REALIGNING CURRENT KNOWLEDGE-BASED APPROACHES TO HEPATITIS C VIRUS PREVENTION AMONG A DIVERSE SAMPLE OF IMMIGRANTS IN NOVA SCOTIA, CANADA.

by

Lilian Aizeyosabor Omorefe

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Dalhousie University is located in Mi'kma'ki, the
ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

DEDICATION

To my twin daughters, Keeva & Karen, and my dear son Ede, for patiently allowing me to share family time to complete this thesis.

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ABSTRACT

Hepatitis C Virus infection (HCV) disproportionately affects immigrants in Canada, particularly those that migrate from HCV endemic countries. This is an important health inequity that needs to be urgently addressed. Using qualitative research methods, this study explored the barriers and culturally relevant facilitators to HCV prevention among a diverse sample of immigrants in Nova Scotia. Study data was derived from ten immigrants who were registered clients of the Immigrant Service Association of Nova Scotia. In-depth interviews were held via Zoom and the thematic-narrative analysis was used to analyze the data.

Overarching themes and subthemes emerged from analysis of the transcripts, including key findings indicating that most participants had not heard of HCV prevention services since they arrived in Nova Scotia, and none have had the opportunity to access HCV prevention services. Recommendations were offered to help provide timely, culturally relevant, and accessible HCV prevention services for immigrants in Nova Scotia.

LIST OF ABBREVIATIONS USED

HEP C	Hepatitis C
HepNS	Hepatitis Society of Nova Scotia
HCP	Healthcare Provider
HCV	Hepatitis C Virus
ISANS	Immigrant Service Association of Nova Scotia
SEM	Social Ecological Model
WHO	World Health Organization

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CHAPTER 1 INTRODUCTION

1.1 STATEMENT OF PROBLEM

Hepatitis C is a blood-borne pathogen caused by the Hepatitis C Virus (HCV), which progresses slowly, usually over 20 or 30 years, and if left undiagnosed and untreated, can result in liver damage and death (Yu et al, 2013; Krajden et al, 2015; Tanveer, 2017; Caldwell, 2019). Most individuals with HCV infection remain asymptomatic after being infected, making early diagnosis and treatment difficult, but, essential (Caldwell, 2019). Currently, there is no vaccine for HCV and new infections occur disproportionately affects immigrants in Canada (Zimmerman et al., 2011; Trubnikov et al., 2011; Guerra et al., 2012; Greenaway et al., 2015; Greenaway et al., 2018; Krajden et al., 2018; The Public Health Agency of Canada, 2018).

However, what is worrisome to the researcher, is that from personal experience as a new immigrant in Canada, it was noteworthy, that there is no screening for HCV before and after arrival in the country (Greenaway et al. 2017). This, in turn, tends to leave immigrants susceptible to the spread of the virus (if infected with HCV), as they may be unaware of the steps necessary to prevent and treat HCV. Currently, no health promotion program or research study has focused on targeting immigrants from HCV endemic countries in Nova Scotia for HCV prevention interventions. Past studies and governmental interventions around HCV prevention have focused mainly on injection drug users and baby boomers; whereas immigrants have been identified as a priority population for HCV prevention needs in Canada, especially those that migrate from HCV endemic regions (Shah et al., 2013; Smith et al., 2012). This prompted me to find out the factors behind the missed opportunities for HCV prevention as well as culturally relevant strategies for prevention among immigrants in Nova Scotia, Canada.

For this study, HCV prevention refers to awareness of HCV and steps taking to prevent the spread of the virus and specifically includes testing for HCV.

1.2 RESEARCH PURPOSE

The purpose of this qualitative exploratory study was to understand how to realign current, knowledge-based approaches to HCV prevention to better meet the awareness, testing, counselling and HCV treatment needs of immigrants in Nova Scotia, Canada. Using interview data from a diverse sample of Nova Scotia-based immigrants, analysis was conducted to better understand the barriers to HCV prevention among immigrants in Nova Scotia as well as the relevance of existing HCV prevention plans already in place, to note gaps in current programming with an effort to ensure that such programs serve immigrants in culturally relevant ways to bridge the existing gap in research and knowledge efforts.

1.3 SIGNIFICANCE OF THE STUDY

This research is meant to help inform government, immigrant service agencies, community organizations and healthcare providers delivering services to immigrants on how to better achieve the triple goals of providing timely, accessible and culturally relevant HCV prevention services to immigrants in Nova Scotia through in-depth knowledge of the specific barriers to HCV prevention as well as facilitators to HCV prevention for immigrants in Nova Scotia. Also, findings from this research can help inform health policymakers on the need to realign current HCV prevention plans in other to improve immigrant's health outcomes through a uniquely suited HCV prevention policy. This can help to facilitate immigrants' timely access to the utilization of HCV prevention services, thereby increasing the likelihood of HCV prevention among immigrants in Nova Scotia.

1.4 RESEARCH QUESTIONS

This qualitative exploratory study was framed using the Social-Ecological Model (McKenzie et al., 2017) which helped to reveal the multi-layered barriers and the culturally relevant approaches to HCV prevention for immigrants in Nova Scotia. It was guided by the following primary and secondary research questions:

The primary research questions are:

1. What are the perceived barriers to getting tested Hand treated for HCV among immigrants in Nova Scotia?
2. What HCV prevention information will be culturally relevant for immigrants in Nova Scotia?

The secondary research questions are:

3. What HCV prevention information do immigrant populations in Nova Scotia access if any?
4. Do barriers to HCV prevention differ based on gender?

1.5 PHILOSOPHICAL FRAMEWORK: THE TRANSFORMATIVE WORLD VIEW

The philosophical worldview guiding this research was the transformative worldview. Creswell and Creswell (2018) stated that a transformative worldview focuses on the needs of minority groups in society that may be marginalized or underserved, with an intent to address their concerns. It is a worldview well suited for marginalized groups, which immigrants in Nova Scotia identify as and it holds that research inquiry may need to be intertwined with policy change to confront inequities (Mertens, 2010). This approach helps to address issues such as non-empowerment, inequality and inequity faced by minority groups. This worldview was suited for the research because immigrants are a group with unique HCV prevention needs. This is an important health disparity issue to address and, therefore, the researcher was driven to undertake this research using a transformative lens to address the HCV health disparities among immigrants in Nova Scotia (Creswell & Creswell, 2018). Further, this transformative world view was specifically applied to this research through engagement with immigrants who are currently perceived to have HCV prevention needs, whereas current knowledge-based approaches to HCV prevention systematically exclude them from prevention plans. Thus, engagement with immigrants can enable them to voice their specific concerns, and eventually, help expose such unique concerns to government, healthcare providers, community organizations, with the hope that this will enable a bettered and realigned approach to HCV prevention for immigrants in Nova Scotia.

A transformative worldview allows research participants to be a part of the process of finding sustainable, efficient and relevant ways to address their unique concerns and improve their health status (Creswell & Creswell, 2018). The researcher envisioned that through a transformative approach, immigrants' perceived concerns can be used to design HCV prevention services that will help address prevention needs, HCV information, testing, counselling, and treatment in non-stigmatizing ways. This will also provide relevant HCV prevention information, that could help to self-determine HCV risk status, as well as guide relevant next steps.

1.6 REVIEW OF THE LITERATURE

As indicated by the World Health Organization [WHO], (2019), HCV can result in both acute and chronic hepatitis, with symptoms ranging in severity from a mild illness lasting a few weeks to a life-threatening illness (WHO), 2019). Individuals infected with HCV may present with symptoms such as body pain, fatigue, nausea, vomiting, loss of appetite, jaundice, fever, or dark urine (WHO, 2019). HCV can be transmitted through injection drug use involving used needles, unsafe healthcare practices including unsafe birthing practices, unscreened blood transfusions, or unprotected sexual activity with someone living with HCV (WHO, 2019).

Globally, HCV results in about 350,000 preventable deaths yearly, with an estimated 150-170 million people chronically infected worldwide (Zimmerman et al., 2011). Further, HCV is responsible for 27% of liver cirrhosis cases and 25% of hepatocellular carcinomas (the third most common cause of cancer deaths worldwide) (Yu et al., 2013; Krajden et al., 2015). A study led by Myers et al. (2012) projected that by the year 2035, cases of decompensated cirrhosis, hepatocellular carcinoma, and liver-related mortality in Canada are likely to increase significantly. The study further estimated that "annual costs associated with HCV (excluding the cost of antiviral therapies) are expected to rise from an estimated $161 million in 2013 to 258 million Canadian dollars at the peak in 2032" (p. 245). Further, The Canadian Network on Hepatitis C Blueprint Writing Committee and Working Groups (2019) and Myers et al. (2014) suggest that if urgent actions are not in place, HCV will continue to spread, and Canada will be facing increasing rates of avoidable HCV-related morbidity and mortality in the coming years, with a consequent rise in healthcare costs.

1.6.1 Priority Population for HCV Prevention Needs in Canada

Preventable and curable, HCV infection has been described as Canada's number one blood-borne pathogen, and the main cause of death from infectious diseases, as well as the primary indication for liver transplants (Bolotin et al., 2018; Canadian Liver Foundation, 2013; Greenaway et al., 2018; Shah et al., 2013).

Schanzer et al. (2014) further stated that HCV remains a significant medical and economic burden in the Canadian context. A study suggests that approximately 252,000 Canadian residents were living with HCV infection in 2013 (Myers et al., 2014). The Public Health Agency of Canada (2016) stated that in Saskatchewan, British Columbia, Yukon, Alberta, Manitoba, and Nova Scotia, the reported rates of HCV infection are 62.8, 48.5, 47.3, 39.3, 34.9, and 32.3 respectively, which are higher than the national average of 31.1 per 100,00 people. HCV disproportionately affects specific populations in Canada and immigrants have been identified to be inclusive especially those that migrate from HCV endemic countries such as Egypt, which has the highest prevalence of HCV globally (Greenaway et al., 2015; Zimmerman et al., 2011; Trubnikov et al., 2011; Guerra et al., 2012; Naghdi et al., 2017; Greenaway et al., 2018; Krajden et al., 2018; The Public Health Agency of Canada, 2018). Greenaway et al. (2015) further add that intermediate and high HCV-endemic countries by region included East Asia and Pacific, East Europe, Central Asia, Latin America, Caribbean, Middle East, North Africa and Sub-Saharan Africa. In the Canadian context, four countries have been identified as major sources of immigration: China, India, Pakistan and the Philippines, all of which have high prevalence rates for HCV (Immigration, Refugees and Citizenship Canada, 2013; Blach, 2017; Statistics Canada, 2017). Furthermore, The Canadian Network on Hepatitis C Blueprint Writing Committee and Working Groups (2019) stated that 35% of HCV infections in Canada are among immigrants, particularly those from HCV endemic countries. Similarly, Tanveer (2017), Greenaway et al. (2018) and Coppola (2019) reported that immigrants from high and intermediate HCV endemic countries are a major group at risk for HCV as they account for a disproportionate number of all HCV cases in Canada (~35%) and have approximately a twofold higher prevalence of HCV (~2%) than those born in Canada. According to Greenaway et al. (2015) and Statistics Canada

(2017), the majority of immigrants arriving in Canada over the past four decades have migrated from regions where HCV is prevalent, and their HCV risk reflects that in their country of origin. It is important to note that this does not intend to conflate immigrants with a disease (Manning, 2010); as their exposure to HCV infection is mainly due to suboptimal healthcare practices in these regions.

1.6.2 Treatment of Hepatitis C Virus Infection

It has been indicated that an antiviral medication recommended to be effective for HCV treatment is widely available (O'Hara et al., 2017). Also, Schanzer et al. (2018) further add, that over the past years, there have been remarkable achievements in HCV treatment and the infection is now curable. Pawlotsky et al. (2015) further supported this claim, stating that HCV is now considered the first chronic viral infection that can be reliably cured through pharmacotherapy, with newer antiviral medications demonstrating cure rates at nearly 100%. Finally, the global health sector strategy on viral hepatitis aims to eliminate HCV as a public health threat by 2030, and Canada supports this goal (WHO, 2016; CATIE, n.d.).

However, this treatment is not made accessible to all. McGowan and Fried (2012) and Tanveer, (2017) reported, that at the health system level, the lack of health promotion, surveillance programs and funding for HCV treatment are limitations to prevention, especially for immigrants in Canada. Thus, an increase in the uptake of testing, treatment and follow-up care for immigrants irrespective of immigration status is crucial. According to Meyer et al. (2014), innovations for HCV treatment have the potential to cure all infected patients if detected early, and studies have shown that HCV can be eliminated in the next 15-20 years if targeted strategies to test, treat and prevent transmission of infection among priority populations are implemented.

1.6.3 Approaches to Eliminate HCV Infection

The Centre for Disease Control and Prevention (CDC) in the United States recommends screening all individuals born between 1945 and 1965 (birth cohort) for HCV infection, because several studies have shown that early diagnosis of infected people will save lives and money by avoiding the cost associated with complications of liver disease (CDC, 2015). Canada also adopts this birth-cohort screening approach (Shah et al., 2013). The Canadian Taskforce on preventive health further recommended HCV screening for all individuals migrating from HCV-endemic countries (Grad et al., 2017). Regardless of these recommendations, Pottie et al. (2011) stated that there are no systematic, targeted HCV screening or health promotion programs for immigrants in Canada. Smith et al. (2012) stated that the approach to eliminating HCV infection in Canada is the "traditional approach" which screens certain groups of people with behavioural risk factors for exposure to infectious blood, such as injection drug users. This approach does help prevent transmission of the virus; however, it is not sufficient to prevent HCV among other priority populations who may have other risk factors of exposure such as (immigrant populations). Greenaway et al. (2017) noted that many immigrants from intermediate/high HCV prevalence countries will thus be missed in current 'traditional risk factor-based screening programs currently in place.

Despite these HCV elimination approaches, Smith et al. (2012) and Asselah et al. (2014) noted that most individuals living with HCV (45%-80%) remain undiagnosed and unaware of their infection until they develop liver disease because neither the 'traditional approach to HCV prevention' nor the CDC 'birth-cohort screening program' will detect HCV infection in most immigrants as they may have been infected in their countries of origin mainly through sub-optimal healthcare-acquired infection. Similarly, Hatzakis (2011) noted that up to 75–90% of

HCV-positive individuals are unaware of their infection and, as a result, they remain reservoirs for transmission of the virus. The Canadian Task Force on Preventive Health Care, (2019), has indicated that immigrants from regions with intermediate and high HCV prevalence need urgent and targeted HCV prevention engagements for a more relevant HCV prevention plan.

1.6.3 Targeted Health Promotion Strategy to Prevent HCV Infection Among Immigrant Populations

Pawlotsky et al. (2015) stated that new antiviral medications are now available, however, making sure that the treatments are targeted at individuals who are at high risk of HCV remains a challenging problem. Researchers have thus suggested that interventions should target all individuals at risk of HCV infection, and subsequently, linking them to healthcare providers (Pawlotsky et al., 2015; Ng et al., 2016; Buller-Taylor et al., 2018). Findings from one study revealed that familiarity with the risk factors for the acquisition of HCV infection, and identifying individuals who are at high risk are important steps in reducing morbidity and mortality related to Hepatitis C (Ha et al., 2016). Similarly, Ha and Timmerman (2018) stated that future HCV prevention research could explore the knowledge and awareness of HCV among groups perceived to have HCV prevention needs for elimination programs because there is a dearth of data on priority populations. Greenaway et al. (2015), Lam et al. (2015), Suijkerbuijk et al. (2018) and Lazarus et al. (2018) further agree that the implementation of a targeted HCV screening program increases early diagnosis and treatment to ultimately, reduce the burden of chronic HCV among immigrants to Nova Scotia.

Despite advances in the treatment of Chronic Hepatitis C infection (CHC), it remains a major public health problem, disproportionately affecting immigrant populations living in Canada (Naghdi et al., 2017). This is an important health inequity to address because most people infected are unaware of their infection until they develop liver cirrhosis, and more so, there is currently, no screening for HCV before arrival in Canada (The Public Health Agency of Canada, 2013; Greenaway et al. 2017). In addition, many immigrants assume they have been tested for HCV as part of the routine screening during the immigration process, or may fear the stigma, judgement and or deportation that may potentially be associated with HCV and, thus, may not be willing to access HCV prevention services (CATIE, 2016; Greenaway et al. 2018; The Canadian Network on Hepatitis C, 2019). According to Trubnikov et al. (2014), over 40% of the estimated 250,000 people living with HCV in Canada are unaware of their infection and often this lack of awareness impedes treatment uptake. Studies to address HCV infection among immigrants in Canada found that at the individual level, barriers to testing and treatment may also include inadequate information on the cause, symptoms, modes of transmission, risk factors, prevention strategies and treatment of HCV infection (Owiti et al., 2015; Greenaway et al., 2018). This inadequate knowledge may leave immigrants vulnerable to infection as they may be unaware of the steps to take to prevent and treat HCV. Published evidence also indicates that most immigrant groups hold a variety of myths about HCV infections, and this could negatively influence their willingness to participate in testing and treatment plans available (Owiti et al., 2015). Several studies noted that immigrants were not sure if they had HCV, partly because the asymptomatic latent (but still infectious) stage of HCV infection was unfamiliar to them, and because the symptoms associated with HCV infections, such as fever, nausea, and fatigue are associated with other infectious diseases (Owiti et al., 2015). Studies conducted with immigrants regarding their knowledge of HCV infection revealed that some immigrants believed there was no effective treatment for HCV and that it could be transmitted through breastfeeding, hugging, shaking hands, sharing a toothbrush, sharing utensils as well as through contaminated water and food (Horwitz et al., 2010; Hwang et al., 2012).

At the health system level, factors including overall lack of sexually transmitted blood-borne infection (STBBI) testing access in Canada also contributed to delayed diagnosis and treatment of HCV (Greenaway et al., 2018; Cooper et al., 2017; Trubnikov et al., 2011). Immigrants to Canada often encounter racism in the healthcare system and as a result, they may not be willing to utilize healthcare services or disclose their HCV risk and/or status (The Canadian Network on Hepatitis C Blueprint Writing Committee and Working Groups, 2019). Thus, HCV knowledge and attitude gaps are also linked with lower levels of relevant engagement in HCV care, which potentially contributes to HCV-related morbidity and mortality (Buller-Taylor et., 2018). Physician-level barriers to identifying and managing patients with HCV prevention needs are also a concern as most physicians are frequently unaware of, or incorrectly identify traditional risk factors for acquiring HCV amongst immigrant populations (McGowan & Fried, 2012). Language and cultural discordance between physicians and patients also lead to poor communication and low quality of healthcare (Greenway et al., 2018). Similarly, Al Shamsi (2020) noted that language barriers and a lack of interpreters in healthcare facilities often lead to miscommunication between the healthcare provider and patient, thus reducing patient satisfaction and decreasing the quality of healthcare delivery and patient safety.

According to Greenaway et al. (2015), Lam et al. (2015), Greenaway et al. (2017), Suijkerbuijk et al. (2018) and Lazarus et al. (2018), immigrants often had a delay in diagnosis of almost ten years after arrival; this thus suggests that they may have benefitted from targeted HCV screening and earlier linkage to care. Thus, to reduce the impact of HCV infection amongst immigrant populations in Nova Scotia, developing HCV prevention programs to specifically address the perceived barriers that hinder immigrants from engaging in testing and treatment of HCV infection is warranted. The main purpose of this suggested health promotion strategy was to ensure that immigrants become aware, through various relevant stakeholders such as healthcare providers of HCV infection, and ultimately, get the necessary linkage to the healthcare system if found to be living with HCV infection. Immigrants will be informed that having knowledge of HCV infection and getting tested will be beneficial to their health outcomes as well their families. To address HCV prevention among immigrants, the cause, mode of transmission, risk factors, symptoms, testing options and linkages to care and treatment needs to be made available to immigrants. Developing an HCV prevention intervention specifically based on immigrants' HCV prevention needs could help address the perceived deficiencies in knowledge and misconceptions towards HCV infection as well as address other HCV prevention barriers amongst immigrants. Of utmost importance, is ensuring that the government and healthcare providers work to provide timely, accessible and relevant HCV prevention services to immigrants as this could empower immigrant populations to gain better access to HCV prevention programs; this is essential for building relevant social connections to existing healthcare services; and as stated by Gahagan et al. (2015), an awareness of one's HCV status is considered a health priority.

This health promotion strategy draws from the strengths of past studies that successfully utilized a targeted health promotion approach to address various unmet health needs among immigrants (Ortiz et al., 2020; Chen et al., 2015). Additionally, Leggett et al. (2016) suggested that information on HCV prevention should be accessible and adapted to the unique needs of priority populations. This health promotion strategy could help address the individual and system-level barriers associated with low utilization of healthcare services, especially for those at risk of HCV infection and for people in under-served populations.

1.7 GAPS IN EXISTING KNOWLEDGE

There is currently, no health promotion program or research study that focuses on targeting the younger generation of immigrants from HCV endemic countries in Nova Scotia for HCV prevention interventions. Past studies and governmental interventions have focused mainly on injection drug users and baby boomers, whereas the younger generation of immigrants has been identified as a priority population for HCV prevention in Canada, especially those that migrate from HCV endemic regions. The uniqueness of this study is that it has utilized a collaborative engagement with younger generation immigrants from HCV endemic regions to better understand the barrier to HCV prevention to ultimately, reveal the need for the design of a culturally relevant, HCV- prevention plan that will be a novel health promotion approach to HCV prevention among Immigrants in Nova Scotia. Health promotion aims to empower people to improve and increase control over their health while focusing on the root cause of illness (WHO, 2016). Health promotion seeks to change the systems by which individual health is determined. One key aspect of health promotion is the social determinants of health framework which includes relevant access to healthcare services (Mikkonen & Raphael, 2010).

CHAPTER 2 CONCEPTUAL FRAMEWORK

2.1 THE SOCIAL-ECOLOGICAL MODEL

Health promotion theories and models have been developed to serve as a framework for effective planning, implementation as well as dissemination of health promotion interventions (Goodson, 2010; Simons-Morton et al., 2012; McKenzie et al., 2017). Such frameworks include the Theory of Planned Behaviour, Protection Motivation Theory as well as, the Health Belief Model (McKenzie, 2017). These theories often focus on individual characteristics that influence behaviour, such as knowledge, attitudes, beliefs and personality traits. These theories are useful to predict and explain individual behaviour as well as suggest how to develop efficient ways to influence and change individual behaviour (Simons-Morton et al., 2012). Additionally, they offer useful approaches to help guide interventions for health promotion. However, the historical critiques of health promotion are that health promotion has tended to focus on individual level interventions such as health education assuming giving education to an individual is necessarily going to change their health-seeking behaviour and we know changes to health behaviour is a complex array of levels of influence (Simons-Morton et al., 2012). Therefore, the researcher situated this thesis within the Social Ecological Model because, unlike micro-cognitive behavioural health promotion theories that focus solely on the individual, the researcher is focusing on the interplay between the levels of influence on HCV prevention.

To efficiently address HCV prevention gaps and design intervention strategies that will be engaging, empowering, culturally relevant and sustainable for immigrants to utilize, it is pertinent to recognize that using a systems-level approach for interventions could be more beneficial as it recognizes that human behaviour is shaped by multiple external levels of influences. (Bronfenbrenner, 1979; Simons-Morton, 2012).

The Social-Ecological Model (SEM) is grounded in the work of developmental psychologist Urie Bronfenbrenner in 1979 and has gained prominence in health promotion in the 1980s with the introduction of multi-level approaches for health promotion, which utilizes a systems approach for the development of health promotion interventions (McKenzie et al., 2017). A core focus of the SEM is that personal, interpersonal, community, organizational, cultural factors, public policy and the physical environment all influence health, and should, therefore, be accounted for when designing equitable, health promotion interventions to achieve sustainable positive health outcomes for individuals most in need of healthcare interventions (Isreal et al., 1994; McLeroy et al., 1988; Sallis et al., 2008). The SEM has seven levels of influences on human health which include: intrapersonal (individual) factors, interpersonal factors, institutional (organizational) factors, community factors, public policy factors, the physical environment and cultural level (McLeroy et al.,1988; Simons-Morton et al., 2012). These influencing factors also synchronize with Tremblay and Hall (2014), who suggests that an individual's health is influenced by a wide range of services from the community levels, organizational structures, services, and partnerships with the community as well as from governmental institutions. Furthermore, the SEM has been cited as an excellent framework for identifying the interaction of the various determinants of health, which in turn, helps program planners to design health interventions that target change at each level of influence (Sallis et al., 2008).

The SEM was used for this study to develop the research purpose, questions and to expose the various perceived multi-layered barriers and facilitators to HCV prevention among immigrants in Nova Scotia. Interestingly, the various levels of the model seem to be interconnected, highlighting the fact that for HCV prevention to be attainable, it must take into account the fact that all key players (government, healthcare providers, policymakers, community organization, immigrant service agencies) must avoid providing siloed and inequitable HCV prevention services.

2.1.1 Intrapersonal (individual) Level

Simons-Morton et al. (2012) noted that individual levels are mainly concerned with knowledge and practices that affect individual behaviour. Therefore, it is important to first identify important knowledge gaps of immigrants so that interventions can be developed to facilitate sustainable positive health outcomes. Wilkins (2011) suggested that it is important that researchers engage community partners through discussions about factors that could contribute to higher than usual rates of health issues to effectively address such concerns. Conducting a needs assessment is an essential prerequisite for health promotion intervention program planning to identify sub-populations most in need of services and determine the most acceptable and relevant ways for interventions to be offered (Eng & Blanchard, 2006).

Smith et al. (2012) noted that the majority of people living with HCV (45%-80%) are undiagnosed and unaware of their infection until it progresses to chronic liver disease; this deficient knowledge may leave immigrants vulnerable to the risk of HCV infections. It is, therefore, necessary to engage immigrants in prevention plans to help reduce the gaps in knowledge towards HCV. On the other hand, it is important to recognize that lack of knowledge in itself is not the main cause of poorer health status; as an individual's health status is largely determined by public health policies which in turn determines availability, accessibility and utilization of health services (Mikkonen & Raphael, 2010). This could invariably impart immigrants' access and utilization of HCV prevention services.

Hence, while this research is specifically aimed at exposing perceived individual barriers to HCV prevention, it also recognized that such individual barriers (lack of knowledge about HCV and HCV prevention) are largely shaped by present healthcare policies and the healthcare delivery system around HCV prevention. This level of the model allowed the researcher to examine how the individual could contribute to HCV prevention gaps while also noting external factors that influence such individual behaviour and practices, which are mostly beyond the individuals' control, for example, equitable access to HCV prevention services for immigrants.

2.1.2 Interpersonal Level

The interpersonal level focuses primarily on the influences of informal social groups that foster collective actions and could include communities of care. These networks can be somewhat formalized and include loosely knit webs of personal connections (Golden et al., 2015). The Hepatitis Outreach Society of Nova Scotia (HepNS) is a social support network service organization in Halifax that provides counselling to people who are unsure whether to get tested for HCV for fear of being stigmatized, as well as provides emotional support to people who have been diagnosed with HCV, as there is often a delay in treatment uptake due to a shortage of HCV treatment (Hepatitis Outreach Society of Nova Scotia [HepNS], 2021). The use of this level of the model allowed the researcher to examine participants’ experiences around seeking social support regarding HCV prevention, counselling and treatment. From a health promotion perspective, social support is a social determinant of health. Thus, the researcher perceived that if relevant connections to social support systems were lacking, it may be unrealistic for immigrants to build relationships with existing social support agencies for HCV prevention and care.

2.1.3 Organizational or Institutional Level

Organizations in this regard include healthcare settings where individuals receive health-related services. To meet this goal, the researcher raised research questions to help identify and understand the influence of organizational levels (healthcare) on HCV prevention. This also provided me with the opportunity to analyze the perceived role of the healthcare system in supporting and empowering immigrants to overcome the barriers they encounter on their path to HCV prevention and treatment. The healthcare system in Nova Scotia is solely managed by the Provincial government; hence, the government must play a huge role in ensuring that immigrants receive equitable access to HCV prevention and treatment services.

Most individuals at risk for, or living with HCV infection, face stigma and discrimination, which discourages them from accessing HCV prevention, testing, treatment and care, as well as other essential social services (Treloar et al., 2013; Skeer et al., 2018). For HCV prevention strategies to be effectively implemented and sustainable, it is critical for the health system to provide culturally relevant, specifically designed, non-stigmatizing healthcare services to meet immigrants at their various levels of perception of HCV infection. In addition, HCV priority populations may require tailored interventions to ensure that they have equitable and non-stigmatizing access to the best quality of HCV prevention services (The Canadian Network on Hepatitis C Blueprint Writing Committee and Working Groups, 2019). Destigmatizing HCV is essential for the successful delivery of HCV services that will reach people in under-served populations. Increasing access to HCV testing in Canada is crucial so that individuals living with HCV infection can benefit from early diagnosis and linkage to care and treatment (The Canadian Network on Hepatitis C Blueprint Writing Committee and Working Groups, 2019).

2.1.4 Community Level

The Community level of the SEM refers to social networks that exist among individuals and groups (Simons-Morton et al., 2012). Immigrant-serving community-based organizations, like the ISANS in Nova Scotia, offer facilities where health promotion programs are carried out. ISANS helps facilitate the engagement of immigrants and researchers in community-based participatory research and uses community resources and skills to strengthen program activities. This ensures that community members are viewed as equal partners in problem identification, planning and developing interventions, program evaluation and research while including systematic efforts to build capacity and empower immigrants with research skills for taking ownership of present and future interventions as well as knowledge translation. Community-based participatory research is unique, in that the emphasis is placed on equal collaboration between researchers and community members with a shared quest to address a community issue (Badiee et al., 2012).

ISANs provides settlement services to immigrants in various emerging immigrant languages, and it serves as home to most immigrants and newcomers to Nova Scotia (Immigrant Service Association of Nova Scotia [ISANS], 2021). Therefore, I perceived that identifying the influence of community agencies such as the ISANS on HCV prevention will help to determine the specific role the organization could play in ensuring that immigrants receive timely and relevant access to HCV prevention services. These community organizations can also create awareness of HCV prevention by incorporating such information in their already existing programs for immigrants and acting as brokers to connect them to relevant healthcare settings where they can get more professional HCV prevention services. Recent studies have shown that HCV prevention interventions and linkage to health care can be improved among immigrants by implementing community-based strategies that are culturally and linguistically developed in collaboration with community-based organizations and health care providers (Jafferbhoy et al., 2012). It is perceived that this could increase the awareness of HCV prevention and create access to and utilization of HCV prevention services.

2.1.5 Physical Environment

The physical environment here refers to the natural and built environment that plays a role in determining health outcomes (Simons-Morton et al., 2012). According to Waldron (2018), an individual's postal code defines their health status, as where they reside has a significant impact on their health outcomes. Immigrants' social, structural and economic determinants of health may expose them to staying in locations that may be unfavourable to their health and wellbeing. This may increase their likelihood of exposure to co-morbidities of HCV, infectious diseases and toxic chemicals. Similarly, an immigrant's physical environment may influence their exposure to racism, access to healthcare services, and the dominant language of health communication, which could impact their access to HCV prevention services. Waldron (2018) further noted that environmental health inequities refer to the unequal rates of illness and disease in areas that are situated near waste sites and other environmental hazards, and this can influence health outcomes. It has been noted that immigrants from HCV endemic regions are termed to be at higher risk for HCV infection, largely due to sub-optimal physical and environmental health practices such as reusing or inadequate sterilization of medical equipment like syringes and needles; transfusion of unscreened blood or blood products in those regions (Asselah et al., 2014). Therefore, intervention plans to prevent HCV infection ought to recognize that immigrants especially those from HCV endemic regions could have other routes of exposure to HCV from their regions of migration, as the current HCV prevention strategy in Canada has not implemented a consideration of immigrants' route of exposure to HCV, thereby excluding them from the current HCV prevention plan, which currently targets persons with behavioural risk factors (Smith et al., 2012; Greenaway et al., 2017).

Previous research has noted that immigrants are in better health when they arrive in Canada, a phenomenon described as the healthy immigrant effect, but this reduces over time (CATIE, n.d.). Simich & Jackson (2011) suggested that the decline in immigrant's health status is mainly due to factors including linguistic barriers, cultural differences, discrimination, racism and barriers to accessing and navigating the healthcare system. These challenges are in line with the claim of Waldron (2018), that your physical environment determines your health outcome. Thus, this level of influence is an important factor for the government and healthcare providers to consider and implement in other to potentially achieve the goal of eliminating HCV.

2.5.6 Cultural Level

Culture in itself is a social determinant of health as it provides a source of identity, values and resilience as well as presents specific developmental challenges and resources (Kirmayer & Jarvis, n.d.). Culture encompasses several elements that are often specific to ethnic, racial, religious, geographic, or social groups. These include personal identification, language, customs, beliefs, values; and these elements often influence beliefs and belief systems surrounding health, healing, wellness, illness, and healthcare delivery (United States Department of Health and Human Services, 2021). According to the Canadian Pediatric Society (2018), the influence of culture on health and healthcare is vast, as it determines perceptions of health and illness behaviour, ageing and death, beliefs about causes of illness, approaches to health promotion, how pain is experienced and expressed, where patients seek care, and the types of treatment patients seek. Thus, acknowledging a patient's culture could promote better healthcare delivery, lead to increased rates of acceptance of diagnoses and adherence to the treatment regimen.

Cultural relevance entails promoting health equity with the aim of reducing health care disparities as it provides a blueprint for health care providers to implement culturally appropriate healthcare services to people of diverse backgrounds (United States Department of Health and Human Services, 2021). According to WHO (2017), the best medical care in the world will remain inadequate if healthcare delivery does not align with the priorities and perceived needs of those it seeks to care for. According to Napier (2014), the systematic disregard for culture in health is the single most significant impediment to the global development of the highest level of healthcare delivery. Experiences of health and healthcare delivery are essentially influenced by the cultural backgrounds from which we make meaning. Therefore, policymakers and healthcare providers ought to critically examine their own cultures and their effects on people who may or may not share the same culture with them (WHO, 2017).

Therefore, in providing relevant HCV prevention interventions, it is necessary to consider the cultural context of immigrants as this may affect how they perceive HCV and access HCV prevention services. Immigrants have unique languages, beliefs, values, customs and resources. Thus, understanding how to work with different immigrant cultural groups through diverse immigrant culture brokers is crucial. Ginn and Kulig (2015) noted that without a proper understanding of each local community, knowledge translation modalities would likely be ineffective and irrelevant to community members, leading to missed opportunities to address health disparities and improve health. Furthermore, since immigrants experience greater barriers to accessing healthcare, it is particularly crucial to provide culturally relevant HCV prevention, care, treatment and continuing support services tailored to their unique needs (The Canadian Network on Hepatitis C Blueprint Writing Committee and Working Groups, 2019).

Although cultural safety involves respectfully acknowledging and protecting a clients' feelings in the healthcare encounter, cultural competence refers to the healthcare provider's proficiencies in guaranteeing that the client feels safe (The Association of Faculties of Medicine of Canada, 2021; National Aboriginal Health Organization, 2015). However, this study specifically focused on cultural relevance and explored how we could design culturally relevant HCV prevention services for immigrants in Nova Scotia as this is crucial to reducing health disparities and improving access to high-quality health care that is respectful of and responsive to the HCV prevention needs of immigrants. As noted by Greenaway et al. (2018), implementing culturally relevant HCV prevention plans for immigrants will not only benefit this population but will be key to eliminating HCV in Canada.

From a health promotion point of view, the researcher envisaged that when culturally relevant HCV prevention services are developed and implemented as a framework, it could enable systems, agencies, and the healthcare team to function effectively to understand and design services to meet the unique needs of immigrants accessing health information and healthcare around HCV prevention. From personal experiences and from the review of previous literature on providing healthcare to immigrants, the researcher recognizes the existing challenge of providing healthcare to a growing number of diverse racial and ethnic communities and linguistic groups of immigrants, each with its cultural traits and health challenges. Thus, the researcher recognized the need to apply this research in such a way as potentially improve health outcomes for immigrants to reduce the HCV disparities. According to the Canadian Medical Protective Association (2014), as in any evaluation of quality healthcare delivery, immigrants ought to decide whether healthcare services they receive are culturally safe relevant. This led to an engagement with a diverse sample of immigrants to explore culturally relevant ways of providing and ensuring access to HCV prevention services in various healthcare delivery systems for immigrants in Nova Scotia. The researcher adopted a culturally relevant approach to recruiting participants from the ISANS for this study.

2.5.7 Public Health Policy

This macro-level of influence recognizes the impact of governmental policies and regulations on health (Langille & Rodgers, 2010) at the municipal, provincial or federal level and can regulate or support individual behaviour and practices. It has been noted that the quality of an individual's health is largely influenced by decisions that the government makes in a range of diverse public health policy domains (Mikkonen & Raphael, 2010). As stated earlier, HCV testing is not currently part of routine immigration medical testing in Canada, despite the fact that immigrants are a priority population with HCV concerns (Public Health Ontario, 2014). Adding to the delay of diagnosis and treatment uptake is the fact, that many healthcare providers may be unaware that immigrants are a group to target for HCV testing during clinic visits (The Canadian Network on Hepatitis C, 2019). This goes alongside the shortage of HCV treatment specialists in Canada (Myers et al., 2012).

Also, cultural, social and language barriers, racism, trauma, immigration status and perceived fear of deportation if they tested positive for HCV; may prevent immigrants' access to health information and services or disclose their HCV status (The Canadian Network on Hepatitis C, 2019). This creates a system-level barrier to HCV prevention for immigrants.

The researcher, therefore, intended to identify the perceived influence of public policy on the prevention of HCV among immigrants in Nova Scotia among others to determine what gaps exist. This could help to address barriers to HCV prevention that stem from present public health policies.

CHAPTER 3 METHODOLOGY

Given the dearth of data on the issue of HCV and immigrant populations in Nova Scotia, this study used an exploratory qualitative research design to understand why these populations remain overlooked. According to Pathak et al. (2013), qualitative research is a method of research inquiry that focuses on identifying and understanding people's views, experiences, attitudes, behaviour and interactions as it enhances the involvement of everyone in the research study. Participants in a qualitative study can have an empowering experience in the study as they can express their beliefs and opinions about the research question. Qualitative research studies social or human phenomena in natural settings and involves subjective interpretation of observed data (Creswell, 2013). The exploration of culturally relevant ways of conceptualizing paradigms that are grounded in the social experiences of study participants was critical for this research.

3.1 RESEARCH METHODOLOGY

The research methodology used for this study is the narrative methodology. According to Creswell (2013), narrative research entails gathering stories from individuals and creating meaning from these stories through collaboration between the researcher and research participant; further noting that people make sense of the world through creating narratives of their experiences of the world. According to Savin-Baden and Major (2013), narratives from a research study are co-created between the researcher and the study participants, as a way of describing and presenting meanings participants make of their knowledge and experiences relating to the study.

A narrative methodology was ideal for this study as it aligned with how participants were engaged in the study, which enabled the participants to express their stories around HCV prevention in Nova Scotia thus, helping to answer the research questions raised. This methodology was also used as a data-gathering tool as research participants saw their engagement in the interview as a way of speaking for themselves and other immigrants regarding HCV prevention. Narrative methodology is ideally situated to help unravel stories of immigrants around HCV prevention, as told by immigrants in their own words and worlds. In the context of health promotion, a narrative methodology was well suited for this research as it empowered the participants to make sense of their well-being in their social context as they understand and experience it, particularly their stories around barriers, relevance and access to HCV prevention services.

3.2 RESEARCH SETTING

All participants involved in the study are registered clients of the ISANS. ISANS supports immigrants by creating a welcoming environment that facilitates intercultural opportunities for immigrants to attain their potential even though they are not in their place of origin. The Immigrant Services Association of Nova Scotia was created in 2009 by the merger of the Metropolitan Immigrant Settlement Association (MISA) and Halifax Immigrant Learning Centre (HILC) with over fifty years of serving immigrants in Nova Scotia. ISANS is the largest immigrant-serving agency in Atlantic Canada with over 270 staff members from more than 64 countries and serving over 9,000 plus clients annually in 104 communities across Nova Scotia. They offer inclusive services respectful of, and sensitive to, diversity while providing services to immigrants, youths, young adults, seniors, 2SLGTBQI+, persons with disabilities, women and children in the areas of language, employment, settlement, education, health, business and community integration. They use a client-centred, trauma-informed approach to ensure that services and programs meet each immigrant unique needs (ISANS, 2021).

3.3 SAMPLE SIZE

The total number of participants intended for this study was sixteen. Greenaway et al., (2015), Owiti, (2015) and The Canadian Task Force on Preventive Health Care, (2019) indicated that immigrants from the eight regions with intermediate and high HCV prevalence need urgent and targeted HCV prevention engagements. Thus, the researcher intended to engage two immigrants each from the eight regions listed for the study in other to have a representation of participants from each region.

However, as data analysis began the researcher noticed that most of the participants were presenting similar views on the research questions. In consultation with the research supervisor, it was agreed to end recruitment with ten participants.

3.3.1 Sample Inclusion Criteria

The inclusion criteria for selecting participants that were eligible to participate in the study to broaden the scope of the research included the following:

1. Immigrants in Nova Scotia who have Permanent Residency status in Canada. This group was chosen because other immigrant groups who have temporary immigration status are not entitled to healthcare benefits and do not benefit from HCV prevention programs currently in place (Gushulak et al., 2011; Greenway et al., 2018). Immigrants on temporary status include visitors, international students, refugee claimants and those on work visas.

2. Immigrants in Nova Scotia who migrated from regions with intermediate or high HCV prevalence. Specifically, this will include immigrants from East Asia and Pacific, East Europe, Central Asia, Latin America, Caribbean, Middle East, North Africa or Sub-Saharan Africa.

3. Immigrants who have lived in Nova Scotia for three years or less were eligible to participate. This criterion exposed the gaps in late engagement with immigrants in healthcare.

4. Immigrants within the age range of 21-50 were involved in the study. According to Statistics Canada (2019), the highest age range of immigrants in Nova Scotia falls within this age category.

5. Immigrants irrespective of their gender identity.

6. Immigrants who are registered in the upper level of the English Language program of the Immigrant Service Association of Nova Scotia (ISANS). The researcher had a prior discussion with the ISANS, and they suggested working with participants who are already in the upper level of their English language program to avoid the communication barrier. Also, considering the high cost involved in recruiting a translator for each participant who could not express themselves in English, the study focused on participants who can speak and understand English.

7. Immigrants who are registered with the ISANS who speak and understand English.

As the focus of this study was to explore the barriers and facilitators to HCV prevention for all immigrants in Nova Scotia irrespective of their past and current HCV status, the researcher did not ask the participants to disclose their HCV status, especially because this was perceived to be a sensitive question to ask a seemingly vulnerable group. Also, the researcher did not recruit participants based on their HCV status.

3.3 2 Exclusion Criteria

Immigrants who were not between the age range of 21 and 50 and had lived in Nova Scotia for more than three years were excluded from the study. Also, immigrants who do not have a

Permanent Resident status were also excluded. Participants not registered with the ISANS and those who were known to the researcher were excluded from the study.

3.4 PARTICIPANT RECRUITMENT

This research study used a purposeful sampling technique to recruit participants. Purposive sampling entails identifying and recruiting research participants who are particularly knowledgeable about or have firsthand experience with a phenomenon of interest (Cresswell & Plano Clark, 2011).

The researcher obtained permission and cooperation from the ISANS to engage immigrants registered with the agency for the study. The agency permitted the researcher to engage in the proposed study with the volunteer participants, and all participants were recruited from the ISANS. The coordinator of the ISANS online English language program assisted with the recruitment by announcing it during the start of the online English class to the students in the Upper Level of the English language program. The coordinator used the electronic copy of the research poster to announce the research; this was done three times in the online class.

As recruitment of participants began, it became difficult as only a few individuals indicated an interest in the study. The researcher then secured ethics approval to expand the scope of the study to include recruitment from the agency's website, Twitter, Instagram and Facebook pages. The ISANS communications team assisted the researcher to display the recruitment poster on the ISANS website, Twitter, Instagram and Facebook page to recruit participants. Participants who considered themselves to be eligible to participate in the study based on the inclusion and exclusion criteria and who are interested in participating in the study were required to reach out to the researcher via email to indicate their interest in the study and to confirm a date and time for the interview.

3.5 DATA COLLECTION

The researcher utilized an open-ended, in-depth interview with immigrants in Nova Scotia to enable participants to narrate their perception and experiences of HCV prevention as well as the relevance of existing prevention programs to note gaps in current programming. According to DeJonckheere and Vaughn (2019), interviews are mostly used in qualitative research and typically consist of a discussion between researcher and participant, guided by a flexible interview protocol and supplemented by follow-up questions. The method allows the researcher to collect open-ended data, to explore participant thoughts, feelings and beliefs about a particular topic.

Eligible participants were invited to engage in a voluntary one-on-one, online interview conducted using Zoom rather than in person due to the current COVID-19 pandemic restriction.

3.6 ETHICAL CONSIDERATIONS

Ethics approval for this study was obtained through the Dalhousie University Health Sciences Research Ethics Board.

As participants were asked to share their personal and often challenging experiences, the researcher was aware of the obligation to manage and mitigate ethical issues that may have arisen. These ethical considerations include privacy, confidentiality, and potential harms and benefits to the participants.

3.6.1 Informed Consent

Before commencing the interview, each participant was informed that responses to the questions were voluntary, and they could stop the interview at any time without any consequences. The potential harms of this study included discussing a sensitive topic with a vulnerable population. The participants were informed that there were no anticipated direct personal benefits of participating in the study. However, it is hoped that the study will contribute to improving HCV prevention among immigrants in Nova Scotia.

After the researcher explained the informed consent and answered questions the participants had, they were required to orally consent to participate in the research. The participants were asked to verbally respond to a short demographic survey question that included their age, gender identity, number of years living in Nova Scotia, educational attainment, and marital status. The interviews lasted approximately 45-60 minutes. The researcher asked seven open-ended interview questions to provide a more flexible and narrative research process. Additionally, follow-up questions were asked by the researcher as the interview progressed. The interviews were audio-recorded with permission from the participants and were transcribed verbatim and the transcripts were checked for accuracy against the original recordings in advance of the data analysis process.

Before the interview, an email was sent to the participants which contained a Zoom link to join the online interview. It also contained information that consent to participate in the study will be obtained orally. Informed- oral consent was obtained on the selected date of the interview. Oral consent was obtained as the researcher perceived that it may be time-consuming for the participant to read through and fully understand the lengthy consent form. The researcher read out details in the consent form to eligible participants and they orally consented with either a yes or no before proceeding with the interview. Participants were encouraged to ask questions at any point during the recruitment and study process.

3.6.2 Anonymity

During the screening process, all participants were informed to choose a pseudonym for the study. They were required to join the online interview with a pseudonym. It was made clear in the informed consent form that all data would be de-identified and that the pseudonyms would be used to present and share the results of the study.

3.6.3 Privacy and Confidentiality

The study participants were de-identified during the transcribing of the interview data. The researcher disabled their Zoom video before joining the discussion and assured the participants that information from the study would be kept strictly confidential or would be shared with their pseudonyms, depending on each participant's consent.

The computer that was used for this research is owned by the researcher, who was responsible for its safe care and storage. The computer was encrypted, and all files were password protected. The interviews were audio-recorded using voice memos for iPhone and were transferred to the researcher’s encrypted and password-protected laptop using a cable and after which the audio recording was permanently deleted immediately from the iPhone. The researcher ensured that the device used to record the interviews did not automatically sync to the cloud. Transcripts were stored on the encrypted, password-protected laptop. The researcher transcribed all the de-identified data and saved the master list information on Dalhousie OneDrive.

3.6.4 Compensation

Participants were sent a link to a $25 Presidents Choice (PC) eGift card via email, to thank them for their time. Participants were informed that if they opted out of the study, they would still receive the gift card as compensation for their involvement.

3.7 QUALITATIVE DATA ANALYSIS

Interview transcripts of participants were analyzed using thematic narrative analysis.

Thematic Narrative Analysis

To conduct a complete analysis of the data, the study drew from the SEM to guide the thematic narrative analysis of the experiences of participants of the study. The use of thematic narrative analysis along with SEM allowed the researcher to capture and organize the data into patterns that provided meaning and answered the research questions. The analysis began by organizing unstructured text and audio. The organization and preparation of the interview data began with transcribing the participants' responses immediately after collecting the data. Once the recordings were transcribed, each transcript was imported into the NVivo qualitative data management software as a rich text file (Woolf & Silver, 2018).

The researcher started the narrative thematic analysis with the familiarization of interview transcripts, to identify, analyze and present patterns (themes) occurring from participants' responses to interview questions (Braun & Clarke, 2006). Using the Narrative thematic analysis, the researcher began to analyze the data, reading, making notes and began to assign- codes. These codes helped to identify themes emerging from the transcript (Braun & Clarke, 2006). The coding entailed re-reading the transcripts and identifying recurring words. The researcher re-read the participants' narratives and highlighted, within each narrative, important ideas and any recurring words. Then the researcher developed a corresponding code, a shorthand designation to easily identify the recurring words.

Thematic narrative analysis was well suited for this study as it helped the researcher to develop a more robust and nuanced understanding of how participants, through a narration of their experiences make meanings about HCV prevention for immigrants in Nova Scotia.

Themes were extracted from the coded participants' responses based on the frequency and context of the responses across the interviews (Creswell & Creswell, 2018). Themes were identified based on the research topic, questions and participants' comments in the interview to make the most out of the findings in ways that can be meaningful and rewarding to participants and the researcher. After the initial set of themes was developed, the transcripts and initial analyses were reviewed to validate the themes with the data. This occurred throughout the analysis phase of this study.

Some qualitative researchers utilize member checking which entails asking participants to confirm that the interpretation of the findings is accurate (Creswell & Poth, 2018). However, for this study, member checking was not employed because the researcher perceived that going back to the participants after the study creates an additional burden on the participants. Since this study was asking participants to discuss an issue perceived to be sensitive, it was judged that asking the participants to return for member checking was inappropriate.

3.8 RESEARCHERS’ POSITION

To begin, it is important to locate me as a researcher. I am currently a graduate student in the Master of Arts in Health Promotion program at Dalhousie University. I am an immigrant registered as a client with the Immigrant Service Association of Nova Scotia (ISANS) and I have utilized their settlement services. During this time, I had the opportunity to identify and speak with immigrants about their experiences accessing healthcare services in Nova Scotia. These conversations and experiences shaped my thoughts and beliefs about immigrants' access to healthcare services. As an immigrant, I can relate, at a personal level, to the inequitable access to health services these populations experience.

Based on personal experiences of accessing healthcare services, particularly around HCV prevention services, I have knowledge and experiences that can not be separated from the research I have conducted. Based on my experiences and knowledge, I believe that my worldview is a transformative worldview as it focuses on the needs of marginalized groups in society that may be under-served to address their concerns (Creswell & Creswell, 2018).

The reliability of this study was twofold; the researcher built relevant connections with the study participants and fostered trust because of their shared immigration status. The researcher recognized that they had to monitor their subjectivity as this is a study of "immigrant" experiences and although they may be similar experiences, there was a likelihood that differences existed. Therefore, a conscious effort was made to assure the study participants that they had a safe space to freely and confidentially offer their stories and experiences focused on HCV prevention in Nova Scotia.

3.9 KNOWLEDGE TRANSFER, SHARING AND MOBILIZATION

The findings of this study will be shared with participants in a short report format, with organizations serving immigrants through an infographic, and with academic audiences in the form of conference presentations and publications.

3.9.1 Immigrants

A short summary report of the research outcome will be shared with the participants through the immigrant service agency’s website, Twitter, Instagram and Facebook page as well as in the ISANS English Language class.

3.9.2 Immigrants Serving Agency

ISANS will receive an email with a lay summary report on the study's key findings. ISANS will be responsible for sharing the results with the participants by posting the results on the ISANS website and social media platforms. It is hoped that through this avenue, the results of the study will be disseminated to healthcare planners, providers as well as policy and decision-makers and the government to help develop more effective HCV prevention services for immigrants in Nova Scotia.

3.9.3 Academic Audience

Findings from the study will be published in relevant and accessible health promotion journals such as the Journal of Immigrant and Minority Health. The research findings will also be presented at relevant health promotion seminars, webinars and conferences like the Dalhousie Crossroads Interdisciplinary Health Research Conference. This could help raise further awareness on HCV prevention and help to spur more research to be done that could help improve immigrants’ general health and wellbeing.

CHAPTER 4 RESULTS

This qualitative health promotion thesis was undertaken to help realign current knowledge-based approaches to HCV prevention to better meet the unique needs of immigrants in Nova Scotia, Canada. This chapter focuses on the participants’ narratives of the research findings. For this study, the researcher used thematic narrative analysis to code the data and identify the emergent themes of the study. The researcher completed interviews with each participant to focus on their lived experiences around HCV prevention in Nova Scotia and analyzed the data through the SEM and the research questions.

4.1 PARTICIPANTS CHARACTERISTICS

Of the ten participants recruited for the study, six were females, three were males, and one was transgender. In terms of the age range, five of the participants indicated that they were between the age range of 31 to 40 years; four participants revealed that they were between the age range of 41-50 years, while one of the participants disclosed an age range of 21-30 years. In terms of educational qualifications, two of the participants stated that they were college graduates; five indicated that they had a bachelors’ degree and three of the participants were masters’ degree graduates. As per the duration of years living in Nova Scotia, seven participants indicated that they have spent about two to three years, two participants disclosed that they have spent about one to two years and one of the participants stated that they have spent about one year in Nova Scotia. In terms of participants' marital status, seven of the participants indicated they are married, two stated that they are single and one of the participants indicated being divorced. The participants' demographic table (table 2) will be included in the list of appendices.

4.2 THEMATIC NARRATIVES

This section provides a narrative of the themes that emerged from the analysis of data to answer the research questions. The themes were grouped into two overarching themes and sub-themes.

After each interview, participants' audio-recorded responses were transcribed verbatim. Using thematic narrative analysis, major themes were identified based on the content of the discussions held by each participant during the interview. A series of themes emerged regarding the participants' experience in assessing HCV prevention services; perceived barriers to getting tested and treated for HCV among immigrants; whether barriers to HCV prevention differ for different genders; strategies that could be utilized to effectively address the HCV testing and treatment needs of immigrants in a non-stigmatizing way; the HCV prevention information immigrant populations in Nova Scotia accessed and the HCV prevention information that could be culturally relevant for immigrants in Nova Scotia.

Given this, participants' narratives of the overarching themes and subthemes identified using their pseudonyms are presented as follows.

4.3 OVERARCHING THEME: BARRIERS TO HCV PREVENTION

Various sub-themes emerged from the participants' views on barriers to HCV prevention among immigrants in Nova Scotia. Some of the barriers are outlined in the following sub-themes:

4.3.1 Lack of Awareness of HCV Prevention

A common perception expressed among participants was a lack of awareness of HCV prevention among immigrants. Participants believed most immigrants lack the necessary information on

HCV prevention in Canada. Some participants' narratives with respect to lack of awareness as a barrier are “People do not know where to go or what to do about the virus; I don't know where to go if I am going to get tested; I don't know the procedure; do I go to my general practitioner?’’ (AB). “I think I would say ignorance on the part of the immigrants because I think a lot of immigrants don't know about HCV, and if they don't know, they will not access prevention services” (Boom). Zizi stated, "there is lack of awareness, immigrants are not aware that HCV prevention is an important issue to discuss. Unlike other common infections like HIV, most people, not just immigrants, do not have information on HCV and how to prevent it” (Zizi).

The majority of the participants disclosed that they had not heard of any HCV prevention services in Nova Scotia. This is exemplified in a quote from participant 14, “no one told me anything about HCV since I landed in Canada and before the immigration process into Canada, I did some tests during my immigration processing, and I feel HCV testing was a part of it” (14).

In the study, only a few participants indicated that they were aware of HCV prevention services. They did, indicate, however, that they did not receive the information from any organization or media in Nova Scotia. One of the participants stated that “I know people who have either sourced information online or gone to their doctor's office to ask for information and were directed to the lab to have HCV test done based on their complaints," (Elizabeth). Another participant with an awareness of HCV prevention service stated that “In my home country there is good information about HCV or any disease, but in Nova Scotia, we have to source health information by ourselves” (Snowy). Snowy went on to explain that the reason why she has not yet accessed HCV prevention services was that she had just got her health insurance card, and she did not need to access HCV prevention services.

Furthermore, AB raised a concern that “if you ask twenty immigrants about HCV, you won’t get up to five people that know about it; because the information is not out there, as, the government is not taking it seriously, if it is not killing thousands of people, it is not taken seriously” (AB). Meanwhile, Boom revealed that “it was through this present study that I heard about HCV prevention for the first time”.

Only one participant (AJ) revealed that she knew about an HCV testing center in the province. She mentioned that there is one clinic that deals with HCV testing, like the Dalhousie Family Clinic in Mumford. She stated that as an immigrant or refugee, you can go there to get some information as there is no barrier there because there is somebody who will speak Arabic, French, or any other language. She further noted that there is also a language line where people can call to get information about anything. She disclosed that there are also 811 phone lines immigrants can call to ask for information just like there are lines for COVID-19. AJ went further to state that “though HCV information is available, most people are not aware of it and so do not access it”. However, she mentioned that “for COVID-19 everyone has an idea of how to reach out. The number to call is 811, because there is awareness, but for HCV, no awareness has been made”. She mentioned that “there is information about diabetes, cancer, hypertension, HIV but not so much for HCV”. AJ narrated a personal story of how embarrassed she was when she visited the blood bank with the hope of donating blood. “When I went to the blood bank, I was told that because I was from a certain region, I could not donate blood. I had no idea until about this. Hence, there is a need for awareness on HCV prevention”.

Though most participants revealed that they have not heard about HCV prevention services in Nova Scotia, few of the participants indicated that they have heard of HCV as a serious illness. One participant, for example, stated that “I know someone who works in a drop-in center where people who use injection drugs go, and some of them may have HCV because they may be reusing needles, thus it is a second-degree experience" (AB). Other participants' narratives indicating some level of awareness about HCV include "I had my HCV vaccination back home" (Boom). "I know it's one of those diseases that affect the liver because I have a health background. Most people are only aware of Hepatitis B. If you mention HEP C or HCV, most people will ask you what that is" (AK).

From these narratives, it can be perceived that the participants are not adequately informed about HCV, as (Boom) for instance mentioned that she got vaccinated for HCV and participant (14) stated that "I believe HCV testing is part of the tests I did during my immigration process". There is currently no vaccine available for HCV prevention and HCV testing is not included in the routine testing during the immigration process to Canada.

Some of the participants blamed the poor awareness of HCV prevention on healthcare providers. They expressed this while stating that they have never heard anything about HCV from any healthcare provider. "I believe there is a lack of awareness on the part of healthcare providers that HCV prevention is worth discussing with immigrants. When you get a family doctor, they give you a form to go for bloodwork. However, they do not check the box for HCV testing" (Boom). Furthermore, a participant disclosed that "I recently got a family doctor, before your study, and she gave us a form to do some bloodwork, HCV testing wasn't included, although Hepatitis B was included. Maybe this means that HCV is not as serious as you think" (Tee).

"When I saw your study, I was curious as to why you chose to focus on immigrants. I searched Google and discovered that immigrants are at risk for HCV in Canada, especially those that come from countries with high HCV cases. HCV is still a deadly infection, yet the government and healthcare providers do not think it is worth discussing with immigrants! this is quite sad.

Your study made me request HCV testing from my new family physician, but he mentioned that it was not necessary. I, however, insisted and he included it. This, therefore, reveals that healthcare providers may not be aware that they need to discuss HCV with their patients who are immigrants" (Zizi).

Regarding suggestions about creating awareness on HCV prevention, AJ indicated that more awareness should be done to make people know about HCV in the province, especially among the immigrants to let them know that they are not alone if they test positive for the virus or any other ailment. Furthermore, Tee noted that "when immigrants come in, they are not conscious of their health, their thoughts are centred around how to survive, so, they must be very well informed before they can get conscious about their health".

4.3.2 Lack of Access to Testing Centres

As indicated by several participants, HCV prevention services are not accessible to immigrants. They indicated that lack of access to HCV information and prevention services is a major factor influencing HCV prevention among immigrants. For instance, a participant, AJ, asserted that "If you do not have information on HCV then, you will not see the need to go for testing, so, lack of access to information is a very big factor" (AJ). The participant (AB) stated that "there is no easy access to HCV testing centres, further stating that she got the phone number to call for HCV counselling and support from the researcher when she was reading information on the consent form". Zizi noted that "I do not know about any testing centre and if there were a shortage of testing centers, everyone would have to queue up in the same place; and who wants to do that to get tested for HCV! definitely nobody."

4.3.3 Language Barrier

Discussions from all the study participants revealed that language is perceived to be a barrier that could affect access to HCV prevention services. For example, participants Snowy stated that "language is a barrier because I believe communication is essential, and most people who come in as immigrants from different countries are not well-versed in expressing themselves in English, which is the only language of health communication in Nova Scotia".

4.3.4 Stigmatization

Some participants also asserted that individuals who test positive for HCV may face stigmatization. Given this, some participants stated that "because HCV is a sexually transmitted disease, there might be an issue of stigmatization. Nobody wants to be the one that will be pointed out for having a particular disease just like in the case of HIV" (AJ). "People don't want to be labelled as having HCV…, so this might affect an immigrant's willingness to know their HCV status or seek healthcare" (AK). Zizi further agreed that "stigma is associated with HCV as no one wants to be associated with an HCV positive person, so, this can make people prefer not to know their HCV status to avoid the shame of stigmatization'' (Zizi).

4.3.5 Immigrant Priority

Based on findings from this study, some participants indicated that they need to satisfy other pressing needs as new immigrants in Canada. As stated by 14, "a major issue for new immigrants is the ability to settle in and secure a job; while the last item on an immigrant's scale of preference will be to get tested for HCV, this will not be on the list" (14). Also, a participant (Tee) further stated that "immigrants are more focused on things other than their health because they need to work hard to survive and it is when they fall sick, that they go to the clinic".

4.3.6 Concern About Immigration Status

A few participants mentioned that immigrants worry about disclosing their health status as they felt it could prevent them from obtaining permanent immigration status. A participant opined that "international students fear about losing their immigration status, especially those planning to become Permanent Residents, they might just keep their cool if the symptoms are not severe instead of getting tested and losing the chance of getting permanent residency status" (14). Furthermore more, participant 14 stated that "if an immigrant tests positive for HCV, who knows, this could impact their immigration status. You know we are not fully Canadians yet; this is my opinion though". Meanwhile, Zizi stated that "because they are immigrants if they test positive for HCV, there is the fear that they may be denied access to free treatment, and this may mean leaving the country to seek healthcare" (Zizi).

4.3.7 Financial Constraints

Few participants stated that the financial burden of testing for HCV, if any, may be a perceived barrier to accessing testing and treatment services. For instance, a participant stated that "finance may be a problem if immigrants have to pay out of pocket for HCV testing and treatment as most immigrants are finding it difficult to settle; anything that would add to their cost of living may not be welcomed" (AK). Vera revealed that "finance is the major issue for immigrants. Thus, if health care is easily accessible, immigrants know where to assess it, how to assess it, and if it is offered free of charge, then immigrants will be encouraged to access and utilize such services".

4.3.8 Lack of Access to A Family Physician

Some participants disclosed that the lack of access to a family physician was a major barrier for an immigrant to get tested and treated for HCV. They noted that there will be no one available to discuss HCV prevention with them if they do not have a family doctor. They further asserted that the lack of family physicians is because of the general shortage of physicians in Nova Scotia and the long waitlists to get a family doctor. As an illustrative quote, Vera mentioned that “it’s difficult for immigrants to be assigned to a doctor. Hence, if immigrants can be allocated to a family doctor as soon as they arrive and if these doctors could also create awareness of hepatitis C, it would be helpful”.

4.3.9 Gender-based barrier to HCV Prevention

Gender barriers to HCV prevention were raised by a number of participants although some participants stated that an individual’s gender did not influence access to HCV prevention among immigrants in Nova Scotia. Some statements in line with this sub-theme are: “I do not think HCV is peculiar to a specific gender. HCV can affect all genders; there are no restrictions in terms of gender” (Elizabeth). Vera asserted that “I feel HCV prevention is a personal thing depending on an individual’s level of determination and tolerance; that is, it depends on how well you think you can manage yourself when you are feeling unwell” (Vera).

However, during follow-up questions to further explore this issue, the participants revealed that females are generally more concerned about their health. The majority of the participants perceived that a female shows more concern for their health than their male counterparts. Given this, Tee mentioned that “females are more self-aware and cautious of their health; therefore, they may access the HCV prevention services more”.

AB further argued that “an average man will not want their family to see them in agony, so, they bottle things up because they still want to be strong for their family; if they expressed how, they felt health-wise, it’s perceived as weakness”. Additionally, AJ stated that "most males do not want to see a doctor and do not want to know their HCV status or that they have any illness, but females are interested in getting information, keener to also embrace health information given to them". AJ further asserted that "unless a male-gendered person is dying before they agree to go see the doctor, whereas if a female has a headache, she will want to see the doctor".

Hence, a few of the participants suggested that there should be more targeted approaches to reaching out to the males. This was indicated as they felt males were silent about their health. Thus, preference should be given to males when designing health programs. Similarly, 14 stated that "if men understood what HCV is about, they would not continue to be silent because they feel the more, they keep silent, the more harm they will do to themselves and their families".

Some participants mentioned that the gender of the health care provider could influence an immigrant's willingness to access HCV prevention services. This was highlighted by AJ who stated that "immigrants might not be comfortable to discuss issues relating to an STI with a differently gendered person. She feels that if she meets a differently gendered healthcare provider, she might not be open to expressing her concern around HCV prevention". This claim was further supported by Zizi who noted that "the gender of the healthcare provider may also determine how willing a particular gender will be in discussing a sexual health topic like HCV".

Both AJ and Zizi perceive that gender inequality is an issue for HCV prevention. Zizi mentioned that "gender inequality is seen as an issue for HCV prevention because if a female is HCV positive, people will think that she is irresponsible as HCV is considered to be sexually transmitted rather than spread in other ways such as injection drug use". AJ further asserted that "testing for HCV might seem awkward for an unmarried female because if a female is unmarried, testing positive for HCV, just like in the case of HIV, makes them feel a sense of irresponsibility, this could also impart HCV testing".

4.4 OVERARCHING THEME 2: CULTURALLY RELEVANT STRATEGIES TO ADDRESS THE HCV PREVENTION NEEDS OF IMMIGRANTS IN NON-STIGMATIZING WAYS

Various sub-themes emerged from the participants' views on how to effectively address the HCV prevention needs of immigrants in a non-stigmatizing way. Some of the strategies are outlined in the following sub-themes:

4.4.1 Training Immigrant Health Educators, Counsellors, and Community Leaders

Few participants asserted that training immigrant health educators is an adequate strategy in addressing HCV testing and treatment needs of immigrants in a non-stigmatizing way. This assertion was observed in AJ’s statement when she opined that “one way to make immigrants feel a sense of belonging is by training immigrant health educators on HCV prevention so that they can pass it to their fellow immigrants in the manner they can understand; such information is usually adhered to.” Some participants noted that various issues affecting immigrants are discussed in their association meetings and if information regarding HCV is disseminated during the meeting, immigrants can easily relate to this information and can easily receive and understand it as a group member familiar with the issue can explain it to them in ways they can easily understand and accept. Furthermore, Elizabeth stated that “training group leaders in various immigrant groups to explain HCV preventive measures and ways of accessing treatment services for those who are HCV positive, may make them not feel stigmatized as they would feel that they are well catered for”.

Snowy suggested that “there is a need to sensitize people in various immigrant groups to be aware of the virus and things that can be done to prevent it and encourage people to get tested and treated if they are already infected". However, Snowy noted that because she does not have a lot of people from her cultural community in the province, there is no community group in Nova Scotia that she can belong to, hence, everything about immigrants' welfare she gets from the ISANS. She felt that information from ISANS was very helpful and noted that "ISANS can also give information about HCV prevention in my first language so that I can read about it and understand it" (Snowy, female).

4.4.2 Involve Immigrant Community Organizations in Raising Awareness of HCV Prevention

Most of the participants suggested that one of the best ways of increasing the awareness of immigrants towards HCV prevention is by involving immigrant servicing agencies such as ISAN, YWCA and the YMCA to be part of creating awareness of HCV prevention for immigrants. As indicated by AK, "ISANS is the first point of contact for immigrants to get various information on settling services in Nova Scotia; thus, incorporating HCV prevention information in this agency will enable immigrants to be informed about HCV prevention and treatment on arrival".

Another key reason for incorporating immigrant community agencies in HCV prevention was expressed by Snowy's in her story;

"ISANS is a blessing to a lot of immigrants; as a new immigrant, I was told that if I needed any information, I should go to the ISANS, and I will get the help I require. Language is not a barrier there, my race is not a barrier there, nothing is a barrier there because there is a mix of people working there. Being a part of ISANS made me feel comfortable and I will therefore suggest that they put information on HCV prevention there to make it culturally relevant for all immigrants" (Snowy, female).

Furthermore, it was stated that “Incorporating HCV information in ISANS will enable the information to be readily available and culturally relevant without stigmatization as it gives immigrants a sense of belonging because the information comes from the agency in charge of providing immigrant support services” (14). This assertion was further supported by Zizi who stated that “Immigrants will most likely accept any information from ISANS because they feel the agency wants the best for them”. Zizi also suggested that “ISANS should put HCV prevention information in their program for newcomers and that they could help speak to the government to investigate the issue since it affects immigrants”.

4.4.3 Immigrant Languages

Some of the participants revealed that the language used in health promotion communication is key to enabling immigrants to understand and act accordingly. Given this, AJ suggested the need to pass HCV prevention information to immigrants in a language that they can understand. AB further stated that “HCV prevention information can be translated into some other major languages like Spanish, Bahasa Indonesia, Mandarin, Arabic or French”.

Some of the participants in the study, especially those with non-English speaking backgrounds, suggested the need to translate HCV information into other languages to ensure proper dissemination and relevance. Given this, Vera suggested that HCV information should be in the immigrant’s first language as it will enable them to understand and accept it better than when it is given to them in a language they are trying to learn. This was also corroborated by AK who disclosed that “they find it a bit difficult to communicate freely in the clinic because English is not their first language, hence the need to translate HCV prevention information into their first language”.

4.4.4 Making HCV Testing Part of Routine Screening

Half of the participants in this study suggested that the government should include HCV testing as part of the routine screening for everyone in Canada irrespective of immigration status. Some of the participants in support of routine screening for HCV stated that the rationale for this routine screening is to reduce the stigma associated with making it mandatory for only immigrants. Tee stated that "HCV testing should be part of the routine blood work that everyone does and that immigrants should also do this on arrival. That way, they will see it as part of the immigration requirement; thus, making it less stigmatizing".

To further expand on this, a participant proposed that "HCV test should be included for immigrants as soon as they arrive in Nova Scotia, but it should not affect the success of their immigration process" (AK).

Also, Zizi suggested that "the government should make HCV testing available to all for free without any consequences; healthcare providers should be aware of the need to include it as routine testing for all. This way, immigrants will benefit, if necessary, from early intervention".

4.4.5 Improving Awareness in Schools and Via Social Media

Some participants suggested that there was an urgent need to raise awareness among immigrants through various media such as social media and in the libraries. They believe through these platforms; HCV information will get to a larger audience and thus increase the awareness of the public about HCV prevention in Nova Scotia. They stated that this will help to destigmatize HCV because everyone will receive the information, not just immigrants.

A participant in the study Boom revealed the need to share information about HCV prevention in different schools as this will get to all kids and not just immigrant kids. She mentioned that there is an urgent need to start teaching about HCV prevention from junior high school because by that age they have more understanding. She further asserted that school and community health clinics can help create awareness of HCV prevention. In support of the suggestion of putting HCV information in schools, AB disclosed that “he thinks prevention services information is not available to young people and this, therefore, raises the need to put such information in schools”.

4.4.6 Awareness of Cultural Norms

Some participants suggested the need to increase awareness of culturally acceptable norms or practices of immigrants that might increase their risk of HCV infection. This was suggested by Tee when he disclosed that “creating awareness of specific immigrant norms that could lead to the spread of HCV will be helpful. Some norms are culturally acceptable but unsafe, hence, the need to identify such norms and work towards safety using a harm reduction approach”.

CHAPTER 5 DISCUSSION

This chapter provides a discussion of the key themes that were identified from the data of the interviews with participants. The Social-Ecological Model served as a conceptual framework to discuss the findings of this study.

The key themes identified regarding the perceived barriers to getting tested and treated for HCV among immigrants; how barriers to HCV prevention differ for different genders; strategies that can be utilized to effectively address the HCV testing and treatment needs of immigrants in a non-stigmatizing way; how HCV prevention information will be culturally relevant for immigrants in Nova Scotia and the HCV prevention information available to immigrants in Nova Scotia were discussed. Ten participants were recruited and interviewed at separate, online- Zoom sessions. Given this, the overarching themes and subthemes identified will be discussed below.

5.1 OVERARCHING THEME 1: BARRIERS TO HCV PREVENTION

5.1.1 Lack of Awareness of HCV Prevention

Responses to prompt opinions on participants' experiences and barriers to accessing HCV prevention services revealed that the majority of the participants were unaware of HCV prevention services in Nova Scotia and that this was a major barrier to HCV prevention. It was observed that the majority of the participants have not heard of HCV prevention services since they arrived in Nova Scotia, and they have not had the opportunity of accessing any HCV prevention service nor have they had felt the need to access HCV prevention services. They disclosed that, as new immigrants, they were not informed about HCV prevention. Also, a participant mentioned that they were vaccinated for HCV before coming to Canada. Whereas there is currently no vaccine for HCV and new infections continue to occur disproportionately affecting immigrants in Canada, especially those that originate from high HCV endemic countries (Zimmerman et al., 2011; Trubnikov et al., 2011; Greenaway et al., 2018; Krajden et al., 2018; The Public Health Agency of Canada, 2018). This could therefore mean that the immigrants lack adequate information about HCV testing, prevention and treatment. This is supported by Smith et al. (2012) when it was noted that most individuals with HCV (45%-80%) remain undiagnosed and unaware of their infection until they develop liver disease. Similarly, Hatzakis (2011) noted that up to 75–90% of HCV-positive individuals are unaware of their infection and, as a result, they remain reservoirs for further transmission of the virus. A participant mentioned that it was through this present study that they heard about HCV for the first time but that information on HIV prevention is commonplace. However, as noted by Gahagan et al., (2015), Hepatitis C Virus is more prevalent than HIV in Nova Scotia. This could therefore reflect in part on missed opportunities to create awareness on HCV, thereby drawing the need for more work to be done around HCV prevention in Nova Scotia.

Interestingly, the Canadian Liver Foundation (2021), also noted that the average Canadian may not be aware of HCV. However, Tanveer (2017) noted that because immigrant's access to healthcare and social support services varies differently, and they are particularly at risk of developing poorer health outcomes; there is the need to consider readdressing HCV prevention for this population who have higher mortality associated with both viral hepatitis and liver cancer. Additionally, it has been noted that immigrants are often excluded from mainstream health services and face high levels of stigma and racism that make it challenging for them to access and utilize healthcare services (The Canadian Task Force on Preventive Health Care, 2019).

According to Pawlotsky et al. (2015), new HCV antiviral medications are now available to Canadian healthcare providers, with rapid innovations in HCV science including new treatment modalities; but making sure that the treatments are targeted at individuals who are at high risk of HCV remains a challenging problem. Findings from a study revealed that familiarity with the risk factors for the acquisition of HCV infection and identifying individuals who are at high risk are important to reducing the morbidity and mortality related to Hepatitis C (Ha et al., 2016).

This lack of awareness is distressing, as Tanveer (2017), Greenaway et al. (2018) and Coppola (2019) reported that immigrants from high and intermediate HCV endemic countries are a major group who are at risk for HCV as they account for a disproportionate number of all HCV cases in Canada (~35%) and have approximately a twofold higher prevalence of HCV (~2%) than those born in Canada. Immigrants living with HCV are more likely to develop cirrhosis and hepatocellular carcinoma as well as being more likely to have a liver-related death during hospitalization than non-immigrants living with HCV. This shows that immigrants ought to be adequately aware of HCV prevention early enough. This is in support of the claim by Trubnikov et al. (2014) who stated that about 220,000-246,000 individuals were living with chronic HCV infection in Canada and most of these individuals were unaware of their infection.

Based on the individual level of the SEM, Simons-Morton et al. (2012) noted that individual levels are mainly concerned with deficient knowledge that could affect individual behaviour. Therefore, it is important to firstly identify immigrant’s awareness about HCV prevention so that interventions can be developed to facilitate sustainable positive health outcomes. However, based on the findings of this study, it was discovered that the reasons for lack of awareness on HCV prevention among immigrants are not solely centred on the immigrants’ inaction, as a majority of the participants mentioned that the lack of awareness was due to the fact there was no awareness on HCV prevention in the province; stating that if it was important, more awareness would have been made about it just like in the case of HIV and the recent coronavirus.

Interpreting this finding through the SEM, it can be concluded that the individual, interpersonal, organizational, community and indeed the public health policy level all have a role to play in creating a barrier to HCV prevention for immigrants in Nova Scotia. Therefore, suggested health promotion initiatives to address this issue should involve a joint effort of these levels of control.

5.1.2 Lack of Access to HCV Testing Centres

Another perceived barrier indicated by most of the participants was the lack of access to HCV prevention information and services. The participants acknowledged that accessibility to HCV testing centres is another major barrier influencing HCV prevention among immigrants. It was noted that people do not know where to get tested for HCV. There is also a need to create HCV street clinics in areas that will be more accessible to, and culturally acceptable to immigrants. Participants stated that the reason for this is that it may be a bit difficult to queue up in one center to test for HCV because they may feel uncomfortable if someone, they are familiar with sees them in a testing centre.

This shows that poor access to information and testing centres are perceived to be a challenge affecting getting tested and treated for HCV among the participants in the study. This finding aligns with previous research which indicated that at the individual level, barriers to testing and treatment may also include inadequate information on cause, symptoms, modes of transmission, risk factors, prevention strategies and treatment of HCV infection (Owiti et al., 2015; Greenaway et al., 2018). This also demonstrates the value of past research that indicated that at the health system level, factors including overall lack of sexually transmitted blood borne infection testing in Canada was also a likely contributory factor to delayed diagnosis and treatment uptake (Greenaway et al., 2018; Cooper et al., 2017; Trubnikov et al., 2011).

This perceived barrier to HCV prevention stems from the organizational (healthcare system) and policy levels of the SEM. Thus, stakeholders at these levels of influence have the power to make changes to address this concern in order to ensure that immigrants (at individual level) are empowered to get adequate access to HCV testing.

5.1.3 Language Barriers

Language differences were also a perceived barrier to HCV prevention among the participants due to the diverse nature of immigrants. As highlighted by some study participants, health communication is key to proper information dissemination and for most people who come to Canada as immigrants from different countries and do not express themselves in the English language. As a result of this, language will be a big barrier for people accessing services like HCV prevention. Even when information about HCV prevention is available, immigrants may not be able to understand what the message been passed across means. Tanveer (2017) stated that some healthcare providers may lack the skills required to work with people who are new to Canada especially those who are not fluent in English.

Interpreting this finding using the SEM, the researcher believes that the barrier to HCV prevention due to language is a function of all levels of the model (interpersonal, organizational, community, public policy, cultural and the physical environment). For instance, the physical environment in which the individual (immigrant) finds themselves determines the language of health communication, which invariably determines the dominant language that will be used in the healthcare delivery system (organizational level) around HCV prevention.

Therefore, key players in these levels of influence ought to advocate for and provide HCV prevention services in languages that will be culturally relevant to immigrants to overcome the perceived barrier to HCV prevention that language of health communication could pose.

5.1.4 Lack of Awareness of Healthcare Providers That HCV Prevention is Worth Discussing

Some participants mentioned that the lack of awareness on the part of healthcare providers that HCV is worth discussing with new immigrants to Canada is a barrier to HCV prevention. This supports the findings of Greenaway et al. (2017), study which stated that immigrants from countries with intermediate and high HCV prevalence are mostly at risk for HCV. However, they had a delay in diagnosis of almost 10 years after arrival. This thus suggests that they may have benefitted from earlier HCV screening and treatment. Furthermore, this barrier may be accounted for by the fact that previous studies have noted that HCV knowledge and attitudes gaps are also linked with lower levels of engagement in HCV care, and this contributes to HCV-related morbidity and mortality (Buller-Taylor et al., 2018). Physician-level barriers to identifying and managing patients with HCV prevention needs are also a concern as, most physicians are frequently unaware of or incorrectly identify traditional risk factors for acquiring HCV amongst immigrant populations and thus fail to discuss HCV prevention with immigrants (McGowan & Fried, 2012). Immigrants from HCV endemic countries are mostly at high risk for HCV due to the sub-optimal healthcare practices in those regions (Asselah et al., 2014). This aligns with the seventh level of the SEM (physical environment) noted by Simons-Morton et al. (2012) and as stated by Waldron (2018), your physical environment determines your health outcomes. Despite the government of Canada's recommendation that immigrants from high-risk areas should be tested for HCV, there still seems to be a gap in the implementation of this recommendation by healthcare providers (Grad et al., 2017). Therefore, healthcare providers who are at the (organizational level) need to be aware that immigrants from HCV endemic regions are mainly exposed to HCV infection due to the environmental health practices they are exposed to in their country of origin. A knowledge of this will ensure that this route of exposure is acknowledged when determining routes of exposure to HCV infection, this could ensure that healthcare providers initiate early and relevant discussions with immigrants around HCV prevention. Participants also mentioned that there is a general lack of family physicians in Nova Scotia, and this increases the wait time to be assigned to a family doctor and invariably, a delay in potentially discussing HCV prevention with immigrants. Connecting immigrants to health and social support services devoid of racism, cultural biases, social economics barriers and discrimination is crucial to addressing the healthy immigrant effect. Thus, efforts to address this perceived barrier ought to be driven by the agents of change in these identified levels of external influence. Addressing this issue could potentially ensure that immigrants may be more empowered and willing to access HCV prevention services.

5.1.5 Stigmatization

From participants' narratives, it was observed that due to the nature of HCV (sexually transmitted infection), there might be issues of stigmatization as no one wants to be associated with an individual who tests positive for HCV. Hence, many individuals may be scared that they will be stigmatized when others eventually get to know that they are HCV positive. This thus creates a barrier to getting tested and treated for HCV.

This perceived barrier could result from an interaction between the interpersonal, organizational, community level of the SEM whom all have a role to play in destigmatizing HCV. These external levels of influence could help to sensitize the public about HCV letting them know that HCV is just like any other illness and could affect anyone irrespective of sex, immigration status, social-economic status, race or gender. Also, they can work interconnectedly to provide emotional and social support to individuals living with HCV, letting them know that they are not alone in the journey to recovery. Destigmatizing HCV is essential for the successful delivery of HCV services as it could potentially increase access to HCV testing, which is crucial so that individuals living with HCV infection can benefit from early diagnosis and linkage to care and treatment (The Canadian Network on Hepatitis C Blueprint Writing Committee and Working Groups, 2019)

5.1.6 Concern about Immigration Status and the Assumption That HCV Testing is Part of The Routine Screening

Fear of losing immigration status was another barrier mentioned by a few participants. Few of the participants were concerned that disclosing their health status could pose a threat to getting a permanent residency status in Canada. A few participants also disclosed that HCV testing is part of the routine medical screening during the immigration process. These various outlined perceptions are consistent with previous research that disclosed that HCV prevention is an important health disparity to address because most people living with HCV are unaware of their infection till, they develop liver cirrhosis, and there is currently, no screening for HCV before arrival into the country. Additionally, many immigrants assume they have been tested for HCV as part of the routine screening during the immigration process or may fear the stigma, judgement and or deportation that may potentially be associated with being HCV positive and thus, may not be willing to access HCV prevention services (Greenaway et al. 2018; The Canadian Network on Hepatitis C, 2019).

From the researcher’s perspective, these perceived barriers are a major function of public policies regarding immigration and healthcare. This level of the SEM (public policy) determines the health of the populace to a large extent because policies control or support health behaviour and practices. Policymakers are therefore required to formulate policies to address health inequities immigrants face in their quest to access healthcare services.

5.1.7 Immigrants Priority and Financial Constraints

Another perceived barrier identified by the participants was that HCV testing is not an immigrant's priority, as there is the need to satisfy other more pressing needs. The financial burden of testing and treatment of HCV was noted to be a perceived barrier to HCV testing and treatment. McGowan and Fried (2012) and Tanveer, (2017) reported that at the health system level, the lack of promotion and surveillance programs and funding for HCV treatment are limitations to prevention, especially for immigrants in Canada. Thus, supporting participants' claim that finance for HCV testing and treatment could be a limiting factor to accessing HCV prevention services.

This perceived barrier could be a result of the influence of the public policy level of the SEM. Also, it could result from an interaction with the physical environment which ought to provide an enabling environment for immigrants to thrive.

5.1.8 Gender-based Barrier to HCV Prevention

Some participants posited that barriers to HCV prevention do not differ based on gender, and that gender may not influence HCV prevention practices of immigrants in Nova Scotia. The participants asserted that HCV affects everybody, and everyone has a role to play in prevention and treatment. This is supported by Pawlotsky et al., (2015), Ng et al., (2016) and Buller-Taylor et al., (2018), when they suggested that interventions should include the selection of all individuals and linking them to care. As the participants noted, gender identity ought not to influence HCV prevention. However, the majority of the participants acknowledged that females show more concern towards their health compared to male-gendered individuals. Thus, male-gendered individuals should be more targeted in health promotion programs. This was indicated as most of the participants felt males are reluctant to discuss their health concerns until it becomes very late. Thus, suggesting that more health programs should be targeted towards men to enable them to be more willing to access health services. As indicated by WHO (2013), gender variations in a given culture may also influence health, illness and patient outcomes.

Also, a few of the participants suggested that immigrants might not be comfortable going to the clinic to discuss issues about a sexually transmitted infection with a differently gendered healthcare provider and thus suggested that there should be a mix of different genders in healthcare settings. According to a scoping review by Ng and Newbold (2011), one of the most pronounced cultural barriers to accessing healthcare by immigrants in Canada is found to be related to physicians' gender.

Furthermore, a few of the participants also identified gender inequality to be a barrier to HCV prevention as unmarried females who test positive for HCV may be viewed as irresponsible. This assertion could result from the influence of the organizational level (healthcare level) and public policy level of the SEM as the healthcare system ought to be devoid of gender bias and policies should be formulated to include gender equity in HCV prevention and care.

5.2 OVERARCHING THEME 2: CULTURALLY RELEVANT STRATEGIES TO ADDRESS THE HCV PREVENTION NEEDS OF IMMIGRANTS IN NON-STIGMATIZING WAYS

Participants suggested various strategies to effectively address the HCV prevention needs of immigrants in a non-stigmatizing way. Discussion of the emerging subthemes includes:

5.2.1 Training Immigrant Health Educators, Counsellors and Immigrant Community Leaders

Most of the participants stated that training immigrant health educators are an important strategy to address the HCV testing and treatment needs of immigrants in a non-stigmatizing way. They further suggested training group leaders in various immigrant minority groups as a point of contact to reach their members. The group leaders will explain to their group members the reasons why they should take preventive measures and assess treatment for those who are positive. This way, they would not feel stigmatized, as they would feel that they are well catered for and that there is a lot of care and concern for their health. This suggestion supports the interpersonal and cultural level of the SEM, which focuses primarily on the influences of significant others, which includes influences of social networks, social support systems and social-cultural groups. When such socio-cultural influencers are present, adherence to recommended health practices is more readily acceptable and accessible (McKenzie et al., 2017). Napier (2014) noted that the disregard of culture in health and healthcare is the single biggest barrier to the global advancement of healthcare delivery worldwide. Therefore, strength can be drawn from the interpersonal and cultural levels of the SEM to help ensure that immigrant social and cultural groups join efforts to raise awareness on HCV prevention among their groups.

5.2.2 Involve Immigrant Organizations in Raising Awareness of HCV Prevention

The majority of the participants suggested that the best way to increase awareness of HCV among immigrants is by incorporating immigrant agencies such as ISANS, YWCA and YMCA to be part of creating awareness on HCV prevention. Thus, ensuring that HCV prevention information is culturally relevant to immigrants. They mentioned that this will facilitate the acceptance and utilization of the information. Majority of the participants mentioned that one of the best ways to ensure that immigrants become aware of HCV and HCV prevention services as well as utilize such services is if they get the information from the ISANS. Participants mentioned that ISANS provides a welcoming and supporting environment for immigrants and, as such, any information provided to them by ISANS is considered relevant to them. They suggested that ISANS should put HCV prevention information in their program for newcomers and that they could help speak to the government to investigate the issue since it affects immigrants. This perfectly aligned with the fourth level of the SEM (community level) stating that Immigrant community organizations like the ISANS in Nova Scotia, serve as locations where health promotion programs can be carried out. ISANS helps to facilitate the engagement of immigrants in various information sessions on capacity building as well as equipping them with information on how to navigate the health system in Nova Scotia. Therefore, drawing strengths from the community level of the SEM will help immigrants get adequate, timely and relevant information on HCV prevention.

Furthermore, the community level of the SEM suggests that community organizations must assist in providing culturally relevant health promotion programs for immigrants who most times, do not benefit from mainstream health services. This can help ensure that immigrants benefit from HCV prevention services, thus limiting the spread of the virus. Lazarus et al. (2018)

agreed that the implementation of a targeted HCV prevention strategy increases early diagnosis and treatment to reduce the burden of chronic HCV among immigrants.

5.2.3 Translation of HCV Prevention Information into Other Immigrant Languages

Another strategy proposed to help address the HCV prevention needs of immigrants is the translation of HCV prevention information into other immigrant languages, as this will ensure proper dissemination of HCV prevention information. This proposed strategy demonstrates the significance of the cultural level and the SEM as the majority of the participants mentioned that they would most likely benefit from HCV prevention information presented to them in their first language. A few participants expressed that they could not properly express their health concerns to health providers because English is not their first language. Thus, HCV knowledge and attitudes gaps are also linked with lower levels of engagement in HCV care, and this contributes to HCV-related morbidity and mortality (Buller-Taylor et al., 2018).

Most of the participants agreed that HCV prevention information should be presented in diverse languages as this will benefit those whose first language is not English; concerning this, various comments were suggested by the participants. For instance, some participants revealed that the language used in disseminating health promotion messages is key to enabling immigrants to understand and act accordingly and hence it should be in a language that they understand. The study participants suggested that HCV prevention information should be translated into some other major languages, like Bahasa Indonesia, Arabic, Mandarin and French. This is in line with the Leggett et al., (2016) study suggesting that information on HCV infection should be accessible and adapted to the unique needs of priority populations. This could help address the barriers associated with low utilization of healthcare settings, especially for those at risk of HCV infection and for people in under-served populations.

Therefore, healthcare providers and the government through public policy must ensure that immigrants receive healthcare in the language and manner that will be relevant to them as, this to a great extent, helps to reduce the sustained disparities in quality and satisfaction of healthcare delivery, health outcomes, and health status of immigrants (Shamsi, 2020).

5.2.4 Cultural Norms

Other participants suggested raising awareness of culturally acceptable norms or practices among immigrants that may increase their risk of HCV to help them see the need to reconsider such practices. They also mentioned that there was also a need to target different minority group leaders to find out what practices they are aware of that could expose them to HCV infection and then put heads together with these group members to find mitigating measures to control the spread of HCV. The published evidence indicates that most immigrant groups have myths about HCV infections, and this could influence their willingness to participate in testing and treatment plans available (Owiti et al., 2015).

The cultural level of the SEM aligns with the suggestions for a need to provide HCV prevention services to Immigrants in culturally acceptable ways. As Ginn and Kulig (2015) noted that, without a proper understanding of each local community, knowledge translation modalities would likely be ineffective and irrelevant to community members, leading to missed opportunities to address health disparities and improve health. Overall, it was suggested that there is a need to improve awareness of HCV in a culturally acceptable way because a lot of people are not aware of HCV.

To conclude, participants in the study made some suggestions to address the various concerns of meeting the HCV information and prevention needs of immigrants in Nova Scotia. They include the need for more awareness campaigns around HCV prevention in the province, especially among immigrants in ways that do not stigmatize them. To increase the level of awareness of HCV among immigrants, it was suggested that immigrant support centers, especially the ISANS, should make information on HCV prevention available and accessible in their agency as this is the first home for all new immigrants. Hence, there should be an immediate response to make the HCV prevention, testing and counselling information popular in this center so that people can have that information and start making use of these services. Some participants stated that having ISANS as a resource center for immigrants is a blessing, and as a result, they take any information they receive from ISANS very seriously because they are confident that ISANS will provide them with the best settling services. Another suggestion from the participant is the need to share information about HCV prevention in different schools, as a participant indicated that HCV prevention information and services are not available to young people. This, therefore, raises the need to put such information in schools. Furthermore, general healthcare should be easily accessible, as immigrants should know where to access HCV information, how to access it, and the services should be offered for free. This will encourage immigrants to be more willing to access such services. As indicated in the research literature, HCV is preventable and curable, yet rates of new infections are on the increase and services for testing and treatment appear to be under-utilized (Schnirring, 2017). This thus necessitates the urgent need to address the HCV prevention needs of immigrants in Nova Scotia. Also, providing awareness on HCV prevention to everyone, not just immigrants through various mass media such as social media, public media and even in the libraries, will ensure proper dissemination of prevention messages on HCV.

Some of the participants suggested the need for free routine HCV screening and treatment, if necessary, for everyone in Canada. They suggested that if HCV testing was targeted at everyone, immigrants would not feel stigmatized if they were requested to opt for testing. Greenaway et al. (2017) noted that immigrants from intermediate/high HCV prevalence countries are missed in current behavioural risk-based screening programs currently in place as immigrants are less likely to have behavioural risk factors for HCV; hence the need to make HCV testing available to all individuals. This suggestion in part demonstrates the significance of the public policy level of the SEM in addressing the HCV prevention needs of immigrants. If the government recommends HCV testing for all individuals, and ensures that healthcare providers implement it in practice, then individuals at risk of the infection will benefit from HCV prevention services without feeling stigmatized. Another suggested strategy is providing educational resources and counselling. Given this, some participants in the study proposed the provision of educational resources to all in society, especially in schools. They mentioned that this will avoid targeting just immigrants and will in turn help to address HCV prevention, testing and treatment among immigrants in Nova Scotia, thereby improving the overall level of awareness of the younger generations on the prevention, testing and treatment of HCV. In support of this, Lam et al., (2015) reported that to address HCV infection among immigrants, the cause, mode of transmission, risk factors, symptoms, testing options and linkages to care and treatment should be developed in a health education curriculum that will be taught in schools.

Table 1: Synopsis of Findings Through the SEM for Each Emerging Overarching and Sub-theme

Overarching themes→→		**Barriers to HCV prevention**		**Culturally Relevant HCV Prevention**	
Sub themes→ ↓	**Influencing levels of the SEM**	**Suggested agent of change**	**Subthemes→ ↓**	**Influencing Levels of the SEM**	**Suggested agent of change**
Lack of awareness	Individual, interpersonal, organizational, community, public policy	Immigrants, government, ISANS, HepNS, healthcare providers.	Training immigrant leaders on HCV prevention	Cultural, organizational	Immigrant culture brokers, Healthcare providers
Lack of access to testing centres	Organizational, public policy	Healthcare providers, mobile outreach street clinics, policy makers	Involve immigrant agencies in creating awareness	Cultural, community, organizational, public policy	ISANS, healthcare providers, government
Language barrier	Organizational, public policy	Healthcare providers, policy makers	Immigrant languages	Organizational, community, interpersonal, cultural	Healthcare providers, ISANS, HepNS
Stigmatization	Interpersonal, organizational, community, physical environment, public policy	HepNS, healthcare providers, ISANS, Government	Cultural norms	Interpersonal, organizational, community, cultural	HepNS, healthcare providers, ISANS
Immigrant priority/finance	Physical environment, public policy	Policy makers, government	Routine HCV testing for all	Public policy	Policy makers
Concern about immigration status	Public policy	Policy makers	Creating awareness in schools/ social media	Interpersonal, community, public policy	HepNS, ISANS, government
Gender	Organizational, public policy	Healthcare providers, Government			
Lack of access to a family physician	Public policy	Government			
Healthcare providers lack of awareness	Organizational, public policy	Healthcare providers, policy makers			

Table 1 above shows that the overarching themes were clustered into perceived barriers to HCV prevention and perceived culturally relevant HCV prevention strategies to address the HCV prevention needs of immigrants. These themes were further broken down into sub-themes and the SEM was used to highlight the level to which these sub-themes belong. This helped the researcher to see the specific levels requiring intervention and the stakeholders responsible for addressing the issues presented in each emerging sub-theme.

It is important to mention that all the issues raised by participants impact immigrants (individual level). However, the interventions to address the issues suggest an interconnected effort that includes all influencing agents of the SEM.

In conclusion, this health promotion thesis study was conducted to help realign the current knowledge-based approaches to preventing HCV among a diverse sample of immigrants in Nova Scotia using the SEM as a guide. This study has furthered our understanding of the major barriers and facilitators to HCV prevention as raised by the participants in the study to meet the HCV prevention needs of immigrants in Nova Scotia.

5.3 SIGNIFICANCE AND IMPLICATIONS FOR HEALTH PROMOTION

As indicated at the beginning of this thesis, the SEM is important for this study because it looks at various levels of influence that can impact the behaviour of individuals all the way through public health policy that does not include immigrants in HCV prevention. The influencing levels across the SEM require us as health promoters to look at ways of developing interventions that take into consideration all the levels of influence that determine HCV prevention among immigrants in Nova Scotia.

Findings from this study indicate that there is no connection between the public health discourse about HCV being a significant problem in Canada and individual immigrants coming to Nova Scotia and understanding their relative need for HCV prevention. This study revealed that there is a disconnect between the influencing level of the SEM in relation to HCV prevention for immigrants in Nova Scotia. However, an issue such as HCV prevention requires a multi-levelled approach to understanding and addressing the barriers and facilitators to prevention for immigrants. The results from this study have important implications for recommended testing, counselling, and treatment interventions for HCV prevention among immigrants in Nova Scotia. Improvement of access to culturally relevant healthcare services and programs on HCV prevention and increased awareness of the importance of HCV testing as a recommended health practice irrespective of immigration status would improve more access to HCV prevention services. Immigrant minority group leaders, immigrant service agencies, government, healthcare providers should provide timely, concise and culturally relevant information on HCV, HCV prevention, testing, counselling and treatment services.

Public health policymakers should provide increased awareness of the importance of HCV testing irrespective of immigration status by improving access to culturally relevant information and services on HCV prevention. Of utmost importance also is that the government recognizes the need to enact policies that will ensure that testing positive to HCV does not negatively impact the success of immigration, which is key to ensuring HCV prevention for immigrants. The government of Canada recently implemented a policy that individuals who are positive for HIV may not be assessed as medically inadmissible to Canada (Government of Canada, 2020). Considering this from a health promotion point of view, the government of Canada can also enact such a policy for HCV, which will ensure that individuals who test positive for HCV are not denied entry into the country based on their health status.

Furthermore, considering that the government of Canada has recommended HCV screening for immigrants from HCV endemic regions, it is warranted that healthcare providers recognize the need to initiate early and relevant discussion with immigrants around HCV prevention and make efforts to familiarize themselves with immigrants' route of exposure to HCV. It is important to bear in mind that as a way of preventing the healthy immigrant effect, it is crucial for healthcare providers to engage immigrants early enough in healthcare as well as make conscious efforts to connecting them to relevant social support services.

Additionally, ISANS should assist in delivering timely, concise and culturally relevant information on HCV prevention to immigrants as it has been recognized and suggested by study participants to be a culturally safe place to get relevant information on HCV prevention. Additionally, the HepNS can support immigrants by creating culturally relevant campaigns around HCV prevention, testing, counselling as well as connecting immigrants to relevant health and social support services for those living with HCV.

Recognizing that HCV prevention for immigrants is filtered through multi-levels of influence, the discipline of health promotion should make efforts to address the cultural and contextual factors that influence HCV prevention among immigrants in Nova Scotia.

5.4 LIMITATIONS OF THE STUDY

Given the small nature of the sample size in comparison to the diverse population of immigrants in Nova Scotia, the findings of this research study can not be generalized to the broader population of immigrants in Nova Scotia. Another limitation encountered is that the immigrants interviewed were well educated so the results of this study may not be comparable with other immigrants in Nova Scotia. However, the findings of this study can provide a glimpse of immigrants' experiences around HCV prevention in Nova Scotia. This could assist with future research in this content area.

5.5 FUTURE RESEARCH

A number of key suggestions for future research emerged from this study. First, future research on HCV prevention among immigrants in Nova Scotia could examine the reasons for the disconnect between government policies regarding HCV prevention and actual practice by interviewing health care providers. Second, future research could delve into the influence of race and stigma on HCV prevention among immigrants in Nova Scotia. Finally, future research could explore interviewing immigrants in Nova Scotia who have accessed HCV prevention services to fully understand their experiences around access and utilization of HCV prevention services.

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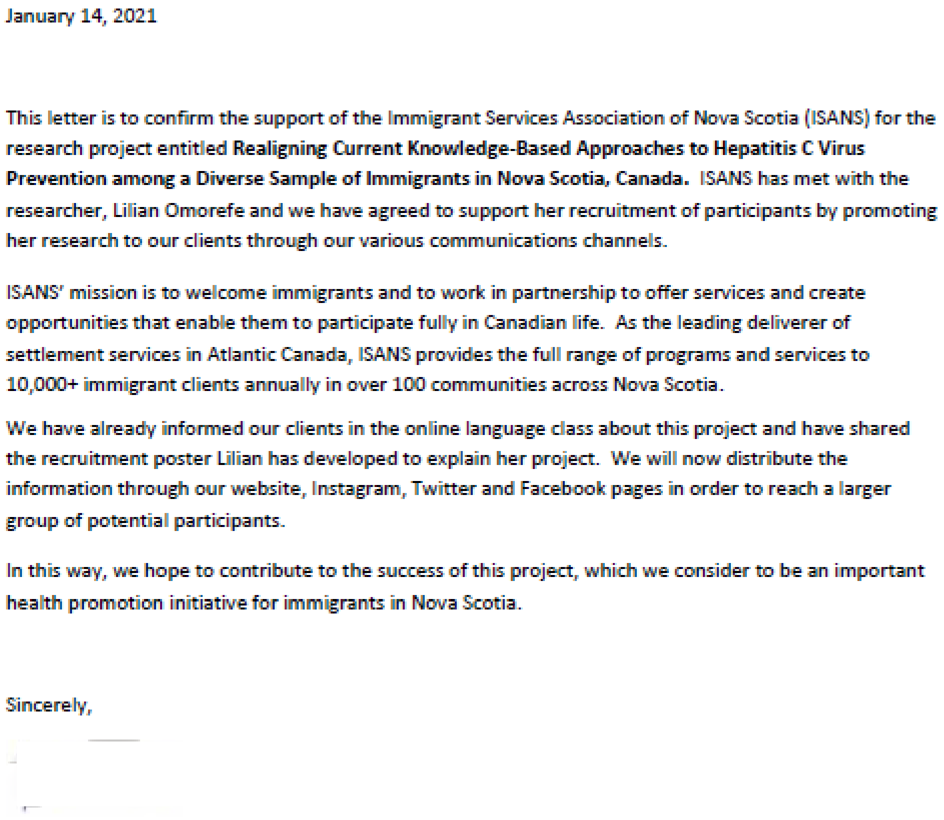
APPENDIX A AMENDED SUPPORT LETTER



January 14, 2021

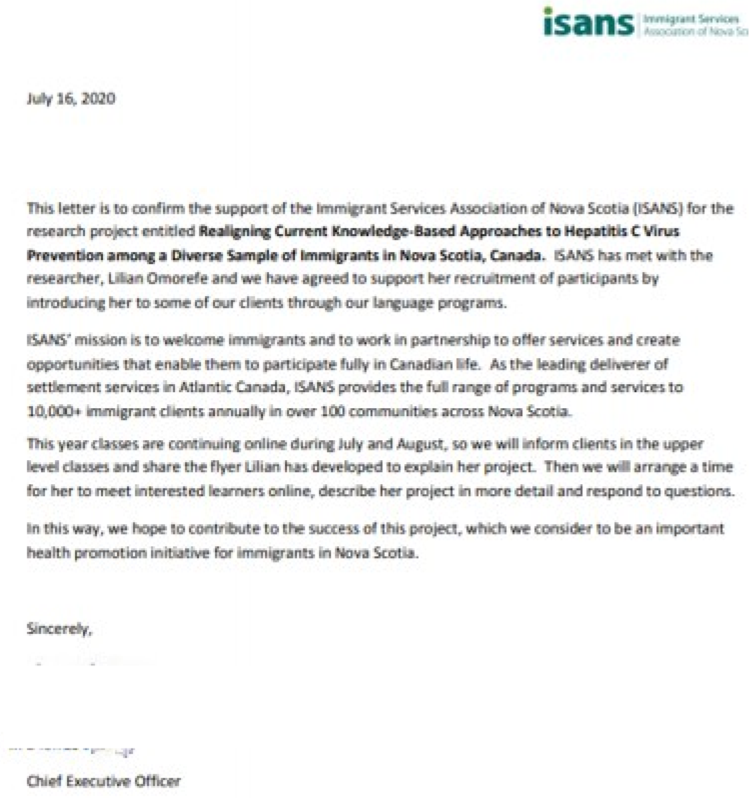
This letter is to confirm the support of the Immigrant Services Association of Nova Scotia (ISANS) for the research project entitled **Realigning Current Knowledge-Based Approaches to Hepatitis C Virus Prevention among a Diverse Sample of Immigrants in Nova Scotia, Canada.** ISANS has met with the researcher, Lilian Omorefe and we have agreed to support her recruitment of participants by promoting her research to our clients through our various communications channels.

ISANS' mission is to welcome immigrants and to work in partnership to offer services and create opportunities that enable them to participate fully in Canadian life. As the leading deliverer of settlement services in Atlantic Canada, ISANS provides the full range of programs and services to 10,000+ immigrant clients annually in over 100 communities across Nova Scotia.

We have already informed our clients in the online language class about this project and have shared the recruitment poster Lilian has developed to explain her project. We will now distribute the information through our website, Instagram, Twitter and Facebook pages in order to reach a larger group of potential participants.

In this way, we hope to contribute to the success of this project, which we consider to be an important health promotion initiative for immigrants in Nova Scotia.

Sincerely,



isans Immigrant Services
Association of Nova Sc

July 16, 2020

This letter is to confirm the support of the Immigrant Services Association of Nova Scotia (ISANS) for the research project entitled **Realigning Current Knowledge-Based Approaches to Hepatitis C Virus Prevention among a Diverse Sample of Immigrants in Nova Scotia, Canada.** ISANS has met with the researcher, Lilian Omorefe and we have agreed to support her recruitment of participants by introducing her to some of our clients through our language programs.

ISANS' mission is to welcome immigrants and to work in partnership to offer services and create opportunities that enable them to participate fully in Canadian life. As the leading deliverer of settlement services in Atlantic Canada, ISANS provides the full range of programs and services to 10,000+ immigrant clients annually in over 100 communities across Nova Scotia.

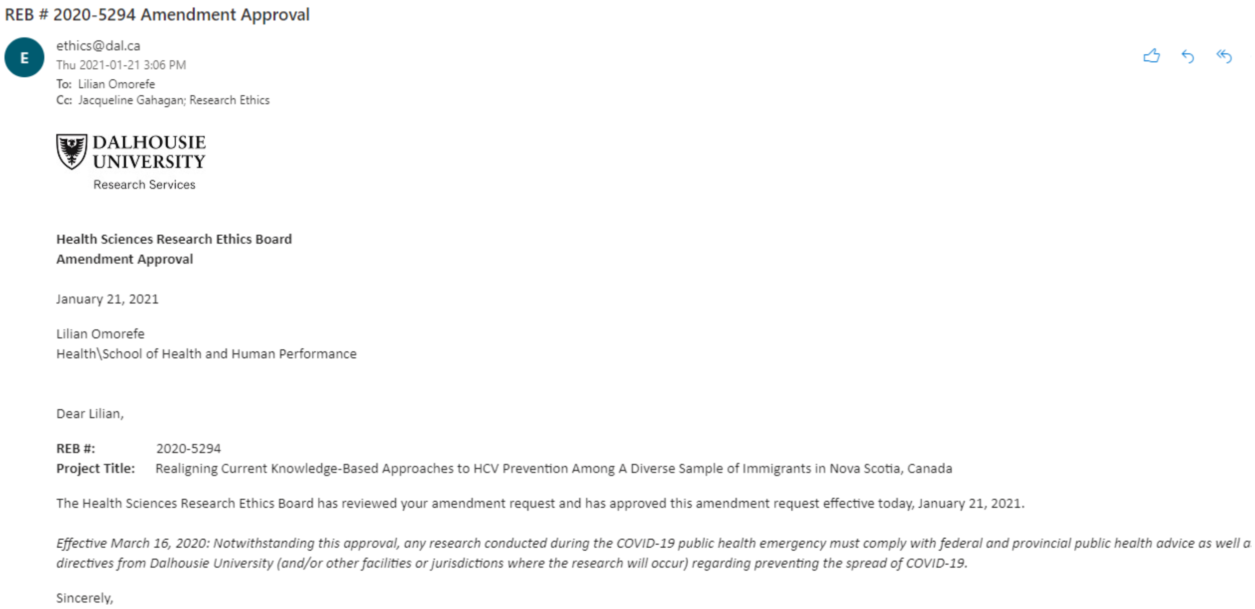
This year classes are continuing online during July and August, so we will inform clients in the upper level classes and share the flyer Lilian has developed to explain her project. Then we will arrange a time for her to meet interested learners online, describe her project in more detail and respond to questions.

In this way, we hope to contribute to the success of this project, which we consider to be an important health promotion initiative for immigrants in Nova Scotia.

Sincerely,

[illegible]
Chief Executive Officer

APPENDIX B ETHICS APPROVAL LETTER



REB # 2020-5294 Amendment Approval

ethics@dal.ca
Thu 2021-01-21 3:06 PM
To: Lilian Omorefe
Cc: Jacqueline Gahagan; Research Ethics

DALHOUSIE UNIVERSITY
Research Services

Health Sciences Research Ethics Board
Amendment Approval

January 21, 2021

Lilian Omorefe
Health\School of Health and Human Performance

Dear Lilian,

REB #: 2020-5294
Project Title: Realigning Current Knowledge-Based Approaches to HCV Prevention Among A Diverse Sample of Immigrants in Nova Scotia, Canada

The Health Sciences Research Ethics Board has reviewed your amendment request and has approved this amendment request effective today, January 21, 2021.

Effective March 16, 2020: Notwithstanding this approval, any research conducted during the COVID-19 public health emergency must comply with federal and provincial public health advice as well a directives from Dalhousie University (and/or other facilities or jurisdictions where the research will occur) regarding preventing the spread of COVID-19.

Sincerely,

APPENDIX C AMENDED RECRUITMENT POSTER

Research in Approaches to Hepatitis C Virus (HCV) Prevention Among a Diverse Sample of Immigrants in Nova Scotia, Canada.

- Are you an immigrant in Nova Scotia?
- We are interested in your perception and experiences on HCV prevention in Nova Scotia.
- You would be asked to participate in a one-on-one interview with the researcher.

This information will help to determine the best ways in which the immigrant population living in Nova Scotia can access HCV information on prevention, counselling, testing and treatment, as well as benefit from HCV prevention programs.

Your participation is voluntary, and it will take approximately 90 minutes.

The inclusion criteria to determine eligibility to participate in the study will include the following:

- Immigrants in Nova Scotia who has a Permanent Residency status in Canada.
- Immigrants in Nova Scotia that are from East Asia and Pacific, East Europe, Central Asia, Latin America, Caribbean, Middle East, North Africa, or Sub-Saharan Africa.
- Immigrants who have lived in Nova Scotia for 3 years or less.
- Immigrants within the age range of 21-50.
- Immigrants in Nova Scotia irrespective of gender identity.
- Immigrants registered in the upper-level class English language program of the ISANS.

- Immigrants registered with the ISANS who can speak and understand English.

Exclusion Criteria

Immigrants that do not meet the above criteria will be excluded from the study and who are known to the researcher and supervisor will be excluded from the study.

- If you are interested in the study, you will need to contact the researcher by sending an email indicating your interest and eligibility to participate, region you migrated from (for selection purpose only) (approximately 2weeks after you email the researcher)

- A ZOOM invite link will be emailed to eligible participants by the researcher to join the one-on-one interview.

In appreciation for your time, you will be sent a $25 President Choice (PC) eGift card via email.

This study has been reviewed by and received ethics clearance through the Dalhousie University Research Ethics Committee.

- If you have any concern or questions, please contact Lilian Omorefe (student researcher)

N.B: Please do not publicly respond or tag anyone over any social media platform to ensure privacy/confidentiality.

Thank you.

APPENDIX D INFORMED CONSENT FORM

DALHOUSIE
UNIVERSITY

Project title: Realigning Current Knowledge-Based Approaches to Prevent Hepatitis C Virus (HCV) Among Diverse Sample of Immigrants in Nova Scotia.

Lead researcher: Lilian Omorefe, MA. Health Promotion student, Dalhousie University.

Other researchers (Student supervisor)

Dr. Jacqueline Gahagan, Full Professor, Health Promotion Division, Dalhousie University.

The student researcher is funding the study.

Participation in this research is voluntary.

We invite you to take part in a research study being conducted by Lilian Omorefe, who is a master student at Dalhousie University. Choosing whether to take part in this research is entirely your choice. Your access to services will not be negatively impacted if you decide not to participate in the research. The information below tells you about what is involved in the research, what you will be asked to do and about any benefit, risk, inconvenience or discomfort that you might experience.

You should discuss any questions you have about this study with the researcher, Lilian Omorefe. Please ask as many questions as you like. If you have questions later, please contact the researcher.

Purpose and Outline of the Research Study

You are being invited to participate in a study that seeks to assess ways of preventing Hepatitis C Virus (HCV) in Nova Scotia. HCV is a blood-borne infection and if left untreated can result in liver damage and death because most people infected do not show symptoms. We believe that you can help us by telling us what you know both about the Hepatitis C Virus and about the ways we can jointly work to reduce its spread in our community. We want to learn what the barriers to HCV prevention are and whether these barriers differ for different gender. We want to learn about the best approach we can adopt to help prevent the spread of HCV and how we can jointly advocate for the design of a more culturally relevant HCV prevention plan for immigrants in Nova Scotia to overcome the perceived barriers to prevention. We also want to know more about strategies that can be utilized to effectively address the HCV prevention needs of immigrants in a non-stigmatizing way.

We feel that your experience as an immigrant in Nova Scotia can contribute much to our understanding and knowledge of the best ways to prevent the spread of HCV as well as assist in designing more relevant HCV prevention plans suitable for immigrants in Nova Scotia.

Who Can Take Part in the Research Study (inclusion and exclusion criteria)

You may participate in the study if you are an:

- Immigrant in Nova Scotia who has a Permanent Residency status in Canada.
- Immigrant in Nova Scotia that is from East Asia and Pacific, East Europe, Central Asia, Latin America, Caribbean, Middle East, North Africa, or Sub-Saharan Africa.
- Immigrant who has lived in Nova Scotia for three (3) years or less.

- Immigrant within the age range of 21-50 years.
- Immigrant in Nova Scotia irrespective of your gender identity
- Immigrant who is registered in the Upper-level English language class of the ISANS.
- Immigrant who is registered with the ISANS who speak and understand English.

You can not participate if you are an:

- Immigrant who is not under the age range specified, and who has lived in Nova Scotia for more than three (3) years. Also, immigrants who do not have a Permanent Resident status and who are not in the regions specified cannot participate in the study. Also, immigrants who are known to the researcher and supervisor cannot participate in the study.

What You Will Be Asked to Do

If you consider yourself eligible for the study based on the inclusion and exclusion criteria mentioned above, and you are interested in participating, you will be required to email the researcher indicating your interest and eligibility to participate, region you migrated from and preferred time to join in the interview (approximately 2weeks after you indicate your interest to participate. You will indicate the region you migrated from, and this will be used for selection purposes only and this information will not be used to identify you nor analyze your data collected. The reason you are being asked to indicate the region you migrated from, is to ensure that the researcher does not select more than 2 participants from each region mentioned above.

You will be required to participate in ONCE in a one-on-one interview that will be held via an online platform (ZOOM) due to the current COVID-19 pandemic. You will be required to orally consent to participate in the study by responding with either a yes or no after the script has been read out to you by the researcher before proceeding with the interview.

You will be required to respond verbally to the demographic survey questions contained in the interview question guide and this will be read out to you by the researcher at the start of the interview. Thereafter, you will be required to respond to the interview questions. Please be informed that response to the questions is optional, and responses are strictly confidential, thus, you can refuse to answer any questions that you may be uncomfortable answering.

The maximum amount of time you could spend participating in this study is 90minutes.

You will also be required to give oral consent/permission to the researcher to use your anonymous quotes.

Possible Benefits

Participating in the study might not benefit you directly, but you might learn things that will benefit the immigrant population in Nova Scotia, as the findings of this research will assist with realigning the current HCV prevention gaps for immigrant populations living in Nova Scotia.

Risks

The risks associated with this study are minimal. There are potential risks involved in using zoom for this study (such as rerouting calls to the US when the Toronto center goes offline), this can bridge the privacy and security of data. Please be informed of this potential risk involved if the server goes off-line. However, again, this issue can be mitigated by disabling your video before joining the zoom meeting to prevent facial identification. Your video will be disabled by the researcher before joining the zoom interview meeting and you are required to join the meeting with a name that is not your real name (coded name).

Also, be informed that your access to services will not be negatively impacted if you choose to withdraw from the study. To lessen the degree of stress you might feel during the interview, please be informed that there is an HCV support line that you can reach out to on your own if you need to. This 24-hour support line (902-210-6168) is managed by the Hepatitis Society of Nova Scotia (HEPNS), a registered Non-Governmental Agency in Nova Scotia. The HEPNS provides counselling and support services to individuals in Nova Scotia, around HCV prevention. You can call or send a text to the number.

Compensation / Reimbursement

It is hoped that you will not incur any expenses relating to the study during the study period. To thank you for your time, the researcher will send you a link to a $25 Presidents Choice (PC) eGift card sent to you via email at the end of your interview. If you decide to stop participating in the study, you will still get this compensation for your involvement so far.

How your information will be protected

Privacy: The persons who will know your identity (their email address and region you originated from) is the student researcher and the supervisor. The interviews will be audio recorded using a voice memo for iPhone and it will be transferred to the researcher's encrypted and password-protected laptop using a cable. Thereafter, the audio recording will be permanently deleted immediately. Data will be put on the Dalhousie OneDrive for storage and save keeping. The Researcher will ensure that the interviews do not automatically sync to the cloud.

Confidentiality

The researcher will not be sharing information about you with anyone outside of the research team (researcher and research supervisor). Participants in the study will be unknown to the researcher and supervisor.

The information that we collect will be audio-recorded and kept private in an encrypted password-protected computer. You will be de-identified during the transcribing of your interview data. The researcher will disable your zoom video before joining the interview. The Researcher will ensure that direct or indirect identifier such as your face, name, date of birth, the home address, is removed before joining the meeting. Please be informed to join the interview meeting with a coded name (not your real name). Please be informed not to publicly respond or tag anyone over any social media platform to ensure privacy and confidentiality.

During the study, all electronic records will be kept secure in an encrypted file on the researcher's password-protected computer. It will not be shared with or given to anyone without your consent. Only the researcher will be able to record the zoom meeting. You will also be required to give consent to the researcher to use your anonymous quotes.

Limits to confidentiality

There is also a little more information you need to understand before participating in an interview over Zoom. To protect your privacy, zoom meetings are encrypted but, like all forms of encryption, this encryption is not fully guaranteed. Furthermore, Zoom retains only basic information about participants' technical information, including the user's IP address, OS details, and device details for troubleshooting and admin reporting. Zoom does not share customer data with third parties and does not engage in monitoring, viewing, or tracking of the video or audio content of video meetings. The above practices will not completely prevent the risk of data scrutiny by parties other than the researchers, but they will help to significantly reduce this risk. Also, note that Zoom calls are routed through Canadian servers unless you are outside of Canada, or the Canadian data center goes offline. If the server goes off, the meeting may be routed through servers in the United States and this can lead to a slight chance that information about the meeting may be accessed by U.S. government agencies (e.g., National Security Agency, Department of Homeland Security).

Therefore, to mitigate this risk, the researcher will disable your video before joining the interview to prevent facial identification. The meeting will be set to allow only the researcher to start, stop and record the meeting. You are required to join the meeting with a coded number.

Data retention

The audio recording will be deleted by the researcher immediately after it has been transferred to the researchers' encrypted, password protected laptop. All data collected both qualitative and quantitative will be stored electronically. Copies of the audio files will be deleted after transcription. All your data collected and stored will be permanently deleted at the end of the study period, tentatively July 2021.

If You Decide to Stop Participating

You can leave the study at any point and can skip any questions during data collection if do not wish to answer without any implications. Be informed also that you are allowed up to one week after your interview to remove your data from the study as by this time transcription and analysis will have started to occur. Combined de-identified results from the interview will be shared to show more general trends, as these data will be analyzed and presented as an aggregate. You can email the researcher to remove and delete your data 1 week after your interview.

How to Obtain Results

A lay summary report on the key result (anonymized and deidentified) of the study will be sent to ISANS by email. ISANS will be responsible for sharing the results with the participants by posting the results of the study on their website at the end of the study.

Questions

We are happy to talk with you about any questions or concerns you may have about your participation in this research study. Please contact researcher, Lilian Omorefe or Supervisor, Jacqueline at any time with questions, comments, or concerns about the research study.

You may also wish to voice concern about the research to the university. If you have any ethical concerns about your participation in this research, you may also contact Research Ethics, Dalhousie University.

Oral Informed consent script

Project Title: Realigning Current Knowledge-Based Approaches to Prevent Hepatitis C Virus (HCV) Among A Diverse Sample of Immigrants in Nova Scotia.

Lead Researcher: Lilian Omorefe, MA. Health Promotion student, Dalhousie University.

The researcher has read the explanation about this study. I understand that if I am interested in the study, I am required to give oral consent to the researcher to participate in the study. I have been given the opportunity to discuss it and my questions have been answered to my satisfaction. I understand that I have been asked to take part in a one-on-one interview that will occur online via ZOOM which is acceptable to me, and that the interview will be audio recorded by only the researcher. I agree to take part in this study. My participation is voluntary, and I understand that I am free to withdraw from the study at any time and can skip any questions during data collection if I do not wish to answer without any implications. I also understand that I am allowed up to one week after the interview to remove my data from the study.

Therefore, do you orally consent to participate in the study?

☐Yes ☐No

Do you understand and agree that direct quotes from your interview may be used without identifying you (you can still participate if you select no)

☐Yes ☐No

APPENDIX E DEMOGRAPHIC SURVEY AND INTERVIEW QUESTION GUIDE

Realigning Current Knowledge-Based Approaches to HCV Prevention Among a Diverse Sample of Immigrants in Nova Scotia, Canada.

Demographic Questions: We are collecting basic demographic data to give us a better understanding of participants in this research. All questions are optional, and your responses are strictly confidential. Please respond with a (YES) to the response that best describes you or answer as appropriate.

1) Please indicate your age range

a) 21-30 _________________

b) 31-40__________________________

c) 41-50__________________

d) Prefer not to answer___________

2) Please indicate your gender

a) Male___________

b) Female________________

c) Other (please specify): ________________

d) Choose not to specify: ________________

3) What is your highest level of COMPLETED education?

a) Elementary School______________

b) Junior High School ________________

c) High School ____________

d) College _________________

e) Bachelor’s degree ______________

f) Master’s degree _________________

g) Doctorate Degree ________________

f) Other ___________________________

g) Prefer not to specify ______________

4) How many years have you lived in Nova Scotia? _____________________

a) Less than 1 year ________________-

b) 1-2 years ______________

c) 2-3 years __________

5) What is your marital status?

a) Single _________________

b) Married ______________

c) Separated/divorced ______________________

d) Other (Please specify): ______________________

e) Prefer not to specify _________________

Research Instrument (Interview question guide)

Realigning Current Knowledge-Based Approaches to Hepatitis C Virus Prevention Among A Diverse Sample of Immigrants in Nova Scotia, Canada.

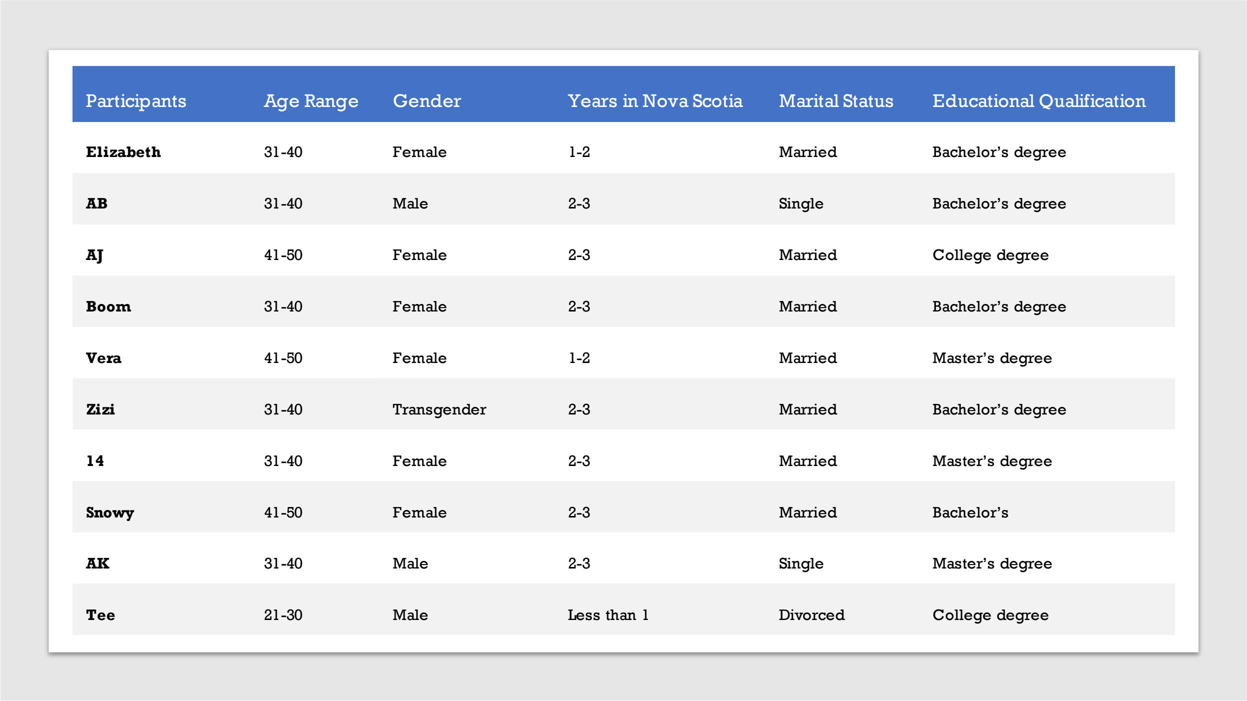
Interview Questions Guide

1. Tell me about your experience assessing HCV prevention services?
2. What would you describe as the factors that can prevent immigrants from accessing HCV prevention services?
3. What are your thoughts on gender affecting access to HCV prevention services?
4. What strategies can be utilized to effectively address the HCV prevention, testing and treatment needs of immigrants in a non-stigmatizing way?
5. From your perspective or experience, what HCV prevention information is available to the immigrant populations in Nova Scotia?
6. From your perspective, what HCV prevention information can be culturally relevant for immigrants in Nova Scotia?
7. Do you have any other comments you would like to make about meeting the HCV prevention and information needs of immigrants to Nova Scotia?

Thank you for your time and interest in this study.

APPENDIX F DEMOGRAPHIC DATA TABLE

Participants Demographic Table



Participants	Age Range	Gender	Years in Nova Scotia	Marital Status	Educational Qualification
Elizabeth	31-40	Female	1-2	Married	Bachelor's degree
AB	31-40	Male	2-3	Single	Bachelor's degree
AJ	41-50	Female	2-3	Married	College degree
Boom	31-40	Female	2-3	Married	Bachelor's degree
Vera	41-50	Female	1-2	Married	Master's degree
Zizi	31-40	Transgender	2-3	Married	Bachelor's degree
14	31-40	Female	2-3	Married	Master's degree
Snowy	41-50	Female	2-3	Married	Bachelor's
AK	31-40	Male	2-3	Single	Master's degree
Tee	21-30	Male	Less than 1	Divorced	College degree