.g., the registration process). Collecting such information via electronic health records can help to identify and address unique patient needs. For example, if a patient has a specific language preference, the healthcare provider would be able to schedule an appointment with an interpreter, which could help facilitate communication and prevent delays. However, as mentioned earlier, factors such as a shortage of funding, personnel, or time may restrict the availability of interpretation services provided by healthcare organizations (Farley et al., 2014), requiring important considerations for strategic resource allocation and partnership development.

In addition, the findings of this dissertation research indicated that telemedicine can also be a useful tool for reducing wait times because this technology allows patients to receive medical care remotely, which can be particularly helpful for immigrant patients who may have difficulty traveling or accessing healthcare facilities due to language barriers. This finding supports findings from Montague and Perchonok's (2012) study, which suggested telemedicine

is an approach to reduce wait times and highlighted the importance of tailoring this technology to the needs of specific target populations to ensure greater uptake and more meaningful use. Knowing and understanding the challenges and issues that immigrant patients face when navigating the healthcare system can lead to tailored interventions.

RQ3: What are immigrant patients' perceptions about ICTs in improving their access to health care?

The findings of this dissertation research with regard to immigrant patients' perceptions and willingness to use ICTs to access healthcare support previous research (Tai-Seale et al., 2019; Busagala, & Kawono, 2013) which reported that ICTs are well regarded and accepted by most patients. The majority of the immigrant patients who participated in this dissertation research indicated that they had used ICT tools for health-related purposes such as accessing health information in their native language. This finding is promising in implementing effective ICTs for healthcare services targeting immigrant patients. For example, translation apps gave immigrant patients a convenient medium to translate physicians' instructions to their mother tongue language. This finding supports past research which concludes that ICTs can improve patient-provider communication through translation apps, visual aids, and the use of video systems that allows for video interpretation (Panayiotou et al., 2020; Lion et al., 2015).

Additionally, many of the immigrant patients who participated in this dissertation research reported using laptops and mobile phones to access the Internet and seek healthcare information. The findings of this dissertation research also showed that immigrant patients used social media sites such as Facebook, Instagram, Twitter, Viber, WhatsApp, and virtual community platforms to access health information about local health services. This finding is

consistent with previous research that examined the role of social media in facilitating access to healthcare services for immigrant patients (Pottie et al, 2020; Ahmed et al., 2020). This finding is also important for the development and successful implementation of online healthcare services for all patients, including immigrant patients.

The increase in usage of ICTs by immigrant patients reveals a necessity for healthcare organizations to design programs that make it easier for immigrant patients to access healthcare services. These tools can be used to engage immigrant patients in outside traditional office-based interactions, and can improve or enhance professional networking, patient care, patient education, and public health initiatives to reduce healthcare disparities. These findings can help inform efforts aimed at improving the use and adoption of ICTs, which might contribute to improving access to healthcare and reducing healthcare disparities.

Many of the immigrant patients who participated in this dissertation research brought attention to the challenges and problems related to their usage of ICTs and their navigating the healthcare system. Digital literacy, for example, was a major concern for many immigrant patients. Digital literacy is much more than how to utilize a computer and a keyboard, or how to do online searches safely. Specifically, digital literacy also relates to how to locate and select material, how to use browsers, hyperlinks, and search engines (Buckingham, 2016). Digital literacy is defined as “the ability to find, evaluate, create, and use content and information using digital technologies” (p.131). In this sense, digital literacy is directly associated with information literacy. Information literacy is a set of skills requiring persons to recognise when information is required and be able to access, analyse, and use that information effectively (Munn & Small, 2017). While healthcare providers generally may be able to access and assess web-based health

information, many people, including immigrant patients, may lack the skills required to access, evaluate, and communicate web-based health information available through media on various digital platforms (Beaunoyer, et al., 2020).

Limited ability to using ICTs commonly implies less access to online information, services, and health resources. For example, the impact of the COVID-19 pandemic has made it clear that empowering people with digital literacy is crucial for improving the effectiveness and the efficiency of their information-seeking behavior. Since the start of the pandemic, web-based platforms such as blogs, social media sites, websites, and virtual communities have been used to disseminate information about the measures that people have to take to stop the spread of the virus (Crawford, & Serhal, 2020). The health information sources that the public access usually inform their decision making about their health, and it may improve their overall knowledge relating to health issues (Connaway, et al., 2017). Increased concern regarding the ability to find and access accurate health information online highlights the importance of the need for digital literacy training among immigrant patients. Being unfamiliar with ICTs when accessing health information can lead to informational disadvantage within the immigrant populations, which in turn contributes to healthcare disparities.

The findings of this dissertation research showed that immigrant patients with low digital literacy were willing to use ICTs to access health care, but they would like to feel safe using these technologies. As stated earlier, many immigrant patients were more likely to be digitally incompetent. Past research (Tan-McGrory et al., 2022) found that strategies for increasing access to technology for patients with digital literacy included offering patient education in multiple languages as well as reducing barriers to electronic health record enrollment. Healthcare

organizations may consider utilizing ICT tools that are easy to use and understand. For example, healthcare organizations may employ electronic health records with a user-friendly interface or provide additional resources to assist immigrant patients learn how to navigate ICTs when accessing healthcare services.

The findings of this dissertation research also showed that most online healthcare services provided to patients in Canada were offered either in English or French. The immigrant patients noted that it would be better if more languages are added. Neglecting this aspect may lead to ICTs that provide inadequate support for both patients and healthcare providers. We may recall from the Unified Theory of Acceptance and Use of Technology that individuals would accept and use technology if they believe that using technology would be useful for what they want to do, in this case, improving access to healthcare and communicating with healthcare providers (Devine, 2016).

In summary, the findings of this dissertation research reflect challenges that many immigrant patients face when dealing with the healthcare system. Training in cultural competence, immigrant patient- provider communication, and establishing healthcare services that support the use of ICTs should be considered by healthcare organizations in order to reduce healthcare disparities. This is because addressing immigrant patient-provider communication issues can help healthcare organizations understand and address the unique communication needs of immigrant patients, which can lead to better access to healthcare services for the immigrant patients and potentially reduce health disparities among immigrant populations.

RQ4: What are healthcare providers' perceptions about ICTs in improving access to health care for immigrant patients?

The findings of this dissertation research with regard to healthcare providers' perceptions about ICTs in improving access to health care for immigrant patients contribute to literature aimed at exploring the role of ICTs in improving access to healthcare for immigrant patients. As Lindström, et al.'s (2011) study shows, ICTs contribute to mitigating communicative challenges in interactions between healthcare providers and immigrant patients. For example, the authors state that utilizing images and videos with illustrations from the internet can be useful for healthcare providers when communicating with immigrant patients who may have low health literacy. These visual aids can assist to clarify complex health terminologies and make health information more accessible and easier to understand by patients (Pratt & Searles, 2017). Similarly, the findings of this dissertation research suggest that healthcare organizations may augment their use of ICTs for communicating with patients who have language barriers. For example, several healthcare providers who participated in the semi structured interviews believed that videos or images with demonstrations can be used to overcome communication barriers with immigrant patients who may face difficulties in understanding the instructions of their healthcare providers.

Furthermore, the findings of this dissertation research indicated that healthcare providers perceive family members as an important part of the management and guidance process when it comes to assisting immigrant patients who are not familiar with using ICTs. This finding align with the research conducted by Lindberg (2013) who shows that healthcare providers can use video conferencing platforms to facilitate virtual support for family members of patients. This dissertation research extends this line of research and suggests that healthcare organizations can improve their cultural competence programs by offering virtual support groups for immigrant patients and their family members. These virtual platforms may be moderated by healthcare

providers or trained volunteers who are able to provide guidance and help immigrant patients and their family members who may have language barriers, or who may have difficulties in understanding how to utilize new technologies.

The findings of this dissertation research also showed that integration of ICTs can help facilitate a sense of social support among immigrant patients. These findings indicated that immigrant patients use video calls to keep in touch with their friends and family members who reside in their home countries, which can help alleviate some of the stress these immigrant patients may go through because of their health concerns. These findings align with Ahmed et al.'s (2020) study which found that connecting with family members who live in their home countries via ICT tools such as social media sites provide some level of family and social support for immigrant groups. By incorporating ICTs into their cultural competence strategies, healthcare organizations can better understand the healthcare needs of their immigrant patients.

RQ5: What are healthcare providers' perceptions about ICTs being effective in improving their communication with immigrant patients?

The findings of this dissertation research indicate that healthcare providers largely perceive the use of ICTs as effective in improving communication with their immigrant patients. These findings indicated that healthcare providers could use EHRs to access specific health information about immigrant patients. The findings showed that it was important for healthcare organizations to collect more demographic data on immigrant patients. These data, which may include information about patients' race and ethnicity, can be saved on EHRs. Douglas et al. (2015) reported that collecting data on the race of a patient may help healthcare providers address certain healthcare disparities that might exist for some racial populations. For example,

the rate of colorectal screening among Asian populations differs between racial subgroups, with a disparity found among Chinese, Korean, and Vietnamese compared to whites, but no disparity in other subgroups (Douglas et al., 2015). In this case, the intervention that would be most effective in reducing the disparity would focus mainly on Chinese, Korean, and Vietnamese patients rather than all Asians. For this reason, Douglas et al. (2015) emphasised the need for collecting demographic data in EHRs. Additionally, Aldridge et al. (2020) found that Black, Asian, and minority groups were at increased risk of death from COVID-19. These researchers argued that barriers in accessing healthcare contributed to this increased risk of death. Aldridge and colleagues concluded that there was an urgent need to collect more data to understand why certain ethnic groups face a higher risk of death from COVID-19.

Many of the healthcare providers who participated in this dissertation research believed that having demographic data on EHRs can help healthcare providers to quickly share information with their colleagues, which can help ensure that all members of the team are aware of the immigrant patients' unique healthcare and communication needs. However, these findings contrast Cruz and Smith's (2021) research study which found disagreement among healthcare providers over demographic data's significance, including the purpose of collecting such important data. This dissertation research reported that many healthcare providers expressed concerns about collecting data on race, ethnicity, and language. These concerns were due to uncertainty regarding with whom such data my be shared (e.g., public agencies). The findings of this dissertation research suggest that researchers may continue to examine how demographic data on immigrant patients can be protected.

Additionally, the findings of this dissertation research indicated that the use of EHRs among immigrant patients was low. The reason for this low usage could be due to that fact that many immigrant patients may not have access to digital devices that are needed to perform health care-related tasks, including using EHRs (Gordon & Hornbrook, 2016). Therefore, it is important for healthcare organizations to consider the unique needs and challenges encountered by immigrant patients when implementing EHRs in order to ensure that they are able to fully realize the benefits of this technology.

In summary, collecting demographic data on immigrant patients may improve healthcare providers' communication with immigrant patients by providing healthcare providers with the information they need to communicate effectively and to be sensitive to cultural and linguistic differences.

Implications for Practice

This dissertation research has identified the cultural challenges and technological issues that both immigrant patients and healthcare providers face when communicating with each other in healthcare settings. The findings show that cultural competence strategies can improve communication between healthcare providers and immigrant patients. Thus, healthcare organizations may use the findings of this dissertation research to better inform their decision making with regard to effective patient-provider communication. Healthcare organizations may prioritize the allocation of resources towards the improvement of their cultural competence strategies. For example, language barriers can be a significant challenge for immigrant patients when communicating with their healthcare providers. Terui (2017) argues that it is necessary for healthcare organizations to understand the ways that language barriers contribute to health

disparities. This is because language barriers can prevent immigrant patients from accessing necessary healthcare services and understanding important health information. By addressing the language needs of their immigrant patients, healthcare organizations can ensure that immigrant patients are able to express their health concerns in a way that is understood by their healthcare providers.

The findings of this dissertation research demonstrate that lack of cultural competence in healthcare organizations can negatively impact patient- provider relationships, communication, and overall effectiveness when working with immigrant patients. The findings inform healthcare organizations about the positive relationship between cultural competence and effective communication with immigrant patients. By understanding how cultural competence relates to improved communication with immigrant patients, healthcare organizations can develop cultural competence strategies that meet the unique needs of immigrant patients. These strategies may include providing cultural competence training for all staff, collecting data on patient demographics, partnering with community organizations, and establishing diversity and inclusion plans. These plans may include creating a set of procedures and policies which aim to promote a culturally diverse and inclusive workplace in a healthcare organization (Soule, 2014). The objective of these diversity and inclusion plans is to ensure that all healthcare providers are provided with the support, knowledge, and skills required to provide culturally competent healthcare services to immigrant patients.

The findings also support healthcare organizations promoting the use of ICTs for improving communication with their immigrant patients. This dissertation research shows that immigrant patients may need to improve their digital and health literacy skills in order to

improve their communication with their healthcare providers. This dissertation research has shown that lack of digital and health literacy can lead to negative outcomes such as misdiagnosis, medication errors, and poor self-management of health conditions. Grossman et al. (2019) posit that focusing on increasing digital and health literacy among culturally diverse patients through patient education may help reduce healthcare disparities. Healthcare organizations should be informed about these digital and health literacy issues. Healthcare administrators at the managerial level should consider implementing strategies to improve the digital and health literacy of immigrant patients. Such strategies may include providing education and training on how to access and understand health information as well as how to navigate the healthcare system.

Another important implication of this dissertation research is that it highlights the need for healthcare organizations to have access to more demographic data on their immigrant patients. Such data can help healthcare providers tailor services to better meet the needs of these different population groups. For instance, an immigrant patient of a Middle Eastern background may not seek mental health treatment due to the cultural stigma associated with mental health in the patient's community (Dardas & Simmons, 2015). Being aware of the patient's cultural background can help healthcare providers better understand the cultural stigma that may exist in the patient's community regarding health, including mental health. Understanding cultural and linguistic backgrounds can help healthcare providers communicate more effectively with their patients and ensure that the patients understand their treatment options.

Additionally, this dissertation research revealed the need to increase the use of electronic health records (EHRs) among immigrant patients because the lack of usage of EHRs contributed

to barriers in communication and coordination of healthcare. By understanding the challenges that immigrant patients face when using EHRs, healthcare organizations can help immigrant patients by implementing more effective strategies to improve outcomes related to using EHRs among immigrant patients. These strategies may include providing education and training in the use of EHRs as well as ensuring that EHRs are accessible and user-friendly for immigrant patients.

Theoretical Implications

This dissertation research has been guided by the Cultural Competence Model and Unified Theory of Acceptance and Use of Technology. CCM and UTAUT were employed within the context of both qualitative and quantitative research approaches, with an emphasis on the qualitative approach. Specifically, the constructs of cultural awareness, cultural knowledge, cultural skill, and cultural encounters within CCM were used to examine the ways in which immigrant patients communicate with their healthcare providers (See chapter 2). Using a CCM perspective allowed this dissertation research to identify factors that can influence the ways in which immigrant patients communicate with healthcare providers (Quach, 2021). For example, the cultural awareness construct was employed to examine the level of cultural awareness among healthcare providers and how it affects their communication with immigrant patients. Additionally, the cultural knowledge construct allowed to examine the level of cultural competence of healthcare providers. For example, healthcare providers' knowledge of cultural differences, attitudes towards cultural diversity, and skills in culturally responsive communication with immigrant patients were examined. The cultural skills construct helped to examine the competencies and abilities of healthcare providers in interacting and communicating with immigrant patients. Lastly, the cultural encounter construct assisted in identifying

communication barriers such as language differences that exist between healthcare providers and immigrant patients.

Additionally, using a CCM perspective allowed this dissertation research to gain understanding from the immigrant patients' perspective of the healthcare providers' level of cultural competence. The participating immigrant patients stated that poor communication with healthcare providers was a result of the healthcare providers' lack of cultural competence, including lack of understanding immigrant patients' culture, language preferences, and health beliefs and practices. This finding bears important implications for the line of research that examines patient-provider communication from immigrant patients' perspectives.

There is great value in learning about the immigrant patient's culture, language, and health beliefs and practices. Darnell and Hickson (2015) reported that patients feel comfortable and willing to share their cultural knowledge and values when healthcare providers integrate these patients' culture into their plan of care. Immigrant patients can benefit from healthcare providers who take the time to learn about their cultural backgrounds and customs so that they can develop a trusting and friendly relationship with them. To ensure that their immigrant patients fully understand their diagnoses, treatments, and healthcare instructions, healthcare providers need to be able to communicate with them in a manner that is culturally and linguistically appropriate. For example, by understanding the language preferences of their immigrant patients, healthcare providers can use appropriate language and communication styles that help improve patient understanding of diagnoses and treatments. Improved health outcomes and better patient satisfaction can be achieved through the demonstration of cultural competence (Brunett & Shingles, 2018). Immigrant patients' adherence to treatment may be negatively

impacted by their distinct health views and practises. Therefore, healthcare providers can tailor treatment plans to better suit immigrant patients' needs and preferences if they are aware of and sensitive to immigrant patients' beliefs and practises.

Healthcare organizations need to be aware of and understand the language and culture of their immigrant patients in order to better improve their communicate with them. As Villadsen et al. (2020) argued, language barriers and lack of cultural competence among healthcare providers have been identified as a patient safety issue for immigrant patients. The findings of this dissertation research can inform the design of cultural competence strategies for healthcare organizations. In particular, CCM can be employed to explore development and implementation of specific cultural competence training for healthcare providers. This training may include workshops, cross-cultural communication training, role-playing exercises, and ongoing support to assist healthcare providers to continuously improve their cultural competence (Shearer & Davidhizar, 2003). Additionally, the implications of understanding immigrant patients' cultural backgrounds can facilitate the development of patient-centered care approaches that integrate cultural beliefs and practices into the healthcare delivery process. Renzaho et al. (2013) found that healthcare providers' understanding of how to communicate with patients from various cultural backgrounds was improved by patient-centered care models that incorporated cultural competence elements.

In addition, the Unified Theory of Acceptance and Use of Technology provided a framework for exploring both immigrant patients and healthcare providers' perceptions, acceptance, and use of ICTs in health care. According to this theory, there are four constructs that play a crucial role in shaping the intent and willingness of users to adopt and utilize ICTs

(Devine, 2016). These factors include the performance expectancy, effort expectancy, social influence, and facilitating conditions (See chapter 2). The construct of performance expectancy allowed this dissertation research to explore the healthcare providers' and immigrant patients' beliefs about the potential benefits of using ICTs to facilitate their communication. The construct of effort expectancy was employed to examine the healthcare providers' and immigrant patients' perceptions of the ease of use of ICTs when communicating with each other. The construct of social influence allowed this dissertation research to explore the influence that others, such as family members or colleagues, have on the healthcare providers' and immigrant patients' adoption and use of ICTs to facilitate patient-provider communication. Lastly, the construct of facilitating conditions was employed to explore the presence of technical support and the availability and accessibility of ICTs for enhancing communication between healthcare providers and immigrant patients.

The findings of this dissertation research highlight the importance of assessing the digital and health literacy levels of the immigrant patients. Pratt and Searles (2017) argued that misunderstanding medication instructions is more common as a result of low health literacy. Many participating healthcare providers reported concerns when using ICTs to communicate with immigrant patients who may have lower levels of digital and health literacy. Many of the participating immigrant patients mentioned that they were unfamiliar with the healthcare system and culture, which made it harder for them to understand and engage with digital health tools and information provided to them. Therefore, assessing digital and health literacy levels of immigrant patients may help to identify potential gaps and inform the development of culturally and linguistically appropriate tools and resources that can be specifically designed to address the health care needs of immigrant patients.

Specifically, constructs of UTAUT can be employed to explore development of patient education and outreach programs that can help immigrant patients understand and navigate the healthcare system. For example, health navigation programs that help immigrant patients to understand the healthcare system, their benefits and coverage, and to locate appropriate healthcare services (Nguyen et al., 2011).

Limitations and Direction for Future Research

There are several limitations of this dissertation research. First, the focus group discussions were conducted with immigrant patients who have been in Ottawa, Canada during the last seven years. Future research should include a larger and more diverse sample and focus on other metropolitan cities across Canada. However, it is worth noting that immigrants across Canada tend to face similar structural barriers like language barriers, lack of access to healthcare, and have limited digital literacy skills. Therefore, although the sample size was limited, the findings have merit and may still be relevant to other immigrant populations in Canada who experience similar challenges. Future research should also extend the eligibility criteria to include immigrants who have been in Canada for a longer period of time. Additionally, snowball sampling and chain referral sampling techniques were used to recruit participants. The size of the sample may have been limited by the number of referrals obtained, which may have resulted in a smaller sample size than desired.

Second, the sample size of the healthcare providers who completed the survey in the second phase of this dissertation research may not precisely be reflective of the characteristics of the entire population of healthcare providers. This issue may lead to conclusions that cannot be generalized to the larger population. Although the researcher feels that sufficient evidence was

presented and that the conclusions were amply supported, future research may increase the sample size to better represent the diversity of the population of healthcare providers and increase the generalizability of the findings. Future research may also conduct separate focus group discussions with healthcare providers to further understand their perspectives and experiences in healthcare communication with immigrant patients.

The third limitation involves the sampling for the semi-structured interviews conducted during the final phase of this dissertation research. Only six healthcare providers consented to participate in the one-on-one semi structured interviews. This small number of interview participants may not be adequate to draw significant conclusions as it relates to the views and experiences of all healthcare providers. Future research may consider targeting specific subgroups of healthcare providers. For example, healthcare providers who have specific experience or training in a particular area. This approach may result in a more representative sample. In addition, future research may increase the number of interviews conducted in order to obtain a larger and more diverse sample, and to capture a wider range of views and experiences among healthcare providers. In so doing, future research might be better able to account for variability and provide a deeper understanding of healthcare communication among immigrant patients and healthcare providers.

Fourth, this dissertation research employed a mixed methods design for data collection and analysis. Although using a mixed method approach is feasible when exploring the relationships between the two forms of data (Creswell, 2014), this approach may present challenges in interpreting the findings and identifying the individual contribution of each phase of the study to the overall findings. Due to the integration of both qualitative and quantitative

data, the interplay between the different sets of data could impede the ability to entirely comprehend the findings.

Additionally, this dissertation research focused specifically on the role of cultural competence and ICTs in improving communication between healthcare providers and their immigrant patients. The research scope was limited to the examination of these two specific factors and did not investigate other potential contributing factors that can improve health care communication and help reduce healthcare disparities for immigrant patients. For example, social determinants of health factors such as poverty rate and income (Singh et al., 2017). Poverty rate and income have been linked to various healthcare disparities including limited access to health care services due to cost concerns (Moodley & Ross, 2015). In order to ensure that immigrant patients receive the necessary support and resources to achieve optimal health outcomes, it will be necessary for healthcare providers, policymakers, and community groups to work together to address these social determinants of health.

Chapter Summary

This chapter began by restating the purpose of this dissertation research. Afterwards, the chapter discussed the way in which this purpose was addressed, shedding light on the key considerations that guided this dissertation research. The chapter also described the two theories that were employed for this dissertation research. In addition, the mixed methods approach used to conduct the study was presented. Then, the principal findings were interpreted and discussed in relation to the research questions. Further, implications for practice, theory, and future research were discussed. Finally, the chapter concluded with an acknowledgment of the limitations of this dissertation research and offered directions for future research.

In chapter 6, the significance of this dissertation research will be discussed, and the findings will be summarized. Additionally, the chapter will discuss directions for future research.

Chapter 6: Conclusion

This chapter highlights the significance of this dissertation research, summarizes the findings, and discusses directions for future research.

There is no doubt that the increase of new immigrants to Canada is causing challenges to the healthcare system, which cannot go unrecognized (Salami et al., 2020; Saunders et al., 2018; Wang et al., 2019; Wylie et al., 2018). Due to cultural differences and language barriers, communicating with and providing healthcare services to new immigrant patients can be more daunting for healthcare providers than when dealing with patients who are familiar with the Canadian healthcare system (Ali & Watson, 2018). Healthcare providers serve as the primary point of access for the delivery of healthcare services for all patients in Canada, including immigrants.

Vang et al. (2017) found that new immigrants to Canada tend to have good health when they first arrive, but as they spend more time in the country, their health begins to decline (Subedi & Rosenberg, 2014). Cross-cultural healthcare communication may contribute to this issue as factors including cultural understanding, language barriers, and lack of access to the healthcare system have a significant impact on healthcare communication and access to healthcare services for immigrant patients (Ferdous et al., 2018). An understanding of these barriers can help healthcare providers find feasible strategies to overcome them, and consequently, improve the delivery of healthcare services to immigrant patients who are affected by cultural and language barriers.

Health information and communication technologies (ICTs) have been employed in various domains of health care, including communication between immigrant patients and their

healthcare providers, which has been the focus of this dissertation research (Chen et al., 2021). Aside from examining the role of ICTs to reduce healthcare disparities and improve patients' access to healthcare in general, (Chen et al., 2020; Graham & Ostrowski, 2016; Lion et al., 2015; Winbush et al., 2013), past studies have also explored the use of ICTs to improve communication between healthcare providers and immigrant patients with the objective of reducing healthcare disparities. For example, a systematic literature review by Chen et al. (2021) examined existing knowledge of older adult immigrants' use of ICTs for home care service. This systematic literature review reported that recent studies on this issue have not addressed or integrated cultural preferences in the development of information and communication technologies for home care services.

The purpose of this dissertation research was two-fold: (1) to examine cultural competence strategies, if any, that are used by health care organizations to improve interaction and communication between healthcare providers and their immigrant patients with the purpose to reduce healthcare disparities, and specifically, (2) to explore the use of ICTs to improve communication between healthcare providers and immigrant patients. Mixed methods approach was employed for data collection and analysis (Creswell, 2014). The research was carried out in three phases. In the first phase, a series of focus group discussions with a sample of recent immigrants was conducted. In the second phase, an online survey was conducted to gain insights from healthcare providers regarding the role of ICTs in improving communication with immigrant patients to help reduce disparities when accessing healthcare services. In the third phase, healthcare providers who participated in the survey were invited to participate in face-to-face, in-depth semi-structured interviews. Campinha-Bacote's Cultural Competence Model and the Unified Theory of Acceptance and Use of Technology were used as a theoretical framework.

The findings of the dissertation research revealed that the lack of cultural competence among healthcare providers and language barriers are major issues that impact the healthcare experiences of immigrant patients. The lack of cultural competence of healthcare providers and language barriers may be addressed through the use of cultural competence strategies by healthcare organizations. In particular, addressing language barriers as well as increasing healthcare providers' cultural awareness, cultural knowledge, cultural skills, cultural encounter, and cultural desire (see chapter 2) can improve communication with immigrant patients. Pettersson et al. (2022) argue that cultural competence-related education may support the development of culturally appropriate interaction and communication skills on the part of healthcare providers.

The findings of this dissertation research also revealed that navigating the healthcare system is challenging for many of the immigrant patients who participated in this dissertation research. Many participants in the immigrant patient focus group discussions highlighted the lack of access to healthcare resources and information for immigrant patients. The findings show that immigrant patients may need to improve their digital and health literacy skills in order to improve their access to the healthcare resources and systems. This is particularly relevant in the current era of increased reliance on ICTs for healthcare communication and access. As Perrin (2015) argues, diverse groups often fall behind due to a lack of access to technology and inadequate digital skills. The findings of this research emphasize the importance of community service organizations in improving access to healthcare resources for immigrant patients. Such organizations can provide information and education to immigrants about healthcare services that are available (Edward & Hines-Martin, 2015).

Additionally, the findings of this dissertation research showed that both immigrant patients and healthcare providers described ICTs as necessary tools in health care delivery as both groups indicated that these technologies can improve communication, increase access to healthcare, and enhance the overall quality of healthcare. The findings of this dissertation research likewise illustrate that healthcare providers may benefit from having access to more demographic data on immigrant patients in order to tailor their services more effectively (Douglas et al., 2015). The findings show that demographic data such as cultural and linguistic backgrounds can help healthcare providers to communicate more effectively and to provide culturally sensitive healthcare services.

Healthcare providers' concerns around immigrant patients' ability to use ICTs to effectively communicate healthcare issues with their providers was also highlighted in the findings of this dissertation research. The findings show that immigrant patients may lack the necessary level of digital literacy and knowledge of technology to effectively communicate with healthcare providers using ICTs. These findings suggest that healthcare organizations should assess their patients' ability to use ICTs prior to implementing these technologies as a means of communication (e.g., assessing digital and health literacy of immigrant patients). Assessing the digital and health literacy levels of a patient population might serve as an effective indicator for identifying patients who require the most assistance with utilizing ICTs (Tieu et al., 2017). Villadsen et al. (2020) argue that digital and health literacy are important predictors for the engagement of immigrant patients in preventative healthcare services. The findings of this dissertation research illustrate that immigrant patients are willing to use ICTs to communicate with their healthcare providers, and with proper training and support, technological barriers can be reduced.

The importance of using EHRs by immigrant patients was highlighted by many healthcare providers. This dissertation research suggests that healthcare organizations should take the necessary steps to increase immigrant patients' engagement with electronic EHRs. Healthcare organizations may provide immigrant patients with education and training on how to utilize EHRs to make EHRs more user-friendly. Therefore, improving immigrant patients' access to EHRs may help to reduce healthcare disparities for immigrant patients (Lopez et al., 2019).

Another important aspect that this dissertation research highlights is addressing concerns immigrant patients may have with using the EHRs such as patient privacy and confidentiality. Many immigrant patients who participated in this dissertation research conveyed that they may not seek medical care if they believe their health information is not adequately protected and confidentially maintained.

Directions for Future Research

Although this dissertation research provides some evidence of how cultural competence and ICTs can improve immigrant patient-healthcare provider communication and reduce healthcare disparities, other aspects of this phenomenon still call for further exploration. This dissertation research employed an exploratory sequential mixed methods design for data collection and analysis with a three-phase sequential investigation (Creswell, 2014) which allows for replication in new contexts with different populations. Future studies can likewise employ a variety of methods, both qualitative and qualitative, as well as other mixed-methods design, to complement the mixed methods approach undertaken in this dissertation research.

Additionally, future research should more extensively examine the impact of cultural competence training on healthcare providers' communication skills and the healthcare

experiences of immigrant patients. According to Acosta-Mosquera et al. (2017), cultural competence training for healthcare providers is a valuable resource for dealing with the challenges of providing health care to diverse populations. Researchers should assess the effectiveness of various cultural competence training programs and identify the most efficient cultural competence strategies for improving communication between immigrant patients and healthcare providers. Accordingly, further research may also include assessments of healthcare providers' self-reported cultural competence, as such assessments may provide additional insights into the impact of cultural competence training on healthcare providers' communication skills and healthcare experiences of immigrant patients.

Future studies may also investigate the role of community service organizations in improving access to healthcare resources for immigrant patients and their impact on reducing healthcare disparities. Researchers may explore the different services that these organizations offer and identify the most effective methods for increasing access to healthcare resources among immigrant groups. Future exploration of how community service organizations can better inform immigrant populations of and communicate about the healthcare resources available in their communities can expand knowledge and understanding of the importance of the services and supports available through community service organizations (Edward & Hines-Martin, 2015).

Another important area of research that future studies may explore is the feasibility of strategies for improving immigrant patients' digital and health literacy skills and how these skills impact immigrant patients’ access to health care. Any future work in this area should examine digital and health literacy training programs that are being used by service provider organizations

and identify strategies that can be employed to increase digital and health literacy skills for immigrant patients specifically. Seo et al. (2019) observed that more digital literacy programs informed by empirical research are required for diverse patients, especially older and low-income adults, as they tend to have lower levels of ICT access and use.

Additionally, future research can further explore the effectiveness of collecting and using demographic data on immigrant patients by healthcare providers in tailoring culturally competent healthcare services for these patients. Researchers may aim to identify how demographic data can assist healthcare providers to improve quality of care and services for immigrant patients (Douglas et al., 2015).

Lastly, future research must also consider the impact of providing immigrant patients with education and support in their ability to effectively use ICTs to communicate with their healthcare providers. This kind of research can investigate the different types of training and support that are currently available and identify reliable approaches for enhancing immigrant patients' ability to communicate with healthcare providers using ICTs.

To conclude, this dissertation research contributes to a better understanding of the communication issues faced by immigrant patients and healthcare providers, and how these issues can lead to increased disparities when it comes to accessing the Canadian healthcare system and related services. This dissertation research offers fertile ground for researchers to identify promising avenues for future scholarship that may be required in relation to the focus of this dissertation research.

References

Aceto, G., Persico, V., & Pescapé, A. (2018). The role of Information and Communication Technologies in healthcare: Taxonomies, perspectives, and challenges. J*ournal of Network and Computer Applications, 107*, 125-154. https://doi.org/10.1016/j.jnca.2018.02.008

Acosta-Mosquera, E., Albar Marín, M.-J., García-Ramírez, M., & Aguilera-Jiménez, A. (2017). Implementing a cultural competence training as a psychopolitical empowerment process. *Journal of Prevention & Intervention in the Community*, *45*(1), 70–80. doi:10.1080/10852352.2016.1197744

Aggarwal, N. K., Lam, P., Castillo, E. G., Weiss, M. G., Diaz, E., Alarcón, R. D., & Lewis-Fernández, R. (2016). How do clinicians prefer cultural competence training? Findings from the DSM-5 cultural formulation interview field trial. *Academic Psychiatry*, *40*(4), 584–591. doi.:10.1007/s40596-015-0429-3

Ahmed, R., & Bates, B. R. (2017). Patients' fear of physicians and perceptions of physicians' cultural competence in healthcare. *Journal of Communication in Healthcare, 10*(1), 55–60. https://doi.org/10.1080/17538068.2017.1287389

Ahmed, R., Bates, B. R., & Romina, S. M. (2016). Assessing the influence of patients' perceptions of physicians' cultural competence on patient satisfaction in an Appalachian Ohio context. *Howard Journal of Communications*, *27*(4), 403–42. https://doi.org/10.1080/10646175.2016.1211569

Ahmed, R., Veronis, L., & Alghazali, I. (2020). Syrian refugee youths' use of social media as a space for communicating social support during resettlement. *A National Project: Syrian Refugee Resettlement in Canada*, (pp.151-172). McGill-Queen's University Press.

Ahmed, S., Siad, F. M., Manalili, K., Lorenzetti, D. L., Barbosa, T., Lantion, V., & Santana, M.J. (2018). How to measure. Cultural competence when evaluating patient-centred care: A scoping review. *BMJ Open, 8*(7), e021525. doi:10.1136/bmjopen-2018-021525

Aldridge, R. W., Lewer, D., Katikireddi, S. V., Mathur, R., Pathak, N., Burns, R., Fragaszy, E. B., Johnson, A. M., Devakumar, D., Abubakar, I., & Hayward, A. (2020). Black, Asian and minority ethnic groups in England are at increased risk of death from COVID-19: Indirect standardisation of NHS mortality data. *Wellcome Open Research*, *5*, 88. https://doi.org/10.12688/wellcomeopenres.15922.2

Al Hadidi, S., Dongarwar, D., Salihu, H. M., Kamble, R. T., Lulla, P., Hill, L. C., & Usmani, S. Z. (2021). Health disparities experienced by Black and Hispanic Americans with multiple myeloma in the United States: A population-based study. *Leukemia & Lymphoma*, *62*(13), 3256-3263. https://doi.org/10.1080/10428194.2021.1953013

Ali, P. A., & Watson, R. (2018). Language barriers and their impact on provision of care to patients with limited English proficiency: Nurses' perspectives. *Journal of clinical nursing*, *27*(5-6), e1152-e1160. https://doi.org/10.1111/jocn.14204

Al Shamsi, H., Almutairi, A. G., Al Mashrafi, S., & Al Kalbani, T. (2020). Implications of language barriers for healthcare: A systematic review. *Oman Medical Journal*, *35*(2), e122. doi:10.5001/omj.2020.40. PMID: 32411417; PMCID: PMC7201401.

Al-Qeisi, K., Dennis, C., Alamanos, E., & Jayawardhena, C. (2014). Website design quality and usage behavior: Unified theory of acceptance and use of technology. *Journal of Business Research*, *67*(11), 2282–2290. doi:10.1016/j.jbusres.2014.06.016

Alizadeh, S., & Chavan, M. (2016). Cultural competence dimensions and outcomes: A systematic review of the literature. *Health & Social Care in the Community*, *24*(6), e117–e130. doi:10.1111/hsc.12293

Allison, A., Shahan, J., Goodner, J., Smith, L., & Sweet, C. (2021). Providing essential clinical pharmacy services during a pandemic: Virtual video rounding and precepting. *American Journal of Health-System Pharmacy: 78*(17), 1556–1558. https://doi.org/10.1093/ajhp/zxab208

Almutairi, A. F., Dahinten, V. S., & Rodney, P. (2015). Almutairi's critical cultural competence model for a multicultural healthcare environment. *Nursing Inquiry*, *22*(4), 317–325. https://doi.org/10.1111/nin.12099

Almutairi, A. F., Adlan, A. A., & Nasim, M. (2017). Perceptions of the critical cultural competence of registered nurses in Canada. *BMC nursing*, *16*(1), 47. doi: 10.1186/s12912-017-0242-2

Ambtman, R., Hudson, S., Hartry, R., & MacKay-Chiddenton, D. (2010). Promoting system-wide cultural competence for serving Aboriginal families and children in a midsized Canadian city. *Journal of Ethnic*, *19*(3), 235–251. doi:10.1080/15313204.2010.499328

Anderson-Lewis, C., Darville, G., Mercado, R. E., Howell, S., & Di Maggio, S. (2018). mHealth technology use and implications in historically underserved and minority populations in the United States: Systematic literature review. *JMIR mHealth and uHealth*, *6*(6), e8383. https://doi.org/10.2196/mhealth.8383

Andrulis, D. P., & Brach, C. (2007). Integrating literacy, culture, and language to improve health care quality for diverse populations. *American Journal of Health Behavior*, *31*(1), S122-S133. https://search-proquest-

com.proxy.bib.uottawa.ca/docview/211891742?accountid=14701

Arya, N., Redditt, V. J., Talavlikar, R., Holland, T., Brindamour, M., Wright, V., & Pottie, K. (2021). Caring for refugees and newcomers in the post–COVID-19 era: Evidence review and guidance for FPs and health providers. *Canadian Family Physician, 67*(8), 575-581. https://doi.org/10.46747/cfp.6708575

Balcazar, F. E., Suarez-Balcazar, Y., & Taylor-Ritzler, T. (2009). Cultural competence: Development of a conceptual framework. *Disability & Rehabilitation, 31*(14), 1153-1160. doi:10.1080/09638280902773752

Bates, B. R., & Ahmed, R. (2012). Introduction to medical communication in clinical contexts. In B. R. Bates & R. Ahmed (Eds.), *Medical communication in clinical contexts* (pp. 1-16). Dubuque, IA: Kendall Hunt.

Beaunoyer, E., Dupéré, S., & Guitton, M. J. (2020). COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies. *Computers in Human Behavior, 111*, 106424. doi:10.1016/j.chb.2020.106424

Benetoli, A., Chen, T. F., Schaefer, M., Chaar, B., & Aslani, P. (2017). Pharmacists' perceptions of professionalism on social networking sites. *Research in Social and Administrative Pharmacy, 13*(3), 575-588. https://doi.org/10.1016/j.sapharm.2016.05.044

Bernhard, G., Knibbe, R. A., Von Wolff, A., Dingoyan, D., Schulz, H., & Mösko, M. (2015). Development and psychometric evaluation of an instrument to assess cross-cultural competence of healthcare professionals (CCCHP). *PLoS One, 10*(12), 1932–6203. doi:10.1371/journal.pone.0144049

Betancourt, R., & Green, R. (2010). Commentary: Linking cultural competence training to improved health outcomes: Perspectives from the field. *Academic Medicine, 85*(4), 583–

585. doi:10.1097/ACM.0b013e3181d2b2f3

Bhat, A. M., Wehbe-Alamah, H., McFarland, M., Filter, M., & Keiser, M. (2015). Advancing cultural assessments in palliative care using web-based education. *Journal of Hospice & Palliative Nursing*, 17(4), 348-355. DOI: 10.1097/NJH.0000000000000175

Bitkina, O. V., Kim, H. K., & Park, J. (2020). Usability and user experience of medical devices: An overview of the current state, analysis methodologies, and future challenges. *International Journal of Industrial Ergonomics, 76,* 102932. https://doi.org/10.1016/j.ergon.2020.102932

Boettcher, A., & Sawyer, R. J. (2022). Evaluating racial disparities in healthcare system utilization and caregiver burden among older adults with dementia. *Clinical Neuropsychologist, 36*(2), 353–366. https://doi.org/10.1080/13854046.2021.1951844

Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57–71). American Psychological Association. https://doi.org/10.1037/13620-004’

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brunett, M., & Shingles, R. R. (2018). Does having a culturally competent health care provider affect the patients’ experience or satisfaction? A critically appraised topic. *Journal of Sport Rehabilitation, 27*(3), 284-288. https://doi.org/10.1123/jsr.2016-0123

Buckingham, D. (2016). Defining digital literacy. *Nordic journal of digital literacy*, 21-34. https://www.idunn.no/file/pdf/66808577/#page=21

Burns, M. N., Montague, E., & Mohr, D. C. (2013). Initial design of culturally informed behavioral intervention technologies: Developing an mHealth intervention for young sexual Minority men with generalized anxiety disorder and major depression. *Journal of Medical Internet Research*, *15*(12), e271. doi:10.2196/jmir.2826

Busagala, L. S., & Kawono, G. C. (2013). Perceptions and Adoption of Information and Communication Technology for Healthcare Services in Tanzania. *International Journal of Computing & ICT Research*, *7*(1).https://www.researchgate.net/publication/263521899

Campinha-Bacote, J. (2002). The Process of cultural Competence in the delivery of healthcare services: A model of care. *Journal of Transcultural Nursing*, *13*(3), 181–184. https://doi.org/10.1177/10459602013003003

Campinha-Bacote, J. (2007b). The process of cultural competence in the delivery of healthcare services: The journey continues. Transcultural C.A.R.E. Associates.

Capell, J., Dean, E., & Veenstra, G. (2008). The relationship between cultural competence and ethnocentrism of health care professionals. *Journal of Transcultural Nursing*, *19*(2), 121–125. doi:10.1177/1043659607312970

Carmack, H. J., & Ahmed, R. (2019). Students' perceptions of provider cultural competence and communication with providers: Predictors of university health center patient satisfaction. *Journal of Health Communication,* 24(9), 719-727. doi:10.1080/10810730.2019.1666197

Castillo, R. J., & Guo, K. L. (2011). A framework for cultural competence in health care organizations. *The Health Care Manager*, *30*(3), 205–214. doi:10.1097/HCM.0b013e318225dfe6

Castleberry, & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as

easy as it sounds? *Currents in Pharmacy Teaching and Learning*, *10*(6), 807–815. https://doi.org/10.1016/j.cptl.2018.03.019

Castro, A., & Ruiz, E. (2009). The effects of nurse practitioner cultural competence on Latina patient satisfaction. *Journal of the American Academy of Nurse Practitioners*, *21*(5), 278–286. doi:10.1111/j.1745-7599.2009.00406.x

Chang, Chiu, C.-W., Hsu, C.-M., Liao, L.-L., & Lin, H.-L. (2019). Corrigendum to "Examining the implementation of teaching and learning interactions of transition cultural competence through a qualitative study of Taiwan mentors untaking the postgraduate nursing program" [Nurse Educ. Today Volume 79, August 2019, pages 74–79]. *Nurse Education Today*, *82*, 106–106. https://doi.org/10.1016/j.nedt.2019.07.008

Chae, S., Lee, Y.-J., & Han, H.-R. (2021). Sources of health information, technology access, and use Among non–English-speaking immigrant women: Descriptive correlational study. *Journal of Medical Internet Research*, *23*(10), e29155–e29155. https://doi.org/10.2196/29155

Chen, Frennert, S., & Östlund, B. (2021). The use of information and communication technology among older immigrants in need of home care: A systematic literature review. *Ageing International*, 1-27. https://doi.org/10.1007/s12126-021-09417-x

Chen, X., Östlund, B., & Frennert, S. (2020). Digital inclusion or digital divide for older immigrants? A scoping review. *International Conference on Human-Computer Interaction* (pp. 176-190). https://link.springer.com/chapter/10.1007/978-3-030-50232-4_13

Chen, G. M., & Young, P. (2012). Intercultural communication competence. In A. Goodboy &

K. Shultz (Eds.), Introduction to communication: *Translating Scholarship Into Meaningful Practice* (pp. 175–188). Dubuque, IA: Kendall-Hunt.

Chilukuri, N., West, M., Henderson, J. L., Lawson, S., Ehsanipoor, R., Costigan, K., & Bennett, W. (2015). Information and communication technology use among low-income pregnant and postpartum women by race and ethnicity: A cross-sectional study. *Journal of Medical Internet Research*, *17*(7), e163. doi:10.2196/jmir.3916

Chipps, J. A., Simpson, B., & Brysiewicz, P. (2008). The effectiveness of cultural-competence training for health professionals in community-based rehabilitation: A systematic review of literature. *Worldviews on Evidence-Based Nursing*, *5*(2), 85–94. doi:10.1111/j.1741-6787.2008.00117.x

Cicolini, G., Pelle, C., Comparcini, D., Tomietto, M., Cerratti, F., Schim, S., & Simonetti, V. (2015). Cultural competence among Italian nurses: A multicentric survey. *Journal of Nursing Scholarship*, *47*(6), 536–543. doi:10.1111/jnu.12165

Clarke, S. K., Kumar, G. S., Sutton, J., Atem, J., Banerji, A., Brindamour, M., & Zaaeed, N. (2021). Potential impact of COVID-19 on recently resettled refugee populations in the United States and Canada: Perspectives of refugee healthcare providers. *Journal of Immigrant and Minority Health*, *23*(1), 184-189. https://doi.org/10.1007/s10903-020-01104-4

Clifford, A., Mccalman, J., Bainbridge, R., & Tsey, K. (2015). Interventions to improve cultural competency in health care for Indigenous peoples of Australia, New Zealand, Canada and the USA: A systematic review. *International Journal for Quality in Health Care*, *27*(2), 89–98. doi:10.1093/intqhc/mzv010

Connaway, L. S., Julien, H., Seadle, M., & Kasprak, A. (2017). Digital literacy in the era of fake

news: Key roles for information professionals. *Proceedings of the Association for Information Science and Technology*, *54*(1), 554-555.https://doi.org/10.1002/pra2.2017.14505401070

Cooper, J. N., & Hall, J. (2016). Understanding black male student athletes' experiences at a historically black college/university: A mixed methods approach. *Journal of Mixed Methods Research,* 10(1), 46-63. https://doi.org/10.1177/1558689814558451

Crawford, A., & Serhal, E. (2020). Digital health equity and COVID-19: The innovation curve cannot reinforce the social gradient of health. *Journal of medical Internet research*, *22*(6), e19361. doi:10.2196/19361

Cresswell, K., & Sheikh, A. (2013). Organizational issues in the implementation and adoption of health information technology innovations: An interpretative review. *International journal of medical informatics*, *82*(5), e73-e86. https://doi.org/10.1016/j.ijmedinf.2012.10.007

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approach*. California, United States, St: SAGE Publications.

Cruz, T. M., & Smith, S. A. (2021). Health equity beyond data: Health care worker perceptions of race, ethnicity, and language data collection in electronic health records. *Medical Care*, *59*(5), 379-385. doi: https://doi.org/10.1097/MLR.0000000000001507

Dardas, L. A., & Simmons, L. A. (2015). The stigma of mental illness in Arab families: a concept analysis: Mental illness stigma: a concept analysis. *Journal of Psychiatric and Mental Health Nursing*, *22*(9), 668–679. https://doi.org/10.1111/jpm.12237

Darnell, L. K., & Hickson, S. V. (2015). Culturally competent patient-centered nursing care.

Nursing Clinics of North America., 50(1), 99–108. https://doi.org/10.1016/j.cnur.2014.10.008

Delgado, D. A., Ness, S., Ferguson, K., Engstrom, P. L., Gannon, T. M., & Gillett, C. (2013). Cultural competence training for clinical staff: Measuring the effect of a one-hour class on cultural competence. *Journal of Transcultural Nursing*, *24*(2), 204–213. doi:10.1177/1043659612472059

Delphin-Rittmon, M., Andres-Hyman, R., Flanagan, E., & Davidson, L. (2013). Seven essential strategies for promoting and systemic cultural competence. *Psychiatric Quarterly*, *84*(1), 53–64. doi:10.1007/s11126-012-9226-2

De Moissac, D., & Bowen, S. (2019). Impact of language barriers on quality of care and patient safety for official language minority Francophones in Canada. *Journal of Patient Experience*, *6*(1), 24-32. https://doi.org/10.1177/2374373518769008

Di Stefano, G., Cataldo, E., & Laghetti, C. (2017). The client-oriented model of cultural competence in healthcare organizations. *International Journal of Healthcare Management. 12* (3), p.189-196. https://doi.org/10.1080/20479700.2017.1389476

Douglas, M. D., Dawes, D. E., Holden, K. B., & Mack, D. (2015). Missed policy opportunities to advance health equity by recording demographic data in electronic health records. *American Journal of Public Health*, *105*(S3), S380–S388. doi:10.2105/.2014.302384

Doorenbos, A. Z., & Schim, S. M. (2004). Cultural competence in hospice. *American Journal of Hospice & Palliative Medicine, 21*(1), 28–32. https://doi.org/10.1177/104990910402100108

Dreachslin, J. L., Weech-Maldonado, R., Gail, J., Epané, J. P., & Wainio, J. A. (2017).

Blueprint for sustainable change in diversity management and cultural competence: Lessons from the national center for healthcare leadership diversity demonstration project. *Journal of Healthcare Management, 62*(3), 171-183. doi:10.1097/JHM-D-15-00029

Elizabeth G. Creamer. (2018). Designing and reporting a fully integrated mixed method research proposal or doctoral dissertation. *In an introduction to fully integrated mixed methods research* (p. 170–). SAGE Publications, Inc. https://doi.org/10.4135/9781506377285.n12

Edward, J., & Hines-Martin, V. (2015). Exploring the providers perspective of health and social service availability for immigrants and refugees in a southern urban community. *Journal of immigrant and minority health, 17*, 1185-1191. doi 10.1007/s10903-014-0048-1

Eklöf, N., Hupli, M., & Leino-Kilpi, H. (2015). Nurses' perceptions of working with immigrant patients and interpreters in Finland. *Public Health Nursing* (Boston, Mass.), 32(2), 143–150. https://doi.org/10.1111/phn.12120

Farsi, D. (2021). Social media and health care, Part I: Literature review of social media use by health care providers. *Journal of Medical Internet Research 23,* (4), e23205-e23204. https://doi.org/10.2196/23205

Feng, & Xie, W. (2015). Digital Divide 2.0: The Role of social networking sites in seeking health information online from a longitudinal perspective. *Journal of Health Communication*, *20*(1), 60–68. https://doi.org/10.1080/10810730.2014.906522

Ferdous, M., Lee, S., Goopy, S., Yang, H., Rumana, N., Abedin, T., & Turin, T. C. (2018).

Barriers to cervical cancer screening faced by immigrant women in Canada: A systematic scoping review. *BMC Women's Health,* 18(1), 165–165. https://doi.org/10.1186/s12905-018-0654-5

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor Using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods, 5*(1), 80–92. https://doi.org/10.1177/160940690600500107

Figueroa, J. F., Wadhera, R. K., Lee, D., Yeh, R. W., & Sommers, B. D. (2020). Community-level factors associated with racial and ethnic disparities in COVID-19 rates in Massachusetts. *Health affairs Web Exclusive, 39*(11), 1984–1992. https://doi.org/10.1377/hlthaff.2020.01040

Farley, R., Askew, D., & Kay, M. (2014). Caring for refugees in general practice: Perspectives from the coalface. *Australian Journal of Primary Health, 20*(1), 85-91. https://doi.org/10.1071/PY12068

Flick, Garms-Homolová, V., Herrmann, W. J., Kuck, J., & Röhnsch, G. (2012). I can't prescribe something just because someone asks for it. Using mixed methods in the framework of triangulation. *Journal of Mixed Methods Research*, *6*(2), 97–110. https://doi.org/10.1177/1558689812437183

Fossum, C. C., Navarro, S., Farias, A. J., & Ballas, L. K. (2021). Racial disparities in the use of palliative radiotherapy for black patients with multiple myeloma in the United States. *Leukemia & Lymphoma, 62*(13), 3235-3243. https://doi.org/10.1080/10428194.2021.1953012

Frenandez, J., & Mangione-Smith, R. (2015). Effect of telephone vs video interpretation on parent comprehension, communication, and utilization in the pediatric emergency department: A randomized clinical trial. *JAMA pediatrics, 169*(12), 1117-1125. https://doi.org/10.1001/jamapediatrics.2015.2630

Fung, K., Lo, H.-T., Srivastava, R., & Andermann, L. (2012). Organizational cultural competence consultation to a mental health institution. *Transcultural Psychiatry, 49*(2), 165–184. doi:10.1177/1363461512439740

Gaston, G. B. (2013). African-Americans' perceptions of health care provider cultural competence that promote HIV medical self-care and antiretroviral medication adherence. *AIDS Care, 25*(9), 1159–1165. doi: 10.1080/09540121.2012.752783

Ghahari, S., Burnett, S., & Alexander, L. (2020). Development and pilot testing of a health education program to improve immigrants' access to Canadian health services. *BMC Health Services Research, 20*, 1-12. https://doi.org/10.1186/s12913-020-05180-y

George, R. E., Thornicoft, G., & Dogra, N., (2015). Exploration of cultural competency training in UK healthcare settings: A critical interpretive review of the literature. *Diversity & Equality in Health and Care*. https://doi.org/10.21767/2049-5471.100037

Gordon, N. P., & Hornbrook, M. C. (2016). Differences in access to and preferences for using patient portals and other eHealth technologies based on race, ethnicity, and age: A database and survey study of seniors in a large health plan. *Journal of Medical Internet Research, 18*(3), e5105. doi: 10.2196/jmir.5105

Gibbons, M. C., & Rivera, C. (2010). Reducing disparities in health care quality: The role of health it in underresourced settings. *Medical Care Research and Review, 67*, 155S–162S. doi:10.1177/1077558710376202

Gibson, K., O'Donnell, S., Coulson, H., & Kakepetum-Schultz, T. (2011). Mental health professionals' perspectives of telemental health with remote and rural First Nations communities. *Journal of telemedicine and telecare*, *17*(5), 263-267. doi:10.1258/jtt.2011.101011

Ginossar, T., & Nelson, S. (2010). Reducing the health and digital divides: A model for using community-based participatory research approach to e-health interventions in low-income Hispanic communities. *Journal of Computer-Mediated Communication*, *15*(4), 530–551. doi:10.1111/j.1083-6101.2009.01513.x

Goldfarb, M. J., Bibas, L., Bartlett, V., Jones, H., & Khan, N. (2017). Outcomes of patient-and family-centered care interventions in the ICU: A systematic review and meta-analysis. *Critical care medicine*, *45*(10), 1751-1761. https://doi.org/10.1097/CCM.0000000000002624

Gomez, L. E., & Bernet, P. (2019). Diversity improves performance and outcomes. *Journal of the National Medical Association*, *111*(4), 383-392. doi:10.1016/j.jnma.2019.01.006

Graham, G. N., Ostrowski, M., & Sabina, A. B. (2016). Population health-based approaches to utilizing digital technology: A strategy for equity. *Journal of Public Health Policy*, *37*, 154–166. doi:10.1057/s41271-016-0012-5

Grossman, L. V., Masterson Creber, R. M., Benda, N. C., Wright, D., Vawdrey, D. K., & Ancker, J. S. (2019). Interventions to increase patient portal use in vulnerable populations: A systematic review. *Journal of the American Medical Informatics Association*, 26(8-9), 855–870. doi:10.1093/jamia/ocz023

Gushulak, B. D., Pottie, K., Roberts, J. H., Torres, S., & DesMeules, M. (2011). Migration and

health in Canada: Health in the global village. *Canadian Medical Association Journal*, *183*(12), 952-958. https://doi.org/10.1503/cmaj.090287

Haynes-Brown, T. K. (2022). Using theoretical models in mixed methods research: An example from an explanatory sequential mixed methods study exploring teachers' beliefs and use of technology. *Journal of Mixed Methods Research*, https://doi.org/10.1177/15586898221094970

Higgins, T. C., Crosson, J., Peikes, D., McNellis, R., Genevro, J., & Meyers, D. (2015). Using health information technology to support quality improvement in primary care. *Mathematica Policy Research*. Retrieved from https://www.pcmh.ahrq.gov/page/using-health-information-technology-support-quality-improvement-primary-care

Hirko, K. A., Kerver, J. M., Ford, S., Szafranski, C., Beckett, J., Kitchen, C., & Wendling, A. L. (2020). Telehealth in response to the COVID-19 pandemic: Implications for rural health disparities. *Journal of the American Medical Informatics Association*, *27*(11), 1816-1818. https://doi.org/10.1093/jamia/ocaa156

Howe, Cipher, D. J., LeFlore, J., & Lipman, T. H. (2015). Parent health literacy and communication with diabetes educators in a pediatric diabetes Clinic: A mixed methods approach. *Journal of Health Communication*, *20*(sup2), 50–59. https://doi.org/10.1080/10810730.2015.1083636

Huh, J., Koola, J., Contreras, A., Castillo, A. K., Ruiz, M., Tedone, K. G., & Schiaffino, M. K. (2018). Consumer health informatics adoption among underserved populations: Thinking beyond the digital divide. *Yearbook of Medical Informatics*, 27(1), 146–155. doi:10.1055/s-0038-1641217

Immigration, Refugees and Citizenship Canada. (2020, September 18). *Annual Report to*

Parliament on Immigration. Retrieved from https://www.canada.ca/content/dam/ircc/migration/ircc/english/pdf/pub/annual-report-2020-en.pdf

International Organization for Migration. (2020). *World Migration Report.* Retrieved from https://www.un.org/sites/un2.un.org/files/wmr_2020.pdf

Ingram, R. R. (2012). Using Campinha-Bacote's process of cultural competence model to examine the relationship between health literacy and cultural competence. *Journal of Advanced Nursing*, *68*(3), 695–704. https://doi.org/10.1111/j.1365-2648.2011.05822.x

Isaacs, S., Valaitis, R., Newbold, K. B., Black, M., & Sargeant, J. (2013). Competence trust among providers as fundamental to a culturally competent primary healthcare system for immigrant families. *Primary Health Care Research & Development*, *14*(1), 80–89. doi:10.1017/S1463423612000254

Jensen, J. D., King, A. J., Davis, L. A., & Guntzviller, L. M. (2010). Utilization of internet technology by low-income adults: The role of health literacy, health numeracy, and computer assistance. *Journal of Aging and Health*, *22*(6), 804–826. doi:10.1177/0898264310366161

Jones, L., Jacklin, K., & O'Connell, M. E. (2017). Development and use of health-related technologies in indigenous communities: Critical review. *Journal of Medical Internet Research*, *19*(7). 256-264. doi:10.2196/jmir.7520 *Journal of Mental Health Nursing, 28*(1), 152-161. https://doi.org/10.1111/inm.12512

Kaihlanen, A. M., Hietapakka, L., & Heponiemi, T. (2019). Increasing cultural awareness: Qualitative study of nurses' perceptions about cultural competence training. *BMC Nursing*, *18*(1), 1-9. 8 https://doi.org/10.1186/s12912-019-0363-x

Kern, F. G. (2018). The trials and tribulations of applied triangulation: Weighing different data

sources. *Journal of Mixed Methods Research*, *12*(2), 166-181. https://doi.org/10.1177/1558689816651032

Khanlou, Haque, N., Skinner, A., Mantini, A., & Kurtz Landy, C. (2017). Scoping review on maternal health among immigrant and refugee women in Canada: Prenatal, intrapartum, and postnatal care. *Journal of Pregnancy, 2017*, 8783294–14. https://doi.org/10.1155/2017/8783294

Khoong, E. C., Rivadeneira, N. A., Hiatt, R. A., & Sarkar, U. (2020). The use of technology for communicating with clinicians or seeking health information in a multilingual urban cohort: Cross-sectional survey. *Journal of medical Internet research*, *22*(4), e16951. doi:10.2196/16951

Kim-Godwin, Y. S., Clarke, P., & Barton, L. (2001). A model for the delivery of culturally competent community care. Journal of Advanced Nursing, 35, 918-92 https://doi.org/10.1046/j.1365-2648.2001.01929.x

Kim, E. H., Stolyar, A., Lober, W. B., Herbaugh, A. L., Shinstrom, S. E., Zierler, B. K., & Kim, Y. (2009). Challenges to using an electronic personal health record by a low-income elderly population. *Journal of Medical Internet Research*, *11*(4), e44. doi:10.2196/jmir.1256

Kim, H. S., Kim, H. J., & Juon, H. S. (2021). Racial/Ethnic Disparities in Patient-Provider Communication and the Role of E-Health Use. *Journal of Health Communication*, *26*(3), 194-203. https://doi.org/10.1080/10810730.2021.1919248

Knowles, L., Lewis, A., King, D., & Jones, L. (2007). Disseminating health disparities education through tele-learning. *Journal of Systemics, Cybernetics and Informatics*, *2*(4), 78–82. https://doaj.org/article/c03106af6c2642079d1b3897edb65953

Kohler, G., Holland, T., Sharpe, A., Irwin, M., Sampalli, T., MacDonell, K., Kidd, N., Edwards, L., Gibson, R., Legate, A., & Ampi Kanakam, R. (2018). The Newcomer health clinic in Nova Scotia: A beacon clinic to support the health needs of the refugee population. *International Journal of Health Policy and Management, 7*(12), 1085–1089. https://doi.org/10.15171/ijhpm.2018.54

Krakow, M., Hesse, B. W., Oh, A., Patel, V., Vanderpool, R. C., & Jacobsen, P. B. (2019). Addressing rural geographic disparities through health it: Initial findings from the health information national trends survey. *Medical Care*, *57*, S127-S132. doi:10.1097/MLR.0000000000001028

Lane, G., Hengstermann, M., White, J., & Vatanparast, H. (2021). Newcomer challenges with accessing healthcare services in Saskatchewan, Canada. *Border Crossing*, *11*(2), 155-172. doi: https://doi.org/10.33182/bc.v11i2.1222

Langford, Orellana, K., & Buderer, N. (2021). Use of online medical records to support medical decision making: A cross-sectional study of US adults. *Journal of Health Communication, 26*(9), 618–625. https://doi.org/10.1080/10810730.2021.1983893

Lankiewicz, E., Mena, L., Crowley, J. S., Sherwood, J., & Sullivan, P. S. (2020). Assessing differential impacts of COVID-19 on black communities. *Annals of Epidemiology, 47*, 37–44. https://doi.org/10.1016/j.annepidem.2020.05.003

Lee, J. (2015). The impact of health information technology on disparity of process of care. *International Journal for Equity in Health*, *14*, (1) 34. doi:10.1186/s12939-015-0161-3

Lee, J., & Spratling, R. (2019). Recruiting mothers of children with developmental disabilities: Adaptations of the snowball sampling technique using social media. *Journal of Pediatric Health Care*, *33*(1), 107-110. https://doi.org/10.1016/j.pedhc.2018.09.011

Levine, S., Gupta, R., Alkwatli, K., Almoushref, A., Cherian, S., Jimenez, D. F., & Weinstock, C. (2022). Telehealth perceptions among US immigrant patients at an academic internal medicine practice: Cross-sectional study. *JMIR Human Factors*, *9*(3), e36069. https://doi.org/10.2196/36069

Li, C. C., Matthews, A. K., Dossaji, M., & Fullam, F. (2017). The relationship of patient–provider communication on quality of life among African-American and white cancer survivors. *Journal of health communication*, *22*(7), 584-592. https://doi.org/10.1080/10810730.2017.1324540`

Lim, N., O'Reilly, M. F., Londono, F. V., & Russell-George, A. (2021). Overcoming language barriers between interventionists and immigrant parents of children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *51*(8), 2876-2890. https://doi.org/10.1007/s10803-020-04754-3

Lion, K. C., Brown, J. C., Ebel, B. E., Klein, E. J., Strelitz, B., Gutman, C. K., Hencz, P., Frenandez, J., & Mangione-Smith, R. (2015). Effect of telephone vs video interpretation on parent comprehension, communication, and utilization in the pediatric emergency department: A randomized clinical trial. *JAMA pediatrics*, *169*(12), 1117-1125. https://doi.org/10.1001/jamapediatrics.2015.2630

Lin, C., Lee, C., & Huang, M. (2017). Cultural competence of healthcare providers: A systematic review of assessment instruments. *Journal of Nursing Research*, *25*(3), 174–186. doi:10.1097/jnr.0000000000000153

Lindberg, B. (2013). Access to videoconferencing in providing support to parents of preterm infants: Ascertaining parental views. *Journal of Neonatal Nursing*, *19*(5), 259-265. https://doi.org/10.1016/j.jnn.2012.10.001

Lindberg, L. G., Mundy, S. S., Kristiansen, M., Johansen, K. S., & Carlsson, J. (2019). Satisfaction with mental health treatment among patients with a non-Western migrant background: A survey in a Danish specialized outpatient mental health clinic. *European Journal of Public Health*, *29*(4), 700-705. doi:10.1093/eurpub/ckz090

Lindström, N. B., & Pozo, R. R. (2020). Perspectives of nurses and doulas on the use of information and communication technology in intercultural pediatric care: Qualitative pilot study. *JMIR Pediatrics and Parenting*, *3*(1), e16545. doi:10.2196/16545

Livingston, J., Holley, J., Eaton, S., Cliette, G., Savoy, M., & Smith, N. (2008). Cultural competence in mental health practice. *Best Practices in Mental Health: An International Journal*, *4*(2), 1–14. https://search.proquest.com/docview/61407227?accountid=14701

López, L., Green, A. R., Tan-McGrory, A., King, R. S., & Betancourt, J. R. (2011). Bridging the digital divide in health care: The role of health information technology in addressing racial and ethnic disparities. *Joint Commission Journal on Quality and Patient Safety*, *37*(10), 437–445. doi:10.1016/S1553-7250(11)37055-9

Lorence, D., & Park, H. (2008). Group disparities and health information: A study of online access for the underserved. *Health Informatics Journal*, *14*(1), 29–38. doi:10.1177/1460458207086332

Lu, M., Kotelchuck, M., Hogan, V., Johnson, K., & Reyes, C. (2010). Innovative strategies to reduce disparities in the quality of prenatal care in underresourced settings. *Medical Care Research and Review*, *67*(5), 198S–230S. doi:10.1177/1077558710374324

Maar, M., Seymour, A., Sanderson, B., & Boesch, L. (2010). Reaching agreement for an Aboriginal e-health research agenda: The aboriginal telehealth knowledge circle

consensus method. *The International Electronic Journal of Rural and Remote Health Research.* Rural Remote Health, *10*(1), 1-13. https://www.rrh.org.au/journal/article/1299

Manuel J. I. (2018). Racial/ethnic and gender disparities in health care use and access. *Health Services Research, 53*(3), 1407–1429. https://doi.org/10.1111/1475-6773.12705 Millett,

Mccalman, J., Jongen, C., & Bainbridge, R. (2017). Organisational systems' approaches to improving cultural competence in healthcare: A systematic scoping review of the literature. *International Journal for Equity in Health*, *16*(1), 78. doi:/10.1186/s12939-017-0571-5

McCloud, R. F., Okechukwu, C. A., Sorensen, G., & Viswanath, K. (2016). Beyond access: Barriers to internet health information seeking among the urban poor. *Journal of the American Medical Informatics Association: JAMIA*, *23*(6), 1053–1059. doi:10.1093/jamia/ocv204

McKenney, K. M., Martinez, N. G., & Yee, L. M. (2018). Patient navigation across the spectrum of women's health care in the United States. *American Journal of Obstetrics and Gynecology, 218*(3), 280–286. https://doi.org/10.1016/j.ajog.2017.08.009

McIlhenny, C. V., Guzic, B. L., Knee, D. R., Demuth, B. R., & Roberts, J. B. (2011). Using technology to deliver health care education to rural patients. *The International Electronic Journal of Rural & Remote Health Research, Education, Practice, and Police*, *11*(4), 1–11. https://www.rrh.org.au/journal/article/1798

McInnes, D. K., Li, A. E., & Hogan, T. P. (2013). Opportunities for engaging low-income, vulnerable populations in health care: A systematic review of homeless persons' access to and use of information technologies. *American Journal of Public Health*, *103*(2), 11-24. https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2013.301623

Millett, Jones, A. T., Benkeser, D., Baral, S., Mercer, L., Beyrer, C., Honermann, B., Lankiewicz, E., Mena, L., Crowley, J. S., Sherwood, J., & Sullivan, P. S. (2020). Assessing differential impacts of COVID-19 on black communities. *Annals of Epidemiology*, *47*, 37–44. https://doi.org/10.1016/j.annepidem.2020.05.003

Molyneaux, H., & O'Donnell, S. (2009). *ICT and health and wellness in remote and rural First Nations communities: A social determinants of health perspective.* Paper presented at the Canadian Society of Telehealth Conference (CST 2009), Vancouver, October 3-6 2009. Retrieved from https://nparc.nrc-cnrc.gc.ca/fra/voir/accept%C3%A9/?id=f0c9f670-e703-47b3-9389-818d5e427c04

Montague, E., & Perchonok, J. (2012). Health and wellness technology use by historically underserved health consumers: Systematic review. *Journal of Medical Internet Research*, *14*(4), 321–342. doi:10.2196/jmir.2095

Moser, M. A. (2009). Text ‘‘Superpowers’’ a study of computers in homeless shelters. *Science, Technology, & Human Values*, *34*(6), 705-740. doi:10.1177/0162243908329568

Moudatsou, M., Stavropoulou, A., Philalithis, A., & Koukouli, S. (2020). The role of empathy in health and social care professionals. *Healthcare (Basel, Switzerland)*, 8 (1) 26. MDPI. https://doi.org/10.3390/healthcare8010026

Moodley, J., & Ross, E. (2015). Inequities in health outcomes and access to health care in South Africa: a comparison between persons with and without disabilities. *Disability & Society*, *30*(4), 630-644. https://doi.org/10.1080/09687599.2015.1034846

Munn, J., & Small, J. (2017). What is the best way to develop information literacy and academic skills of first year health science students? A systematic review. *Evidence Based Library and Information Practice* 12 (3) https://doi.org/10.18438/b8qs9m

Muroff, J., Robinson, W., Chassler, D., López, L. M., Gaitan, E., Lundgren, L., & Gustafson, D. H. (2017). Use of a smartphone recovery tool for Latinos with co-occurring alcohol and other drug disorders and mental disorders. *Journal of dual diagnosis*, *13*(4), 280-290. https://doi.org/10.1080/15504263.2017.1348649

Naderifar, M., Goli, H., & Ghaljaie, F. (2017). Snowball sampling: A purposeful method of sampling in qualitative research. *Strides in Development of Medical Education*, *14*(3). doi: 10.5812/sdme.67670.

Nanney, M. S., Myers, S. L., Xu, M., Kent, K., Durfee, T., & Allen, M. L. (2019). The economic benefits of reducing racial disparities in health: the case of Minnesota. *International Journal of Environmental Research and Public Health*, *16*(5), 742. https://doi.org/10.3390/ijerph16050742

National Bureau of Economic Research (1998, April 18). *Diversity and Immigration*. Retrieved from https://www.nber.org/papers/w6535

Ng, C., & Newbold, K. B. (2011). Health care providers' perspectives on the provision of prenatal care to immigrants. *Culture, Health & Sexuality*, *13*(5), 561–574. doi:/10.1080/13691058.2011.555927

Nguyen, T. U. N., Tran, J. H., Kagawa-Singer, M., & Foo, M. A. (2011). A qualitative assessment of community-based breast health navigation services for Southeast Asian women in Southern California: recommendations for developing a navigator training curriculum. *American journal of public health*, *101*(1), 87-93. https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2009.176743

Nistor, N., Lerche, T., Weinberger, A., Ceobanu, C., & Heymann, O. (2014). Towards the integration of culture into the unified theory of acceptance and use of technology. *British*

Journal of Educational Technology, *45*(1), 36–55. https://doi.org/10.1111/j.1467-8535.2012.01383.x

Norman, C. D., & Skinner, H. A. (2006). eHealth literacy: Essential skills for consumer health in a networked world. *Journal of medical Internet research*, *8*(2), e506. doi: 10.2196/jmir.8.2.e9

Nouri, S. S., Avila-Garcia, P., Cemballi, A. G., Sarkar, U., Aguilera, A., & Lyles, C. R. (2019). Assessing mobile phone digital literacy and engagement in user-centered design in a diverse, safety-net population: Mixed methods study. *JMIR mHealth and uHealth, 7(*8), e14250. doi:10.2196/14250

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International journal of qualitative methods*, *16*(1), 1609406917733847. https://doi.org/10.1177/1609406917733847

Oelke, N. D., Thurston, W. E., & Arthur, N. (2013). Intersections between interprofessional practice, cultural competency and primary healthcare. *Journal of Interprofessional Care, 27*(5), 367–372. doi: /10.3109/13561820.2013.785502

Onwuegbuzie, Dickinson, W. B., Leech, N. L., & Zoran, A. G. (2009). A qualitative framework for collecting and analyzing data in focus group research. *International Journal of Qualitative Methods,* 8(3), 1–21. https://doi.org/10.1177/160940690900800301

Paez, K. A., Allen, J. K., Carson, K. A., & Cooper, L. A. (2008). Provider and clinic cultural competence in a primary care setting. *Social Science & Medicine*, *66*(5), 1204–1216. doi:10.1016/j.socscimed.2007.11.027

Papadopoulos, I. (2006). The Papadopoulos, Tilki and Taylor model of developing cultural

competence. *Transcultural health and social care: Development of culturally competent practitioners*, 7-24.

Panayiotou, A., Hwang, K., Williams, S., Chong, T. W., LoGiudice, D., Haralambous, B., & Batchelor, F. (2020). The perceptions of translation apps for everyday health care in healthcare workers and older people: A multi-method study. *Journal of Clinical Nursing*, *29*(17-18), 3516-3526 |DOI: 10.1111/jocn.15390

Pearson, A., Srivastava, R., Craig, D., Tucker, D., Grinspun, D., Bajnok, I., & Gi, A. A. (2007). Systematic review on embracing cultural diversity for developing and sustaining a healthy work environment in healthcare. *International Journal of Evidence-Based Healthcare*, *5*(1), 54-91. doi:10.1111/j.1479-6988.2007.00058.x

Perrin, A. (2015). *Social media usage*: 2005-2015. Pew Research Center. Retrieved from http://www. pewinternet.org/2015/10/08/social-networking-usage-2005-2015/

Pereira, LaRoche, A., Arredondo, B., Pugh, E., Disbrow, E., Reekes, T. H., Brickell, E., Boettcher, A., & Sawyer, R. J. (2022). Evaluating racial disparities in healthcare system utilization and caregiver burden among older adults with dementia. *Clinical Neuropsychologist*, *36*(2), 353–366. https://doi.org/10.1080/13854046.2021.1951844

Pettersson, S., Holstein, J., Jirwe, M., Jaarsma, T., & Klompstra, L. (2022). Cultural competence in healthcare professionals, specialised in diabetes, working in primary healthcare—A descriptive study. *Health & Social Care in the Community*, *30*(3), e717-e726. https://doi.org/10.1111/hsc.13442

Plano Clark, V. L., Huddleston-Casas, C. A., Churchill, S. L., O'Neil Green, D., & Garrett, A. L. (2008). Mixed methods approaches in family science research. *Journal of Family Issues*, 29(11), 1543-1566. https://doi.org/10.1177/0192513X08318251

Pottie, K., Ratnayake, A., Ahmed, R., Veronis, L., & Alghazali, I. (2020). How refugee youth use social media: What does this mean for improving their health and welfare?. *Journal of Public Health Policy*, *41*(3), 268-278. 8 https://doi.org/10.1057/s41271-020-00231-4

Powell, M. B., Manger, B., Dion, J., & Sharman, S. J. (2017). Professionals' perspectives about the challenges of using interpreters in child sexual abuse interviews. *Psychiatry, Psychology, and Law*, *24*(1), 90–101. https://doi.org/10.1080/13218719.2016.1197815

Pratt, M., & Searles, G. E. (2017). Using visual aids to enhance physician-patient discussions and increase health literacy. *Journal of Cutaneous Medicine and Surgery*, 21(6), 497-501. https://doi.org/10.1177/1203475417715208

Prescott-Clements, L., Schuwirth, L., Van der Vleuten, C., Hurst, Y., Whelan, G., Gibb, E., & Rennie, J. (2013). The cultural competence of health care professionals: Conceptual analysis using the results from a national pilot study of training and assessment. *Evaluation & The Health Professions*, *36*(2), 191-203. doi:10.1177/0163278712454137

Quach, L. N. (2021). *The Relationship Between Cultural Competency and Hospital Quality Measure Outcomes* [Doctoral dissertation, Walden University]. ProQuest Dissertations and Theses Global.

Ratanawongsa, N., Barton, J. L., Schillinger, D., Yelin, E. H., Hettema, J. E., & Lum, P. J. (2013). Ethnically diverse patients' perceptions of clinician computer use in a safety- net clinic. *Journal of Health Care for the Poor and Underserved*, *24(*4), 1542–1551. doi:10.1353/hpu.2013.0188

Reese, D. J., & Beckwith, S. K. (2015). Organizational barriers to cultural competence in hospice. *American Journal of Journal of Hospice*, *32*(7), 685–694. doi:

10.1177/1049909113520614

Reuland, C. J., Godage, S. K., Wu, L., Valenzuela-Araujo, D., Cortez, J. D., Polk, S., & DeCamp, L. R. (2021). Information and communication technology access and use among low-income Latino immigrant parents. *Maternal and child health journal*, *25*, 1807-1813. https://doi.org/10.1007/s10995-021-03265-6

Renzaho, A. M. N., Romios, P., Crock, C., & Sonderlund, A. L. (2013). The effectiveness of cultural competence programs in ethnic minority patient centered health care-A systematic review of the literature. *Journal for Quality in Health Care*, *25*(3), 261–269. doi: 10.1093/intqhc/mzt006

Rogers. (2018). Coding and writing analytic memos on qualitative data: A review of johnny Saldana's the coding manual for qualitative researchers. *The Qualitative Report, 23*(4), 889–892.

Rubens-Augustson, T., Wilson, L. A., Murphy, M. S., Jardine, C., Pottie, K., Hui, C., & Wilson, K. (2019). Healthcare provider perspectives on the uptake of the human papillomavirus vaccine among newcomers to Canada: A qualitative study. *Human vaccines & immunotherapeutics*, *15*(7-8), 1697-1707. https://doi.org/10.1080/21645515.2018.1539604

Ryan, M. H., Yoder, J., Flores, S. K., Soh, J., & Vanderbilt, A. A. (2015). Using health information technology to reach patients in underserved communities: A pilot study to help close the gap with health disparities. *Global Journal of Health Science, 8*(6), 86–94. doi:10.5539/gjhs.v8n6p86

Saha, S., Korthuis, P. T., Cohn, J. A., Sharp, V. L., Moore, R. D., & Beach, M. C. (2013). Primary care provider cultural competence and racial disparities in HIV care and

outcomes. *Journal of General Internal Medicine*, *28*(5), 622–629. doi:10.1007/s11606-012-2298-8

Salami, B., Mason, A., Salma, J., Yohani, S., Amin, M., Okeke-Ihejirika, P., & Ladha, T. (2020). Access to Healthcare for Immigrant Children in Canada. *International Journal of Environmental Research and Public Health*, *17*(9), 3320. https://doi.org/10.3390/ijerph17093320

Salami, B., Salma, J., & Hegadoren, K. (2019). Access and utilization of mental health services for immigrants and refugees: Perspectives of immigrant service providers. *International Journal of Mental Health Nursing*, *28*(1), 152-161. https://doi.org/10.1111/inm.12512

Saldana, J. (2016). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.

Samuels-Kalow, M., Jaffe, T., & Zachrison, K. (2021). Digital disparities: Designing telemedicine systems with a health equity aim. *Emergency Medicine Journal*, *38*(6), 474-476. https://doi.org/10.1136/emermed-2020-210896

Saunders, N. R., Guttmann, A., Gill, P. J., Holder, L., Gandhi, S., Vigod, S., & Kurdyak, P. (2018). Use of the emergency department as a first point of contact for mental health care by immigrant youth in Canada: a population-based study. *Canadian Medical Association Journal (CMAJ)*, 190(40), E1183–E1191. https://doi.org/10.1503/cmaj.180277

Schnall, Cho, H., & Liu, J. (2018). Health information technology usability evaluation scale (Health-ITUES) for usability assessment of mobile health technology: Validation study. *JMIR mHealth and uHealth*, *6*(1), e4–e4. https://doi.org/10.2196/mhealth.8851

Services, C. and S. (2022, November 3). *Why choose Ottawa*. City of Ottawa. https://ottawa.ca/en/living-ottawa/immigrating-ottawa/why-choose-ottawa#section-00bb2cb9-c010-4657-8c5e-985f9a4b4d10

Sharifi, N., Adib-Hajbaghery, M., & Najafi, M. (2019). Cultural competence in nursing: A concept analysis. *International Journal of Nursing Studies*, 99, 103386–103386. https://doi.org/10.1016/j.ijnurstu.2019.103386

Shearer, R., & Davidhizar, R. (2003). Using role play to develop cultural competence. *Journal of nursing education*, *42*(6), 273-276. https://doi.org/10.3928/0148-4834-20030601-10

Seo, H., Erba, J., Altschwager, D., & Geana, M. (2019). Evidence-based digital literacy class for older, low-income African-American adults. *Journal of Applied Communication Research, 47*(2), 130–152. https://doi.org/10.1080/00909882.2019.1587176

Shen, Z. (2015). Cultural competence models and cultural competence assessment instruments in nursing: A literature review. *Journal of Transcultural Nursing*, *26*(3), 308-321. doi:10.1177/1043659614524790

Sicotte, C., Moqadem, K., Vasilevsky, M., Desrochers, J., & St-Gelais, M. (2011). Use of telemedicine for haemodialysis in very remote areas: The Canadian First Nations. *Journal of Telemedicine and Telecare*, *17*(3), 146-149. doi:10.1258/jtt.2010.100614

Silver, R. (2017). Healthcare leadership's diversity paradox. *Leadership in Health Services*, *30*(1), 68–75. doi:10.1108/LHS-02-2016-0007

Singh, G. K., Daus, G. P., Allender, M., Ramey, C. T., Martin, E. K., Perry, C., & Vedamuthu, I. P. (2017). Social determinants of health in the United States: Addressing major health inequality trends for the nation, 1935-2016. *International Journal of MCH and AIDS*, *6*(2), 139. doi: 10.21106/ijma.236

Soule, I. (2014). Cultural competence in health care: An emerging theory. *Advances in Nursing Science*, *37*(1), 48–60. doi: 10.1097/ANS.0000000000000016

Statistics Canada (2022, October 26) *Census Profile, 2021 Census of Population.* Retrieved From *www12.statcan.gc.ca*

Statistic Canada (2021, September 10). *Immigration in Canada: Statistics & Facts.* Retrieved from https://www.statista.com/topics/2917/immigration-in-canada/#topicHeader__wrapper

Statistic Canada (2017, January 25). *Immigration and Diversity: Population Projections for Canada and its Regions, 2011 to 2036.* Retrieved from https://www150.statcan.gc.ca/n1/en/pub/91-551-x/91-551-x2017001-eng.pdf?st=e1NLkoDp

Stewart, D.W. & Shamdasani, P.N. (2014) *Focus Groups: Theory and Practice, 3rd Edition*. *ProtoView*, *1*(31). Ringgold, Inc.

Subedi, R. P., & Rosenberg, M. W. (2014). Determinants of the variations in self-reported health status among recent and more established immigrants in Canada. *Social Science & Medicine (1982)*, 115, 103–110. https://doi.org/10.1016/j.socscimed.2014.06.021

Suh, E. E. (2004). The Model of Cultural Competence Through an Evolutionary Concept Analysis. *Journal of Transcultural Nursing*, *15*(2), 93–102. https://doi.org/10.1177/1043659603262488

Tai-Seale, M., Downing, N. L., Jones, V. G., Milani, R. V., Zhao, B., Clay, B., & Longhurst, C. A. (2019). Technology-enabled consumer engagement: Promising practices at four health care delivery organizations. *Health Affairs*, *38*(3), 383-390 https://doi.org/10.1377/hlthaff.2018.05027

Tan-McGrory, A., Schwamm, L. H., Kirwan, C., Betancourt, J. R., & Barreto, E. A. (2022). Addressing virtual care disparities for patients with limited English proficiency. *American Journal of Managed Care*, *28*(1). doi10.37765/ajmc.2022.88814

Tang, T., Lim, M. E., Mansfield, E., McLachlan, A., & Quan, S. D. (2018). Clinician user

involvement in the real world: Designing an electronic tool to improve interprofessional communication and collaboration in a hospital setting. *International Journal of Medical Informatics*, *110*, 90-97. https://doi.org/10.1016/j.ijmedinf.2017.11.011

Terui, S. (2017). Conceptualizing the pathways and processes between language barriers and health disparities: Review, synthesis, and extension. *Journal of Immigrant and Minority Health*, *19*(1), 215-224. DOI 10.1007/s10903-015-0322-x

Tsai, T. I., & Lee, S. Y. D. (2016). Health literacy as the missing link in the provision of immigrant health care: A qualitative study of Southeast Asian immigrant women in Taiwan. *International Journal of Nursing Studies*, *54*, 65-74. https://doi.org/10.1016/j.ijnurstu.2015.03.021

Thøgersen, H., Møller, B., Åsli, L. M., Bhargava, S., Kvåle, R., Fjellbirkeland, L., ... & Larsen, I. K. (2020). Waiting times and treatment following cancer diagnosis: Comparison between immigrants and the Norwegian host population. *Acta Oncologica*, *59*(4), 376-383. https://doi.org/10.1080/0284186X.2019.1711167

Tieu, L., Schillinger, D., Sarkar, U., Hoskote, M., Hahn, K. J., Ratanawongsa, N., & Lyles, C. R. (2017). Online patient websites for electronic health record access among vulnerable populations: portals to nowhere?. *Journal of the American Medical Informatics Association*, *24*(e1), e47-e54. https://doi.org/10.1093/jamia/ocw098

Tulli, M., Salami, B., Begashaw, L., Meherali, S., Yohani, S., & Hegadoren, K. (2020). Immigrant mothers' perspectives of barriers and facilitators in accessing mental health care for their children. *Journal of Transcultural Nursing*, *31*(6), 598-605. https://doi.org/10.1177/10436596209028

Vang, Z. M., Sigouin, J., Flenon, A., & Gagnon, A. (2017). Are immigrants healthier than native-born Canadians? A systematic review of the healthy immigrant effect in Canada. *Ethnicity & health, 22*(3), 209-241. https://doi.org/10.1080/13557858.2016.1246518

Vargas, P. A., Robles, E., Harris, J., & Radford, P. (2010). Using information technology to reduce asthma disparities in underserved populations: A pilot study. *The Journal of Asthma: Official Journal of the Association for the Care of Asthma*, *47*(8), 889–894. doi: 10.3109/02770903.2010.497887

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly, 27*(3), 425–478. https://doi.org/10.2307/30036540

Venkatesh, V., Thong, J., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems*, *17*(5), 328–376. https://doi.org/10.17705/1jais.00428

Villadsen, Hadi, H., Ismail, I., Osborne, R. H., Ekstrøm, C. T., & Kayser, L. (2020). ehealth literacy and health literacy among immigrants and their descendants compared with women of Danish origin: A cross-sectional study using a multidimensional approach among pregnant women. *BMJ Open,*10(5), e037076–e037076. https://doi.org/10.1136/bmjopen-2020-037076

Volland, J., & Fryda, S. (2015). HCAHPS series part 1: Transforming care transitions. *Nursing Management, 46*(1), 24-29. doi:10.1097/01.NUMA.0000459101.17224.c3

Wang, Y., McKee, M., Torbica, A., & Stuckler, D. (2019). Systematic literature review on the

spread of health-related misinformation on social media. *Social Science & Medicine, 240*, 112552. https://doi.org/10.1016/j.socscimed.2019.112552

Wang, L., & Kwak, M. J. (2015). Immigration, barriers to healthcare and transnational ties: A case study of South Korean immigrants in Toronto, Canada. *Social Science & Medicine*, 133, 340-348. https://doi.org/10.1016/j.socscimed.2014.11.039

Wendling, A. L. (2020). Telehealth in response to the COVID-19 pandemic: Implications for rural health disparities. *Journal of the American Medical Informatics Association, 27*(11), 1816-1818. https://doi.org/10.1093/jamia/ocaa156

Winbush, G. B., McDougle, L., Labranche, L., Khan, S., & Tolliver, S. (2013). Health empowerment technologies (HET): Building a web- based tool to empower older African American patient-doctor relationships. *Journal of Health Care for the Poor and Underserved*, *24*(4 SUPPL.), 106–117. doi:10.1353/hpu.2014.0017

Wylie, L., Van Meyel, R., Harder, H., Sukhera, J., Luc, C., Ganjavi, H., Elfakhani, M., & Wardrop, N. (2018). Assessing trauma in a transcultural context: challenges in mental health care with immigrants and refugees. *Public Health Reviews, 39*, 22. https://doi.org/10.1186/s40985-018-0102-y

Xu, X., Shen, B., Zhang, A., Liu, J., Da, Z., Liu, H., & Gu, Z. (2016). Anxiety and depression correlate with disease and quality-of-life parameters in Chinese patients with ankylosing spondylitis. *Patient Preference and Adherence, 10*, 879–885. https://doi.org/10.2147/PPA.S86612

Young, L., & Guo, L. (2016). Cultural diversity training: The necessity of cultural competence for health care providers and in nursing practice. *The Health Care Manager*, *35*(2), 94–102. https://doi.org/10.1097/HCM.0000000000000100

Zhang, Q., Guo, X., & Vogel, D. (2021). Information and communication technology use for life satisfaction among the elderly: A motivation perspective. *American Journal of Health Behavior, 45*(4), 701-710. https://doi.org/10.5993/AJHB.45.4.9

Zhang, X., Hailu, B., Tabor, D. C., Gold, R., Sayre, M. H., Sim, I., & Artiles, L. (2019). Role of health information technology in addressing health disparities: Patient, clinician, and system perspectives. *Medical Care, 57*, S115-S120. doi:10.1097/mlr.0000000000001092

Zibrik, L., Khan, S., Bangar, N., Stacy, E., Lauscher, H. N., & Ho, K. (2015). Patient community centered eHealth: Exploring eHealth barriers and facilitators for chronic disease self-management within British Columbia's immigrant Chinese and Punjabi seniors. *Health Policy and Technology, 4*(4), 348-356. https://doi.org/10.1016/j.hlpt.2015.08.002

Appendices

Appendix A: Ethical Approval

06/12/2018

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL

Numéro du dossier / Ethics File Number	H-09-18-1103
Titre du projet / Project Title	Cultural Competence in Health Care: Examining The Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients
Type de projet / Project Type	Thèse de doctorat / Doctoral thesis
Statut du projet / Project Status	Approuvé / Approved
Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)	06/12/2018
Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)	05/12/2019

Équipe de recherche / Research Team

Chercheur / Researcher	Affiliation	Role
Idris ALGHAZALI	École de science informatique et de génie électrique / School of Electrical Engineering and Computer Science	Chercheur Principal / Principal Investigator
Rukhsana AHMED	Département de communication / Department of Communication	Superviseur / Supervisor

Conditions spéciales ou commentaires / Special conditions or comments

550, rue Cumberland, pièce 154 Ottawa (Ontario) K1N 6N5 Canada
550 Cumberland Street, Room 154 Ottawa, Ontario K1N 6N5 Canada

613-562-5387 • 613-562-5338 • ethique@uOttawa.ca / ethics@uOttawa.ca
www.recherche.uottawa.ca/deontologie | www.recherche.uottawa.ca/ethics

06/12/2018

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

Le Comité d'éthique de la recherche (CÉR) de l'Université d'Ottawa, opérant conformément à l'*Énoncé de politique des Trois conseils* (2014) et toutes autres lois et tous règlements applicables, a examiné et approuvé la demande d'éthique du projet de recherche ci-nommé.

L'approbation est valide pour la durée indiquée plus haut et est sujette aux conditions énumérées dans la section intitulée "Conditions Spéciales ou Commentaires". Le formulaire « Renouvellement ou Fermeture de Projet » doit être complété quatre semaines avant la date d'échéance indiquée ci-haut afin de demander un renouvellement de cette approbation éthique ou afin de fermer le dossier.

Toutes modifications apportées au projet doivent être approuvées par le CÉR avant leur mise en place, sauf si le participant doit être retiré en raison d'un danger immédiat ou s'il s'agit d'un changement ayant trait à des éléments administratifs ou logistiques du projet. Les chercheurs doivent aviser le CÉR dans les plus brefs délais de tout changement pouvant augmenter le niveau de risque aux participants ou pouvant affecter considérablement le déroulement du projet, rapporter tout évènement imprévu ou indésirable et soumettre toute nouvelle information pouvant nuire à la conduite du projet ou à la sécurité des participants.

The University of Ottawa Research Ethics Board, which operates in accordance with the *Tri-Council Policy Statement* (2014) and other applicable laws and regulations, has examined and approved the ethics application for the above-named research project.

Ethics approval is valid for the period indicated above and is subject to the conditions listed in the section entitled "Special Conditions or Comments". The "Renewal/Project Closure" form must be completedfour weeks before the above-referenced expiry date to request a renewal of this ethics approval or closure of the file.

Any changes made to the project must be approved by the REB before being implemented, except when necessary to remove participants from immediate endangerment or when the modification(s) only pertain to administrative or logistical components of the project. Investigators must also promptly alert the REB of any changes that increase the risk to participant(s), any changes that considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project or the safety of the participant(s).

Riana MARCOTTE
Responsable d'éthique en recherche / Protocol Officer
Pour/For **Daniel LAGAREC** Président(e) du/ Chair of the **Comité d'éthique de la recherche en sciences sociales et humanités / Social Sciences and Humanities Research Ethics Board**

550, rue Cumberland, pièce 154 Ottawa (Ontario) K1N 6N5 Canada
550 Cumberland Street, Room 154 Ottawa, Ontario K1N 6N5 Canada

613-562-5387 • 613-562-5338 • ethique@uOttawa.ca / ethics@uOttawa.ca
www.recherche.uottawa.ca/deontologie I www.recherche.uottawa.ca/ethics

Appendix B:

Recruitment Letter: Focus Group Participation in Phase One

Hello,

This is Idris Alghazali, a Ph.D. Candidate in Digital Transformation and Innovation at the University of Ottawa. The reason for this letter is that we are looking for participants for a research study titled: Cultural Competence in Health Care: Examining the Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients. This study is about examining cultural competence strategies, if any, that are used by healthcare organizations at all levels, including managers and senior executives to improve interaction between health care providers and their immigrant patients for the sake of reducing healthcare disparities, and to explore innovative technologies that can be utilized to reach out to immigrant populations.

We are looking to speak to immigrants who arrived in Canada within the last 7 years and are willing to share their experience navigating the healthcare system in Canada. If you have visited a hospital/clinic or have communicated with any healthcare organization since you arrived in Canada, would you be willing to share your thoughts with us? We would love to include you in an upcoming discussion on cultural competence in healthcare and the role of health information technology in reducing healthcare disparities. The discussion will last for about 1.5 hrs. Your participation in this research project will be voluntary, and you would be able to withdraw at any point without penalty or consequences. Are you available on Thursday, February 21th at 4:30 PM?

We will be meeting at University of Ottawa, 55 Laurier Ave E, Ottawa, room number DMS 11143. (Desmarais Building). We will provide refreshments for our participants. We will also offer a $10 cash incentive to those who participate in the discussion.

We look forward to speaking with you soon!
Sincerely

Idris Alghazali

Appendix C:

Consent Form: Focus Group Participation in Phase One

Title of The Study:

Cultural Competence in Healthcare: Examining the Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients

Supervisor: Dr. Rukhsana Ahmed
Adjunct Professor, Department of Communication, University of Ottawa, Ottawa, Ottawa, ON

Student: Idris Alghazali
Ph.D. Candidate, Digital Transformation and Innovation, University of Ottawa, Ottawa, ON

Invitation to Participate: I am invited to participate in the aforementioned study conducted by Idris Alghazali, a Ph.D. Candidate in Digital Transformation and Innovation at the University of Ottawa, who is being supervised by Dr. Rukhsana Ahmed, Adjunct Professor in the Department of Communication at the University of Ottawa.

Purpose of the Study: The purpose of the proposed study is to examine cultural competence strategies, if any, that are used by healthcare organizations at all levels, including managers and senior executives to improve interaction between healthcare providers and their immigrant patients for the sake of reducing healthcare disparities, and to explore innovative technologies that can be utilized to reach out to immigrant patients.

Participation: My participation will consist of completing a written socio-demographic questionnaire and attending a focus group discussion to respond to a number of questions related to my experience interacting with healthcare providers as well as my use of information and communication technology, if any, to communicate with healthcare providers. The focus group discussion will last approximately between 60 and 120 minutes and will be audio-recorded.

Risks: I understand that my participation in this study implies that I will share my perspectives and personal experiences related interacting and communicating with healthcare providers. I have received assurance from the researchers that there are no discomforts associated with the study. If, however, for some reason I feel uncomfortable during the discussion, I have received assurance from the researchers that my participation is voluntary, I am free to withdraw at any time during the discussion.

Benefits: I will receive no direct benefit from participation. However, the information that I will share can contribute to raising awareness of the importance of communication between healthcare providers and immigrant patients. It can also help to develop recommendations regarding how to best communicate with healthcare providers.

Confidentiality and Anonymity: I have received assurance from the researchers that the information I will share will remain confidential. I understand that, with my permission (i.e., circling recording option) the discussion will be digitally recorded and transcribed; however, the information will be carefully and completely protected, stored in a locked laptop (password protected) belonging to the researcher and hard copies of the data will be stored in a locked file cabinet in the researcher's home. In order to maximize confidentiality and anonymity, I will select and use a pseudonym during the discussion. I have received assurance from the researchers that my actual name will not be recorded by recording devices and note takers. My actual name will appear on the consent form, which will be carefully and completely protected. However, I have been made aware that my confidentiality and anonymity cannot be entirely guaranteed because the focus group is a group activity.

Conservation of data: The data collected (digital recordings and transcripts of focus group discussions) will be stored in a locked file cabinet in the researcher's home until 2023.

Compensation: Upon participation in the focus group discussion, I will receive a compensation of $10 cash even if I do not complete the discussion.

Voluntary Participation: I am under no obligation to participate, and if I choose to participate, I can withdraw from the study at any time and/or refuse to answer any questions, without suffering any negative consequences. However, I have been made aware that because of the inter-

dependent nature of focus group data, focus group data cannot be withdrawn after the completion of the focus group.

Statement of Consent: I have read the above information and received answers to any questions I asked. I consent to participate in the aforementioned research study conducted by the above-mentioned researchers.

If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON, K1N 6N5, (613) 562-5387 or at ethics@uottawa.ca

Participant's Name: _____

Participant's Signature: _____ Date: _____

Researcher's Name: _____

Researcher's Signature: _____ Date: _____

Appendix D:

Focus Group Protocol: Phase One

Focus group questions for Immigrant patients

Thank you for participating in the research project, "Cultural Competence in Health Care: Examining the Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients" I appreciate your interest.

Demographic questions: These items are about you personally. Please know that all information is confidential. Responses to these questions will be used only to compare different responses of different people.

1. What is your age? _____

2. What is your gender?
a. Male b. Female
c. "You don't have an option that applies to me. I identify as (specify) _____."

3. What ethnic category best describes you?

a. Caucasian

b. African

c. Middle Eastern/Arab d. South Asian

e. Southeast Asian

f. Latin American

g. Other, (please indicate): _____

4. What is your immigration status? _____
5. What is your level of education?
a. Less than 8th grade

b. Some high school

c. High school graduate

d. Some college/ vocational training/ post-secondary/ university h. Professional degree

e. College/ vocational training/ post-secondary/ university f. Some graduate school

g. Graduate degree

i. Other, please specify _____

6. What is your yearly household income?

a. Less than $10,000	d. $30,000-$39,999	g. $60,000-$69,999
b. $10,000-$19,999	e. $40,000-$49,999	h. $70,000-$79,999
c. $20,000-$29,999	f. $50,000-$59,999	i. $80,000 or more

7. When was the last time you visited a healthcare center or a hospital? _____

8. When was the last time you saw a healthcare provider? _____

Table 1

Guiding questions for focus group Discussions

Guiding Questions
When did you arrive in Canada and where did you come from?
Can you please tell me why you came to Canada?
How would you describe the Canadian culture and how does it compare with yours?
Can you please tell me about your life in Canada? And how do you deal with health-related issues?
What do you think of the healthcare system in Canada and how do you find it useful or not?
How would you describe your experience interacting with healthcare providers when you go to hospitals?
How do you communicate with your healthcare providers?
What are some of the major challenges and problems that you face when navigating the healthcare system?
Do you use any types of technology to access healthcare information? If yes, what are those? if no, can you explain why not?
Do you think the use of ICTs can improve your access to healthcare? If yes, please explain how so. If no, why not?
Do you think you would be able to use technology to communicate with healthcare providers and hospitals? If yes, can you please elaborate? If no, can you please explain why not?
In your opinion, do you think that ICTs can improve communication with healthcare providers? If yes, can you please elaborate? If no, can you please explain why not?

*These questions were informed by relevant existing literature.

Appendix F:

Compensation Form: Focus Group Participation in Phase One

Title of The Study:

Cultural Competence in Healthcare: Examining the Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients.

Researchers:

Supervisor: Dr. Rukhsana Ahmed, Adjunct Professor, Department of Communication, University of Ottawa, Ottawa, ON

Student: Idris Alghazali, Ph.D. Candidate, Digital Transformation and Innovation, University of Ottawa, Ottawa, ON

Acceptance: I agreed to participate in the aforementioned study conducted by Idris Alghazali, Ph.D. Candidate, Digital Transformation and Innovation, University of Ottawa and his supervisor: Dr. Rukhsana Ahmed, Adjunct Professor, Department of Communication, University of Ottawa. I received $10 cash in appreciation of my participation.

Participant's signature: _____ Date: _____

Researcher's signature: _____ Date: _____

Witness *(needed in the case where a participant is visually impaired):*

Signature: _____ Date: _____

Appendix G:

Survey Participants: Recruitment Text via Email in Phase Two

Hello,

This is Idris Alghazali, a Ph.D. Candidate in Digital Transformation and Innovation at the University of Ottawa. The reason for this e-mail is that we are looking for participants for a research study titled: Cultural Competence in Health Care: Examining the Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients.

This study is about examining cultural competence strategies, if any, that are used by healthcare organizations at all levels, including managers and senior executives to improve interaction between health care providers and their immigrant patients for the sake of reducing healthcare disparities, and to explore innovative technologies that can be utilized to reach out to immigrant populations.

To be able to take part in this study, individuals must be medical doctors, nursing professionals, pharmacists, or administrative healthcare staff including managers and/or directors. Potential participants would be invited to complete an online survey "Google Docs" It will take about 5 to 10 minutes of their time. The participants will be asked to response to a number of questions related to their experience interacting and communicating with recent immigrant patients.

Have a great day!

Idris Alghazali

Appendix H:

Consent Form: Survey Participation in Phase Two

Title of The Study:

Cultural Competence in Healthcare: Examining the Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients

Supervisor: Dr. Rukhsana Ahmed
Adjunct Professor, Department of Communication, University of Ottawa
Ottawa, ON

Student: Idris Alghazali
Ph.D. Candidate, Digital Transformation and Innovation, University of Ottawa, Ottawa, ON

Invitation to Participate: I am invited to participate in the aforementioned study conducted by Idris Alghazali, a Ph.D. Candidate in Digital Transformation and Innovation at the University of Ottawa, who is being supervised by Dr. Rukhsana Ahmed, Adjunct Professor in the Department of Communication at the University of Ottawa.

Purpose of the Study: The purpose of the proposed study is to examine cultural competence strategies, if any, that are used by healthcare organizations at all levels, including managers and senior executives to improve interaction between healthcare providers and their immigrant patients for the sake of reducing healthcare disparities, and to explore innovative technologies that can be utilized to reach out to immigrant patients.

Participation: My participation will consist of filling out a survey and responding to a number of questions related the role of cultural competence as well as the use of information and communication technology in improving interaction between healthcare providers and their immigrant patients for the sake of reducing healthcare disparities. It can take about 10 to 15 minutes to fill out the survey.

Risk and benefits: I understand that part of my participation will involve answering questions about the role of cultural competence as well as the use of information and communication technology in healthcare settings. I have been reassured by the researcher that there are no potential risk or discomfort in this study. I will receive no direct benefit from participation, however the information I will share will help contribute towards a better understanding of how cultural competence programs and the use of information and communication technology can be used to improve interaction between healthcare providers and their immigrant patients for the sake of reducing health care disparities.

Confidentiality and Anonymity: I have received assurance from the researcher that all the data I will provide will remain confidential. I understand that data collected will be coded in such a manner that my name will not be associated with the data and will not be used in any written publication. I also understand that since the survey data is collected on Google Docs, it is subject to the U.S. privacy law, Patriot Act.

Conservation of data: I understand that the data I will be providing will be stored in a locked laptop (password protected) belonging to the researcher and hard copies of the data will be stored in a locked file cabinet in the researcher's home until 2023.

Compensation: I understand that I will not be compensated for completing this survey.

Voluntary Participation: I am under no obligation to participate in this study, and I have the right to withdraw from study at anytime without penalty as my participation in this study is entirely voluntary. If I choose to withdraw from the study, I will be given the option to also withdraw any data collected.

Statement of Consent: I have read the above information and received answers to any questions I asked. I consent to participate in the aforementioned research study conducted by the above-mentioned researcher.

If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON, K1N 6N5, (613) 562-5387 or at ethics@uottawa.ca

[Check box], Yes, I agree to participate in this survey.

Appendix I:

Survey Protocol: Phase Two

Survey questions for healthcare providers

Thank you for participating in the research project, "Cultural Competence in Health Care: The Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients" I appreciate your interest. When appropriate, please answer the following survey questions. As you complete the survey, please make sure that you mark each answer clearly, and that you read and understand the instructions for each section.

Demographic questions: These items are about you personally. Please know that all information is confidential. Responses to these questions will be used only to compare different responses of different people.

1. What is your age? _____

2. What is your gender?

   a. Male b. Female

   c. You don't have an option that applies to me. I identify as (specify) _____.

3. Do you identify with one or more of the following categories of ethnic/cultural origin?

   a. Caucasian
   b. African
   c. Middle Eastern/Arab
   d. South Asian
   e. Southeast Asian
   f. Latin American
   g. Other, (please indicate): _____

4. Do you use ICTs for healthcare to communicate with immigrant patient? If yes, what are those? If no, can you explain why not?

Survey questions* related to the use of HICTs in healthcare delivery

When appropriate, please answer the following questions by circling the number that best represent your response. For example, if the question was "Candy is…," and most of the candy you think was sweet, but some candy you thought of was sour, you might answer like this:

Candy is…

SWEET 1 (2) 3 4 5 SOUR

Impact

1. I think ICTs would be a positive addition for healthcare providers to communicate with immigrant patients

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

If you agree, what kind of ICTs would you recommend, and can you please give examples?

2. ICTs would be an important part of meeting my information needs related to communication with immigrant patients

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

3. ICTs would allow for patient/family participation in care

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

Perceived Usefulness

1. Using ICTs would enable me as well as the patients to save time

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

2. I think ICTs would present more equitable tools for communicating with immigrant patients

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

3. ICTs would facilitate both patient care and administrative process

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

Perceived Ease of Use

1. I would be comfortable with my ability to use ICTs

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

2. Learning to use ICTs for communicating purposes would be easy for me

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

3. It is easy for me to become skillful at using ICTs

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

User Control

1. It will not take a lot of time for me to recover if I ever make a mistake using ICTs

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

2. Using ICTs would make it easier to reach out to immigrant patinas

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

3. ICTs would help me to be problem-focused in my communication with immigrant patients

a. Strongly agree b. Agree c. Not sure d. Disagree e. Strongly disagree

*These questions were adapted from scale published in Schnall, Cho, and Liu's (2018) article: Health information technology usability evaluation scale (Health-ITUES) for usability assessment of mobile health technology: Validation study.

Appendix J:

Consent Form: Interview Participation in Phase Three

Title of The Study:

Cultural Competence in Healthcare: Examining the Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients

Supervisor: Dr. Rukhsana Ahmed
Adjunct Professor, Department of Communication, University of Ottawa
Ottawa, ON

Student: Idris Alghazali
Ph.D. Candidate, Digital Transformation and Innovation, University of Ottawa, Ottawa, ON

Invitation to Participate: I am invited to participate in the aforementioned study conducted by Idris Alghazali, a Ph.D. Candidate in Digital Transformation and Innovation at the University of Ottawa, who is being supervised by Dr. Rukhsana Ahmed, Adjunct Professor in the Department of Communication at the University of Ottawa.

Purpose of the Study: The purpose of the proposed study is to examine cultural competence strategies, if any, that are used by healthcare organizations at all levels, including managers and senior executives to improve interaction between healthcare providers and their immigrant patients for the sake of reducing healthcare disparities, and to explore innovative technologies that can be utilized to reach out to immigrant patients.

Participation: My participation will consist of completing a written socio-demographic questionnaire and attending a face-to-face interview to respond to a number of questions related to the role of cultural competence as well as the use of information and communication technology in improving interaction between healthcare providers and their immigrant patients for the sake of reducing healthcare disparities. The interview will last approximately between 60

and 120 minutes and will be audio-recorded. However, if I choose to withdraw, I will be given the option to also withdraw any data previously collected.

Risks: I understand that my participation in this study implies that I will share my perspectives and personal experiences related interacting and communicating with immigrant patients. I have received assurance from the researchers that there are no discomforts associated with the study. If, however, for some reason I feel uncomfortable during the interview, I have received assurance from the researchers that my participation is voluntary, I am free to withdraw at any time during the interview.

Benefits: I will receive no direct benefit from participation. However, the information that I will share can contribute to raising awareness of the importance of communication between healthcare providers and immigrant patients. It can also help to develop recommendations regarding how to best communicate with recent immigrant patients.

Confidentiality and Anonymity: I have received assurance from the researchers that the information I will share will remain confidential. I understand that, with my permission (i.e., circling recording option) the interview will be digitally recorded and transcribed; however, the information will be carefully and completely protected, stored in a locked laptop (password protected) belonging to the researcher and hard copies of the data will be stored in a locked file cabinet in the researcher's home. In order to maximize confidentiality and anonymity, I will select and use a pseudonym during the interview. I have received assurance from the researchers that my actual name and any other identifying information will not be recorded by recording devices and note takers. My actual name will appear on the consent form, which will be carefully and completely protected. Moreover, my anonymity will be protected as my actual name will never be used in any written publication.

Conservation of data: The data collected (digital recordings and transcripts of interview) will be stored in a locked file cabinet in the researcher's home until 2023.

Compensation: Upon participation in the interview, I will receive a compensation of $10 cash even if I do not complete the interview.

Voluntary Participation: I am under no obligation to participate, and if I choose to participate, I can withdraw from the study at any time and/or refuse to answer any questions, without suffering any negative consequences. If I choose to withdraw, I will be given the option to also withdraw any data collected.

Statement of Consent: I have read the above information and received answers to any questions I asked. I consent to participate in the aforementioned research study conducted by the above-mentioned researchers.

If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON, K1N 6N5, (613) 562-5387 or at ethics@uottawa.ca

Participant's Name: _____

Participant's Signature: _____ Date: _____

Researcher's Name: _____

Researcher's Signature: _____ Date: _____

Appendix K:

Interview Protocol: Phase Three

Interview guide for healthcare providers

Thank you for participating in the research project, "Cultural Competence in Health Care: The Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients" I appreciate your interest.

Demographic questions: These items are about you personally. Please know that all information is confidential. Responses to these questions will be used only to compare different responses of different people.

1. What is your age? _____

2. What is your gender?

   a. Male b. Female

   c. "You don't have an option that applies to me. I identify as (specify) _____."

3. Do Do you identify with one or more of the following categories of ethnic/cultural origin?

   a. Caucasian e. Southeast Asian

   b. African f. Latin American

   c. Middle Eastern/Arab g. Other, (please indicate): _____

   d. South Asian

4. Do you use ICTs for healthcare to communicate with immigrant patients? If yes, what are those? If no, can you explain why not?

?

Table 2

Guiding Questions for Interviews

Guiding Questions
Can you please tell me about yourself and the role you play in this center (or hospital)?
Can you please tell me how you communicate with immigrant patients?
How would you describe your experience interacting with patients from different cultural backgrounds?
What are some of the major challenges and problems that you face when communicating with immigrant patients?
How easy is it for you to communicate with patients with limited English langue proficiency? Please explain.
What do you know about the concept cultural competence?
Please tell me about your experience providing treatment and care for immigrant patients, and how satisfied are you with the service? Please elaborate.
Does your center provide cultural competence training for healthcare providers? If yes, please provide examples. If not, why not and how do you feel about it?
Do you know about the use of ICTs in healthcare delivery? Please provide examples.
Do you think the use of ICTs can facilitate access to healthcare for immigrant patients? __
A. If yes, please explain why and how?
B. If no, please discuss why not?
What specific contribution you think ICTs can make to improve healthcare delivery for immigrant patients?

*These questions were informed by relevant existing literature.

Appendix L:

Compensation Form: Interview Participation in Phase Three

Title of The Study:

Cultural Competence in Healthcare: Examining the Role of Information and Communication Technology in Reducing Health Care Disparities for Immigrant Patients.

Researchers:

Supervisor: Dr. Rukhsana Ahmed, Adjunct Professor, Department of Communication, University of Ottawa, Ottawa, ON

Student: Idris Alghazali, Ph.D. Candidate, Digital Transformation and Innovation, University of Ottawa, Ottawa, ON

Acceptance: I agreed to participate in the aforementioned study conducted by Idris Alghazali, a Ph.D. Candidate, Digital Transformation and Innovation, University of Ottawa and his supervisor: Dr. Rukhsana Ahmed, Adjunct Professor, Department of Communication, University of Ottawa. I received $10 cash in appreciation of my participation.

Participant's signature: _____ Date: _____

Researcher's signature: _____ Date: _____

Witness *(needed in the case where a participant is visually impaired):*

Signature: _____ Date: _____