Immigrant women's perceptions of cervical cancer prevention strategies in Ontario, Canada: A framework-informed qualitative analysis

by

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Authors Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any final required revisions, as accepted by my committee. I understand that my thesis may be made electronically available to the public.

Abstract

Background: In Ontario, it is recommended that people with a cervix who are sexually active and over the age of 21 have a Papanicolaou (Pap) test every three years and that students in grade seven receive the human papillomavirus (HPV) vaccine. The extent to which eligible Canadians engage in regular Pap smear examinations and obtain the HPV vaccination are significant public health issues. Importantly, immigration status is largely associated with being underscreened for cervical cancer (Bacal et al., 2019; Datta et al., 2018). Canadian immigrants are less likely to be screened for cervical cancer and have higher rates of HPV infection compared to non-immigrants (Datta et al., 2018; Lofters et al., 2007; Wilson et al., 2021). To develop targeted public health interventions that encourage screening and vaccination among eligible immigrants in Canada, public health practitioners must explore the behavioural influences that produce screening inequities between immigrants and non-immigrants.

Methods: Using a semi-structured theoretically-informed qualitative interview study, this thesis examined two major questions: (1) "What are the experiences and perceptions of cervical cancer prevention strategies among immigrant women in Ontario?" and (2) "How might targeted public health programs improve Pap test adherence and HPV vaccination among immigrant women and their children in Ontario?". The interview guide was based on Version 1 of the Theoretical Domains Framework (TDF). Interviews were coded inductively to explore barriers and enablers to cervical cancer prevention programs. Using previously published criteria, the behavioural influences identified in the inductive stage were then allocated to relevant TDF domains.

Results: The behavioural influences identified in this study were allocated to nine of the 12 TDF domains, including *Knowledge*, *Skills*, *Beliefs about capabilities*, *Beliefs about consequences*, *Motivation and goals*, *Environmental context and resources*, *Social influences*, *Emotion*, and *Behavioural regulation*.

Conclusion: The findings from this study informed five recommendations for targeted public health programs aiming to increase screening adherence and vaccination rates within immigrant communities. The recommendations are to (1) improve access to multilingual health resources, (2)

disseminate health information to immigrant communities through effective media, (3) provide physicians with educational resources to improve the cultural sensitivity and safety of their approaches to care delivery, (4) increase access to low-barrier healthcare and (5) incorporate self-administered tests into provincial screening programs.

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Dedication

I would like to dedicate this thesis to my Mom, Titi, and Vovó. I am so grateful for the strong female role models I have in all of you. Your stories inspired this work, and I simply would not be who I am today without the three of you. Thank you.

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List of Abbreviations

Abbreviation	Meaning
HPV	Human papillomavirus
Pap test	Papanicolaou test
ICC	Invasive cervical cancer
TDF	Theoretical Domains Framework
CIC	Canadian Immunization Committee
OHIP	Ontario Health Insurance Plan
SES	Socioeconomic status
CCHS	Canadian Community Health Survey
CCO	Cancer Care Ontario
IVF	In vitro fertilization
BCT	Behavioural change technique
CCRIH	Canadian Centre for Refugee and Immigrant Healthcare

1.0 Introduction

An estimated 1,350 Canadian women will be diagnosed with cervical cancer this year; however, this cancer is highly preventable due to its slow progression (Canadian Cancer Society, 2020). Cervical cancer results from persistent infection with an oncogenic strain of the human papillomavirus (HPV). In most cases, an HPV infection can be fought off by the infected individual's immune system (Castellsagué, 2008; CDC, 2019). However, in instances where HPV does not go away on its own, it can lead to genital warts or cancer (CDC, 2019). High-risk oncogenic strains of HPV, responsible for 95–99% of cervical cancer cases, take several years to progress from infection to invasive cervical cancer (ICC) (Castellsagué, 2008; Skinner et al., 2016). As such, Papanicolaou (Pap) tests serve as a highly effective secondary prevention tool. Pap tests consist of a cervical swab that can detect signs of HPV infection before the virus progresses into a cancerous lesion (Safaeian & Solomonl, 2007; Skinner et al., 2016).

People who have a cervix can also get vaccinated against HPV to prevent cervical cancer. Vaccines that target oncogenic strains of HPV have been developed and recommended in Canada for females since 2007 (CIC, 2014). Currently, the HPV vaccines available and administered in Ontario are Cervarix and Gardasil 9 (Dubé, 2019; NACI, 2017). Both vaccines protect against several HPV strains, including HPV Types 16 and 18, which account for over 70% of cervical cancer cases (NACI, 2017; Zhai & Tumban, 2016).

Failure to prevent cervical cancer is the result of low rates of vaccination against HPV and poor adherence to provincial Pap test guidelines (Campos et al., 2014; Spayne et al., 2008). In Ontario, it is recommended that people who have a cervix who are sexually active and over the age of 21 obtain a Pap test every three years and that Grade Seven students receive the HPV vaccine to prevent cervical cancer (Cancer Care Ontario, 2020). Unfortunately, vaccination and screening rates in Ontario fall well below the provincial targets. For example, in the 2018/2019 school year, Public Health Ontario reported that 57.9% of Grade Seven students had received all recommended doses of the HPV vaccine, which is far from the 80–90% target set by the Canadian Immunization Committee

(CIC) (PHO, 2020; Shapiro et al., 2017). Similarly, provincial targets for Pap test screening stand at 95%, while the 2020 Ontario Cancer Screening Performance Report identified a Pap test adherence rate of 60% in 2018.

Factors influencing why someone might fail to comply with current screening guidelines include older age, low levels of education, a lower SES, and limited access to health services or a primary care physician (Bacal et al., 2019; Latif, 2010; Lofters et al., 2007; McDonald & Kennedy, 2007). In addition, being an immigrant is largely associated with being underscreened for cervical cancer (Bacal et al., 2019; Datta et al., 2018; Wilson et al., 2021).

Immigrants to Canada are less likely to be screened for cervical cancer, and those between 40 and 70 years of age have a higher incidence of invasive cervical cancer diagnoses than do non-immigrants in the same age range (Aston et al., 2019; Bacal et al., 2019; Datta et al., 2018; Lofters et al., 2007). Immigrant and refugee populations in Canada are also disproportionately impacted by HPV infections, which likely leads to their increased risk of developing cervical cancer (Wilson et al., 2021).

Ontario is home to the majority of Canada's immigrant population and therefore should make immigrant health needs a priority (Office of Economic Policy, 2021). To develop health promotion programs that encourage screening and vaccination, public health practitioners should explore screening inequities between immigrant and non-immigrant women. This study uses the Theoretical Domains Framework (TDF) to identify barriers and facilitators of Pap test adherence and HPV vaccination among immigrant women between 40 and 70 years of age residing in Ontario, Canada. The reporting of the study follows the relevant sections of Tong et al.'s (2007) consolidated criteria for reporting qualitative research (COREQ). The COREQ is a checklist for detailed and comprehensive reporting of qualitative research, including the research team, methods, context, findings, analysis, and interpretations of the study results (Tong et al., 2007).

2.0 Literature Review

Despite its preventability, cervical cancer has the fourth-highest incidence of cancers among women across the globe (WHO, 2020). It was estimated that Canadian women accounted for 1,350 cervical cancer cases and 410 deaths in 2020 (Canadian Cancer Society, 2020). The review below will discuss the etiology of cervical cancer and the human papillomavirus, cervical cancer prevention strategies, and health services access among immigrant communities.

2.1 Cervical Cancer and the Human Papillomavirus

Prior to the 1980s, researchers had not yet affirmed the etiology of cervical cancer (Castellsagué, 2008). Today, based on the accumulation of virological, molecular, clinical, and epidemiological studies, researchers have ascertained that virtually all cervical cancers are sexually transmitted diseases (Dillner et al., 2000; Muñoz et al., 2006). Cervical cancer results from persistent infection with oncogenic strains of the human papillomavirus (HPV) (Bosch & Muñoz, 2002; Campos et al., 2014).

HPV is a sexually or vertically transmitted DNA-based virus suspected to have infected the human population for dozens of millennia (Bosch & Muñoz, 2002; Castellsagué, 2008). With over 100 different strains of the virus, the clinical presentation is not consistent among infected individuals (Castellsagué, 2008). In most cases, the infected individual's immune system can fight off the infection before symptoms begin to develop. However, in instances where HPV does not go away on its own, it can lead to genital warts or cancer (Canadian Cancer Society, 2020). Approximately 90% of individuals infected with HPV Types 6, 11, 16, or 42 will develop condyloma acuminatum (genital warts). These strains can be vertically transmitted to the child during a vaginal delivery (Castellsagué, 2008). Cancerous presentations of HPV infection include neoplastic cervical, vulvar, vaginal, penile, and anal cancers, which are usually associated with low-risk and, more frequently, high-risk strains of HPV. Low-risk strains include HPV Types 6 and 11, and high-risk strains include HPV Types 16, 18,

45, and 31. Types 16 and 18 alone account for over 70% of cervical cancer cases (Castellsagué, 2008; NACI, 2017; Zhai & Tumban, 2016). Cancerous presentations of HPV infection are primarily contracted through sexual intercourse, including penile-vaginal and penile-anal intercourse. As such, both males and females are involved in the chain of infection and may transmit the virus unknowingly as an asymptomatic carrier (Castellsagué, 2008).

To definitively diagnose cervical cancer, infected patients must undergo a colposcopy directed biopsy of their cervical tissue (Bosch & Muñoz, 2002). The cervix is the part of the uterus that projects into the anterior aspect of the vagina. The tissue most susceptible to infection with oncogenic strains of HPV is the cervical transformation zone, an area of metaplastic tissue on the cervix. The size of the cervical transformation zone's immature metaplastic tissue decreases with age. As a result, younger individuals with a cervix are at a greater risk of infection with oncogenic strains of HPV (Bosch & Muñoz, 2002; Schiffman & Wentzensen, 2013).

Progression from an HPV infection to invasive cervical cancer (ICC) is a slow process that can take several years. As such, adherence to cervical cancer screening increases the likelihood that an infection will be caught before precancerous or cancerous lesions have formed (Safaeian & Solomonl, 2007; Skinner et al., 2016).

2.2 Cervical Cancer Prevention Strategies

While it is more common for infections with HPV to resolve on their own, preventing HPV infection is still an essential aspect of preventing cervical cancer (Dubé et al., 2019). In the absence of vaccination, it is estimated that 75% of Canadians who are sexually active will be infected with HPV during their lifetime (CIC, 2014). The HPV vaccine is a highly effective primary prevention tool for cervical cancer. To combat the high incidence of HPV in Canada, all provinces and territories have introduced publicly funded school-based HPV vaccination programs (Dubé et al., 2019). Currently, there are two HPV vaccines authorized for use in Canada for females between the ages of 15 and 45 and males between the ages of 16 and 26 (NACI, 2017). Both vaccines prevent infection with several strains of HPV, including high-risk Types 16 and 18 (NACI, 2017; Zhai & Tumban, 2016).

The Canadian Immunization Committee (CIC) recommends that HPV vaccination school programs set targets of vaccinating 80–90% of eligible students; however, several provinces and territories remain well under this range (Shapiro et al., 2017). The HPV vaccination is delivered in 2–3 doses to both female and male students. The vaccine was first available to female students in 2007 and to male students in 2010 (CIC, 2014). Among females, vaccination uptake and completion (2–3 doses as recommended by the provincial program) in the 2014/2015 school year ranged from 48% in the Northwest Territories to 89.2% in Newfoundland and Labrador (Shapiro et al., 2017). In Ontario, the provincial public health office reports on the series completion of the HPV vaccine for both sexes at 12 years of age and for females only at 17 years of age to capture school programs with extended eligibility beyond grade 7 (PHO, 2020). In the 2018/2019 school year, Public Health Ontario reported that 57.9% of 12-year-olds and 61.6% of 17-year-olds received all recommended doses of the HPV vaccine, positioning Ontario well behind the target set by the CIC (PHO, 2020; Shapiro et al., 2017).

According to a study by Malagón et al. (2015), while mass uptake of the HPV vaccination is predicted to significantly decrease rates of cervical cancer, the vaccine alone is not enough to avoid developing the disease. Women who do not participate in regular screening have the highest disease burden after receiving the HPV vaccination compared to vaccinated women who participate in regular screening (Malagón et al., 2015). In high-income countries, the Pap test is the most widely used secondary prevention tool for cervical cancer (Safaeian & Solomon, 2009). The Pap test is a cervical swab used to collect a sample of cells, which are then tested to detect changes in the cervix likely caused by an HPV infection (Cancer Care Ontario, 2020). If atypical or precancerous cells are detected on the cervix, patients will be monitored closely to ensure the abnormal cells do not progress into a cancerous state. Monitoring can include follow-up tests or treatments, including additional Pap tests, an HPV test, a colposcopy, a biopsy, and an excision procedure to remove the abnormal cells (Canadian Cancer Society, 2020). In most cases, two consecutive abnormal Pap tests are warning signs of a woman's risk of developing a cancerous lesion (Bosch & Muñoz, 2002).

Spence et al. (2014) found that inadequate screening is strongly correlated with developing cervical cancer. Epidemiological studies, including one by Franco et al. (2001), have also suggested that women who have not been screened, have two to ten times the relative risk of developing cervical

cancer. This risk increases with the time since their last screening (Franco et al., 2001). In Ontario, adequate screening involves at least one Pap test every three years. Present guidelines advise that individuals with a cervix, who are or who have been sexually active, obtain regular Pap tests between the ages of 21 and 70 (Cancer Care Ontario, 2020). Pap tests fall under Ontario's Health Insurance Plan (OHIP) and are therefore covered for individuals who meet OHIP requirements. The 2020 Ontario Cancer Screening Performance Report identified a stable Pap test adherence rate of 60% among eligible women in Ontario between 2013 and 2018.

Encouragingly, the report noted that 86% of women who received a high-grade abnormal Pap test received the appropriate follow-up care within six months of their diagnosis (Cancer Care Ontario, 2021). Various factors have been associated with being underscreened, including limited knowledge, a lack of access, and primary care physicians' characteristics as potential barriers to regular screening (Murphy, 2007). To develop effective screening programs, public health practitioners must identify women who are less likely to adhere to Pap test guidelines. By identifying at-risk groups for being underscreened and understanding the behavioural influences leading them to be underscreened, public health practitioners can then address barriers to screening and develop targeted promotional material to better engage these groups.

2.3 Immigrant Women, Pap tests and the HPV Vaccine

Despite the availability of highly effective primary and secondary preventive measures for cervical cancer, Canadian immigrants are disproportionately impacted by the disease due to underscreening (Wilson et al., 2021; Bacal et al., 2019; Datta et al., 2018). In Canada, women who have never been screened for cervical cancer constitute more than 40% of ICC cases and those who are infrequently screened account for 10% (Spence et al., 2007). While projections state that up to 12% of eligible Canadians have never had a Pap test, this percentage is much higher among immigrant women (Xiong et al., 2010; Bascal et al., 2019).

A study using data from the 2012 Canadian Community Health Survey (CCHS) identified a significant association between immigrant status and risk of underscreening, irrespective of time in

Canada (Bacal et al., 2019). Similarly, a study by Datta et al. (2018) evaluating the risk of underscreening among Montréal residents concluded that immigrant status was the strongest predictor of never being screened for cervical cancer (Datta et al., 2018). These findings are consistent with previous literature, which identifies lower rates of Pap test utilization among Canadian immigrants (Grunfeld, 1997; Finkelstein, 2002; Lee et al., 2019; Lofters et al., 2010; Schoueri-Mychasiw et al. 2013). Previous literature has also identified a correlation between being underscreened and immigrating from countries with a high incidence of cervical cancer and low screening rates (Lofters et al., 2010).

To date, no existing studies have reported on HPV vaccination uptake among immigrants in Canada. However, it has been reported that immigrants in Canada face HPV infections at disproportionate rates (Pottie et al., 2011; Wilson et al., 2021). The disproportionate impact of HPV infections on the immigrant community warrants further investigation into barriers to vaccination experienced or perceived by immigrant women in Canada.

2.4 Barriers to Health Services for Immigrant Women

Ontario received 46.3% of all immigrants who came to Canada in the first quarter of 2020 (Office of Economic Policy, 2021). Studies have shown that people can experience a deterioration in their health status after immigration to Canada, with some suggesting that this is due to a lack of appropriate health services access (De Maio & Kemp, 2010; Subedi & Rosenberg, 2014). To understand why immigrant health can deteriorate in the years following immigration, researchers have identified a range of factors that influence access to and use of health services among immigrant populations (Lebrun, 2012; Setia et al., 2011). These factors include culture, socioeconomic status (SES), physician characteristics, and awareness or understanding of the services offered (Ferdous et al., 2018; Setia et al., 2011). Despite identifying these factors, knowledge of the health care needs and access to health services among immigrant populations in Canada is still poorly understood today (Ferdous et al., 2018).

A recent study investigating the incidence of ICC among Canadian immigrants found that the risk was greater for immigrants between the ages of 40 and 70 and for immigrants from certain countries, including Russia, Ukraine, and Korea (Aston et al., 2019). These findings are supported by previous literature suggesting that the risk of ICC increases with age and that patterns of low screening among immigrant women continue after immigration from countries with lower screening rates (Lofters et al., 2010; Vicus et al., 2015).

2.41 Cultural Barriers

Canada's immigrant population has contributed to growing multilingualism in the home and the increased diversity of Ontario residents' ethnic and cultural origins (Arora, 2019). The 2016 Census reported that Ontario's current population identifies with more than 250 ethnic or cultural backgrounds (Statistics Canada, 2017).

Culture and ethnicity have been well-documented as significant predictors of engagement with health services among immigrant communities (Lofters et al., 2010; Redwood-Campbell et al., 2011). Cultural factors influencing access to health services involve both a difference in how immigrants view the Canadian health system and a lack of health promotion efforts to reach cultural minorities. Immigrants who identify with an ethnicity or culture that strongly differs from the Western culture that is pervasive in Canadian systems will have to adapt to a new health culture upon their arrival in Canada. Challenges adapting to a new health culture can impede an immigrant's ability to navigate services and seek out important health-related information (Lai & Chau, 2007). Immigrants have also expressed discomfort discussing traditional, herbalist, or other alternative practices with their healthcare providers despite these practices being widely used and trusted in their birthplace (Lofters et al. 2010; Zanchetta & Poureslami, 2006).

In the context of immigrant women and cervical cancer screening, low levels of acculturation have been identified as a significant barrier impeding understanding of the prevention strategy (Gupta et al., 2002; Lofters et al., 2010; Steven et al., 2004). Many patients who are immigrants do not understand why they need to obtain regular screening (Steven et al., 2004). External influence from

people who share their culture has also been identified as a predictor of screening behaviour (Redwood-Campbell et al., 2011). Thus, immigrants living in communities that do not share their culture removes this external influence, which can have a detrimental impact by reducing their level of participation in regular screening. The opposite is also sometimes true, as a qualitative study found that Chinese and Arabic women identified embarrassment and modesty as cultural-related feelings which deterred their participation in regular Pap tests (Redwood-Campbell et al., 2011). Testimonials from these women indicated that being unmarried made it very difficult for them to speak openly about their sexual health with friends and with their physicians (Redwood-Campbell et al., 2011).

Similar conclusions have been made in studies investigating HPV vaccination uptake among immigrant populations. Due to the fact that HPV is a sexually transmitted disease, there is a challenge in recommending vaccination to immigrants who see discussions related to sexuality and sexual health as taboo in their culture (Rubens-Auguston et al., 2019). Healthcare providers in a study by Rubens-Auguston et al. (2019) recalled a reluctance among some newcomers who believed the vaccine encourages promiscuity.

2.42 Socioeconomic Status

Social and economic factors have been well documented as significant determinants of health at both the population and individual levels (Dunn & Dyck, 2000). A study using the CCHS demonstrated a positive association between higher education and income with good health among immigrants in Canada (Halli & Anchan, 2005). The cost of transportation and childcare can be a barrier to health service access for immigrant women (Lofters et al., 2010). Women who belong to a lower SES are less likely to access the resources needed to attend regular physician visits and prioritize their non-urgent health needs (Lofters et al., 2010; Zanchetta & Poureslami, 2006). Lofters et al. (2010) found that the compounded effect of recent registration with Ontario's universal health insurance (a group mainly consisting of immigrant women), living in a low-income area, and being between 50 and 69 years of age resulted in a Pap screening rate of only 31.0%. This was contrasted with a 70.5% screening rate among a control group (Lofters et al., 2010). In another study, researchers

emphasized the need to improve general Pap screening adherence by targeting women who recently immigrated and who belong to a lower SES (Lofters et al., 2007).

To date, few studies have investigated the barriers to HPV vaccination among immigrants and children of immigrants in Canada. Rubens-Auguston et al. (2019) looked at healthcare providers' perspectives, concluding that access to the HPV vaccine among newcomers was largely impacted by cost. For individuals who immigrate at an age outside of the age bracket targeted by publicly funded school programs, paying out-of-pocket for the HPV vaccine can pose a significant barrier to vaccine uptake (Rubens-Auguston et al., 2019).

2.43 Physician Characteristics

Previous studies investigating health services uptake among immigrant women have identified physician characteristics and system factors as potential barriers (Van Til et al., 2003; Zapka & Lemon, 2004). Incongruence between an immigrant's culture and their physician's can create similar cultural barriers to those of a new health system culture (Lofters et al., 2010; Redwood-Campbell et al., 2011). The physician's perceived sex is also a reported barrier. Several studies have suggested that female immigrants prefer female physicians. One study found that a physician's perceived sex was most important to Muslim participants who insisted on having a female physician complete their Pap tests (Redwood-Campbell et al., 2011).

Complementing the study by Rubens-Auguston et al. (2019), in which physicians reported difficulty talking to patients about preventive care in the limited time they saw them, a study by Lofters et al. (2010) reported that several immigrant women were not offered various preventive tests, like the Pap test, from their doctor. In terms of the HPV vaccine, providers are more likely to rely on school-based programs to educate on the vaccine than to bring it up with a patient (Rubens-Auguston et al., 2019). Thus, individuals who may have a difficult time understanding the information provided by the school or who missed the window for school-based programs might not be made aware of the vaccine. In an effort to improve immigrants' care, researchers have used these findings to advocate for

educating primary care physicians on priority topics and cultural sensitivity when it comes to servicing immigrant patients (Hislop et al., 2007).

2.44 Lack of Knowledge

Without correctly understanding the reasons, risks, and requirements behind health service guidelines, it is unlikely that an individual will have the self-motivation to adhere to public health recommendations (Hislop et al., 2007; Lofters et al., 2007). Previous studies have identified that low education among immigrant women might be a barrier to participation in preventive programs (Hislop et al., 2007; Lofters et al., 2007). Information concerning Pap screening is not easily accessible to individuals who do not speak English or French, have lower levels of education, or have lower health literacy levels (Hislop et al., 2007; Lofters et al., 2007). One study investigating cervical cancer screening among the Chinese and South Asian (predominantly Punjabi) communities in BC, Canada, identified linguistically appropriate education as a necessary intervention to increase adherence to current Pap test guidelines (Hislop et al., 2007). Gaps in knowledge were also identified in a qualitative study investigating the perceived barriers to preventive health screening among new immigrants in Hamilton, Ontario (Redwood-Campbell et al., 2011). Women involved in the study voiced a need for information on the purposes of screening, what the procedures were, and what to make of the results (Redwood-Campbell et al., 2011).

Similarly, HPV vaccination is associated with the ability to identify a primary care physician and navigate a new health system (Rubens-Auguston et al., 2019). Physicians reported challenges communicating with newcomer patients. They noted that health promotion resources are rarely available in multiple languages or created at a level appropriate for individuals with low health literacy (Rubens-Auguston et al., 2019). This is a significant challenge with the current school programs that require parents to sign "convoluted" and "difficult to understand" consent forms for their children to receive the HPV vaccine (Rubens-Auguston et al., 2019, p. 1700). A lack of accessible information might also lead to gaps in knowledge. Providers participating in the study noted that many newcomers had little to no knowledge about HPV or the existence of a vaccine to

prevent the virus (Rubens-Auguston et al., 2019). This is consistent with other studies evaluating barriers to preventive programs for immigrant communities (Wilson et al., 2021).

2.5 Targeted Public Health Measures for Immigrant Women

While several studies have advocated for targeted public health measures for immigrant women, the development and execution of these programs is rare (Bacal et al., 2019). In Canada, the Pap test is considered one of the most widely accessible forms of cancer screening due to organized efforts by government and non-government agencies (McDonald & Kennedy, 2007). However, provincially organized screening programs have not been sufficient, as studies have found that more than one-fifth of Ontarian women have not been screened for breast, cervical, and colorectal cancer for five years or more (Lofters et al., 2019). Recommendations from previous literature include improving access to primary care physicians, training non-physicians to complete screening examinations, or using self-administered testing (Bacal et al., 2019).

Self-collected examinations and HPV testing are a newer concept supported by several studies as an effective way to reach underscreened women (Racey & Gesink, 2016; Singla & Komesaroff, 2018). While Health Canada approved a self-testing kit for HPV in 2017, these testing kits have not been incorporated into official screening programs, limiting their usefulness (Fedyanova, 2018).

In a qualitative study investigating the perspectives of healthcare providers, several reported that targeted health promotion efforts are necessary to facilitate HPV vaccine uptake among immigrant women (Rubens-Auguston et al., 2019). Similarly, qualitative studies investigating Pap test adherence have also called for targeted screening programs for immigrant women (Bacal et al., 2019; Lofters et al., 2019). These studies come after the publication of a compendium of pan-Canadian best and promising practices for engaging seldom or never screened women (inclusive of trans women, trans men, and intersex individuals) in cancer screening. The compendium was a collaboration between South Riverdale, Mount Sinai Hospital, and Toronto Public Health to identify practices to engage those least likely to participate in cancer screening in Canada (SRCHC, 2010). The publication identified several at-risk groups, including newcomers to Canada and immigrant women,

low-income women, and women of low literacy or whose first language is not English. In Ontario, the environmental scan found 36 programs created to target underscreened groups. Of the 36 groups, only 17 focused on cervical cancer, and of the 17 programs, only 9 included immigrant women or cultural minorities in their list of target audiences. The nine programs explicitly focused on immigrant women or cultural minorities leveraged multiple media channels and translated health materials. The OMNI/ Rogers Women's Cancer Initiative for Multi-Ethnic Communities recruited healthcare professionals to deliver scripted messages in Farsi, Ukrainian, and Punjabi. Of all programs, this one was most effective, reaching 90% of its target population (SRCHC, 2010). However, like the other programs, this one, too, encountered several challenges. The most common challenges noted across all programs were timing, high drop-out rates, difficulty ensuring the content created was culturally sensitive, limited funding, and a lack of research investigating the existing barriers for under-screened populations. Lessons learned by these programs included the vital role of women practitioners in breaking down gender barriers, the value of community engagement in developing these programs, and the importance of tailoring each project to different regions and communities (SRCHC, 2010).

Overall, the literature suggests that targeted health promotion efforts must be built in collaboration with community members and tailored to each region and community to effectively reach different immigrant populations and encourage their participation in regular screening (Bacal et al., 2019; Lofters et al., 2019; SRCHC, 2010). As a result, understanding immigrant women's perspective on how targeted public health programs can be improved to increase Pap test screening and HPV vaccination rates was prioritized in this study's question guide. To date, no other qualitative study has evaluated the experiences and perceptions of both the Pap test and HPV vaccine among Ontario's immigrant population.

3.0 Specific Aims

This study examined two major research questions: (1) “What are the experiences and perceptions of cervical cancer prevention strategies among immigrant women in Ontario?” (2) “How might targeted public health programs improve Pap test adherence and HPV vaccination among immigrant women and their children in Ontario?”

To answer these questions, the study addressed the following sub-questions:

A) What knowledge do immigrant women have about the Pap test and the HPV vaccine?

B) Are immigrant women accepting of current cervical cancer prevention strategies?

C) What are immigrant women’s experiences with and perceptions of Pap tests, the HPV vaccine, and healthcare providers who administer these interventions?

D) What suggestions do immigrant women have to improve current cervical cancer prevention strategies in Ontario?

4.0 Study Design

This study was a semi-structured theoretically-informed qualitative interview study. Immigrant women currently residing in Ontario were interviewed about their perception of and experiences with current cervical cancer prevention strategies. The interview guide was based on Version 1 of the Theoretical Domains Framework (TDF). Important determinants of the target behaviours (Pap test examinations and the HPV vaccine) were identified using the procedure outlined by Mayring (2004), which involves both inductive and deductive coding.

4.1 Methodology

4.11 Research Team and Reflexivity

I served as the sole interviewer, conducting all 20 semi-structured interviews. At the time of the interviews, I was completing research as a master's student. I hold an Honours Bachelor of Medical Sciences and possess a high level of health literacy as a result of my educational background. Both of my parents are Portuguese, and my mother immigrated to Canada from Portugal in her teens. Being proficient in Portuguese allowed me to build an enhanced rapport with Portuguese participants and also extended to them the comfort of being able to respond in Portuguese if they preferred.

Before the study, both myself and my second coder completed qualitative research involving semi-structured interviews through a four-month graduate course in qualitative methods. The research completed as part of the graduate course allowed us to develop effective interviewing, coding, and data analysis skills. Further, we both completed a certificate in human research ethics training (TCPS2 Certificate).

Throughout each interview, where applicable, I took detailed memos. These memos acknowledged moments when my positionality and experiences were challenged or matched by a participant's story. All memos were incorporated into the transcripts as a note to the reader and were

reviewed by the second coder. While coding, both the second coder and I sought to centre the participant's experiences while also acknowledging how the memos in the transcripts might influence the interpretation of the data collected.

I had pre-established relationships with five of the participants recruited for the study. To ensure rigour of the study, the second coder did not share a pre-established relationship with any of the five participants and was responsible for carefully evaluating and independently coding the five transcripts belonging to these participants. All participants were aware of my position as a master's researcher.

4.12 Theoretical Framework

Implementing evidence-based health promotion practices requires acceptance by a target audience and should ultimately aim for behavioural change (Richardson et al., 2019). Successfully changing behaviour is dependent on a careful assessment of barriers and enablers of the desired behaviour change as experienced by the person conducting the behaviour (Atkins et al., 2017; Richardson et al., 2019). In the context of this study, the desired behaviour change was to increase cervical screening adherence and HPV vaccination rates among immigrant women and their children in Ontario. For this reason, the study was developed using the Theoretical Domains Framework (TDF).

The TDF is a recent development in behavioural studies created by a team of behavioural and health services research implementation scientists (Michie et al., 2005). The framework is a consensus among the researchers who aimed to distil an integrated framework from 128 theoretical constructs taken from 33 of the most relevant theories to implementation questions (Atkins et al., 2017). After first identifying theories and theoretical constructs relevant to behaviour change, the team developed a simplified list of overarching theoretical domains. These domains can function as either a barrier or enabler to meeting the desired behaviour. The domains include *Knowledge*, *Skills*, *Social/professional role and identity*, *Beliefs about capabilities*, *Beliefs about consequences*, *Motivation and goals*, *Memory, attention and decision processes*, *Environmental context and resources*, *Social influences*,

Emotion, *Behavioural regulation*, and *Nature of the Behaviour* (Michie et al., 2005). The TDF was later validated by an independent group of behavioural experts, which led to the addition of two domains: *Optimism* and *Reinforcement*. Both Version 1 (12 domains) and Version 2 (14 domains) are used widely in behaviour research (Atkins et al., 2017).

For the purpose of this study, the researcher used Version 1 of the TDF. This decision was made following an evaluation of relevant domains by the research sub-aims (Appendix A). During this evaluation, the researcher determined that the two additional domains included in Version 2 of the TDF did not align well with the research aims.

While the framework was initially developed to evaluate influences on the behaviours of health professionals related to the implementation of evidence-based recommendations, recent studies have extended its application to understand patient behaviours (Kolehmainen et al., 2011; Nicholson et al., 2014). Similarly, this study employed the framework to understand barriers and enablers of Pap test and HPV vaccine adherence (desired behaviour) among immigrant women in Ontario (patient). To date, the framework has been primarily used in the context of health care interventions (Phillips et al., 2015; Richardson et al., 2019).

To help guide the application of the framework to this study, the researcher followed the guidelines outlined by Atkins et al. (2017) to investigate enablers and barriers of Ontario's current cervical cancer prevention strategies for immigrant women. The first step was to select and specify the target behaviour(s), which were uptake of and adherence to cervical cancer prevention strategies, specifically the Pap test and HPV vaccine. The second step was to select the study design. The majority of studies using TDF are qualitative analyses of interview or focus group data (Francis et al., 2009; Islam et al., 2012; Phillips et al., 2015). Qualitative semi-structured interviews were selected as they are considered to be more useful when less is known about the influences on the behaviour of interest (Atkins et al., 2017). Previously, no studies had investigated the experiences and perceptions of both the Pap test and HPV vaccine among Ontario's immigrant population.

The third step was deciding the sampling strategy. The guidelines developed by Atkins et al. (2017) suggest researchers should establish a minimum sample size a priori, providing the example of Francis et al. (2010) "ten + three" stopping criterion, which was used in this study. The fourth step is

the development of an interview schedule, also referred to as an interview guide. Both Atkins et al. (2017) and McGowan et al. (2020) recommend a semi-structured guide to allow for flexibility in the order in which domains are covered. This suggestion allows for a more natural flow in the interview. The construction of the interview guide is detailed in *IV Data Collection* below. The guidance provided for the fifth step, data collection, recommended that all interviewers have a strong familiarity with the theoretical constructs underpinning the domains to encourage appropriate unscripted probing during the interview. The primary researcher independently conducted all of the interviews and prepared for each interview with a review of Appendix B. The final recommendations by Atkins et al. (2017) pertained to data analysis, which applied to the *II Deductive Category Development* below.

4.13 Participant Selection

Eligibility Criteria

Pap test guidelines and HPV school programs vary by province and are only accessible to individuals with provincial health insurance. Additionally, Pap tests are covered under Ontario's provincial health insurance plan, which means that permanent residents have access to screening without having to pay out-of-pocket (Ferdous et al., 2018). As a result, eligibility for participation in this study included immigrant women eligible for OHIP who are currently residing in Ontario. To ensure informed consent, participants were also required to possess a passive comprehension of English. Passive comprehension was assessed at the beginning of each interview with dialogue to confirm the participant's understanding of the letter of intent and consent form.

Eligibility was also restricted to participants between 40 and 70 years of age in the year the interviews took place. The age bracket was selected according to previous literature, which demonstrated an increased incidence of invasive cervical cancer among immigrant women between 40 and 70 years of age (Aston et al., 2019). Additionally, vaccines that target oncogenic strains of HPV have been developed and recommended in Canada for females since 2007 and males since 2010 (CIC, 2014). Given that those currently between 40 and 70 would have been between 26 and 56 in 2007, the

majority of this age range would have been eligible for the HPV vaccine as it is available to individuals 45 and under. Further, participants with children aged 11–26 (female) or 11–22 (male) would have had school programs targeting their children for HPV vaccination. Due to challenges with recruitment during the COVID-19 pandemic, eligibility was not restricted to those who were either 45 or under in 2007 or to individuals with children in the aforementioned age ranges, as all participants could at least speak to Pap test examinations.

Recruitment

Participants were recruited using a recruitment poster (Appendix C) shared on social media platforms (Facebook, Twitter, and Instagram) and distributed via email to (1) immigrant and multicultural organizations, (2) community and health centres, and (3) religious centres in Ontario. A standard email template was used to reach out to all organizations (Appendix C). Some participants were also recruited through snowball sampling leading to a greater number of Portuguese and Indian participants.

Participants were recruited until theoretical saturation of the data was reached. Theoretical saturation was reached at 20 participants, following the "ten + three" stopping criterion, in which a minimum of ten interviews is required plus subsequent interviews until three consecutive interviews provide no new ideas (Francis et al., 2010).

Participants were made aware of the aims of the study via the recruitment materials. These aims were reiterated at the beginning of each one-on-one interview. Participants were asked to read a letter of intent shared with them via email and to return the signed consent form in advance of the interview (Appendix D). During this exchange, participants were also asked to confirm their eligibility for the study and were given the opportunity to pose any questions about participation to the researcher. At this point, I spoke to 11 participants who opted out of the study after inquiring about the interview process and questions. The reasons noted for non-participation were (1) discomfort with the research topic and (2) lack of compensation.

A standard script was used to collect verbal consent from participants who did not return a signed consent form in advance of the study (Appendix D). All participants were also provided feedback forms upon completion of their interview (Appendix D).

Characteristics of the Sample

The participants' ages ranged from 41 to 65, with the average age being 53. Nine of the participants were Portuguese, four were Indian, three were Polish, and the remaining participants identified themselves as Irish, Persian, Peruvian, and Russian. Seven of the participants immigrated to Canada after 2000 (in the last twenty years), and eleven of the participants immigrated to Canada before 2000, with the most time spent in Canada being 55 years. Participants were asked what their knowledge of English had been before immigrating. Eleven of the participants had no prior knowledge of English, and only five reported a high comprehension and ability to communicate in English before immigrating. The remaining four had a low-medium level comprehension of English. Three of the participants had not completed high school, five had completed high school, five held only a Bachelor's degree, and seven had post-graduate degrees. All but two of the participants were married, and all participants had children. Seventeen of the participants had at least one female child, who ranged in age from 10 to 42, with the average age being 26. Thirteen of the participants had at least one male child, who ranged in age from 6 to 41 with the average age being 24. A detailed table with the participant's characteristics can be found in Appendix E.

4.14 Data Collection

Qualitative semi-structured interviews were used as they are the preferred method of data collection when less is known about potential influences on the behaviour of interest (Atkins et al., 2017). Interviews were audio-recorded with permission from each of the participants, and field notes were collected when necessary.

Interviews

A study-specific, English-language semi-structured interview guide (Appendix F) based upon Version 1 of the TDF was developed for one-on-one interviews with participants. Unlike previous TDF studies, the interview guide questions were not constructed in clusters according to each domain they relate to (McGowan et al., 2020). Instead, the researcher aimed to develop an interview guide that would promote a natural flow of conversation, as is widely encouraged in qualitative work (Rubin & Rubin, 2011). One-on-one interviews were preferred to other interview techniques to promote the acquisition of a greater depth of information and detail from each participant (Campanelli, 2008). The one-on-one interview also protected the individual's personal information, given the sensitive nature of the topics discussed (Nichols, 1991).

The interview guide was informed by the theoretical content of each domain within the TDF. Appendix A outlines which domains connect to each sub-aim detailed in Section 3.0. These sub-questions were then used to build out the open-ended questions surrounding experiences and perceptions of the Pap test and HPV vaccine.

For example, to assess the TDF domain *Knowledge*, questions were asked about the participant's familiarity with the behaviours of interest. These included Question 5, "What conversations have you had with your family doctor/general physician regarding Pap tests?", with alternative wording prompts and follow-up questions asking about whether the physician or the patient had initiated these discussions. The interview then went on to ask about the frequency of screening with Question 6 "How often do you get a Pap test? Why do you get it that often?".

As these interviews were "semi-structured" both scripted and unscripted probes were used depending on the flow of the conversation. The interview guide was first piloted with five graduate students who were familiar with qualitative research methodology. Pilot testing helped to refine the probes used and reorder the interview guide to elicit the greatest flow.

Interviews took place during the COVID-19 pandemic between March and May of 2021. Due to public health restrictions at the time of the interviews, the researcher conducted all interviews over the phone or over a video-conferencing platform (Skype, Zoom, WebEx or Google Hangouts)

depending on the participants' comfort using and access to the available platforms. The interviews ranged in length between 30 and 75 minutes (the majority were between 40–45 minutes). Interviews were transcribed verbatim in NVivo 12 (QSR International, 2020). No interviews were repeated. Audio files and transcripts were not shared with participants following their interview.

Audio Recordings and Field Notes

Interviews were audio-recorded on the researcher's computer. All audio files were deleted immediately following transcription. Participants were asked to confirm their consent to audio-recording prior to starting the recording for each interview. During and after each interview, the researcher took field notes to capture any disruptions to the call and any non-verbal cues from the participant. Reflective memos were also taken, where applicable, to ensure the researcher could take note of all reflections prior to analysing the transcript.

4.2 Ethics

Ethics approval was obtained by the University of Waterloo's Office of Research Ethics (ORE #42901). A letter of intent was emailed to all interested participants, including a detailed description of the study. Written or verbal informed consent was obtained from each study participant in advance of their interview. During the interview, participants were also told that they may refuse to answer any interview questions and/or end their participation at any point up until the results are being sent for publication. Pseudonyms were used to anonymize all participants. The centres contacted for the purpose of recruitment were also anonymized to further ensure that participants cannot be identified. A feedback letter was prepared and emailed to all participants following their interview (See Appendix D).

There were minimal known or anticipated risks to participants in this study. Even so, the interviewer had a list of helpline services and help centres on hand, should any of the participants have indicated a state of emotional distress as a result of the information exchanged throughout the interview (See Appendix G). Participants were also provided with the option of accepting fact sheets

on Pap tests, the HPV vaccine, HPV, and cervical cancer obtained from the Cancer Care Ontario website as well as information on how to find a primary care physician in Ontario from the Government of Ontario's website when it was appropriate (See Appendix G). There were no direct benefits to participants. This study aimed to provide recommendations for future research in cervical cancer screening and prevention, guidelines, and targeted public health programs.

4.3 Data Analysis

Many studies using the TDF have taken a deductive-only approach to their analysis. However, using only a deductive analysis has resulted in some researchers overlooking important behavioural determinants that do not fit into the TDF domains (McGowan et al., 2020). As a result, McGowan et al. (2020) recommend that qualitative researchers complement their deductive analysis with the addition of an inductive approach. Thus, the analysis of the transcripts followed the procedure outlined by Mayring (2004), which involves inductive category development followed by deductive category application.

4.31 Inductive Category Development

The first five interviews were inductively coded by two researchers independently. The researchers employed a bottom-up coding approach to the interviews to identify barriers and enablers of regular Pap tests as well as barriers and enablers to the HPV vaccine, either for the participant themselves or for their children. To ensure the participant's presence in the final text, the researchers borrowed Charmaz's (2014) approach to inductive coding. She emphasizes the importance of coding quickly to ensure that the produced codes remain as close to the transcript as possible. At this stage, the barriers and enablers were coded using a minus symbol (-) to indicate a barrier and an addition symbol (+) to indicate an enabler. The text accompanying the symbol would be a concise version of what the participant had uttered.

After barriers and enablers were identified through a close-coding of the five texts, they were organized into categories. Through this process, the two coders co-created a data-driven coding manual (Appendix H). The coding manual included definitions of the proposed categories and descriptions to help guide additional coding of barriers and enablers into each of the categories. The coding manual was then applied to five additional texts by the student investigator. Any emergent categories were discussed with the second coder and integrated into the coding manual. For the final ten texts, the student investigator independently applied the coding manual and refined aspects of the manual where appropriate.

4.32 Deductive Category Development

In their paper, “A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems”, Atkins et al. (2017) discuss a procedure for considering themes or categories generated in an inductive analysis in relation to the various theoretical domains included in the TDF. The domains were designed as broad groupings of factors that may influence an individual's behaviour (Atkins et al., 2017). Following the inductive category development, each primary category was reviewed for content and sorted into a relevant TDF domain. Any categories that were deemed unsuitable for a TDF domain were to be recorded as 'not fitting.' Sorting the categories in the coding manual into the relevant TDF domains was done in collaboration with the second coder. Both researchers referenced Appendix B to guide category allocation into relevant TDF domains.

4.33 Modal Salience of the TDF Domains

Following the inductive and deductive category development stages, the frequency with which each barrier or enabler was noted in a participant's transcript was used to determine each TDF domain's relative importance. This process is frequently used in qualitative studies employing the TDF and allows for 'modal salience' of each domain to be identified (Francis et al., 2009; Islam et al.,

2012). Power et al. (2017) define modal salience of the TDF domains as the "frequency with which specific beliefs within a domain were elicited, across the sample of transcripts as a whole, relative to other specific beliefs within other domains" (p. 3). Modal salient domains were defined as those mentioned by at least 20% of the participants (Epton et al., 2015). These domains were judged to be relevant to Pap test adherence and HPV vaccination among immigrant women in this study sample.

4.34 Qualitative Rigour

Several strategies were used to ensure rigour of this study. These strategies addressed limitations present in the recruitment, interview, and coding stages of the research. First, recruitment of five participants with pre-established relationships to the researcher was accounted for with independent coding by the second coder of the five transcripts. Second, the researcher ensured credibility of the research by being mindful of their ethnocentricity and biases, known as 'reflexivity' (Baxter & Eyles, 1997). Acknowledging the role of the researcher, and sole interviewer, as the active instrument in the research included addressing the researcher's positionality and taking memos throughout each interview, which were carefully revisited through the coding process (Appendix J). Finally, to ensure rigour of the coding process, the researcher recruited a second coder. The second coder was an advanced master's student who had prior coding experience and a strong background in qualitative research methods. Their responsibilities included independently coding five of the transcripts (25% of the interviews), co-creating the coding manual, and revisiting the coding manual after revisions were made by the primary researcher.

Inter- and intra-coder reliability scores were calculated to assess the level of agreement between coders and between different points in time for the student investigator, respectively. Calculations were made according to Miles and Huberman's (1994) formula: *(# of agreements) / (# of agreements + # of disagreements)*. The calculation was conducted using two of the 20 interviews (10% of the interviews), in accordance with recommendations outlined by O'Connor and Joffe (2020) in their article "Intercoder Reliability in Qualitative Research: Debates and Practical Guidelines".

5.0 Results

Since the onset of the COVID-19 pandemic, several of the immigrant and multicultural organizations and the community and health centres that were contacted had halted communications with their members. With fewer organizations and centres disseminating the recruitment materials, recruitment for the study took longer than anticipated. Despite delays, theoretical saturation was successfully reached according to guidelines outlined by Francis et al. (2010). Three interviews coded by the two researchers informed the first iteration of the coding manual, which later grew to a total of 16 barrier labels and 14 enabler labels. The final coding manual (Appendix H) included sub-labels and sub-sub-labels, which more accurately reflected the participants' references. Allocation of the barriers and enablers in the final coding manual to the TDF yielded a total of nine relevant domains. Domains were assigned a major or minor value according to the number of participants who cited each domain.

5.1 Description of the Process

A total of 32 women communicated interest in participating in the study. Eleven opted out of participating after a call with the primary researcher to discuss the study in greater detail, because they felt uncomfortable speaking to the subject matter, because they had limited knowledge of the prevention strategies, or because there was no compensation provided. One of the women who communicated interest heard about the study through another participant but contacted the researcher after theoretical saturation had been reached and the data analysis was complete. The participant was thanked for their interest and told that recruitment for the study had closed.

The final sample of participants consisted of 20 immigrant women. Five organizations and centres circulated the recruitment material among their members, resulting in recruitment of nine of the study participants. The remaining 11 participants had seen the study via a social media channel or

had heard about it from a fellow participant. Sample demographic characteristics are reported in Table 1.0, and more detailed characteristics are reported in Appendix E.

The five participants with pre-established relationships to the primary researcher had their transcripts coded by the second coder. These five participants were among the first ten interviews. As a result, the first ten interviews were not coded in the same order in which they were conducted because priority was given to the five that had to be coded by the second coder. The final ten interviews were coded immediately after transcription to ensure that once no new codes had been added for three consecutive transcripts, recruitment stopped as theoretical saturation had been reached (Francis et al., 2010). In reviewing the memos recorded on the transcripts, the second coder did not identify any concerns. For example, when participants noted that they preferred to have a female or women physician, the interviewer noted in a memo that this was also their preference. In these cases, the second coder reviewed the text to verify that the interviewer's preference did not seemingly influence the preference shared by the participant.

Table 1.0 Sample characteristics

Variables	Number of Participants (n=20)
Age	
41–45	4 (20%)
46–50	4 (20%)
51–55	5 (25%)
56–60	3 (15%)
61–65	4 (20%)
Background	
Portuguese	9 (45%)
Indian	4 (20%)
Polish	3 (15%)
Other	4 (20%)

Education	
< Elementary School	1 (5%)
< High School	2 (10%)
High School	5 (25%)
Bachelor's Degree	5 (25%)
Post-graduate Degree	7 (35%)
Time in Canada	
1–10 years	1 (5%)
11–20 years	7 (35%)
31–40 years	4 (20%)
41–50 years	7 (35%)
51–60 years	1 (5%)

5.2 Inductive Category Development

Transcripts were analysed using a bottom-up approach, as discussed in Section 4. After discussions with the second coder, both researchers felt that there were several repeated themes across the first three transcripts (15% of the interviews). As a result, the two researchers drafted the first iteration of the coding manual. The codes in the first three transcripts were re-labelled according to the coding manual. The first iteration of the manual was used to code the next two transcripts. After five transcripts had been coded by both researchers, the coding manual was revised.

The primary researcher used the amended coding manual to code the next five transcripts. After ten transcripts (50% of the interviews) were coded, the primary researcher met with the second coder to discuss additional amendments to the manual. At this point, the researchers were conflicted in their view of whether some utterances should be categorized as a barrier or an enabler. For example, when participants noted that they did not have a preference about the gender of their healthcare practitioner, it was clear to both researchers that the gender of the healthcare practitioner was not a barrier to health services access. However, the researchers disagreed about whether it

should be categorized as an enabler or not be coded. After meeting, the researchers agreed to add a section to the coding manual to capture beliefs that could be viewed as either or neither a barrier nor enabler. The final ten transcripts were coded by the primary researcher and amendments were made independent of the second coder.

Amendments to the manual were minor for the final ten transcripts. No modifications were needed while coding the last three transcripts, which was when theoretical saturation had been met (following the "ten + three" stopping criterion) (Francis et al., 2010). Once the coding manual was finalized, example quotes were added to complement the descriptions.

Major labels identified for both barriers and enablers included *Healthcare Professional (HP)*, *Clinic Experience (CE)*, *Information (IN)*, *Immigration (IM)*, *Birthplac*e *(BP)*, *Educational Background (EB)*, *Procedure (PR)*, *Sexual Health (SH)*, *Cancer Care Ontario (CCO)*, *Adherence (AD)*, *School Programs (SP)*, *Culture (CU)*, *Social Influences (SI)*, and *Finances (FI)*. Major labels coded only as barriers were *Employment (EM)* and *COVID-19 (C19)*. Codes that could be captured as either or neither a barrier nor enabler fell under the major labels *Healthcare Professional* and *Sexual Health*. See Appendix H for the final version of the data-driven coding manual.

5.3 Deductive Category Development

After completing the data-driven coding manual, the two researchers met to review each of the labels, sub-labels, and sub-sub-labels for content and allocated them to one of the relevant domains of the TDF. To inform the allocation process, the researchers used Appendix B, which details the domain definitions and constructs. All of the content was successfully allocated to a relevant domain. Thus, no categories were recorded as 'not fitting.'

The researchers agreed on all label allocations aside from *Adherence (AD)*. After discussing both views, the researchers decided that the barrier and enabler label *Adherence (AD)* fit under two domains, *Beliefs about consequences* and *Motivation and goals*. Allocation of labels to TDF domains is reported in Appendix I.

5.4 Relevant TDF Domains

Nine of the 12 TDF domains were determined to be relevant to health services access, and more specifically, uptake of cervical cancer prevention strategies among immigrant women in Ontario, Canada. Table 2.0 summarizes each of the relevant domains, the number of enabler and barrier labels allocated to the domain and the number of utterances cited. However, due to overlap between labels coded under *Beliefs about consequences* and *Motivation and goals*, the results coded to these domains are discussed under the sub-title "Beliefs and Motivation". Additionally, the remaining labels assigned to the domains *Beliefs about capabilities* and *Beliefs about consequences* were grouped together under the sub-title Beliefs due to the limited number of utterances for both domains that did not overlap with the domain *Motivation and Goals*. Allocation of labels to each sub-heading can be found under Appendix I.

Table 2.0 Summary of labels allocated to relevant TDF domains

		Number of Utterances		
Relevant Domain	**Number of Labels**	Total	Enablers (+)	Barriers (-)
Knowledge	10	135	78	57
Skills	2	11	6	5
Beliefs about capabilities	2	7	7	0
Beliefs about consequences	3	91	38	53
Motivation and goals	2	87	38	49
Environmental context and resources	10	125	43	82
Social Influences	5	78	39	39
Emotion	5	51	11	37
Behavioural Regulation	11	204	92	100

5.41 Knowledge

The TDF domain *Knowledge* is defined as "an awareness of the existence of something" (Michie et al., 2005; Atkins et al., 2017). Barriers to knowledge included a lack of information surrounding women's health, Pap test examinations, and the HPV vaccine. One participant spoke about the lack of general awareness surrounding current prevention strategies.

> We don't get any awareness campaign as to what's a–, what's allowed, what's eligible so people who don't have a medical background they don't get much information from anywhere.
>
> - Mary *(49, Indian, immigrated in 2002, Professional degree)*

This same sentiment was echoed by other participants who suggested that the risk associated with HPV and cervical cancer is not effectively communicated. In discussing a lack of awareness surrounding the risk of the conditions, one participant reflected on conversations with her friends who are infrequently screened.

> I think if they just give more information to women, and they learn how necessary to do that, it helps them. As we always say, knowledge is very important. Some people they don't know by postponing this test what danger they can bring to themselves.
>
> - Henrietta *(59, Persian, immigrated in 1988, Bachelor's degree)*

The majority of the participants were not aware that the eligibility for the HPV vaccine included males or that the vaccine was available to individuals beyond school-aged children. Eight participants lacked an awareness of the eligibility requirements for Pap test examinations and the frequency with which they should be undergoing screening. One of the participants, Alessia (*48, Russian, immigrated in 2014, PhD*), was completely unfamiliar with both the Pap test examination and the HPV vaccine.

Four participants associated their lack of knowledge with a lack of information from their healthcare providers. After demonstrating gaps in knowledge surrounding eligibility for and frequency of the Pap test, one participant explained that her healthcare provider had not given her any information on the screening procedure.

> They don't really explain very much to you. I think if you want to find out anything you have to ask a lot of questions from the doctors. I find they don't really (..) explain much. They just do it without explanation. So if you really want to know, you have to ask them, why and what, that type of thing, you really have to ask them the questions.
>
> - Aileen *(61, Irish, immigrated in 1982, High school/certificate program)*

Two participants with post-graduate degrees in health-related fields suggested that the limited information they had received from their healthcare professional was because the physician made assumptions about their existing knowledge. In addition, they felt that their healthcare providers tended to avoid explaining or overly complicating concepts because of their educational background.

> And I said, you know, I don't understand. And she said, you don't understand what? I said, Look, it's your responsibility to make it clear for me, because as a psychologist, you know, I can speak in complicated language, but I should deliver the message to the person, right? And that's why I was fighting with her. And then finally, I said, you know what, I will record what you're saying, I will go, you know, to your administrator, your manager, and they will let you know how you give me feedback. And then she started speaking normally, you know, so I can get to know the information in a way I can understand.
>
> - Alessia *(48, Russian, immigrated in 2014, PhD)*

> You know, and again, my GP doesn't spend that much time with me, because she just presumes a lot of things I know, right? Like, and sometimes that's not a good thing, in some ways, because I may neglect my own health because of age.
>
> - Fayra *(53, Indian, immigrated in 2001, Professional degree)*

One participant who elected not to vaccinate their child suggested that having more information about the vaccine from their healthcare provider may have changed their mind.

> We trust our doctor, right? So when I'm going to the doctor, I'm going there for a reason. I need, you know, I trust I mean, I'm gonna listen to what he tells me. So if I had more information, if it was more open communication, and tell me the point of having the vaccine, definitely like we would talk about it, and make sure that it was done.
>
> - Estelle *(50, Portuguese, immigrated in 1981, High school)*

Besides a lack of information from their healthcare provider, ill-equipped walk-in clinics were also reported as a barrier to obtaining knowledge about the HPV vaccine.

> I don't think walk-in clinics are equipped to answer nor do I think they like to answer questions like that. They'll refer you to your family practice and if you don't have a family doctor it is not easy to get one either (scoffs) so you know I think had it not been for the school we would know hardly anything about it.
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

A lack of health information upon arrival in Canada posed a barrier to health services access and knowledge of cervical cancer prevention strategies for five of the participants. Among those five participants, two expressed an urgency for greater support of new immigrants.

> There's not even like a (..) a site where like new immigrant people when they come in and they're supposed to vaccinate their kids, does somebody tell them, or guide them, or public health person care to call them and tell them you're new you're a refugee, find a family doctor, here's three family doctors in your area that are available or accepting new patients?
>
> - Mary *(49, Indian, immigrated in 2002, Professional degree)*

The same participant provided recommendations of what their ideal situation would be for new immigrants.

> Assign somebody that can take them to a public health unit get the test (?) checked out, complete physical done, understand the language, mom doesn't speak English? OK transfer because you need a translator who can understand both sides and now get their complete physical done, let them have a document with themselves, within the next two weeks after they land in Canada that they can take to any facility if they have a problem.
>
> - Mary *(49, Indian, immigrated in 2002, Professional degree)*

Conversely, one participant reported that the information they received when they arrived in Canada helped them to locate a general practitioner who shared their cultural background and could communicate with them in their first language.

> **Interviewer:** And so then they also had some information about finding a family doctor here as well?
> **Participant:** Yes, yes. They told us that these are the things and because we couldn't speak well, English, we find an Iranian doctor in here.
>
> - Henrietta *(59, Persian, immigrated in 1988, Bachelor's degree)*

The majority of participants had had conversations with their healthcare providers surrounding the purpose of the Pap test and the HPV vaccine. Three of the participants recalled being explicitly told that the screening procedure prevents cervical cancer. Two of the participants were told that fewer sexual partners reduce their risk of cervical cancer. In speaking about her reluctance to have the exam because of her age and perceived risk as a woman in a monogamous marriage, one participant noted that her physician took the time to explain why she was still required to get screened.

> Also, you know, cervical cancer, they do all that. So I do understand it. And they explain to me every single time when I ask, hey, do I really have to do this again? So it's (..) it's good that they refresh and educate me the importance of doing it.
>
> - Estelle *(50, Portuguese, immigrated in 1981, High school)*

Proper knowledge acquisition was achieved among participants who suggested their physicians took the time to explain concepts to them in a way they could understand; this was coded as *Effective health communication* under the enabler label *Healthcare Professional (HP)*. For example, one participant with uterine fibroids had a high level of knowledge concerning her condition and attributed it to conversations with her general practitioner.

> Even I remember the first time when he came with the results that I have this fibroids, I remember the doctor he take a piece of paper and he explained so well Ingrid what you have (..) it's like a cauliflower inside you uterus and he started like (..) he made a drawing and explain to me so well.
>
> - Ingrid *(57, Portuguese, immigrated in 1978, High school)*

The same participant also noted that her healthcare professional would resolve her uneasiness toward the Pap test examination by explaining each step of the procedure. This was an experience shared by

seven other participants. The seven appreciated that their healthcare professional took the time to walk them through the procedure, as illustrated by the following quote.

> They are very detailed [Interviewer's Name]. Um I love it because they assure me they know how I feel about them 100% get it. But they take me step by step each time I do them. And they tell me why.
>
> - Estelle *(50, Portuguese, immigrated in 1981, High school)*

The *Knowledge* domain also includes the barrier and enabler label *School Programs (SP)*, which explored participants' level of awareness about HPV due to the publicly funded school programs in Ontario. The barrier label included sub-labels about insufficient information about the vaccine, vaccine eligibility, the participant's preferred language, and having no opportunity to voice questions. One participant attributed her choice to not vaccinate her child to the limited information provided by the school. Others who chose to vaccinate their children criticized the school programs for not giving them enough information and noted that they had to seek out information from other media. Three participants with post-graduate degrees completed their own research about the HPV vaccines to supplement what they had learned from the school programs. Tiana, a participant who held a PhD in Microbiology, was one of these participants. She had looked into articles documenting the efficacy and safety of the vaccine and commented on the school program.

> Just asked me if I want this vaccine or not for my daughter. They didn't provide me any information about the vaccine, and safety and everything, which I think would be very useful for all parents with, you know, easy to understand language for them. Just to say, what are the risks of side effects? What are side effects? Because, of course, it's not only one vaccine, there are different ones, so they should know which one you're using and what is the risk.
>
> - Tiana *(43, Polish, immigrated in 2003, PhD)*

Independent research was included as a sub-sub-label under the enabler label *Information (IN)*. Sub-labels under the enabler label *School Programs (SP)* were *Information provided* and *Open lines of communication*. Three participants explicitly stated that the school programs had equipped them with enough information to make an informed decision about the vaccine. In addition, three participants

appreciated the opportunity to voice questions, with one speaking about her opportunity to ask questions in the setting of an information night for parents.

> So there were emails and written communication that came to the parents. There were also inform nights so like if you wanted to know more about it you could go to an inform night.
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

5.42 Skills

The TDF domain *Skills* is defined as "an acquired ability or proficiency" (Michie et al., 2005; Atkins et al., 2017). The only code that fell under this domain was the sub-label *Health literacy* under both the enabler and barrier labels entitled *Educational background (EB)*. Three participants found the terminology used in health promotion or by their healthcare provider challenging to understand. Four participants felt comfortable with the health terminology and noted that their educational background and work in health-related fields supported their comfort in engaging with health resources and in dialogues focused on Pap tests and the HPV vaccine. One of the participants had not heard of nor obtained a Pap examination in their birthplace, despite being 25 years old and married at the time of their immigration to Canada. However, due to her educational background as a dentist, she was quickly able to understand the purpose of the procedure.

> I guess it was like, again, like I said, because we were from the healthcare field when she mentioned it to me, and then it just made sense.
>
> - Imani *(45, Indian, immigrated in 2001, Professional degree)*

5.43 Beliefs

Due to the limited number of codes assigned to the domain, *Beliefs about consequences* (defined as "an acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use") that didn't overlap with *Motivation and Goals*, codes that fell

under *Beliefs about consequences* and *Beliefs about capabilities* (defined as "an acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation"), are reported together in this section (Michie et al., 2005; Atkins et al., 2017). The codes that fell under the domain *Beliefs about consequences* include the barrier sub-label *Past experiences*, and the codes allocated to *Beliefs about capabilities* are sub-labels *Past experiences* and *Ease of procedure* under the enabler label *Procedure (+PR)*.

Four participants reported generally negative experiences with the Pap test exam, with one participant suggesting her negative experiences led her to postpone the procedure.

> Generally it's a negative I would say it's a negative experience and I think because it feels so awkward I think you almost like you postpone them for as (..) as long as you can yeah I definitely don't have them regularly.
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

One participant who identified the Pap examination as a negative experience also reported that the procedure reminded her of when she worked in a clinic that conducted abortions at 14 years of age.

> But I also think of Pap tests (..) you know, my first (..) the first time I ever saw somebody in that position was when I was young and I worked for a doctor, and that doctor performed abortions in his clinic. And I remember the first time I did the Pap test, that was my first recollection (..) was of what I saw some of the women- I mean I know it's a different thing. But it's just, you know, the the stirrups and putting your legs in the position that you are that whole, I think they should make it into an environment where it doesn't feel so clinical, those are so it almost feels like you know, the stirrups are actually just a really horrible thing that just feels wrong.
>
> - Yana *(54, Portuguese, immigrated in 1978, Bachelor's degree)*

Three participants reported that they were comfortable with the procedure. One participant recalled a Pap test with a gynecologist who provided patients with socks to keep their feet warm during the procedure. Three participants also identified the procedure as an easy exam, with one participant comparing it to a blood test.

> Pap test for me is easy, never anything like embarrassed or something. Because I think it's a normal test like a blood test, right? For me, it's just a normal test.
>
> - Simone *(41, Polish, immigrated in 2004, Master's degree)*

5.44 Beliefs and Motivation

The barrier and enabler label *Adherence (AD)* had sub-themes *Pap test* and *HPV vaccine*, where direct connections were drawn between a coded barrier or enabler and adherence to the Pap test schedule or uptake of the HPV vaccine. These connections were coded as sub-sub-labels. For both the Pap test and HPV vaccine, participants who adhered to the schedule and chose to vaccinate their child described the procedure and vaccine as important or necessary for good health, as illustrated by the following quotes.

> I just felt that, you know, it was just important to have all kinds of protection, and regardless of, you know, what it meant, and the protection was what was compelling for me. So it was really what he was preventing, versus what you would need to engage in to get that it was just jumping to, if it can prevent something at some point, my daughter will get to that age, and I'd rather her be protected.
>
> - Yana *(54, Portuguese, immigrated in 1978, Bachelor's degree)*

> You know, what I think that's, that's totally something all the women should consider and think about it. And be aware of that. In a certain point, it's, it's necessary, I believe. It's kind of like a regular visit, if you're with your family doctor.
>
> - Beatrix *(43, Polish, immigrated in 2006, Bachelor's degree)*

The two coders determined that viewing the behaviours this way fell under two domains, *Beliefs about consequences* and *Motivation and goals*. For the purpose of the TDF, the domain *Motivation and goals* is defined as a "mental representation of outcomes or end states that an individual wants to achieve" (Michie et al., 2005; Atkins et al., 2017). As a result, both domains were merged under the sub-heading Beliefs and Motivation.

Additionally, the participants who had not adhered to regular Pap tests or chose not to vaccinate their child or themselves saw the preventive measures as unnecessary and had a low perceived risk of the associated conditions.

> I stopped going every three years, I kind of bumped it off. So there are a couple of factors: (a) I am busy and I forget. Then second is I feel that my risk factors are pretty low.
>
> - Fayra *(53, Indian, immigrated in 2001, Professional degree)*

Another participant, who reported that she had never been screened or vaccinated herself or her children, believed the prevention measures were unnecessary because if something was wrong with her body, she would know.

> Because as a psychologist I believe you know (..) that I will feel when something is wrong. There should be a sign like fatigue, or any pain. You know? And I'm very careful with my body.
>
> - Alessia (*48, Russian, immigrated in 2014, PhD*)

Similar comments were made when speaking about others who chose not to get screened or vaccinated.

> I think a lot of people think that if they don't have any symptoms like they don't have any pain or any symptoms then they just let it go and say 'OK I'm OK I'm fine'.
>
> - Lenya *(59, Portuguese, immigrated in 1978, High school)*

> But I think, I think because the idea of using condoms is maybe they think that by using condoms, they're already protected.
>
> - Gracie *(54, Portuguese, immigrated in 1985, Grade 11)*

5.45 Environmental Context and Resources

In the context of the TDF, the *Environmental context and resources* domain is defined as "any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behaviour" (Michie et al., 2005; Atkins et al., 2017).

In this study, enablers and barriers surrounding the participant's physical environments pertain to their health services access, their experience in a clinic setting and the resources available to them in those settings. Access to a healthcare professional was categorized under the barrier and enabler label *Health Professional (HP)* and broken down into sub-sub-labels *General Physician* and *Gynecologist*. Twelve participants reported challenges accessing or acquiring a general physician, citing that doctors often had wait-lists or were not accepting new patients. As a result, many relied on walk-in clinics for their health needs, as illustrated by the following quote.

> Okay, so when we, when we got here, we knew that we needed to get a family doctor. But at the beginning, it was hard for us to get a person to look after the family. And the reason why it's because they weren't (..) the doctors are not available. It was very, very difficult for us to get (..) even we needed to get into a waiting list to get a family doctor. So at the beginning was all the time, kind of going through a walk in clinic.
>
> - Diana *(54, Peruvian, immigrated in 2007, Master's degree)*

Three participants experienced challenges obtaining a referral to a gynecologist or getting an appointment with a gynecologist due to long wait times.

> It feels like gynecologists that there are out there and especially females how long it takes (..) it took me a year and a half to get my last appointment (inhales) so that's a long time to wait to see a doctor about an issue so I think that's a significant deterrent the timelines.
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

The eight participants who had an easier time obtaining access to a physician either had a connection to an existing patient seen by the healthcare professional or happened upon a physician who was open to taking new patients.

> Right now I have in Burlington my family doctor (..) doctor and she's also my, my, my boyfriend (..) my fiance's doctor. Because she was his doctor she didn't have any problem to take me.
>
> - Simone *(41, Polish, immigrated in 2004, Master's degree)*

> When I called because she's in my neighborhood. She was willing at the time she would take us because it was a family. So she was willing to take it as a whole family. She wasn't taking individuals but she was seeking families. So that's how we got it.
>
> - Yana *(54, Portuguese, immigrated in 1978, Bachelor's degree)*

In speaking about their clinic experiences, four participants reported frustration over the limited time they are able to spend with their physician during an appointment. Some suggested that they were often unable to voice concerns or ask questions because they had felt rushed.

> I didn't know about it and I feel like you have a very specific 10 minute window to see your doctor and that you can't even get to all that stuff because you're so rushed in you know they have their pre-set questions they're going to ask you and (..) you know, you know, that you have this 10 minute appointment and they're maximizing their earnings by booking as many 10 minutes appointments as they can schedule in that day so I don't even feel like there's opportunity for that.
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

Sub-labels under the enabler label *Clinic Experience (CE)* included *Translation services* and *Informative clinic environments*. Two participants noted that while their physicians may not have spoken their preferred languages, there were other staff in the clinics who helped with translation when necessary.

> **Interviewer:** And does the doctor speak Portuguese?
> **Participant:** Canadian, Canadian but they have receptionists available to translate for me.
>
> - Andrea *(65, Portuguese, immigrated in 1980, Grade 4)*

Additionally, seven participants commented on the availability of resources in multiple languages at their clinic, which was coded under the sub-label *Accessible resources*. One participant noted that the clinic was located in an immigrant-dense community and catered to the community by having resources available in multiple languages.

> You know they had it in multiple languages they, they, were like um, um, they were located in a mixed population area so I guess they modified their look of the office in the reception

> area to be more mixed cultural friendly. So they had (..) they had posters and stuff in different languages especially for like nursing mother information, first baby uh coupons, and stuff like that they were also in multiple languages. So living in that specific neighborhood where it was new immigrant more population I think I saw that they had a lot of mixed um languages, and messages, and Flyers.
>
> - Mary *(49, Indian, immigrated in 2002, Professional degree)*

Four of the seven participants shared a similar sentiment, noting that clinics with resources available in a language besides English catered to the surrounding community or the patients typically serviced by the clinic's physicians.

> You know the only place I've seen that was when I had uh an Asian doctor and he had a lot of materials specific to (..) he serviced a lot of the Asian community and I found that he always had a board up full of material (..) but that was the only doctor I've ever seen that in.
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

Other participants noted that their clinics did not have resources in their preferred language.

> I have English only speaking doctor, right? And that for me it would be much easier to be honest with you will be like Polish information as well. Yes. So maybe will be nice sometimes if you have like, immigrant woman that we sometimes can offer her (..) ask her if you prefer information in Polish or English about this or that right?
>
> - Simone *(41, Polish, immigrated in 2004, Master's degree)*

This was also noted under the barrier label *School Programs (SP)*, where one of the participants noted that the resources provided by the school program on HPV vaccines were only available in English.

Six participants commented on the medium through which they receive health information, noting that hardcopy resources in clinics are not always effective. Instead, participants suggested that health resources should come in the form of social media campaigns and through channels frequently resourced by immigrant communities, including multicultural organizations.

> You know how Facebook pops ads Public health should pop ads like this too.
>
> - Mary *(49, Indian, immigrated in 2002, Professional degree)*

> Cultural centers, is a really another great place. So I think you should just, you know, provide information in different ways so that you're making sure that people are getting the information somehow.
>
> - Yana *(54, Portuguese, immigrated in 1978, Bachelor's degree)*

Along the same lines, one participant referenced public health approaches to address the COVID-19 pandemic as being more effective than what they had seen about women's health because of the media used to distribute the information.

> I also think you can leverage, you know, television, because, you know, there's, you know, often there's programming in different languages. So leverage that, and, and they've, they've done a really good job with COVID, I've noticed in (..) I watched the Portuguese show, so I've noticed that there is COVID related vaccine information in Portuguese, like with (..) with subtitles, during the Portuguese show, so that's a really great medium, because a lot of people you know, when you're an immigrant, you tend to kind of want to, you know, still have a proximity to your culture, so they will watch those programs.
>
> - Yana *(54, Portuguese, immigrated in 1978, Bachelor's degree)*

Three participants expressed a need to saturate multiple media with health resources to increase the likelihood that an individual would adhere to prevention strategies.

> So what I feel in healthcare, multiple streams of the same information help. You are doing things from missINFORMED, right, like you're giving that information. So that is one level of information that the patient, the person at large, or public at large, will have that access to like they have that access, free access to information, and it's evidence based, then they will have read that. And then when they go to the general practitioner, that reinforces what you read, if they also say similar things, and it reinforces what you had originally read. It's like they're advertising, right? You see an ad and you see the product, and then you say, Oh, yeah, I know this product. Let's just buy this one. So it's the same way. So if you if you have heard it somewhere, and then you get reinforced by a higher authority with this case will be the GP and then they'll say, Oh, yeah, that is very good.
>
> - Fayra *(53, Indian, immigrated in 2001, Professional degree)*

Circumstances of an individual's situation or environment were coded under the barrier labels *Immigration (IM)* and *Employment (EM)* and the enabler label *Immigration (IM)*. Barrier sub-labels *Adapting to life in Canada*, *Concern about residency status*, and *Employment conditions* provided

context about the participant's experiences as a new immigrant that acted to enhance or deter their access to health services.

Nine participants voiced that they struggled to adapt after arriving in Canada. Common issues among participants were difficulty adapting to the new culture, missing family, or lacking a support system in Canada, and struggling to communicate because of language or accent barriers. One participant who immigrated because of a fellowship opportunity noted that her struggle adapting also impacted her work environment.

> It is a little apprehensive because the way of approach talking, you know, understanding how people interpret what you say, your accent, all those things kind of keep you wondering and thinking quite a bit, it adds to your day to day stress, so to speak, right? You have your stress of working in a different, totally different environment. But you also have people stress like, you know, you're always wonder what they think about you. And do they understand what you're trying to say?
>
> - Fayra *(53, Indian, immigrated in 2001, Professional degree)*

One participant who worked as an administrative assistant at a walk-in clinic noted that immigrants who did not yet have permanent residency in Canada would typically avoid seeking medical attention for non-urgent health needs.

> Yeah. Because they have to pay for everything. And they also care that maybe somebody will like, like, the Doctor will call to immigration or wherever (..) the burden, but no, doctor will not do that. No doctor will not do that. Because it's not a doctor's interest. And they don't even have a time for that. They don't want to talk to some immigration. But some people, they don't know this. And it's a problem because they don't really check their health. Unless it's something really bad then they go but they have to pay for everything.
>
> - Simone *(41, Polish, immigrated in 2004, Master's degree)*

Eight participants noted that it was challenging to find employment in Canada as a new immigrant and that the only jobs that were available were minimum wage jobs, night shifts or labour intensive work. One participant who spoke about her father's job on a tobacco farm in Northern Ontario and her mother's job working nights as a cleaner described the work in the following quote.

> The jobs nobody else wanted, right? That's usually what they took and the hours were awful and the pay was awful (..)
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

Participants who had an easier time adjusting to life in Canada credited the diversity of the communities they moved into and the sizable community of individuals who shared their cultural or ethnic background. Participants who moved into a community that was predominantly composed of individuals who shared their background reported that they had support finding housing, employment, or a physician.

> We're very fortunate that [where we moved] has a lot of Portuguese people that we connected with, who helped us find a three bedroom apartment that we moved into, with my siblings, myself and my mom.
>
> - Estelle *(50, Portuguese, immigrated in 1981, High school)*

5.46 Social Influences

The TDF defines the domain *Social influences* as "those interpersonal processes that can cause an individual to change their thoughts, feelings, or behaviours" (Michie et al., 2005; Atkins et al., 2017). For example, when participants were asked about Pap tests or the HPV vaccines, many spoke about perceptions among their friends, family, and cultural views of the prevention tools.

Two participants reported that their friends do not get screened regularly, with one participant noting that her friend opts out of screening despite her best efforts to encourage them. Another participant noted that when they debated whether to vaccinate their child with the HPV vaccine, they discussed it with friends who had daughters in the same grade. One of her friends opted against vaccinating. Four participants did not feel comfortable discussing sexual health-related topics with friends.

Among participants who openly discussed sexual health-related topics with their friends, two noted that it helped to keep them accountable.

> Like my group of like my generation I tell my friends and say ‘oh I went to do the mammogram’ or ‘I went to the Pap test’. Everyone gets it too and checks with each other.
>
> - Ingrid *(57, Portuguese, immigrated in 1978, High school)*

Four participants noted that their friends regularly adhere to Pap test examinations.

Five participants mentioned that they speak openly about sexual health with their family members, and three mentioned that they do so in an effort to encourage their daughter’s adherence to Pap test screening, as illustrated by the following quote.

> 100% yeah like a mother of (..) I have two daughters you know (..) all the time you know I talk to my daughters and I say ‘guys (..) please (..) you know go to the doctor and check you’ ‘have a good conversation open mind with family doctor and do whatever your family doctor tell you’. And I think this is for like women when you're young it's better if you find when it's like a new problem not like an old problem.
>
> - Ingrid *(57, Portuguese, immigrated in 1978, High school)*

Five participants noted that sexual health-related topics are not discussed with their family members. Two participants suggested that the lack of conversation was due to their parent’s “old fashioned” beliefs.

> Especially in the islands on just backwards thinking and, you know, very old fashion, like, not being able to date openly, I had to lie to them a lot. Like, even wear makeup (..) I'd have to sneak makeup in my bag. Put it on at school. Yeah, couldn't have open conversations. Very, very strict upbringing, especially with my father.
>
> - Jocelyn *(53, Portuguese, immigrated in 1971, High school)*

Another participant mentioned that her husband was initially against vaccinating their daughter with the HPV vaccine, and as a result, their daughter was not vaccinated as part of the school program. Instead, she had to take her daughter to a clinic after they had reached an agreement to vaccinate her.

> And even she didn't get it at school, because we were so kind of torn in my household so I had to take her later on to the vaccine.

- Diana (*54, Peruvian, immigrated in 2007, Master's degree)*

Five participants described that sexual health or pre-marital sex were not discussed among family or friends who belonged to their same cultural background. The majority of the participants who described sexual health and pre-marital sex as taboo in their culture were Portuguese, and the other two participants were Indian. Ingrid, a Portuguese participant, spoke about her mother's views after remarking on the Portuguese culture at large.

> Yes like my mom raised me like you supposed to marry a virgin. It's supposed to be your first night when you're married.
>
> - Ingrid *(57, Portuguese, immigrated in 1978, High school)*

No participants mentioned their cultural background as something that encouraged conversations about vaccination or screening adherence.

Participants were also asked about their access to a current general physician, to which many responded with a description of the relationship they had with their healthcare practitioner. Three participants reported unfavourable views of their current physician, and another three noted that they had switched general physicians because of a dislike of their previous doctor. One participant suggested that her physician did not take immigrant patients seriously.

> I find that just because her patient base was all Portuguese, like from the continent from the islands. Like she (..) It's almost like she, she doesn't have to really try hard to do her job. And like she didn't take people serious because it's like, oh, they're all immigrants.
>
> - Gracie *(54, Portuguese, immigrated in 1985, Grade 11)*

Another participant switched physicians because she felt uncomfortable around her initial doctor, who she saw from when she was a child until she was 18 years old. She recalled one experience with the first doctor when describing her feelings of discomfort toward her interactions with him.

> To tell you from experience my first uh experience at age 14, when I went to see him, I thought he I had chickenpox and he asked me to remove my bra and didn't explain why that was necessary. It was very uncomfortable, so never again.
>
> - Estelle *(50, Portuguese, immigrated in 1981, High school)*

Thirteen participants described positive views of their current healthcare practitioner, with five explicitly stating that they trusted their physicians' knowledge or judgement. Positive views of healthcare practitioners were mentioned in association with their physician's commitment to explaining things well and taking time with them or being attentive during each visit.

> It takes me a while to get used to a new doctor. But I like her. She's (..) she's pretty attentive, and she listens and she's good at referring if you think you know, you need more tests, or you know, a specialist or something, so she's pretty good like that.
>
> - Aileen *(61, Irish, immigrated in 1982, High school/certificate program)*

> Well, I always talk to her anything regarding that, because I want to live healthier. And if it's something necessarily I needed to be done, I asked her, and she will always guide me. It's not necessary or it's not necessary. Or if you want to do it, it's okay. Anything that she tells me, I accept it. Because I trust her.
>
> - Henrietta *(59, Persian, immigrated in 1988, Bachelor's degree)*

Three participants mentioned that their relationship with their healthcare practitioner felt like a friendship.

> Yeah yeah very good she has kind of become more like a friend she is very personable.
>
> - Mary *(49, Indian, immigrated in 2002, Professional degree)*

One of the participants who built, what they labelled as, a friendship with their physician noted that they no longer felt comfortable getting Pap examinations from the doctor and instead asked to be referred to a gynecologist for sexual health-related care

> I have a GP who is now my friend, you know, shares (..) just because of our background, we got friendly and so I didn't go (..). So she does PAP tests in her clinic but I became (..) I was just hesitant to get it done from her just because we know her well now and so (..) and also, I

had, like, this is 10 years ago, I had at that time wanted to do this different IUD, which is kind of protective for endometrial cancer as well. So I just (..) and some hormonal balance I was trying to achieve, but anyhow. So I booked with a gynecologist, so I do have a gynecologist I go to. And so she does my PAP tests and checks my uterus and ovaries as well.

- Fayra *(53, Indian, immigrated in 2001, Professional degree)*

5.47 Emotion

Concerning behaviour implementation, the TDF defines the domain *Emotion* as "a complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event" (Michie et al., 2005; Atkins et al., 2017). When participants were asked about what came to mind when they think about the Pap test exam, the majority responded with emotional descriptions. Feelings toward the procedure included vulnerability, stress, pain, fear, discomfort, and anxiety, which 12 participants voiced. In addition, some participants associated the feelings of discomfort with feeling shy about the area of their body being screened.

Well, it's uncomfortable, in terms of like, not pain, uncomfortable, but like shyness, you know, sort of, like reserved with your private body parts. So that part would be uncomfortable to get up on the bed and, you know, put your legs on the stirrups.

- Jocelyn *(53, Portuguese, immigrated in 1971, High school)*

Uh I would say one, yes. Anything to do with what she does say, typically putting it in blunt terms, female private parts, it's like, you just makes you feel vulnerable.

- Imani *(45, Indian, immigrated in 2001, Professional degree)*

One participant who expressed feelings of anxiety toward the procedure added that the primary reason for her anxiety was having to wait for the results.

But then, but mine (..) the reason that I don't want to do it is just because of my anxiety. I don't want to sit here for two weeks going crazy about whether I have this cancer or not.

- Valerie *(63, Indian, immigrated in 1978, Bachelor's degree)*

Seven participants also shared feelings of discomfort toward discussions with their healthcare practitioners about their sexual health, or more specifically, questions regarding sexual activity. With one participant explicitly stating that the line of questioning discouraged her adherence to regular Pap test exams.

> And the question is, of, you know, sexual, be active and how many partners like you speak like how I use your protection, very uncomfortable when [Doctor's name] would ask me that. I think one time I went by five years that I didn't get it done because I didn't want to keep (..) I didn't want to be questioned.
>
> - Estelle *(50, Portuguese, immigrated in 1981, High school)*

Two participants noted that they had never been asked about their sexual activity status because they received their first Pap test after they were married, and their physician assumed that they were sexually active. These codes were recorded as neither a barrier nor an enabler.

> I mean, I know my daughter has said once I think that, sometimes they'll let you know, especially when you're younger, like your age group they might say, oh, do you have many sexual partners, right? But you know, I've never been asked those questions. I guess when you're married, and you've only been married the one time that it's a little different?
>
> - Aileen *(61, Irish, immigrated in 1982, High school/certificate program)*

Due to the COVID-19 pandemic, one participant mentioned feelings of discomfort having to enter a healthcare setting.

Four participants reported feeling comfortable discussing sexual health with their healthcare provider, and six participants felt comfortable with questions about their sexual activity. One participant suggested that her level of comfort was because of her level of trust in them as a confidant, drawing a comparison to a Catholic priest.

> And on the other side, the the system that they need to know, because I think doctors are like your priest, if you're a Catholic and you have faith, you are going to kind of, you know, you're an open book.
>
> - Diana (*54, Peruvian, immigrated in 2007, Master's degree)*

The same participant described feelings of distress when receiving her first letter from Cancer Care Ontario (CCO) regarding the results of her Pap test.

> Well my doctor tells me all the time. It's like, if you don't hear from me, that means that everything is okay. I'm not gonna call you if your (?) or whatever, are fine. I will call you if there is something that we need to discuss. And, and you get the letter from the government, you're like oh no!
>
> - Diana (*54, Peruvian, immigrated in 2007, Master's degree)*

5.48 Behavioural Regulation

In the context of the TDF, *Behavioural regulation* is defined as "anything aimed at managing or changing objectively observed or measured actions" (Michie et al., 2005; Atkins et al., 2017). Items that were coded and associated with the *Behavioural regulation* domain included the barrier and enabler labels *Birthplace (BP)*, *Finances (FI)*, *Adherence (AD)*, *Cancer Care Ontario (CCO), Healthcare professional (HP)*, and *COVID-19 (C19)*.

Sub-sub-labels under domain *Birthplace (BP)* identified similarities and differences between the organization of health systems, Pap test procedure or regularity, and HPV vaccination programs in the participant's birthplace compared to the ones in Canada. Seven participants noted significant differences between the organization of the two health systems, with one participant preferring the one in their birthplace and opting to seek out health services when they visited.

> For annual I do annual in Russia, I have a list of what I'd like to have done. It's a big list that I was advised by my friend. In Russia, you can come and you can demand, you can say what you want, and they will give referral.
>
> - Alessia (*48, Russian, immigrated in 2014, PhD*)

Four participants noted that their birthplace did not have an organized screening program for cervical cancer. One participant reported that despite being in a health-related field, she was completely unfamiliar with the procedure until she moved to Canada and had her first Pap test.

> And to be honest with you, [Interviewer's Name], I, the first time that I started getting done, my Pap test was here in Canada, it was never done for me in India. And it's (..) it's not something that is commonly done or we were introduced to I mean, despite being in the healthcare field.
>
> - Imani *(45, Indian, immigrated in 2001, Professional degree)*

One participant reported an awareness of the Pap examination from her birthplace (Poland), where the screening schedule was also every three years. Three other participants noted similarities between the organization of the health system in their birthplace and Canada in terms of having a family doctor that you see regularly.

Nine participants reported experiences of financial insecurity when they first immigrated to Canada. Five of these participants attributed their lack of adherence to preventive programs with the need to prioritize other items, such as work, because of their financial struggles. Similar comments were made by participants speaking generally about the immigrant community.

> Yeah, I would say that when immigrants come to Canada, they are in a very different mindset, right. They have to find a job, settle down, look after their bills, and you know how they're going to, you know, stabilize here. So, I will say first few years of their life four to five years, they're not even thinking about any preventative examinations for example. So Pap test and mammogram examinations will be down in there to do list.
>
> - Fayra *(53, Indian, immigrated in 2001, Professional degree)*

The cost of the HPV vaccine, for the two participants who looked into vaccination while ineligible for the publicly funded school programs, was reported as a deterrent to obtaining the vaccine. One participant noted that the cost would significantly burden a new immigrant who might be working multiple jobs.

> So it's yeah so pretty much like there is a barrier right cause it's a financial barrier - for some people $500 a lot of money in order to get a protection but they don't understand the importance of the protection cause it's never been like out there why this is so important (..) so they are like uh well I'm working two jobs, I'm doing night shift, I can't do this at this time and then the kids older and who cares? The kid doesn't care either so never got it right?
>
> - Mary *(49, Indian, immigrated in 2002, Professional degree)*

Conversely, one participant mentioned that they can access Pap tests through a private care provider in Canada.

> I have the opportunity to have private health, and actually, I've done it once already, where I've done a full examination through MEDCAN which is a private provider. It was a male doctor, but I didn't do a Pap test. I am going to be booking my next one which will include a Pap test.
>
> - Yana *(54, Portuguese, immigrated in 1978, Bachelor's degree)*

The majority of participants who noted that they regularly adhere to Pap test exams said that their Pap test was typically booked or completed during an annual check-up.

> Um, well, let's say I went in for um (..) like my a routine physical. Then she'd say, oh, next year you do for your Pap test, you know, in and around October will be good. So then I try to make a mental note or I'll put it on my calendar book Pap test.
>
> - Jocelyn *(53, Portuguese, immigrated in 1971, High school)*

Seven participants reported that they had regular physicals.

Six participants mentioned that they had regularly seen a physician about their sexual health because of an associated condition. As described by the participants, the conditions included problems with their ovaries, cysts on their ovaries, irregular periods, cervical polyps, and uterine fibroids. The majority of these conditions can be identified during a speculum or bimanual exam, which like the Pap test, occur as part of a complete pelvic exam (Daley & Cromwell, 2002). When comparing herself to her non-adherent friend, one participant attributed her uterine fibroids diagnosis to the reason she has always adhered to preventive guidelines.

> I go to a doctor and the difference with me is I had problems right? So I start very young doing this because like I said I have to do treatments to (..) to get pregnant. So I start at the early age to do this and so I don't know if it was because of that and my friend, like the one I'm talking about, she never had problems just you know what I mean (..) like she had an easy life on that.
>
> - Lenya *(59, Portuguese, immigrated in 1978, High school)*

Participants also associated seeing a physician more regularly about their sexual health with becoming pregnant. Two participants reported that they experienced challenges becoming pregnant, with one periodically seeing a physician for in vitro fertilization treatments (IVF).

Ten participants mentioned that they felt accountable for ensuring that they adhered to their Pap test schedule.

> I would say, obviously, varies because of the individual's personal responsibility, because for example, I have, as I said, I'm blessed that my doctor reminds me, but at the same time, if she doesn't, tell me anything, I know that, that I need to go through and make an appointment so, I would be asking her isn't that something that I need to do now?
>
> - Diana (*54, Peruvian, immigrated in 2007, Master's degree)*

One participant noted that after nearly a decade of not having a Pap test and not receiving any reminders, she brought it up with her general physician.

> It's me asking or me experiencing some symptoms that I feel like I should probably get one and (..) even with my GP maybe 10 years ago I remember thinking geez I don't even think I've had one in like 8 years and saying should I have one? during my (..) my regular like annual and them going well when's the last time you had one? And then they're flipping through the charts and notice that it's been almost a decade (..) but it was me suggesting it.
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

The majority of participants who regularly adhered to Pap tests noted that they received frequent reminders about the exam. Ten participants indicated that these reminders came from their healthcare practitioner or health clinic. In addition, two participants were reliant on the CCO letters received in the mail to remind them when they were due for an exam.

> It's easy because you don't remember it but the health card people send you a letter in in your mail at home saying you're due for one and then you just call your family doctor and just book it.
>
> - Mary *(49, Indian, immigrated in 2002, Professional degree)*

When asked if participants were familiar with the CCO mail reminders, five participants noted that they regularly receive the letters, with three suggesting that it is a good program. Eight participants reported never receiving a letter from CCO, and five reported only receiving the letters infrequently. Four participants voiced privacy concerns surrounding the mail system, with one suggesting that if she had been younger at the time the mailing system was introduced, it would have discouraged her participation in Pap screening.

> I mean they might live in the home with all of their relatives especially if they're new immigrants and you know a lot of times that's what you have to do in order to you know get a foot up on, on, living in the new country and saving money and if that information is being mailed to your house oh my God I can only imagine how uncomfortable that would be! (..) if I was in that position when I was a new immigrant that would completely discourage me from doing it.
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

Eleven participants reported a preference for a female or woman doctor, with five recalling negative experiences or greater discomfort when completing Pap exams with a male doctor.

> It was never a good experience when I was going for my Paps with a male, right, it was never good uh not. It was just very uncomfortable. It's not something that I, you know, was looking forward to it. I put it off as much as I could. Because I it was something that I was not comfortable going into do.
>
> - Estelle *(50, Portuguese, immigrated in 1981, High school)*

Five participants mentioned that they preferred a physician who shares their same cultural background. One participant elaborated on why she preferred a physician who shared her culture.

> Cause when you have similar beliefs on you follow similar religion you eat kind of similar food (..) they can understand your problem a little bit more better because you can explain it to them (..) and they know what it means because they use the same kind of stuff right? Yeah so say if I say to another Doctor that I had too much kidney beans, it doesn't sound as good as I tell her when I'm talking to her in my language that because I, I, was more on a protein that and I ate a lot of different lentils. For another doctor lentils might be just lentils, but I can specifically tell her which lentils more than the other one 'cause there is 15 varieties of lentil that we eat everyday.

- Mary *(49, Indian, immigrated in 2002, Professional degree)*

Eight participants preferred or specifically sought out physicians who were able to communicate in their preferred language. For example, one participant noted that while she also had a preference for a woman physician, she stayed with her current doctor because they were able to communicate with her in Portuguese.

> I prefer to have a woman but I can't choose. He also speaks Portuguese, so that is most important.
>
> - Andrea *(65, Portuguese, immigrated in 1980, Grade 4)*

Two participants reported a preference for a gynecologist over their general practitioner for sexual health-related care. The two participants felt that gynecologists were better equipped to handle sexual health procedures and provided more information, as illustrated by the following quote.

> I specifically wanted someone that would know what they were talking about and you know maybe had more, more, up-to-date information specific to what I was feeling. (..) it feels even more awkward at a GP than it does at a gynecologist, at least the gynecologist seems set up for that, and does them more regularly (..) (inhales) versus a GP that you know like even the tables aren't (..) don't feel it sometimes equipped for that you've got to kind of put your legs up versus having stirrups.
>
> - Celina *(49, Portuguese, immigrated in 1978, Bachelor's degree)*

Five participants noted that they did not have a preference between seeing a gynecologist or general practitioner about their sexual health. Two participants did not feel the need to seek out a physician who could communicate in their preferred language, noting that they could always translate materials at home if needed. Four participants did not have a preference about their physician's gender, and one participant did not have a preference about their physician's cultural background. These utterances were coded as neither a barrier nor an enabler.

Due to the timing of the study, participants were asked about whether the COVID-19 pandemic had impacted their access to health services and their ability to adhere to their Pap test

schedule or obtain the HPV vaccine for them or their child. Seven participants noted that their ability to adhere to their Pap test schedule was impacted by the pandemic, with six participants citing challenges with scheduling an appointment. Five participants indicated that their annuals had been impacted, and for some took place over the phone because their clinic was not hosting in-person appointments. One participant mentioned that the pandemic had affected the level of information she could obtain about the HPV vaccine through the school program for her son. She also noted that her child would not be able to receive the vaccine through the school program, and she would have to take him to either a vaccination clinic or doctor's office if she would like to vaccinate him.

5.5 Modal Salience of the TDF Domains

According to the modal salience of the identified domains, major themes (frequently mentioned domains) were considered to be those mentioned by more than half of the participants (>10) as either an enabler or barrier and minor themes (infrequently mentioned domains) were mentioned by half or less than half of the participants (≤10). Major domains included *Knowledge*, *Beliefs about consequences, Motivation and goals*, *Environmental context and resources*, *Social influences*, *Emotion*, and *Behavioural Regulation*. *Skills* and *Beliefs about capabilities* were determined to be minor domains. See Table 3.0 for a summary of the number of participants who cited each of the relevant TDF domains. A breakdown of citations by participants per each label categorized under the domain can be found in Appendix I.

Table 3.0 Summary of TDF domains cited by participants

Domain	Number of participants citing the domain	
	Enabler (+)	Barrier (-)
Knowledge	18	15
Skills	4	3
Beliefs about capabilities	5	0
Beliefs about consequences	16	18
Motivation and goals	16	18
Environmental context and resources	20	17
Social influences	17	16
Emotion	9	13
Behavioural regulation	20	19

5.6 Reliability Scores

Inter-coder reliability calculations were made for the two transcripts coded using the first iteration of the data-driven coding manual. Intra-coder reliability calculations were made using the first and sixth transcripts coded by the primary researcher. These transcripts were coded for a second time after all 20 transcripts had been coded and the coding manual was finalized. The first transcript was selected because it was used to inform the first iteration of the coding manual and the sixth transcript was selected because it was the first transcript coded using an amended coding manual that both researchers reviewed.

Both inter and intra-coder reliability scores were calculated for both the barrier/enabler label and for the sub-label. Calculations were not made for the sub-sub-label.

Table 4.0 Summary of reliability scores

Score Type	Averaged Score (in percent)
Inter-coder Reliability Score	
Enabler/Barrier Label	82.28%
Sub-label	76.82%
Intra-coder Reliability Score	
Enabler/Barrier Label	85.82%
Sub-label	81.45%

I Inter-coder Reliability Score

Table 4.1 Calculation of the inter-coder reliability score

Transcript	Number of agreements	Number of disagreements	Score (in percent)
Enabler/Barrier Label			
Interview 2_Celina	83	19	81.37%
Interview 8_Diana	99	20	83.19%
Sub-label			
Interview 2_Celina	77	25	75.49%
Interview 8_Diana	93	26	78.15%

II Intra-coder Reliability Score

Table 4.2 Calculation of the intra-coder reliability score

Transcript	Number of agreements	Number of disagreements	Score (in percent)
Enabler/Barrier Label			
Interview 1_Celina	73	16	82.02%
Interview 6_Valerie	69	8	89.61%
Sub-label			
Interview 1_Celina	71	18	79.78%
Interview 6_Valerie	64	13	83.12%

6.0 Discussion

Using a semi-structured theoretically-informed qualitative interview study, this thesis examined two major research questions (1) "What are the experiences and perceptions of cervical cancer prevention strategies among immigrant women in Ontario?" and (2) "How might targeted public health programs improve Pap test adherence and HPV vaccination among immigrant women and their children in Ontario?". The results were analysed in light of the TDF to address the second research question, in which various influences were found to be associated, directly or indirectly, with regular adherence to Pap test exams or uptake of the HPV vaccine. Influences were categorized into nine TDF domains, suggesting that interventions designed to improve adherence and uptake among immigrant communities in Ontario should include multiple behaviour-change techniques (BCTs) (Cane et al., 2015; Michie et al., 2013). Modal salience was calculated for the domains to determine whether domains should be considered major (mentioned by at least half of the participants) or minor (mentioned by less than half of the participants) in the context of this study sample (Francis et al., 2009; Sandelowski, 2000). For the purpose of informing potential targeted health interventions, the behavioural influences under each domain are explored below as either modifiable or non-modifiable. It is suggested that to develop an effective intervention, all modifiable influences should be targeted, and the intervention should be tailored to the non-modifiable influences (Allemann et al., 2016). While some influences are more nuanced, the barriers were determined to be modifiable only when they were not genetic factors or when they were assumed to be easily targeted by a public health intervention (Vlasnik et al., 2005). For example, the social influence of friends on Pap tests was determined to be non-modifiable influences because it would be difficult to change how much an individual values their friends or family's opinions about cervical cancer prevention strategies with a targeted public health intervention. However, as a non-modifiable influence, it is possible to tailor potential interventions to acknowledge the role that these social influences play. The Hand in Hand Breast Cancer Prevention project serves as an excellent example of this approach. The project

recruited peer leaders to attend training sessions about breast health and cancer screening to then share with their circle of friends (SRCHC, 2010).

6.1 Contextualization of the Findings

6.11 Major Domains

The major domains identified in this study include *Knowledge*, *Beliefs about consequences, Motivation and goals*, *Environmental context and resources*, *Social influences*, *Emotion*, and *Behavioural Regulation*. Among these domains, the relevant barriers and enablers operate at the intrapersonal, interpersonal, and environmental levels.

At the intrapersonal level, barriers and enablers were identified across all domains. Under the *Knowledge* domain, two non-modifiable enablers concerning healthcare professionals were observed. The enablers concerned a participant's view of their physicians, in which several participants described seeing their physicians as a trusted resource for health information and an appreciation for when their physicians took the time to explain concepts to them in a way they could understand. Similarly, Maticka-Tyndale et al. (2007) found that Iranian immigrants preferred to acquire information about sexual health from their physicians. Immigrants view their healthcare professionals as an essential resource for obtaining health-related information, which, as a non-modifiable enabler, can be used to tailor public health interventions to immigrant populations (Asanin & Wilson, 2008; Maticka-Tyndale et al., 2007; SRCHC, 2010)—for example, disseminating information about preventive health services through physicians (Lynn et al., 2018; SRCHC, 2010). Additionally, effective health communication has been reported to improve patient knowledge acquisition (Ha & Longnecker, 2010). Thus, physicians should use health communication strategies when educating patients about preventive care opportunities (Fox et al., 2009).

Other notable non-modifiable influences at the intrapersonal level were associated with the *Social influences*, *Emotion,* and *Behavioural regulation* domains. Some participants reported that they were uncomfortable discussing sexual health-related topics with their physicians. The discomfort

stemmed from cultural-specific feelings and the individual's relationship with their physician, thus discomfort discussing sexual health-related topics was categorized as a barrier under *Social influences*. Discomfort around speaking to physicians about sexual health has been reported in qualitative studies exploring barriers impeding women's ability to seek and access health services (McCallum et al., 2012). A semi-structured interview study with non-immigrant women found that older women reported shyness and stigma as barriers to initiating discussions around their sexual health with their physicians (Hoopes et al., 2017). While stigmas associated with sexual health were not identified in this study, some participants did note that their shyness toward discussing sexual health stemmed from cultural influences that discourage pre-marital sex. In addition to discomfort discussing sexual health with physicians, participants reported negative feelings toward the screening procedure that discouraged their adherence. These feelings were categorized as non-modifiable barriers under the domain *Emotion*. Feelings of fear, vulnerability and pain have been well-documented in qualitative literature reporting on women's experiences undergoing a Pap test (Ferdous et al., 2018; Gesink et al., 2016; Redwood-Campbell et al., 2011).

Intrapersonal-level influences under *Behavioural regulation* included differences between the organization of health systems, Pap tests, and HPV vaccines in the participant's birthplace, preferences concerning their healthcare professional, and privacy concerns around having CCO Pap test reminders mailed to their home address. Previous studies have identified patterns of low screening adherence among individuals who immigrate from countries with low national screening rates (Lofters et al., 2010; Vicus et al., 2015). To date, no studies have investigated potential patterns between HPV vaccination uptake with low or high vaccination rates in an immigrant's birthplace. The only participant in this study who noted that HPV vaccinations are not available in their birthplace still chose to vaccinate their child after learning about the opportunity here. However, future studies specifically focusing on comparing HPV vaccination protocols between immigrants' birthplace and their current country of residence may yield additional insights.

Healthcare professional preferences mentioned by participants concerned their physicians' specialization, gender, culture, and fluency in the participants' first language. For example, the majority of participants reported a preference for female or women physicians. This has been

discovered in other qualitative studies evaluating sex or gender preference among women seeking sexual health-related care, as female or women physicians also served as enablers to healthcare access (Redwood-Campbell et al., 2011; Van Til et al., 2003; Zapka & Lemon, 2004). In addition, several participants reported that they were able to build a greater rapport with physicians who shared their cultural background or who could speak in their preferred language. Several studies have identified incongruence with a physician's culture as a barrier to quality healthcare or health services access (Lofters et al., 2010; Redwood-Campbell et al., 2011). This is further supported by studies that suggest shared decision-making, an effective medical approach where the physician involves the patient in decisions about their health and treatment plan, is more difficult in an intercultural context and even more challenging with language barriers (Suurmond & Seeleman, 2006).

Two participants reported privacy concerns regarding the CCO mail reminders. With the CCO sending Pap test reminders and results through the mail, participants raised concerns around the possibility of having someone else in the household opening their mail. To my knowledge, no studies have reported on privacy concerns among immigrant or non-immigrant women around the CCO mail reminders. However, one study investigating the feasibility of using South Asian lay health educators to call patients in their preferred language and raise awareness about cancer screening uptake noted that a limitation of the approach was the potential for privacy issues or concerns with calling a shared phone (Lofters et al., 2017).

Modifiable influences operating at the intrapersonal level were allocated to the domains *Beliefs about consequences*, *Motivation and goals*, and *Environmental context and resources*. Under both *Beliefs about consequences* and *Motivation and goals*, barriers and enablers were coded where participants believed that the Pap test and the HPV vaccine are either necessary or unnecessary to obtain good health. This is consistent with previous studies evaluating health beliefs about cervical cancer screening and the HPV vaccine (Johnson et al., 2008; Laranjeira, 2013). A qualitative interview study with Portuguese women found that the perception of one's susceptibility to cervical cancer can impact their adherence to regular screening (Laranjeira, 2013). Participants in both Laranjeira's (2013) study and this thesis believed that because they were not experiencing any symptoms, or because they were in a closed marriage, they did not need to undergo regular screening.

Fortunately, health beliefs are modifiable influences that can be targeted through effective education, health communication, and social support (Johnson et al., 2008; Laranjeira, 2013; Reiter et al., 2009).

Under *Environmental context and resources*, participants indicated media through which they would prefer to receive health information outside of health clinics. Media preferred by the study sample included social media platforms Facebook and Twitter, television channels that offer international programming, and multicultural centres. The domain through which public health practitioners distribute health resources is modifiable (Oh et al., 2012). Thus, consideration should be given to promoting health resources across additional media to improve their overall reach. An evaluation of community-based strategies to increase cervical cancer screening determined that strategies combining mass media campaigns were the most successful (Black et al., 2002).

Interpersonal influences centred around the TDF domain *Social influences* and included the barriers and enablers coded as friends, family, and cultural influences. While all these influences are considered to be non-modifiable, they offer opportunities to tailor the content and media through which health information is distributed that may function to improve acceptance of the content. Studies evaluating health-seeking behaviours among immigrant communities have identified social networks as an important source for health-related information (Courtright, 2005; Oh et al., 2012). As such, the extent to which friends and family encourage or discourage regular Pap test adherence or HPV vaccination is an important influence on participation in preventive programs for immigrant women (SRCHC, 2010). Cultural-specific influences were only reported by Portuguese, Indian, and Polish participants in this study. Among these participants, Portuguese women reported that their cultural communities had influenced them to believe that one should be abstinent before marriage. This belief led them to avoid seeking out sexual health-related care while sexually active but unmarried. These findings align with the results of a study evaluating Portuguese women's knowledge and health beliefs about cervical cancer screening, which identified similar symbolic meanings, attitudes, and cultural beliefs that discouraged adherence (Laranjeira, 2013).

Influences operating at the environmental level were identified within the *Knowledge*, *Environmental context and resources*, and *Behavioural regulation domains*. Under *Knowledge*, several modifiable influences are noted in this study. These influences centre around a lack of

available or effective resources to educate immigrants about the preventive measures of interest and the associated conditions. The results from this study suggested that there is a lack of accessible health resources for new immigrants who are not fluent in either of the official languages in Canada. A limited understanding of health-related information impedes an individual's ability to navigate the Canadian healthcare system, and consequently, obtain health services access among immigrants and non-immigrants (Asanin & Wilson, 2008; Higginbottom & Safipour, 2015). Factors impeding access are experienced to a greater degree among new immigrants, as established immigrants are more likely to be capable of communicating in either English or French (Lebrun, 2012). Thus, multilingual resources are needed to help immigrants better navigate the health system (Stampino, 2007). Of the participants involved in this study, only five (20% of participants) reported having a high-level comprehension of English when they had first arrived in Canada. This is consistent with previous literature that suggests new immigrants are often linguistically isolated due to limited proficiency in either English or French (Lebrun, 2012).

In 2007, Stampino reviewed major Canadian consumer health websites for language accessibility and concluded that there is a need for the addition of more multilingual health resources to improve accessibility among immigrant communities. A re-review of these same sites for the purpose of this discussion yielded the same conclusions, suggesting limited to no efforts to improve the language accessibility of these sites have been made in over ten years. The Government of Canada's health portal reviewed by Stampino was no longer available. Instead, the Government of Canada's website entitled "Just for you – Immigrants," which includes information on the organization of the Canadian health system and women's health, was reviewed. Information on this site is only available in English and French.

The majority of participants in the study who had school-aged children criticized the information provided by the schools, which are also provided in only English or French. Only three study participants felt that they were provided with enough information to make an informed decision about vaccinating their child. Inconsistencies between information provided as part of the publicly funded programs are not surprising, as surveys across various health regions in Ontario have reported significant discrepancies between school-based HPV programs (Wilson et al., 2012). Wilson et al.

(2012) reported that some independent schools, often with a religious affiliation, refused to offer HPV immunization. Similar studies have advocated for annual webinars on HPV vaccinations to help standardize the information available across provincial health regions (Dubé et al., 2018). Studies have also identified language barriers associated with the programs as parents are expected to sign consent forms available in only English or French (Dubé et al., 2018; Wilson et al., 2012). Thus, immigrants who have a low comprehension of both official languages are unable to provide informed consent.

Environmental context and resource influences are modifiable and pertain to health services access. Twelve of the study participants reported challenges accessing or acquiring general physicians. The majority of the remaining participants who quickly found general physicians had a connection to the physicians through a family member or friend. Underscreening is associated with individuals who lack access to a regular doctor (Schoueri-Mychasiw & McDonald, 2013). Immigrants face a multitude of challenges while trying to obtain a regular physician, including geographic, socio-cultural, and economic barriers (Asanin & Wilson, 2008; Higginbottom & Safipour, 2015). Geographic barriers are inclusive of long-wait lists to see physicians in their area, which was a reported barrier by participants in this thesis. Similar to the thesis findings, participants in the study by Asanin and Wilson (2008) reported waiting months and even years to find a family doctor. The structural and systemic issues producing these barriers require policy solutions at the federal, provincial, and local levels informed by public health research (Asanin & Wilson, 2008; Higginbottom & Safipour, 2015).

The final influences operating at the environmental level were whether and how reminders were received about preventive screening. As part of this study, these influences were allocated to the domain *Behavioural regulation*. Participants in this study either took note of their Pap test schedule to ensure they were adhering to regular screening, relied on letters from the CCO, or received reminders from their healthcare professional or health clinic. The majority of participants were reliant on their healthcare professional to remind them that they were due for screening and often received this reminder while visiting the clinic for their annual physical exam. To my knowledge, no studies have evaluated the effectiveness of reminders from healthcare professionals provided to patients during

annual exams. Only five participants in this study reported that they regularly receive letters reminding them that they are due for a Pap test. Conversely, eight participants did not recall ever receiving a letter, and five noted that they infrequently received the letters. In a study evaluating whether CCO letters encourage participation in screening, researchers found that women in the exposed group (the group who received the mail reminders) were more likely to return to screening than the non-exposed group (Tsoa et al., 2017). Due to the controlled nature of the study, receipt of the letter was guaranteed among the exposed group. However, the actual CCO mail reminder program seems to be less reliable. In accordance with the findings outlined in this thesis, Karwalajtys et al. (2007) reported that not all immigrant women recalled having received the CCO mail reminders. Thus, more attention should be given to improving the program's consistency.

With the influences on uptake and adherence to cervical cancer prevention strategies operating across intrapersonal, interpersonal, and environmental levels, the TDF can be used to understand the interplay of these levels in eliciting behavioural change. Behavioural BCTs have been assigned to each of the relevant domains identified in this study. For example, the *Knowledge* domain has been associated with the promising BCT *Information about Health Consequences* (Cane et al., 2015; Michie et al., 2013). *Information about Health Consequences* involves providing information about the costs and benefits that the individual's actions will have on their health (Michie et al., 2016). In the context of cervical cancer prevention strategies, this would involve information describing the risks of not getting Pap tests or vaccinated against HPV and the benefits of regular screening adherence and HPV vaccination. When planning an intervention to employ this BCT, insights from the interplay of barriers and enablers at various levels within the *Knowledge* domain should be resourced. In this case, a modifiable influence at the environmental level is a lack of risk communication, and a non-modifiable influence at the intrapersonal level is that participants viewed their healthcare professional as an important and trusted resource for information about their health. Thus, a potential intervention could be to develop risk communication materials in alignment with the *Information about Health Consequences* BCT that healthcare professionals can recommend to their patients.

In addition, having conducted this study during the COVID-19 pandemic, unique insights were identified concerning the pandemic's influence on adherence and uptake of the preventive measures. These insights fell under the domains *Emotion* and *Behavioural regulation*. Due to the pandemic, some participants noted that they did not feel comfortable entering a healthcare setting for fear of possible COVID-19 infection. As a result, some participants had intentionally delayed visits to clinics. The pandemic also impacted Pap test adherence for seven study participants, with six of them struggling to book an in-person appointment for the exam. One participant with a child who reached eligibility for the HPV vaccine during the COVID-19 pandemic noted that she was provided with limited information from the school and would have to take her child to a walk-in or vaccination clinic if she wanted to vaccinate them. While it is not reasonable to expect targeted health programs to account for pandemic-like states, especially with the redeployment of public health efforts toward emergent needs, these insights are relevant for the near future as Ontario re-opens and health services begin operating closer to their pre-pandemic state. With regards to Pap tests, public health professionals should ensure that efforts are made to follow up with individuals who were due for an exam during the pandemic. For the HPV vaccine, school-aged children who became eligible for vaccination during the pandemic should be included in the school's outreach efforts for newly eligible students. These students should also have the opportunity to be vaccinated in their school if their parent or guardian did not already take them to a vaccination or walk-in clinic. Previous literature has suggested that school-based vaccination helps to reduce barriers to vaccination associated with accessibility (Escoffery et al., 2019; Tan et al., 2011; Vorsters et al., 2017).

6.12 Minor Domains

Minor domains identified in this study include *Skills* and *Beliefs about capabilities*. While deemed less relevant among the present study sample, this could be the result of using a smaller sample size and only spanning seven ethno-cultural backgrounds. Future studies focusing on ethno-cultural sub-groups or larger sample sizes may determine that these domains are more relevant.

The enablers and barriers allocated to each of these two domains operated only at the intrapersonal level. Enablers included high levels of health literacy and viewing the Pap test exam as an easy procedure. Conversely, barriers included low levels of health literacy and negative experiences with previous Pap exams.

Among the participants in this study, seven had a post-graduate degree, and five were in health-related fields. A high level of health literacy has been well-documented as an enabler of favourable health outcomes among patients managing chronic conditions (Berkman et al., 2004; Neter & Brainin, 2019). In addition, effective management of chronic conditions requires a higher level of knowledge about the condition and effective health service utilization, which are documented enablers among individuals who possess higher levels of health literacy (Shi et al., 2017). Similarly, having a greater awareness and understanding of available preventive tools has been associated with higher levels of health literacy (Kim et al., 2018; Morris et al., 2013; Oldach & Katz, 2014). This was highlighted in the present study when participants with health-related post-graduate degrees completed their own research into the HPV vaccines that persuaded them to vaccinate their children.

Immigrants typically have lower health literacy levels compared to non-immigrants (Ng & Omariba, 2011). Ng and Omariba (2014) reported that only 24% of Canadian immigrants had met the requisite health literacy level compared to 44% of non-immigrants in Canada. As a result, immigrants may face more significant challenges navigating the Canadian health system, communicating with physicians, and adhering to medical advice (DeWait et al., 2004). These challenges can lead to an increased risk of adverse health outcomes for immigrant communities. Low health literacy rates have been associated with poor health outcomes among individuals living with chronic health conditions, including diabetes, hypertension, HIV, and depression (Berkman et al., 2004; Neter & Brainin, 2019).

Few participants in the study reported positive experiences in previous Pap examinations. The majority of participants reported negative experiences when accessing sexual health-related care. For some, the negative association was linked to a single salient experience. Previous studies have identified an association between negative experiences during screening procedures and low priority of screening adherence (Van Til et al., 2003). Van Til et al. (2003) identified a complex interaction

between a patient's personal experiences with Pap tests and approaches to screening promotion that function to produce lower screening rates in Prince Edward Island, Canada.

Both low health literacy rates and negative prior experiences are non-modifiable influences on an immigrant's participation in cervical cancer prevention programs. Thus, interventions aiming to address these barriers should ensure that they include resources with high readability scores and trauma-informed practices (Brooks et al., 2018; Corcoran & Ahmad, 2016). According to Cane et al. (2015) potential BCTs associated with the *Skills* and *Belief about capabilities* domains include *Behavioural rehearsal/practice*, which might look like efforts directed toward improving health literacy rates among immigrant communities, and *Focus on past success*, which might look like asking immigrant patients what made previous screenings more comfortable for them to try to replicate more positive experiences with Pap tests.

6.2 Strengths and Limitations

The current literature investigating immigrant women, the HPV vaccine, and Pap test lacks dedicated qualitative research on their experiences and perceptions of the prevention strategies. To my knowledge, this is the only study evaluating perceptions of both Pap tests and the HPV vaccine among immigrant women in Ontario, Canada. Immigrant populations are at a greater risk for being underscreened for cervical cancer (Bacal et al., 2019; Datta et al., 2018; Lofters et al., 2007). While quantitative studies have evaluated the association between various predictor variables and adherence, few qualitative studies have investigated the reason for underscreening through the immigrant's perspective and experiences (Lofters et al., 2010). With a growing immigrant population in Ontario, research centring immigrant perspectives and experiences regarding health is critical (Al-Busaidi, 2008; Office of Economic Policy, 2021). For this reason, employing a qualitative semi-structured interview approach produced rich data that captured barriers and enablers as perceived and experienced by immigrant women in Ontario. The limitation, however, with interview data is the potential for subjective validation, response, and recall bias. Data presented in the study represents the participant's perceptions, which are not free from subjective validation or response bias. Thus, the

influences identified as barriers or enablers of health services access, and more specifically, cervical cancer prevention strategies, could differ from objective behavioural influences. For example, previous research has reported an over- and under-estimation of cancer screening behaviour in studies that used self-reporting methods (Montano & Phillips, 1995; Suarez et al., 1995).

The semi-structured interview guide also included questions about the participant's immigration experience. More than half of the participants had already been in Canada for over 20 years, in which case recollections of their immigration experiences may have been less accurate. Despite the potential risk of subjective validation, response, and recall bias, it would be difficult to assess the objective behaviours and influences using alternative methods due to the multiple levels at which the identified barriers and enablers operate. Future studies may choose to complete interviews with other stakeholders about their perceptions concerning influences on behaviour to validate the enablers and barriers deemed relevant in this study.

The recruitment of a second coder enhanced the credibility of the researcher's interpretations of the participant's stories. Multiple coding of the transcripts and building both the coding manual and deductive categories in collaboration with a second researcher improved the quality of the content analysis. The dependability of the interpretations was also enhanced using inter- and intra-coder reliability scores. Miles and Huberman's (1994) formula was used to calculate the reliability scores. The inter- and intra-coder reliability scores calculated for the barrier and enabler labels were averaged for two transcripts (10% of the interviews) and yielded 82.8% agreement and 85.82% agreement, respectively. According to Miles and Huberman (1994), an inter-coder reliability of 80.00% among multiple coders is sufficient.

Many qualitative studies that employ the TDF use an overly rigid approach that risks overlooking important factors (McGowan et al., 2020). To avoid this risk, the researcher prioritized the flow of a natural conversation when developing the interview guide as opposed to repetition of specific questions to meet the TDF domains in a checklist-type format. Additionally, TDF research has been criticized for only using a deductive approach. Therefore, in accordance with McGowan et al. (2020) who recommended that qualitative researchers strengthen their work by incorporating

inductive analyses when employing the TDF, this study followed the procedure outlined by Mayring (2004), which involves inductive category development followed by deductive category application.

The two researchers responsible for deductive category application were able to sort all of the inductive codes into one or more of the TDF domains, supporting the researcher's selection of the TDF framework for this research topic. Further, in conversation with the second coder, both researchers noted that none of the inductive categories would have to be sorted into the domains *Optimism* and *Reinforcement*, as they matched well to the domains in Version 1 of the TDF. These domains were added to Version 2 of the TDF after the framework was validated. With both Version 1 and 2 frequently used in health research, this supported the researcher's decision to use the first version of the TDF for this study (Atkins et al., 2017).

Participants were recruited using convenience and snowball sampling. In terms of convenience sampling, it is important to recognize that of 32 participants who expressed interest in the study, 11 decided not to participate after having the opportunity to speak further about the content that would be discussed in the interview. As a result, it is possible that the individuals who participated were generally more comfortable with the subject matter or were inclined to participate because of an interest in improving the current guidelines surrounding the prevention strategies. An interest in improving the guidelines, as was advertised as the study purpose on recruitment material, could have been motivated by a greater knowledge of or negative experiences with the prevention strategies. However, the final group of participants were not all adherent, comfortable discussing sexual health with friends or family, knowledgeable about the Pap test or HPV vaccine, and some participants did not report negative feelings toward or experiences with the preventive measures. In addition, three participants were recruited to the study through snowball sampling. Thus, due to potential friendships between participants, descriptions of social influences among their friend groups may have been repeated in the data.

Recruitment for the study was challenging due to the limitations associated with the COVID-19 pandemic. Recruitment through relevant organizations and centres was limited, as most only operated in-person, and had halted operations for the duration of the pandemic. For this reason, it was not possible to narrow the participant eligibility beyond the given age window and meeting OHIP

requirements. As a result, not all participants had children or were themselves eligible to obtain the HPV vaccine. This limited the data collected on potential influences on HPV vaccine uptake among the immigrant community and is why enablers and barriers for either or both the Pap test and HPV vaccine were reported under each domain as opposed to separate analyses for each preventive measure.

The Portuguese, Indian, and Polish communities had the highest number of contributing participants. The final group of participants was composed of nine individuals who self-identified as Portuguese (45% of the study population), four who self-identified as Indian (20% of the study population), and three who self-identified as Polish (15% of the study population). Participants were not explicitly asked about elements of their background or culture that might influence Pap test adherence or HPV vaccine uptake; however, culture as a barrier was identified during the inductive coding by only self-identified Portuguese, Indian, and Polish participants. This may have been due to the overrepresentation of these backgrounds in the study; as such, cultural-specific barriers as perceived by the self-identified Portuguese, Indian and Polish participants should be seen as less generalizable data.

Lastly, while the researcher followed the guidelines outlined by Francis et al. (2010) to determine when theoretical saturation of the data had been reached, the final sample size for the study was small. As is common with qualitative research, caution should be exercised when extrapolating the data to immigrant communities at large. Further, the heterogeneity of the immigrant population in Ontario also warrants further investigation into subgroup populations with an evaluation of within-group differences. While eligibility for the study was inclusive of individuals from any cultural or ethnic background, the findings cannot be generalized to the entire immigrant community as a small sample size cannot effectively account for the vast number of intersecting identities at play. Instead, the findings from this study should be viewed as areas of concern to inform the direction of future research.

6.3 Implications and Recommendations for Targeted Public Health Programs

To my knowledge, this is the first study to employ the TDF for the purpose of evaluating adherence to preventive measures for cervical cancer, and thereby offers a number of novel insights into the use of the TDF for evaluating prevention strategies and potential interventions to improve these strategies. A benefit of classifying barriers and enablers to cervical cancer prevention strategies into TDF domains is that appropriate BCTs can be more easily identified. Cane et al. (2015) sorted existing BCTs into the theoretical domains included in Version 2 of the TDF using a closed-sort top-down approach. Twelve of the 14 domains were assigned BCTs. The two domains that were not assigned at least one relevant BCT were the domains *Social/professional role and identity* and *Memory, Attention, and Decision Processes*. Encouragingly, neither of these were considered to be relevant domains in this study. This means that all TDF domains deemed relevant to cervical cancer prevention adherence and uptake among the sample group can be easily matched to existing BCTs. Of these domains, *Knowledge, Skills, Motivation and goals*, *Environmental context and resources*, *Social influences*, and *Behavioural regulation* all have relevant BCTs that were identified to be commonly used by experts in psychology, behavioural medicine, and health promotion (Michie et al., 2013). Thus, public health practitioners should consider addressing barriers to cervical cancer prevention strategies with targeted programs informed by the commonly used BCTs associated with each relevant TDF domain.

Similarly, public health practitioners can leverage health interventions that have previously been associated with the relevant TDF domains. For example, in a study by Allemann et al. (2016), TDF domains were matched to various adherence interventions. While the focus of this study was medication adherence, the authors conclude that their findings can be extended for application with adherence interventions at large (Allemann et al., 2016).

Informed by existing commonly used BCTs and adherence interventions, public health programs should target modifiable influences and tailor them to non-modifiable influences identified in this study (Allemann et al., 2016). Key opportunities for targeted public health interventions,

informed by the results of this study, include improving linguistic access to health-related resources, resourcing more effective media for the dissemination of health-related information, providing physicians with educational resources about effectively servicing immigrant communities, increasing access to low-barrier care, and offering self-administered Pap tests.

6.31 Multilingual Resources

Public health practitioners should improve the availability of multilingual health-related resources concerning cervical cancer prevention to improve knowledge acquisition among immigrant communities. Barriers allocated to the *Knowledge* and *Environmental context and resources* domains included a lack of health-related resources upon arrival to Canada, English-only health resources, limited information on and awareness about cervical cancer preventive measures, and criticisms of the publicly funded school-based HPV promotion programs. Each of these barriers is a modifiable influence that targeted public health programs could address.

Previous studies have identified that language barriers impede people's ability to navigate and understand the Canadian healthcare system, and consequently, acquire necessary health information (Asanin & Wilson, 2008; Higginbottom & Safipour, 2015). Language barriers have also been reported for school-based HPV programs. Previous studies have found that parents who are able to read and understand information about the vaccine are more open to vaccinating their child; thus, language barriers may reduce the likelihood of a parent choosing to vaccinate their child (Dubé et al., 2018). In a survey of Ontario's school-based HPV immunization program, only two health units (representing 24% of Ontario's population) sent home translated resources for parents who do not speak English or French (Wilson et al., 2012).

Public Health Ontario and local public health units should consider expanding the language accessibility of health-related resources provided to new immigrants and available on credible and high traffic health websites (Stampino, 2007). Successful programs have been previously implemented to expand language accessibility of educational materials concerning cervical cancer prevention strategies. For example, the Cancer Prevention and Screening team created print ads that

were translated into ten priority languages and posted in target communities across Toronto. The ads were also timed with Cancer Month, Breast Cancer Awareness Month, Cervical Cancer Awareness Week and Colorectal Cancer Month (SRCHC, 2010). Placing ads outside of clinic environments is also an example of the BCT *Prompts/cues*, which has been associated with the domain *Environmental context and resources* (Cane et al., 2015).

6.32 Effective Media

In alignment with the BCT *Prompts/cues*, multi-media campaigns may be an effective way for public health practitioners to reach immigrant communities. In the present study, several participants lacked awareness of current prevention strategies available in Ontario, Canada. Barriers allocated to the *Knowledge* and *Environmental context and resources* domains included a lack of women's health information reaching the participants through a preferred media. Some participants mentioned that social media, international programming, and multicultural organizations would be effective media through which they would prefer to receive health-related information.

Results of this study thereby suggest that effective awareness campaigns should span multiple media. Supportive of these findings, successful awareness campaigns identified by South Riverdale, Mount Sinai Hospital, and Toronto Public Health utilized international programming and educational presentations in community and health centres. For example, in 2004, Toronto Cancer Prevention Coalition's Early Detection and Screening working group launched the *OMNI/Rogers Women's Cancer Initiative for Multi-Ethnic Communities*. The initiative targeted Farsi and Ukrainian communities through the community's relevant network on OMNI. Ten-minute videos promoting awareness of early detection and screening for breast, cervical, and ovarian cancers aired over the course of a four to six month period. The success of the project led to its replication for other target communities (SRCHC, 2010).

In addition, two other successful campaigns that promoted awareness through community and health centres were also reported in South Riverdale, Mount Sinai Hospital, and Toronto Public Health's compendium of pan-Canadian best and promising practices for engaging seldom or never

screened women (SRCHC, 2010). The two programs were titled *Increasing Breast, Cervical and Colorectal Cancer Screening Awareness and Participation in the Arabic and Somali Communities* and the *Joy Luck Women's Project: Building Capacity*. The two initiatives were launched in Ottawa and Toronto's South Riverdale community, respectively. The programs integrated culturally sensitive cancer screening presentations in community and health centres that were delivered by peer educators and family physicians who reflected the target community's cultural background. Both programs were well-received by community members with participant satisfaction rates of more than 80% (SRCHC, 2010).

Secondly, some study participants noted that they had not received, or infrequently received, letter reminders from Cancer Care Ontario for the Pap test exam. Some noted privacy concerns about receiving these letters to their home. While studies have found that the CCO mail program encourages screening at regular intervals when letters are received (Tsoa et al., 2017), a survey by Karwalajtys et al. (2007) found that the reminders are not consistent. To address inconsistencies with mail-reminders and associated privacy concerns noted by participants in this study, a potential solution is to send Pap test reminders through an individual's preferred contact method. For example, extending the reminder system to also include pre-recorded phone calls, texts, or emails.

6.33 Educational Resources for Physicians

Under the domains *Knowledge* and *Social influences* enablers of cervical cancer prevention strategies identified in this study included effective health communication, information provided about Pap tests and the HPV vaccines from healthcare professionals and seeing healthcare professionals as an important resource for health information. Barriers allocated to the domain *Environmental context and resources* included short clinic visits, limiting the number of questions a participant could discuss with their doctor.

The limited time that physicians spend with their patients is a well-documented barrier to meeting the health needs of immigrant communities (Asanin & Wilson, 2008; Maticka-Tyndale et al., 2007). While there are external influences that lead to short visits with patients, a modifiable influence

in these situations is the topics prioritized by the physicians in the limited time they have with their patient (Asanin & Wilson, 2008; Wyonch, 2021). This falls under the associated BCT *Restructuring the social environment*. Since immigrant patients tend to see their physicians as trusted resources for health information, physicians have the opportunity to educate or offer resources to their patients to improve their awareness of available preventive measures (Lynn et al., 2018; Maticka-Tyndale et al., 2007).

To effectively educate patients, physicians must possess strong health communication skills. Participants in this study who demonstrated a high-level understanding of a condition they had been diagnosed with credited their physicians' lay explanation. Health literacy rates are poorer among immigrant communities compared to non-immigrants (Ng & Omariba, 2011). Previous studies have associated low health literacy rates with poor health outcomes (Berkman et al., 2004; Neter & Brainin, 2019). Thereby, to help reduce the negative impact of low health literacy on health outcomes, physicians should be provided educational resources detailing effective health communication techniques. Efforts have been made to teach effective communication skills to physicians. From these strategies, researchers have identified the importance of using practice-oriented techniques to compliment educational resources (Berkhof et al., 2011). Resources permitting, public health practitioners may also consider involving opportunities for role-play, feedback, and discussions when working toward improving physician-level barriers to patient care.

Lastly, when developing educational resources for physicians it is important to tailor them to non-modifiable influences, such as an immigrant's cultural background. Previous researchers have acknowledged the importance of tailoring interventions to patient characteristics (Allemann et al., 2016; Müller et al., 2015). As noted in this study, a participant who immigrated from Russia, a country with low-cervical cancer screening rates, had no awareness of either preventive tool (Aston et al., 2019). This is consistent with literature that identifies patterns of low screening adherence among individuals who immigrate from countries with low national screening rates (Lofters et al., 2010; Vicus et al., 2015). Some immigrant needs reflect the influence of their birthplace and can therefore differ from Canadian-born patients (Gushulack et al., 2016). In addition, it is important to acknowledge the challenges impeding effective communication between physicians and patients who

do not share the same cultural background (Kreps & Sparks, 2008). Educational resources for physicians discussing communication interventions must speak to the importance of culturally sensitive practices. Adopting culturally sensitive approaches to discussions around preventive strategies increases the degree to which the discussion will influence the participant's behaviour (Kreps, 2002; Kreps & Sparks, 2008; Maibach & Parrott, 1995). Thus, the proposed resource creation should prioritize educating physicians on how to take account of the cultural diversities in their communities and tailor their approaches to ensure cultural sensitivity and safety (Maticka-Tyndale et al., 2007).

An example of this opportunity put into practice was the Greater Toronto Area (GTA) Cancer Prevention and Screening Physician Campaign Strategy. To improve rates of breast, cervical, and colorectal cancers, the Greater Toronto Area Cancer Prevention and Screening Network (GTA CPSN) published a series of articles in the *Ontario Medical Review* journal to communicate with physicians about current screening rates and to encourage them to prioritize discussions about screening with their patients. The program identified family physicians in Ontario as key stakeholders in reaching screening targets. Disseminating educational resources through the OMR allowed the network to reach 28,000 general physicians in Ontario (SRCHC, 2010).

6.34 Access to Low-barrier Healthcare

Preferences about healthcare professional's qualifications, gender, culture, and fluency in specific languages were noted as barriers in this study. For example, the majority of participants reported a preference for female or women physicians. While physicians cannot change these characteristics about themselves, it is important to have structures in place to connect patients to physicians that match their preferences to improve the patient experience (Takeshita et al., 2020). In this study, a participant from Iran noted that upon her arrival in Canada, she was matched to a physician who was able to speak Farsi. The participant had no level of English and would otherwise have struggled to obtain proper care. Other participants also noted that they specifically sought out physicians who were able to communicate in their preferred language, further emphasizing the

importance of physician-preferences to healthcare access among immigrant women. These findings are supported by other studies investigating physician-level barriers to screening adherence among immigrant women (Lofters et al., 2010; Redwood-Campbell et al., 2011; Van Til et al., 2003; Zapka & Lemon, 2004).

Additionally, one of the study participants who worked as an administrative assistant in a health centre noted that some immigrants avoid seeking out non-urgent medical care for fear of being reported to immigration services or not having the means to afford associated costs. Other studies have had similar findings while evaluating health services uptake among undocumented migrants or individuals with no or precarious medical insurance (Khanlou et al., 2017; Nellums et al., 2021). Thus, healthcare centres that provide safe and non-judgemental care to immigrant patients may improve health services access and improve participation in cervical cancer prevention (Chan et al., 2018; Chen et al., 2015).

Encouragingly, low-barrier healthcare centres already exist. An example of a low-barrier healthcare centre for immigrants is the Canadian Centre for Refugee and Immigrant Healthcare (CCRIH). Located in Toronto, Ontario, the CCRIHC is a volunteer medical clinic dedicated to providing immigrants and refugees with free access to healthcare services. Since 2006 the volunteer-run clinic has been offering a comprehensive women's health program. The SWAN program is offered by an all-women team of physicians, nurse practitioners, nurses, and mental health counsellors and provides various services, including female pelvic exams and Pap tests. Currently, the clinic has completed over 40,000 medical visits and has a patient base that is 70% women (CCRIHC, 2021). This is an example of the BCTs *Social support or encouragement (general)* and *Social support (practical)* in practice (Cane et al., 2015).

Participants in the study also identified barriers under the domain *Environmental context and resources* that pertained to their situation immediately following arrival in Canada. Barriers included challenges finding employment, working difficult jobs, and experiencing financial insecurity. These barriers have been reported in previous studies investigating the relationship between employment and SES on the health of immigrant populations (Dunn & Dyck, 2000, Lofters et al., 2010; Rubens-Auguston et al., 2019; Zanchetta & Poureslami, 2006).

To reach immigrant women in downtown Toronto who could not access sexual health services due to their work, the Immigrant Women's Sexual Health Centre launched a Mobile Health Clinic Program, which can be considered as an example of the BCT *Restructuring the physical environmen*t (Cane et al., 2015). The mobile clinic employed staff from the target communities, offered translated resources, and would hit high-traffic areas and areas frequented by immigrant women. These areas included factories, women's centres, community centres, religious organizations, and ESL classes. The program ran for three years, in which it serviced over 16,000 Toronto women (SRCHC, 2010).

Public health practitioners working at both the provincial and local levels should consider targeted interventions that involve funding or expanding the number of centres like the CCRIH and mobile health clinics, developing directories that help patients connect to clinicians that suit their preferences, and employing cultural brokers and medical interpreters to assist in clinics located in immigrant-dense communities.

6.35 Self-administered Screening

The majority of participants involved in the study reported negative emotional responses to obtaining a Pap test. These responses, which are considered non-modifiable influences, include feelings of fear, discomfort, anxiety, vulnerability, stress, and pain. Participants also reported feeling uncomfortable speaking about their sexual health or responding to questions about their sexual activity with their physicians. This is consistent with other qualitative studies investigating barriers to Pap tests among both immigrant and non-immigrant women (Ferdous et al., 2018; Gesink et al., 2016; Redwood-Campbell et al., 2011). Complete screening using a self-administered test could pose a solution to these barriers by allowing patients to complete the exam in the comfort of their own homes.

Several studies support self-collected examinations and HPV testing as an effective way to reach underscreened women (Racey & Gesink, 2016; Singla & Komesaroff, 2018). Studies report several enablers associated with self-sampling devices, including convenience, privacy, and ease of

use (Abdullah et al., 2017; Madzima et al., 2017). These findings support self-collected tests as an example of the BCT *Reduce negative emotions* associated with the TDF domain *Emotion* (Cane et al., 2015).

A study evaluating the acceptability of HPV self-sampling among 164 women found that over half of the participants felt that the procedure was easy to perform (Abdullah et al., 2017). These findings are consistent with smaller studies that documented good acceptability and reported convenience among participants (Cerigo et al., 2012; Dannecker et al., 2004).

Rossi et al. (2015) compared the impact of self-sampling on cervical cancer screening rates through a randomized control trial. The study concluded that home mailing of self-sampler devices was the most effective way to increase participation in preventive screening (Rossi et al., 2015). Similar findings were reported in the Health Outcomes through Motivation and Education Project, where 78% of women returned their HPV self-test compared to 11% who obtained a Pap test in a clinic environment (Reiter et al., 2019). In addition, studies have found that sending self-collected sampling through the mail is a more effective intervention than sending letters to remind individuals about an upcoming screening appointment (Racey et al., 2016).

In 2017, Health Canada approved a self-testing kit for HPV. However, despite extensive supporting literature advocating for self-screening devices, these testing kits have yet to be incorporated into official screening programs in Canada (Fedyanova, 2018).

6.4 Directions for Further Research

The extent to which each of the relevant domains identified in this study is likely to bring about the greatest change to encourage adherence to regular Pap tests and HPV vaccine uptake among immigrant women in Ontario, Canada, is unknown. While efforts were made to distinguish between major and minor domains according to the number of participants cited under each domain, the small sample size and single coder for 75% of the interviews limit the study's generalizability. Future studies are needed to determine how best to prioritize the TDF domains that influence the degree to which cervical cancer prevention strategies are reaching immigrant women.

Further research into the intrapersonal influences impacting adherence to Pap tests and uptake of the HPV vaccine among immigrant communities is warranted. Specifically, researchers should focus on cultural and ethnic sub-groups within Ontario's immigrant population to investigate potential cultural influences. For example, the present study only noted cultural-specific influences among the Portuguese, Indian, and Polish communities who were overrepresented in the study compared to other cultural and ethnic backgrounds. This suggests that larger samples from cultural and ethnic sub-groups might produce additional insights into other cultural-specific influences, which are categorized as non-modifiable influences and should be used to tailor potential health interventions.

Interpersonal influences are also non-modifiable influences that were identified across several relevant domains in this study. Future research into perspectives of other relevant stakeholders and their relationships with participants could be used to validate the enablers and barriers identified in this study that pertain to interpersonal relationships. Among Atkins et al.'s (2017) recommendations regarding the use of the TDF in qualitative research, it is suggested that samples "include the target adopters of the behaviours and/or other relevant stakeholders" (p. 7). The present study only used a sample of the target adopters of the behaviour; thus, future studies should investigate other relevant stakeholders. In the case of this topic, other relevant stakeholders would include walk-in clinic physicians, general practitioners who service immigrant-dense communities, and gynecologists. Studies engaging these other stakeholders can also help validate environmental influences identified by the study sample.

Lastly, due to the lack of eligibility for HPV vaccination among some participants and their children in the present study, further analysis into barriers and enablers of the HPV vaccine within the context of the TDF is needed. These studies should investigate uptake among parents of eligible children across various regions in Ontario as researchers have documented a high diversity of vaccine coverage and approaches to school-based programs across the province (Wilson et al., 2012).

7.0 Conclusion

The purpose of this thesis was to examine immigrant women's perceptions and experiences with Pap tests and the HPV vaccine to assess potential influences on screening adherence and vaccine uptake among immigrant communities in Ontario, Canada. Currently, provincial screening and vaccination rates fall well below the Canadian Immunization Committee's (CIC) targets (CIC, 2014; PHO, 2020; Shapiro et al., 2017).

This study employed the Theoretical Domains Framework (TDF) to effectively categorize potential influences on cervical cancer prevention strategies into an overarching theoretical framework that integrates constructs from widely accepted behavioural theories (Michie et al., 2005). The objectives of the thesis were met using a qualitative interview approach and a combination of inductive and deductive analyses. During the inductive category development, influences were coded as barriers or enablers to Pap test adherence or HPV vaccination and assigned a label, sub-label, and sub-sub-label. The sub- and sub-sub-labels closely reflected the transcript text. Incorporating an inductive approach to the data analysis allowed categories to emerge that were not guided by the TDF and further enabled the researcher to evaluate the relevance of the TDF to this topic. All of the codes were successfully allocated to one or more of the TDF domains, which can be considered corroborating evidence supporting the use of the TDF for research concerning immigrant behaviours associated with cervical cancer prevention strategies.

Nine of the 12 TDF domains were deemed relevant to the study. They were then categorized as either a major or minor domain according to the number of participants who cited the domain as either an enabler or barrier. Major domains included *Knowledge*, *Beliefs about consequences, Motivation and goals*, *Environmental context and resources*, *Social influences*, *Emotion*, and *Behavioural Regulation*. Minor domains included *Skills* and *Beliefs about capabilities.*

The study findings highlight the importance of identifying factors that influence adherence to Pap tests and uptake of the HPV vaccine among immigrant communities in Ontario, Canada, to ensure

equitable access to preventive measures. Employing the TDF permitted the identification of potentially modifiable influences of screening and vaccination behaviour.

Informed by the study sample, the relevant TDF domains and their associated behavioural change techniques (BCTs), the researcher proposed five recommendations for targeted public health programs aiming to increase screening adherence and vaccination rates within immigrant communities. The recommendations are to (1) improve access to multilingual health resources, (2) disseminate health information to immigrant communities through effective media, (3) provide physicians with educational resources to improve the cultural sensitivity and safety of their approaches to care delivery, (4) increase access to low-barrier healthcare and (5) incorporate self-administered tests into provincial screening programs.

While the findings from this study should be extrapolated with caution due to the limited number of participants, the recommendations are largely supported by existing literature. As a result, these recommendations can be viewed as a positive start. Further research on this topic should validate the relevant domains identified in this study using samples of ethno-cultural sub-groups within Ontario's immigrant population and key stakeholders, such as walk-in clinic physicians, general physicians servicing immigrant-dense communities, and gynecologists.

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Appendices

Appendix A: Relevant TDF domains by study aim

Relevant Sub-Questions	**Domains**	**Relevant Constructs**
What knowledge do immigrant women have about the Pap test and the HPV vaccine?	Knowledge	Knowledge about the condition
		Knowledge about the scientific rationale
		Procedural knowledge
	Memory, attention and decision processes	Decision-making
Are immigrant women accepting of current cervical cancer prevention strategies?	Beliefs about capabilities	Social environment
		Perceived competence
		Self confidence
		Perceived behavioural control
	Beliefs about consequences	Outcome expectancies
		Anticipated regret
		Attitudes
		Beliefs
		Characteristics of outcome expectancies ● Valued/ not valued ● Probable/ improbable ● Perceived risk/ threat
What are immigrant women's experiences with and perceptions of Pap tests, the HPV vaccine, and healthcare providers who administer these interventions?	Emotion	Stress
		Anticipated regret
		Fear
		Positive/ negative affect
		Anxiety

	Behavioural regulation	Self-monitoring
		Barriers
		Facilitators
	Nature of the behaviours	Direct experience
		Past behaviour
	Social/ professional role and identity	Identity
		Group/ social identity
		Group/ social norms
	Social influences	Social support
		Group/ social identity
		Group/ social norms
		Group conformity
		Social pressure
		Power/ hierarchy
		Social comparisons
	Skills	Ability
		Interpersonal skills
		Coping strategies
What suggestions do immigrant women have to improve current cervical cancer prevention strategies in Ontario?	Environmental context and resources	Resources
		Material resources
	Motivation and goals	Intention
		Intrinsic motivation

		Commitment

Appendix B: TDF domain definitions and constructs

The constructs and definitions were informed by previous literature on the TDF (Atkins et al., 2017; Michie et al., 2005).

Domain	Constructs	Definition
Knowledge	Knowledge Knowledge about condition/scientific rationale Schemas + mindsets + illness representations Procedural knowledge	An awareness of the existence of something
Skills	Skills Competence/ability/skill assessment Practice/skills development Interpersonal skills Coping strategies	An acquired ability or proficiency
Social/professional role and identity	Identity Professional identity/boundaries/role Group/social identity Social/group norms Alienation/organisational commitment	A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting
Beliefs about capabilities	Self-efficacy Control—of behaviour and material and social environment Perceived competence Self-confidence/professional confidence Empowerment Self-esteem Perceived behavioural control Optimism/pessimism	Acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use
Beliefs about consequences	Outcome expectancies Anticipated regret Appraisal/evaluation/review Consequents Attitudes Contingencies Reinforcement/punishment/consequences Incentives/rewards Beliefs Unrealistic optimism Salient events/sensitisation/critical incidents Characteristics of outcome expectancies—physical, social, emotional; sanctions/rewards, proximal/distal, valued/not valued, probable/improbable, salient/not salient, perceived risk/threat	Acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation
Motivation and goals	Intention; stability of intention/certainty of intention Goals (autonomous, controlled) Goal target/setting Goal priority Intrinsic motivation Commitment	Mental representation of outcomes or end states that an individual wants to achieve

	Distal and proximal goals Transtheoretical model and stages of change	
Memory, attention and decision processes	Memory Attention Attention control Decision-making	The ability to retain information, focus selectively on aspects of the environment, and choose between two or more alternatives
Environmental context and resources	Resources/material resources (availability and management) Environmental stressors Person × environment interaction Knowledge of task environment	Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behaviour
Social influences	Social support Social/group norms Organisational development Leadership Team working Group conformity Organisational climate/culture Social pressure Power/hierarchy Professional boundaries/roles Management commitment Supervision Inter-group conflict Champions Social comparisons Identity; group/social identity Organisational commitment/alienation Feedback Conflict—competing demands, conflicting roles Change management Crew resource management Negotiation Social support: personal/professional/organisational, intra/interpersonal, society/community Social/group norms: subjective, descriptive, injunctive norms Learning and modelling	Those interpersonal processes that can cause an individual to change their thoughts, feelings, or behaviours
Emotion	Affect Stress Anticipated regret Fear Burn-out Cognitive overload/tiredness Threat Positive/negative affect Anxiety/depression	A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event
Behavioural regulation	Goal/target setting Implementation intention Action planning	Anything aimed at managing or changing objectively observed or measured actions

	Self-monitoring Goal priority Generating alternatives Feedback Moderators of intention-behaviour gap Project management Barriers and facilitators	
Nature of the behaviours	Routine/automatic/habit Breaking habit Direct experience/past behaviour Representation of tasks Stages of change model	The aspects of a behaviour that give the appearance of behaviour as a programmed output

Appendix C: Recruitment Materials

Recruitment Poster

This study has been reviewed by, and received ethics clearance through a University of Waterloo Research Ethics Committee (#42901)

UNIVERSITY OF WATERLOO

PARTICIPANTS NEEDED

Research Study Evaluating: Immigrant women's experiences with and perceptions of cervical cancer prevention strategies

Research Study Details

As a participant in this study, you will be asked to share your life story and experiences with both Pap tests and the human papillomavirus (HPV) vaccine. You will participate in an interview over the phone or over a video-conferencing platform (Skype, Zoom, WebEx or Google Hangouts) that will take approximately 45-60 minutes. The questions will be open-ended and will focus on:

- Your move to Canada
- Access to sexual health services and information
- Your experiences with and perceptions of the Pap test and HPV vaccine

The purpose of this study is to:

- Advance our understanding of experiences with and perceptions of Ontario's cervical cancer prevention strategies
- Contribute to the study of cervical cancer prevention and immigrant women's health

ELIGIBILITY TO PARTICIPATE

- Canadian immigrant woman
- Between 40 and 70 years of age
- Currently residing in Ontario, Canada
- Eligible for Ontario's Health Insurance Plan (OHIP)
- Basic understanding of English

CONTACT INFORMATION

For more information on this study, or to volunteer for this study, please contact:

Kayla Benjamin, MSc Student
Email: kabenjamin@uwaterloo.ca

Organization Recruitment Email

Date: [Insert Date]

Dear [Name of Organization's Contact]

This letter is a request for **[name of organization]**'s assistance with a project I am conducting as part of my Master's degree in the School of Public Health and Health Systems at the University of Waterloo, Ontario, under the supervision of Dr. Martin Cooke**.** The title of my research project is *A Qualitative Analysis of Immigrant Women's Adherence to and Perceptions of Cervical Cancer Screening and Prevention in Ontario, Canada*. The purpose of this study is to explore immigrant women's adherence to and perceptions about programs in place to prevent cervical cancer. Specifically, I will explore how individuals have experienced and perceive Pap tests and the human papillomavirus virus (HPV) vaccine. Knowledge and information generated from this study may help advance our understanding of Ontario's cervical cancer prevention strategies.

It is my hope to connect with immigrant women affiliated with your organization who meet the eligibility criteria for this study. During the course of this study, I will be conducting interviews with participants, asking them to share their life story, including their move to Canada, as well as their view on the prevention strategies used today to reduce cervical cancer rates in Canada. At the end of this study the publication of this thesis will share the knowledge from this study with other public health researchers, practitioners, and community members.

To respect the privacy and rights of the **[name of organization]** and its participants, I will not include any references to the organization's name within my study. What I intend to do, is provide the **[name of organization]** with posters to be distributed by the **[name of organization]** at their discretion. My contact information will be contained on the posters. If someone is interested in participating, they will be invited to contact me, Kayla Benjamin, to discuss participation in this study in further detail.

Participation of any participant is completely voluntary. Each participant will make their own independent decision as to whether or not they would like to be involved. All participants will be informed and reminded of their rights to participate or withdraw before any interview, or at any time in the study. Participants will also receive an information letter including detailed information about this study, as well as informed consent forms.

To support the findings of this study, quotations and excerpts from the stories will be used labelled with pseudonyms to protect the identity of the participants. Names of participants will not appear in the thesis or reports resulting from this study. Participants will not be identifiable, and only described according to the demographic characteristics they feel comfortable sharing.

The **[name of organization]**'s identity will remain confidential in this study. All paper field notes collected will be retained on a password protected computer and/ or locked in my advisor's office at the University of Waterloo. All paper notes will be confidentially destroyed after three years. Further, all electronic data will be stored indefinitely on a password protected computer with no personal identifiers for a minimum of seven years. Finally, only myself and my advisor, Dr. Martin Cooke, in the School of Public Health and Health Systems at the University of Waterloo will have access to these materials.

I would like to assure you that this study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. However, the final decision about participation belongs to the **[name of organization],** and any interested participants.

If you have any questions regarding this study or would like additional information to assist you in reaching a decision about participation, please contact me at 647-230-2201 or by email (kabenjamin@uwaterloo.ca). You may also contact my supervisor, Dr. Martin Cooke at 519-888-4567, ext. 43554 or by email (cooke@uwaterloo.ca).

I hope that the results of my study will be beneficial to immigrant communities across Canada, the broader research community, and the **[name of organization]**. I can forward a summary of results from the study to **[name of organization]**, once the study is complete. I very much look forward to speaking with you and thank you in advance for your assistance with this project.

Yours sincerely,

Kayla Benjamin
MSc Candidate
School of Public Health and Health Systems
University of Waterloo

Dr. Martin Cooke
Associate Professor
School of Public Health and Health Systems
University of Waterloo

Appendix D: Participant Documents

Letter of Intent/ Consent Form

University of Waterloo

[Enter date]

Dear Participant:

This letter is an invitation to participate in a research study titled *A Mixed Methods Analysis of Immigrant Women's Adherence to and Perceptions of Cervical Cancer Screening and Prevention in Ontario, Canada*. The purpose of this study is to explore immigrant women's adherence to and perceptions about programs in place to prevent cervical cancer. Specifically, I will explore how individuals have experienced and perceive Pap tests and the human papillomavirus virus (HPV) vaccine.

This study will be undertaken by Kayla A. Benjamin, a graduate student in the School of Public Health and Health Systems at the University of Waterloo. I will ask you to tell your life story, including your move to Canada, as well as your view on the prevention strategies used today to reduce cervical cancer rates in Canada.

Participation in this study is voluntary. It will involve taking part in an open-ended interview that will take approximately 45-60 minutes to complete. The interview will take place over phone, or a video call service (Skype, Zoom, WebEx, or Google Hangouts). When information is transmitted over the internet, privacy cannot be guaranteed. There is always a risk your responses may be intercepted by a third party. University of Waterloo researchers will not collect internet protocol (IP) addresses or other information which could link your participation to your computer or electronic device without first informing you.

With your permission, the interview will be audio-recorded to facilitate the collection of information, and later transcribed for analysis. During the interview, you may decline to answer any of the interview questions and/or share your personal information with myself. Further, you may withdraw from this study at any time by advising the researcher. If you decide to withdraw, I will erase the interview transcript and all the research notes that were taken during the interview process. Your identity will remain confidential. Your name or any other personal identifying information will not appear in any research papers or publications resulting from this study. To protect your confidentiality, I will erase the audio recording of the interview right after we transcribe it, but the transcription which will be assigned a pseudonym will remain. The consent form that you signed will be stored in a locked office in the University of Waterloo. Your anonymized interview transcript will be stored on the password-protected computer of Kayla Benjamin for a minimum of two years.

Participation in this study may not provide any personal benefit to you. We hope the data collected will advance our understanding of Ontario's prevention strategies. The overall objective of this study is to contribute to the study of cervical cancer prevention and immigrant women's health. There are no known or anticipated risks to you as a participant in this study.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. If you have questions for the Committee, contact the Office of Research Ethics at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions regarding this study, or if you would like additional information to assist you in reaching a decision about participation, please contact Kayla Benjamin, at (647) 230-2201 or kabenjamin@uwaterloo.ca.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Sincerely,
Kayla Benjamin, MSc Student
kabenjamin@uwaterloo.ca
Student Investigator
School of Public Health and Health Systems
University of Waterloo

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

I have read the information presented in the information letter about the study being conducted by Kayla Benjamin, an MSc student in the School of Public Health and Health Systems, University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the project paper and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent up until the results are submitted for publication. I may do so by advising the student researcher.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#_____). If you have questions for the Committee, contact the Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact Kayla Benjamin at (647) 230-2201 or kabenjamin@uwaterloo.ca
With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

YES NO

I agree to have my interview audio recorded.

YES NO

I agree to the use of anonymous quotations in the course project papers and any other publications based on this research.

YES NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____

Verbal Consent Script

This script will be used in conjunction with the Letter of Information.

Introduction:

Hello. I am Kayla Benjamin, and currently an MSc Student at the University of Waterloo in the School of Public Health and Health Systems. I am conducting a research project titled *A Qualitative Analysis of Immigrant Women's Adherence to and Perceptions of Cervical Cancer Screening and Prevention in Ontario, Canada*. The purpose of this study is to explore immigrant women's adherence to and perceptions about programs in place to prevent cervical cancer. Specifically, I will explore how individuals have experienced and perceive Pap tests and the human papillomavirus virus (HPV) vaccine. This interview is part of my Master's thesis. My supervisor in my Master's degree is Dr. Martin Cooke from the University of Waterloo's School of Public Health and Health Systems.

Thank you for participating in my research.

[*If the LOI was provided in advance*]

Have you had time to read the Letter of Information I sent you?

[*If the LOI was provided in advance and the participant responds that they have read the LOI*]

Great, then I would like to take a moment to review some main points from the Letter of Information before we continue. [*Proceed to review the highlights of the LOI, be sure to include risks and what will happen with their data, and confirm the important points about voluntary participation and withdrawal listed below.*]

[*If it is not possible to give an LOI to the participant, or if the LOI was not sent in advance, or the participant responds that they did not read the LOI in advance, then I will proceed to go through the full LOI in detail with the participant and confirm the important points about voluntary participation and withdrawal listed below*.]

I will confirm the following with the participant:

- Your participation in this study is voluntary.
- If you do not want to answer some of the questions you do not have to, but you can still be in the study.
- You can decide to stop at any time, even part-way through the interview for whatever reason, no justification is necessary.
- If you decide to stop during the interview, I will ask you how you would like me to handle the data collected up to that point, whether returning it to you, destroying it or using the data collected up to that point.
- If you decide to withdraw, I will erase the interview transcript and all the research notes that were taken during the interview process.
- Your identity will remain confidential. Your name or any other personal identifying information will not appear in any research papers or publications resulting from this study.
- To protect your confidentiality, I will erase the audio recording of the interview right after we transcribe it, but the transcription which will be assigned a pseudonym will remain and will be stored on a password-protected computer for a minimum of seven years.
- You can ask to remove your data from the study up until papers from the study have been submitted for publication.

- This study has been reviewed and cleared by the University of Waterloo's Research Ethics Board.

Consent questions:

Do you agree to participate in this study?

If yes,

Do you agree to an audio recording of this interview?
Do you agree to the use of anonymous quotations from this interview in the project papers and any other publications based on this research?

Would you like a copy of the study results? If yes, where should we send them (email address)?
If not, "Thank you for your time."

Feedback Letter

University of Waterloo

[Enter date]

Dear Participant,

I would like to thank you for your participation in this study. The data collected during interviews will contribute to the study of cervical cancer prevention and immigrant women's health.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. If you have questions for the Committee contact the Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions, please contact Kayla Benjamin at (647) 230-2201 or kabenjamin@uwaterloo.ca

Please remember that your identity will be kept confidential. Once all the data is collected and analysed for this project, we may share this information with the research community through seminars, conferences, presentations, and journal articles. If you would like to read the project report, I will be happy to send it to you. If you wish to receive the results of the study, please provide your email address and, when the study is completed, Kayla Benjamin will send you the information.

Sincerely,

Kayla Benjamin, MSc Student
kabenjamin@uwaterloo.ca
Student Investigator
School of Public Health and Health Systems
University of Waterloo

Appendix E: Participant characteristics

Participant Pseudonym	Age	Background	Place of Birth	First Language	Year of immigration	Level of English prior to immigration	Educational Background	Job/ Career	Relationship Status	Number of Kids
Mary	49	Sikh Punjabi/ Indian	India	Hindi	2002	High	Doctor of Dentistry	Dentist/ Business Owner	Married	2 kids
Celina	49	Portuguese	Portugal	Portuguese	1978	No English	HR Diploma/ Bachelors	HR Professional	Married	2 kids
Lenya	59	Portuguese	Portugal	Portuguese	1978	No English	High School	Factory Worker/ Stay at Home Mom	Married	3 kids
Rose	65	Portuguese	Portugal	Portuguese	1966	No English	High School	Hospital Cafeteria Staff/ Customer Service Rep	Married	2 kids
Ingrid	57	Portuguese	Portugal	Portuguese	1978	No English	Grade 10	Factory Worker/ Cleaner/ PSW	Married	2 kids
Valerie	63	Indian	Kenya	Gujarati	1978	High	Bachelors	Consultant	Married	1 kid
Andrea	65	Portuguese	Portugal	Portuguese	1980	No English	Grade 4	Waitress/ Cleaner	Married	3 kids
Diana	54	Peruvian	Peru	Spanish	2007	Medium	Masters	HR Professional	Married	2 kids
Gracie	54	Portuguese	Portugal	Portuguese	1985	Low	Grade 11	Customer Service Rep	Married	2 kids
Aileen	61	Irish	Ireland	English	1982	First Language	High School / Certificate program	Secretary	Married	2 kids
Tiana	43	Polish	Poland	Polish	2003	Low	Doctorate	Scientist/ Researcher	Married	1 kid
Henrietta	59	Persian	Iran	Persian	1988	Low	Bachelors	Part-time/ Contingent Office Staff	Divorced	1 kid
Alessia	48	Russian	Russia	Russian	2014	No English	Doctorate	Psychotherapist	Married	2 kids
Simone	41	Polish	Poland	Polish	2004	No English	Masters	Medical Secretary/ Cleaner	Divorced/ Common-Law	2 kids

Fayra	53	Indian	India	Marathi	2001	High	Doctor of Medicine	Radiologist	Married	1 kid
Jocelyn	53	Portuguese	Portugal	Portuguese	1971	No English	High School	Hair Stylist/Administrative Assistant/Crisis Intervention	Married	2 kids
Imani	45	Indian	India	Hindi	2001	High	Doctor of Dentistry	Dentist/ Business Owner	Married	2 kids
Beatrix	43	Polish	Poland	Polish	2006	No English	Bachelors	Office Clerk	Married	2 kids
Estelle	50	Portuguese	Portugal	Portuguese	1981	No English	High School	Cosmetologist/Customer Service Rep	Married	5 kids
Yana	54	Portuguese	Portugal	Portuguese	1978	No English	HR Certificate/ Bachelors	HR Professional	Married	2 kids

Appendix F: Semi-Structured Interview Guide

Immigrant Women's Experiences and Perceptions of Cervical Cancer Screening and Prevention

Interview Guide

Note: The content of the interview guide and specific probes may change as the research progresses. The content may change slightly if better ways to phrase questions are identified. These questions should therefore be taken as examples that may change based on the interviewee and the interview situation.

Part 1: Introduction of the Study

The aim of this interview is to understand your experiences and general perceptions about different cervical cancer screening prevention strategies. You will be asked about how women experience Pap tests and your thoughts about the HPV vaccination. The interview will likely last around 45-60 minutes.

I would like to audio record the interview for the purposes of transcribing and ensuring that your answers are correctly recorded. Is that okay with you? (Thank you)

If there are any questions that you are uncomfortable with, you may refuse to answer. I also want to reiterate from the consent form that you may withdraw your consent up until the results from this study are submitted for publication. You may withdraw your consent by contacting me.

Part 2: Basic Demographic Information

Before we get started, I would like to collect some basic demographic information for the purpose of describing participants in the study and to see if responses to questions differ according to various demographic characteristics. I would also like to remind you that you can choose to skip a question at any point throughout this interview.

1. How old are you?
2. How would you describe your background?
3. Where were you born?
4. What is your first language?
5. When did you come to Canada?
6. Did you learn English before coming to Canada?
    a. If not, when did you start to learn English?
7. What is your educational experience?
    a. What schools did you go to?
8. Do you currently work?
    a. What is your job?
    b. What jobs have you occupied in the past?
9. What is your relationship status?
10. Do you have children?
    a. How many children do you have?
    b. How old are they?

Part 3: Interview Guide

*Note: *All questions with an asterisk are not necessarily applicable to all participants. Alternative questions (with the same/ a similar aim) are included beneath each of these questions (if they are not probes).*

Question 1: If you are comfortable sharing this, could you tell me about your move to Canada?

- When/ how/ why did you immigrate?
- Did you come through the point system, or did you come as a refugee?
- Where did you first come to when you moved to Canada?
- Did you find Canadian culture to be different from the culture in your country of origin?

Question 2: Do you have a family doctor/ general physician that you see regularly?

If no: Where do you go when you need non-urgent medical advice?

- How long have you been seeing them?
- Do you see the same person for all of your medical needs?

Question 3: Have you ever attempted to access sexual health, including cervical cancer screening, information, and services in Canada?

If yes: Have you ever faced any challenges in accessing the information/ these services?

- *Have you found that there are health materials available in your preferred language (if that language is not English)?
- Have you ever come away from a doctor's appointment feeling unsure about the instructions/information you were given?
- Have you ever felt uncomfortable discussing your sexual health with your doctor/ physician?

Question 4: Can you tell me what comes to mind when you think about Pap tests?

- Positive/ negative
- Easy/ hard
- What have your experiences been with Pap tests?

***Question 5: What conversations have you had with your family doctor/ general physician regarding Pap tests?**

Alternative: Have you had a conversation with a doctor/ physician regarding Pap tests?

- Did they initiate these conversations with you?
- What did your doctor tell you about them?
- Do you feel that you were well-informed about this test after speaking to your physician about it?

***Question 6: How often do you get a Pap test? Why do you get it that often?**

Alternative: How often do you think people should get a Pap test? Has your healthcare provider told you about how regularly people should be screened?

- Do you talk to your friends/ family about it? What are their experiences?
- Has COVID-19 impacted your ability to adhere to the current screening guidelines?

Question 7: Pap tests are only provided to individuals who are sexually active, so to obtain a Pap test, individuals must disclose to their physician that they are (or have been) sexually active. What do you think is positive and/or negative about this?

Question 8: Cancer Care Ontario sends letters to eligible women aged 30-70 to book a Pap test, and also sends letters to women aged 21-70 to inform them of their test results. What do you think is positive and/or negative about this?

Question 9: Can you tell me about any existing barriers that you think discourage people from getting a Pap test?

- Have your friends/ family discussed why or why not they get regular Pap tests?

Question 10: How do you think targeted health programs could improve the number of people who get regularly screened?

Question 11: How familiar are you with the HPV vaccine?

- Have you been vaccinated?
- Do you know when it is recommended that girls/ boys be vaccinated?
- If you have a child, would you want him/her to be vaccinated?

***Question 12: What conversations have you had with your family doctor/ general physician regarding the HPV vaccination?**

Alternative: Have you had a conversation with a doctor/ physician regarding the HPV vaccine?

- Did they initiate these conversations with you?
- What did your doctor tell you about them?
- Do you feel that you were well-informed about the vaccination after speaking to your physician about them?

Question 13: Can you tell me about any existing barriers that you think discourage people from getting the HPV vaccination?

- Have your friends/ family discussed why or why not they have been vaccinated?

Question 14: How do you think targeted health programs could improve the number of people who get the HPV vaccination?

Question 15: Is there anything else you would like to add?

Part 4: Conclusion

Thank you so much for your time. All of the information you have provided is very valuable to this study. Please feel free to contact me if you have any questions. Thank you again for participating!

Appendix G: Additional Resources for Participants

Immigration and Mental Health Resources/ Services

Immigration Specific Resources

https://www.cic.gc.ca/english/newcomers/services/index.asp#table1caption

- This link provides resources specific to the location of the individual

Waterloo area

Conestoga College

145 Lincoln Road, 2nd Floor
Waterloo, Ontario
N2L 4C7
Canada

Telephone: 519-886-6749

- ✔ Language training (general)
- ✔ Job-specific language training
- ✔ Help with daily life

English at First

16 William Street West
Waterloo, Ontario
N2L 1J3
Canada

Telephone: 519-571-0360

- ✔ Language training (general)
- ✔ Help with daily life
- ✔ Services for refugees
- ✔ Services for Women
- ✔ Services for Seniors

Toronto area

Centre francophone de Toronto

5 Fairview mall Drive, Suite 280
North York, Ontario
M2J 2Z1
Canada

Telephone: 416-922-2672

- ✔ Language assessment
- ✔ Language training (general)
- ✔ Job-specific language training
- ✔ Help with daily life
- ✔ Help finding a job
- ✔ Find or become a mentor to a newcomer
- ✔ Francophone service provider
- ✔ Services for Women
- ✔ Services for Seniors
- ✔ Services for Youth

CultureLink (Northern District Library)

40 Orchard View Boulevard
Toronto, Ontario
M4R 1B9
Canada

Telephone: 416-393-7610

- ✔ Find or become a mentor to a newcomer

Thorncliffe Neighbourhood Office

1470 Don Mills Road, 2nd Floor
Toronto, Ontario
M3B 2X9
Canada

Telephone: 416-395-3988

- ✔ Language training (general)
- ✔ Job-specific language training
- ✔ Help with daily life
- ✔ Help finding a job
- ✔ Find or become a mentor to a newcomer
- ✔ Services for refugees

Mental Health Services

Walk-In Counselling (Toronto)
Family Service Toronto

Family Service Toronto (FST) helps people dealing with a wide variety of life challenges. For over 90 years, we have been assisting families and individuals through counselling, community development, advocacy and public education programs. Our services are available to everyone who lives or works in Toronto.

Mental Health Programs and services include:
* Walk-In Counselling
* Counselling
* David Kelley Services (HIV/AIDS Community, Counselling, Lesbian & Gay Community Counselling)
* LGBT Parenting Network
* Families in Transition (FIT)
* Growing Up Healthy Downtown (GUHD)
* New Directions
* Seniors and Caregivers Support Services
* Violence Against Women (VAW)

128A Sterling Rd.
Toronto, ON, Map

416-595-9618

www.familyservicetoronto.org/

Ages served: All ages
Languages served: English
Fees: None
Area Served: Toronto

Find Mental Health programs in your community:
https://www.ementalhealth.ca

Resources for the Public

Pap Test Information

- **Pap test brochure - Take a Closer Look**
- **Cervical Cancer Screening – What your abnormal Pap test means**

Human Papillomavirus (HPV)

- **Human Papillomavirus (HPV)** and cervical cancer
- **Public Health Agency of Canada HPV Vaccine Q&A**

Available from: https://www.cancercareontario.ca/en/types-of-cancer/cervical/screening#:~:text=The%20Ontario%20Cervical%20Screening%20Program,or%20nurse%20practitioner%20to%20stop.

Find a family doctor or nurse practitioner

A family doctor or nurse practitioner is your **primary health care provider** – meaning they are the person you make an appointment with when you have a new, non-emergency health concern. You can learn more about their services below.

Visits to a doctor or nurse practitioner are publicly funded – meaning you don't have to pay.

Here are **two options to find a family doctor or nurse practitioner** who is accepting new patients:

1. Register with our Health Care Connect service and have a nurse find a doctor or nurse practitioner for you.
2. Use The College of Physicians and Surgeons of Ontario's Find a Doctor search.
    1. choose "**Advanced Search**" to find a doctor near you (by city/town or postal code)
    2. click on "**Additional Search Options**" to narrow your search (to family doctors and/or language spoken)
    3. contact the doctor to check if they are accepting new patients

Available from: https://www.ontario.ca/page/find-family-doctor-or-nurse-practitioner#section-0

Appendix H: Data-driven coding manual

Barriers (-)				
Barrier Label	**Sub-label**	**Sub-sub-label**	**Description**	**Example quotes**
Healthcare Professional (HP)	Relationship with HP	Switched HP	Participants switched their GP/ gynecologist because of negative beliefs, feelings, or experiences with the healthcare professional.	I like my family doctor now I've been seeing her for probably (*inhales*) 2 years maybe 2 1/2 (..) before that I hated my doctor so I changed to the one I see now. (Interview 2_Celina)
		Feels negatively toward their HP	Participant utters negative beliefs or feelings toward their HP.	I find that just because her patient base was all Portuguese, like from the continent from the islands. Like she. It's almost like she, she doesn't have to really try hard to do her job. And like she didn't take people serious because it's like, 'oh, they're all immigrants'. (Interview 9_Gracie)
	Access to HP	General Physician	Finding a GP is/was a difficult experience.	Interviewer: And do you have a family doctor? Participant: I used to have, but he escaped to (..) London (laughter). So we are waiting for replacement. Interviewer: Okay. How long have you been waiting for a replacement? Participant: I think we are already waiting a year (Interview 11_Tiana)
		Gynecologist	Participant has/had a difficult time obtaining a referral and/or identifying a gynecologist.	I went to the doctor and you know it was like pulling teeth, to try to see a specialist. (Interview 13_Alessia)

		Challenges getting appointments	Participant has/had a difficult time getting appointments with their HP.	I think lack of resources how very few it feels like gynecologists that there are out there and especially females how long it takes it took me a year and a half to get my last appointment (inhales) so that's a long time to wait to see a doctor about an issue so I think that's a significant deterrent the timelines. (Interview 2_Celina)
	HP Preferences	Specialist vs General Physician	Participant identifies barriers to obtaining sexual health services because their HP is a non-specialist.	Yes I feel it feels even more awkward at a GP than it does at a gynecologist, at least the gynecologist seems set up for that, and does them more regularly (..) (*inhales*) versus a GP that you know like even the tables aren't (..) don't feel sometimes equipped for that you've got to kind of put your legs up versus having stirrups. (Interview 2_Celina)
		Gender	Incongruence with the physician's gender results in barriers to healthcare access.	And, culturally, I would think just their hesitation, that unless and until if they don't have a female doctor, I would imagine for a lot of them, that would be something that they would not be comfortable getting it done as well. (Interview 17_Imani)
		Culture	Incongruence with the physician's culture results in barriers to healthcare access.	I think having doctors that understand the different cultures would help you know and be more culturally sensitive in the questions that they ask or explaining what information is going to come out or be sent or be accessible. (Interview 2_Celina)

		Spoken language(s)	Participant cannot communicate with their HP in their preferred/first language.	In the Polish speaking, yeah, I don't have a problem. I understand them. But I have, like specialists and I have a much harder time, because I have Hashimoto disease and that is under control of an endocrinologist audit, right? So on the beginning, was the one endocrinologist and when I go to him, I always prepared to write everything down. And then I could take it home to translate everything. Yeah, it was a little challenging, because I usually went just by myself for this visit, and again, I don't really know English. But I figured out (..) I prepared much more to the visits. (Interview 14_Simone)
Clinic Experience (CE)	Long wait-times		Lengthy clinic wait-times deter the participant from seeking out medical care.	But today, my husband went for a blood test and his student stood for getting the blood test for one and a half hours and at the end of one and a half hours, they told him you have to wait another half an hour. So he just quit and he just came home. He said I was so hungry. And then they said another half an hour. I just got exhausted. And it was not urgent by any means. But it was something to really do to address something that he wanted to get done, testing. (Interview 15_Fayra)
	Short appointment times with HP		Participant feels that their visit with their healthcare professional is short and/or rushed, which can lead to a lack of information or clarity surrounding preventive care.	I didn’t know about it and I feel like you have a very specific 10 minute window to see your doctor and that you can't even get to all that stuff because you're so rushed in you

				know they have their pre-set questions they're going to ask you and (..) you know, you know, that you have this 10 minute appointment and they're maximizing their earnings by booking as many 10 minutes appointments as they can schedule in that day so I don't even feel like there's opportunity for that. (Interview 2_Celina)
Information (IN)	Lack of risk communication		Participants note a need for more information/communication surrounding the risk associated with HPV/cervical cancer.	I think the only reason that it would be there, it's because they don't know how dangerous it is if they don't do it. That's why (..) always educating people giving the information, is very important. (Interview 12_Henrietta)
	Lack of women's health information		Participants note a need for more information/communication surrounding women's health.	-so yes the public health needs to do more in (..) communicating that this is a bigger issue than what we think it could be and it can save (..) you a lot of trouble for later if you were aware that this is something that you can opt for, or you can choose for, or you should get it done. Campaign, definitely about Women's Health, is very low I would say (..) in Canada for sure I haven't heard like public speaking notes or like blogs or tweets about what women should do in order to keep their health in an organized way. (Interview 1_Mary)
	Inaccessible resources	Language	Health resources are not available in the participant's preferred/first language.	There isn't anything specific to a different language in any of the

				doctors offices I've been to. (Interview 2_Celina)
		Ineffective mediums	Participant identifies a need for health resources to be shared through additional mediums/suggests that current mediums of disseminating health information are ineffective.	Instead of putting pamphlets together that sit in the public health unit and nobody goes there. Who goes public health unit? I've never been to one public health unit in my life. (Interview 1_Mary)
	Pap tests	General knowledge	Participant is not familiar with/has limited knowledge of the screening procedure.	Interviewer: Are you familiar with a Pap test? Participant: No, let me just look it (..) what is this? (Interview 13_Alessia)
		No information from HP	The participant's healthcare professional did not educate them on the screening procedure.	Because their family doctor didn't explain it to them so they didn't even know, they were like 'oh is it like we have to get it done' I'm like 'it's just like you get tested for um like breast cancer stuff if you have history or something it's like you should talk to your doctor and see'. (clears throat) But who tells the general public that if you are 21 and you're [sexually] active [that] you should get a Pap smear? (Interview 1_Mary)
	HPV vaccine	General knowledge	Participant is not familiar with/has limited knowledge of the vaccination.	Interviewer: And have you heard of the HPV vaccine? Participant: No not that either. (Interview 13_Alessia)
		No information from HP	The participant's healthcare professional did not educate them on the vaccine.	With my family doctor none, but I did talk to our pediatrician since [my daughter] was getting it (..) and they recommended it (..) but no additional information. I think the bulk of my

				information came from the public nurse and documents that came from the school. (Interview 2_Celina)
		Walk-in clinics were ill-equipped to provide information/handle questions	Participant found walk-in clinics to be unhelpful/noted that walk-in clinics could not answer questions related to the vaccine.	I don't think walking clinics are equipped to answer nor do I think they like to answer questions like that they'll refer you to your family practice and if you don't have a family doctor it is not easy to get one either (scoffs) so you know I think had it not been for the school we would know hardly anything about it. (Interview 2_Celina)
		Vaccine eligibility	Participant was not familiar with vaccine eligibility.	Well it would be nice (..) I didn't even know boys could get it I didn't (..) I don't even know the age group I just honestly thought it was young girls in grade eight and seven so if it's available to other people like that I don't even know that so then it makes me feel like there isn't great information out there about it because I thought it was a very specific group of people that were eligible to get it so if there's more people beyond that then I'm very uneducated about it 'cause I don't know about it even when [my daughter] was getting it they didn't talk even that about it being available for boys. (Interview 2_Celina)
Immigration (IM)	Lack of information provided upon arrival to Canada		Participant did not receive information surrounding healthcare services or availability upon arrival to Canada.	There's not even like a (..) a site where like new immigrant people when they come in and they're supposed to vaccinate their kids,

				does somebody tell them, or guide them, or public health person care to call them and tell them 'you're new you're a refugee, find a family doctor, here's three family doctors in your area that are available or accepting new patients'? (Interview 1_Mary)
	Concern about residency status		Participant's note that they themselves/ their friend were concerned about the threat of deportation when ineligible for provincial healthcare and thus avoided resourcing non-emergent healthcare.	But that's for that. But if you're like irregularly here, I mean, you don't have status here because some people they are like this. So that is like, they don't really go to doctor unless there is a problem. Believe me. (Interview 14_Simone)
	Adapting to life in Canada		Participant experiences challenge(s) adapting to life in Canada.	I guess you know, you might say okay, you know I have the English and all that but at that time my accent would have been you might think I have a strong accent now but it was much stronger then. And you know, I had to change a lot of the way I would say things because otherwise people weren't understanding me in the beginning. (Interview 10_Aileen)
Birthplace (BP)	Healthcare delivery	Organization	Healthcare delivery is organized differently in the participant's birthplace, leading them to have a harder time adapting to Canadian health culture/ participant prefers the way healthcare delivery is organized in their birthplace.	You know, in Moscow, it's very high level, this medicine (..) medical structure, just I think, yeah, and it's not (..) it's not business. It's not business oriented. Like it's like in Canada. (Interview 13_Alessia)
		Pap test procedure/regularity	Pap test regularity is different/ Pap tests are not provided in the participant's birthcountry, impacting their adherence to the Pap test schedule in Canada.	I think that was the basic thing. And to be honest with you, [Interviewer's Name], I, the first time that I started getting done, my Pap test was here

				in Canada, it was never done for me in India. And it's (..) it's not something that is commonly done or we were introduced to I mean, despite being in the healthcare field. (Interview 17_Imani)
		HPV vaccination	HPV vaccination is uncommon/does not happen in the participant's birthplace.	Interviewer: So are you fairly familiar with that vaccination? Participant: Again, after coming here? Interviewer: After coming here right. Participant: Yes, because it was not mandatory there. Or it was not something that was done on a regular basis, no. (Interview 17_Imani)
Educational Background (EB)	Health literacy		Lower health literacy levels act as a barrier to enaging with/understanding information concerning health. *Lower health literacy was flagged when participants noted a difficulty engaging with the terminology used in health resources or by their health professional	Interviewer: Yeah, and who remembers what they learned in high school to that great a detail? And so when you bring your friend or your father, do they, are they more familiar because they work in that area? T Participant They understand words better. And then, you know, they ask if they I think I'm a bit lost. You know, when they start speaking this, the same these terms, you know, I'm getting frustrated at times. That's why they, they helped me, you know, to be present.
	Assumptions about knowledge		The participant's level of knowledge on health subjects is assumed because of their educational background.	You know, and again, my GP doesn't spend that much time with me, because she just presumes a lot of things I know, right. Like, and sometimes that's not a good thing, in some ways, because I may neglect

				my own health because of age. (Interview 15_Fayra)
Procedure (PR)	Past experience(s)		Participant recalls (generally) negative experiences with their Pap test screening.	Participant: And, you know, like, last time when did it, I think it was two years ago from today, I mean from this year, and she's telling me that they haven't got anything. Because my um first time when my doctor did it, if I didn't want to do it and all that she thought that I might, I might be scared. So she she did it with something little, the little equipment, right? And then, and then it wasn't enough. So I had to wait for another three months. And then do it again (....) yeah, that was my last experience, which wasn't a very pleasant one. (Interview 6_Valerie)
	No explanation of the procedure		HP does not walk the participant through the steps/actions while completing the procedure.	They are quick and not informative and I don't even know if what I feel during them is normal like you know 'cause they're uncomfortable are they supposed to be? (..) I feel like there's so little dialogue and I don't know if it's 'cause it's an uncomfortable experience or if the um (..) doctors aren't just maybe they just don't know that we feel so uncomfortable (..) I would imagine they would not that they vocalize it. (Interview 2_Celina)
	Feelings toward the procedure	Pain	Participant describes the Pap test as a painful experience.	Well, I know it is necessary to do it. But when I remember it? Oh, my god so much pain (laughter). (Interview 12_Henrietta)

		Discomfort	Participant describes the Pap test as an uncomfortable experience.	When I think of Pap tests (..) uncomfortable yeah painful (..) I just think that nobody makes that test comfortable. (Interview 2_Celina)
		Anxiety	Participant notes feeling anxious in advance of/during the Pap test exam or when waiting/receiving results.	But then, but mine (..) the reason that I don't want to do it is just because of my anxiety about the test. I don't want to sit here for two weeks going crazy about whether I have this cancer or not. (Interview 6_Valerie)
		Fear	Participant notes feeling fearful toward the Pap test exam/results.	I think there is always there is always that (..) that negative, you know, scary thoughts. All the time, all the time, no matter what I need to because it's very interesting. It's because, you know, you hear, you know, you learn things, and so you're just always thinking 'Oh, I hope everything is okay.' (Interview 8_Diana)
		Stress	Participant notes feeling stressed in advance of/during the Pap test exam or when waiting/receiving results.	Yeah, no, no, there is a certain kind of discomfort because you are, this is not an everyday thing for you, right? You just do it once in a while. And so then, you know, you feel that day is a little bit stressful day you're going to a doctor, you're getting a test done. So I mean, even though we do this in and out and as a profession, but when you're the patient is such a different thought process, right? You still panic a lot. (Interview 15_Fayra)
		Vulnerability	Participant describes the Pap test as a vulnerable experience.	Uh I would say one, yes. Anything to do with what she does say, typically

				putting it in blunt terms, female private parts, it's like, you just (..) makes you feel vulnerable. (Interview 17_Imani)
Sexual Health (SH)	Discomfort discussing sexual health with HP		Participant does not feel comfortable discussing topics related to their sexual health with their HP/the participant suggests that this is something people may generally be uncomfortable with.	Sometimes it can be hard for people to be having open conversation with the doctor about that (Interview 5_Ingrid)
	Discomfort with questions about sexual activity status		Participant does not feel comfortable disclosing sexual activity status or discussing sexual activity with their HP/the participant suggests that this is something people may generally be uncomfortable with.	I think everyone's over like, the minimum age should just get it. Because I know a lot of girls will not tell them that they're active. (Interview 6_Valerie)
Cancer Care Ontario (CCO)	Mail Reminders/Results	Not received	Participant does not receive mail reminders and/or results from CCO.	But the actual letter for the Pap test no but I know I do get the ones for the mammograms. (Interview 4_Rose)
		Received infrequently	Participant does not consistently receive mail reminders and/or results from CCO.	Interviewer: And cancer care Ontario is supposed to send letters to everyone about Pap tests do you get those letters? Participant: No not (..) not for a long time I think I had it before (..) but for a long time I don't have one. (Interview 3_Lenya)
		Privacy concerns	Participant is concerned about mail regarding Pap test reminders or results being sent to their home.	If, if they were trying to hide it, then the letter system because it does go to the house, of course, no one is supposed to open anyone's mail. But I know that parents can, can do that. (Interview 16_Jocelyn)

		Distress	Participant notes feelings of distress receiving results via the mailing system.	And you know what, it's interesting. It's exactly the opposite when it's happening. Well my doctor tells me. It's like, if you don't hear from from me, that means that everything is okay. I'm not gonna call you if your results or whatever, are fine. I will call you if they something that we need to discuss. And, and you get the letter from the government, you're like 'Oh no!' (Interview 8_Diana)
Adherence (AD)	Irregular physicals/checkups		Participant never/infrequently obtains physicals/checkups with a GP.	Participant: So I didn't even really think about it. I was like, I was 20, 20 something, so I mean, like, you'll feel healthy. You'll feel you know, like full of energy and you don't feel even if you're tired, you just you know, like taking good sleep and everything is going back to normal. So I didn't have family doctor maybe for first two years. (Interview 18_Beatrix)
	Regular Pap tests	Lack of knowledge	Participant is not aware of how often they should be getting a Pap test.	Um I always thought you're supposed to get one every couple of years (..) I have no idea if that's correct (slight laughter). (Interview 2_Celina)
		Intentionally avoids	Avoids Pap tests because of negative experiences or feelings toward the exam/their HP.	Generally it's a negative I would say it's a negative experience and I think because it feels so awkward I think you almost like you postpone them for as (..) as long as you can yeah I definitely don't have them regularly. (Interview 2_Celina)

		Doesn’t feel it is necessary	Perceived risk of cervical cancer is low/doesn’t feel that the Pap test is necessary.	Interviewer: Okay, and would you mind sharing why you are not interested in getting the Pap test? Participant: Because as a psychologist I believe you know (..) that I will feel when something is wrong. There should be a sign like fatigue, or any pain? You know, and I'm very careful with my body. (Interview 13_Alessia)
		No access to HP	Participant themselves/knows others who do not adhere to Pap tests because of limited/no access to a HP.	I think, in some places, people don't have family physicians. So I think that it's not something that you typically can do on a walk in clinic. As far as I know, I might be off but I, I know, at least with my doctor, because she's a family physician, but she runs her walk in, you can do a throw the walk in, because you actually have to book that you're going to be doing a Pap test, because they want to prep the room and get their things ready. So I can envision, or sorry, assume that if somebody doesn't have a family physician, that that might be more problematic, I would think. (Interview 20_Yana)
	Reminders	No reminders from HP/health clinic	Participant does not receive reminders from their HP/health clinic.	Very rarely generally it's me asking or me experiencing some symptoms that I feel like I should probably get one and (..) even with my GP maybe 10 years ago I remember thinking geez I don't even think I've had one in like 8 years and saying ‘should I have one?’ during my (..) my regular

				like annual and then going ‘well when's the last time you had one?’ and then they’re flipping through the charts and notice that it's been almost a decade (..) but it was me suggesting it. (Interview 2_Celina)
	HPV vaccine	Lack of knowledge	Participant is not aware of the vaccine’s availability and/or their/their child’s eligibility for vaccination.	Interviewer: And are your daughters vaccinated? Participant: No, they didn't get that. I didn't hear about it for them. (Interview 7_Andrea)
		Doesn’t feel it is necessary	Perceived risk of HPV/cervical cancer is low/doesn’t feel that the Pap test is necessary.	Yeah, I heard about this time, I know that it can prevent also somehow, but I'm not sure if any, if any parent will give the vaccine who can give you a side effect to the boy who is really not suffering from it so much. Right? So if I had a boy I wouldn't give it to him. (Interview 11_Tiana)
		Against getting vaccined	Participant feels strongly about not getting the vaccine.	Yeah. And it's deterring a lot of parents to give the vaccine to their daughters, because because they are scared, they heard the news that someone died. And, you know, in Europe, it was a big situation. (Interview 11_Tiana)
		Too young	Participant voices that they/others feel that the vaccine is introduced at too young an age	Well, I think I remember there was some, something about that. And he told me that they had some session for that. Although I was still thinking that it was too early for him to learn those things (laughter). (Interview 12_Henrietta)

		Promotes or condones sexual activity	Participant voices that they/others feel that the vaccine promotes or condones sexual activity or multiple partners.	I think it's up to the (?), like, you know, some families wouldn't want their daughter students sex, right? (?) to have sex, right? So it would be very difficult for those young girls, to convince their parents, and let the parents know about it. (Interview 6_Valerie)
		Comparison to COVID-19 vaccines	Participant compares public perceptions of the HPV vaccine to COVID-19 vaccines.	It's like COVID, I'm gonna take mine Sunday and everybody's calling me crazy. You know? So there's people with different ideas but to me it's a good thing (..) if you can have anything to prevent being sick I think it's great but there's people were thinking differently I don't know. (Interview 3_Lenya)
School Programs (SP)	Information provided		School program does not provide clear/sufficient information on the HPV vaccine.	Yeah. Because, I think they just asked me if I want this vaccine or not for my daughter. They didn't provide me any information about the vaccine, and safety and everything, which I think would be very useful for all parents with, you know, easy to understand language for them. Just to say, what are the risks of side effects? What are side effects? Because, of course, it's not only one vaccine, there are different ones, so they should know which one you're using and what is the risk? (Interview 11_Tiana)
	No opportunity to voice questions		School programs do not include any opportunities for parents/students to voice questions they have about the vaccine.	Interviewer Oh okay. I think they've gotten better now. Because my little cousins that

				age now had nights for the parents to go and ask questions and like all of these things, but I don't think they had that for us. Participant No they didn't have that for my daughter at all. (Interview 8_Diana)
	Eligibility		School program is not inclusive of everyone who is eligible for vaccination (ex: does not vaccinate male students).	I don't know about it even when [my daughter] was getting it they didn't talk even that about it being available for boys. (Interview 2_Celina)
	Language accessibility		School programs do not provide resources in the participant's preferred language/languages besides English.	But I only remember getting that in English there was no communication in different languages that came to the homes or even the option to get it in a different language so luckily I understood it but (..) (Interview 2_Celina)
Culture (CU)	Cultural-specific feelings or views		Participant voices cultural-specific feelings that inform their attitude toward sexual health-related topics.	In my culture, again, there is that uncomfortable like only my husband touches my body kind of thing or sees me, you know, naked or whatever, could be that kind of mentality really reserved. (Interview 16_Jocelyn)
	Taboo subjects	Pre-marital sex	Pre-marital sex is considered inappropriate/taboo in the participant's culture.	Yes like my mom raised me like you supposed to marry a virgin. It's supposed to be your first night when you're married. (Interview 5_Ingrid)
		Sexual health	Discussions surrounding sexual health are considered inappropriate/taboo in the participant's culture.	Yeah I do I think because (..) I think North America maybe is a little bit more free talking about those things

				than maybe some other cultures. Definitely the Portuguese culture that I grew up in (..) maybe it's different now (..) probably is but you know then it was not (..) you don't really talk about that at all so I can see where that question would be very taboo or make kind of encourage you to lie about your health and whether you're active or not. (Interview 2_Celina)
Social Influences (SI)	Family	Does not discuss sexual health topics	Participant's family does not/avoids discussing topics concerning sexual health.	I see the difference of like, what I'm able to communicate with my daughters at their age compared to when I was their age, like (..) my mom (..) nobody would talk about such things at all. (Interview 9_Ingrid)
		Attitude toward the HPV vaccine	Participant recalls family members opting out of the HPV vaccine/having contradicting perceptions about the vaccine.	So I think it's, it's interesting, because in the family, we had different perceptions about that vaccine. (Interview 8_Diana)
	Friends	Pap test adherence	Participant's note that their friends do not adhere to regular Pap tests.	Yeah I think like when I talk with a couple of my friends 'cause I was going to send them the link for the Zoom meeting and they asked me what is it all about and so I explained them a little bit and um some of them don't even know that they had to get it tested (..) they haven't got like a testing done yet. (Interview 1_Mary)
		HPV vaccine uptake	Participant's note that their friends opt out of vaccinating their child/themselves with the HPV vaccine.	Yeah, I have one friend who the daughter, well I think she was contemplating. She was really

				uncomfortable with it. (Interview 16_Jocelyn)
		Comfort discussing with friends	Participant does not feel comfortable discussing topics concerning sexual health with their friends.	Yeah, no, I really don't know. I've never talked to any. I've never talked to anybody about it, like, never talk to my friends about it or anything. (Interview 10_Aileen)
Employment (EM)	Employment Conditions	Challenges finding employment	Employment opportunities are difficult for new immigrants.	Yeah it was the jobs nobody else wanted right? That's usually what they took and the hours were awful and the pay was awful (Interview 2_Celina)
		Difficult jobs		I also remember never seeing my mom and dad because they were working my dad was um (..) had really difficult jobs like picking tobacco and so he was off a lot and my mom cleaned at night so we didn't see her very often (..) so we were also alone a lot I remember (Interview 2_Celina)
Finances (FI)	Financial struggle		Participant experiences financial instability/financial struggle leads to challenges prioritizing health/preventive health opportunities.	Those days were not easy (..) so (..) he was in full time school (..) but he still did part time security job in the evening in the weekend and then I started working an I gave my test, the tests are so expensive for a new immigrant. All the, the, fees to just write your test so expens- you have to have a job the money that you bring with you isn't good enough to even live, you have kids (..) you survive you need to pay rent. (Interview 1_Mary)

	HPV vaccine cost		Participant notes that the cost of the HPV vaccine may deter them/others from obtaining the vaccine.	The payment can be a big issue. Now they do offer it in school. So hopefully, you know, they'll, they'll do it through school because, it's free. But after that yes the cost is a barrier. (Interview 20_Yana)
COVID-19 (C19)	Scheduling an appointment		The COVID-19 pandemic has impacted the participant's ability to schedule medical appointments.	And I don't even think they're seeing you I (..) you know I was seeing a gynecologist for urinary track stuff and I, I, was supposed to have an appointment to follow up with her in October and she never called (..) um I never called to rebook it but like there was no cadence with um following through on even appointments I had booked it just went and nobody called to follow up. (Interview 2_Celina)
	Ability to adhere to Pap test schedule		The COVID-19 pandemic has impacted the participant's ability to adhere to their regular Pap tests.	Well, now with COVID I think I'm overdue. I, probably, was supposed to do it like sometime in the fall or winter of last year. Um but yeah, with COVID it's the in person thing, I think, yeah, it's it's hard. It's hard to get these appointments now. (Interview 16_Jocelyn)
	No in-person appointments		Participant has virtual/phone appointments with their HP because of the COVID-19 pandemic.	Of course, nowadays, it's hard to see any doctor, you just have to do it over the phone. (Interview 10_Aileen)
	Impact on school-based HPV programs		Impact on school programs to promote HPV vaccination due to the COVID-19 pandemic.	Participant: Mm no this year because of COVID, she (..) he's supposed to have this vaccination at school. Interviewer: Yeah.

				Participant But because of COVID. So there was two options. They send me email, I have option like, um go to vaccination clinic, or I can do at a doctor office (..) family doctor. (Interview 14_Simone)
	Discomfort entering health settings		Participant notes that they/others feel uncomfortable going in to see a doctor because of the COVID-19 pandemic.	I mean, now with COVID a lot of people are hesitant going into healthcare settings. (Interview 16_Jocelyn)
Enablers (+)				
Enabler Label	**Sub-label**	**Sub-sub-label**	**Description**	**Example quotes**
Healthcare Professional (HP)	Relationship with HP	Feelings of trust toward their HP	Participant trusts their HPs knowledge/recommendations.	Well, I always talk to her anything regarding that, because I want to live healthier. And if it's something necessarily I needed to be done, I asked her, and she will always guide me. 'It's not necessary' or 'it's not necessary'. Or 'if you want to do it, it's okay'. Anything that she's tells me, I accept it. Because I trust her. (Interview 12_Henrietta)
		Positive view of HP	Participant utters positive beliefs about or feelings toward their relationship with their HP.	Yeah (said unconfidently), you know I'm still getting used to her, it takes me a while to get used to a new doctor. But yeah, I like her. She's she's pretty attentive, and she listens and she's good at referring if you think you know, you need more tests, or you know, a specialist or something, so she's pretty good like that. (Interview 10_Aileen)

	Access to HP	General Physician	Finding a GP is/was an easy experience.	So I find a doctor that was her friend that got her practice in Toronto then she moved to Mississauga, and right now I have in Burlington my family doctor (..) doctor and she's also my, my, my boyfriend (..) my fiancees doctor. Because she was his doctor she didn't have any problem to take me. (Interview 14_Simone)
		Gynecologist	Participant has/had an easy time obtaining a referral and/or identifying a gynecologist.	So basically when I came to Canada um I, I, had a family physician um back then in Toronto and because uh I was planning to do my second child they referred me to um a gynecologist. And then since, since, then I was with the gynecologist for almost six years. (Interview 1_Mary)
	HP Preferences	Specialist vs General Physician	Participant notes that their experience with specialists (gynecologists) were better when it comes to sexual health-related care/helped them to be better informed.	So the gynecologist always give more information about like what do and made (?) for things or did the testing and got reports done (..) so it was a very, very, nice um set up I would say for me. (Interview 1_Mary)
		Gender	Participant voices a preference for/better experiences with a HP of a specific gender.	Yeah. For a while, I used to see this doctor called Dr. King. I think he's quite popular. He's a Chief of medicine and he's teaching students now. And he was he was really, he was really nice. And, you know, he's very experienced, but I do feel I do feel better with my doctor now because she's, she's a woman. (Interview 6_Valerie)

		Culture	Positive HP interactions due to a shared culture with the HP/greater depth of understanding or built rapport with HP due to shared culture.	I traditionally feel that (..) the, for example, Indian origin people will favorably go to Indian doctor if, if they have access to that. (Interview 15_Fayra)
		Spoken Language(s)	Ability to communicate with their HP in their preferred/first language.	I prefer to have a woman but I can't choose. He also speaks Portuguese, so that is most important. (Interview 7_Andrea)
	Effective health communication		HP takes time to properly explain concepts to their patients and uses effective health communication tactics.	Yes like when it's the time to go, explain everything in details. Even I remember the first time when he came with the results that I have this fibroids, I remember the doctor he take a piece of paper and he explained so well Ingrid what you have (..) it's like a cauliflower inside you uterus and he started like (..) he made a drawing and explain to me so well. (Interview 5_Ingrid)
Clinic Experience (CE)	Informative clinic environment		Participant viewed their clinic as a good resource for health-related information.	I didn't have any, (clears throat) any, problems they were very informative. Their staff gave us leaflets and hand outs before they did anything (..) very well organized office and in Toronto that I went to. (Interview 1_Mary)
	Translation services		Clinic staff (ex: physicians, nurses, receptionists) were able to assist participants with translation when necessary.	Interviewer: And does the doctor speak Portuguese? Participant: Canadian, Canadian but they have receptionists available to translate for me. (Interview 7_Andrea)

Information (IN)	Accessible resources	Language	Health resources are available in the participant's preferred/first language.	You know they had it in multiple languages they, they, were like um, um, they were located in a mixed population area so I guess they modified their look of the office in the reception area to be more mixed cultural friendly. So they had (..) they had posters and stuff in different languages especially for like nursing mother information, first baby uh coupons, and stuff like that they were also in multiple languages. So living in Toronto in that specific neighborhood where it was new immigrant more population I think I saw that they had a lot of mixed um languages, and messages, and Flyers. (Interview 1_Mary)
		Effective mediums	Participant recalls receiving health information through preferred mediums/ frequently visited or resourced mediums.	Interviewer: And was the information that you saw on the internet in English or was it in Portuguese, the information about the vaccine? Participant: Portuguese Interviewer: Do you know what what kind of site or where you saw it on the internet? Participant: I think on Facebook or something like that. (Interview 7_Andrea)
	Cervical cancer		Participant is knowledgeable about the condition/received educational resources about the condition.	I have seen patients with cervical cancers, you know, it's very, very insidious disease, to have and the spread is really brutal. So, I mean, if it's caught early, it's punitive. But if it's not caught early, it's it's a

				problem. So I have seen a girl, where a young girl back home in India just died within six months of diagnosis. Yeah, it can be quite devastating. So I mean, when I think of that, I just feel anything and everything to prevent is going to be better than having the disease. So yeah, it wasn't very difficult for me to convince myself to agree. (Interview 15_Fayra)
	Pap tests	General knowledge	Participant is knowledgeable about the screening procedure/received educational resources about the screening procedure.	I mean as regards to the Pap test, I know they're looking for, you know, they're screening to see if there's any cancer cells or whatever. Because the take, like, it's almost like take some cells from there when they go in to do the Pap test. (Interview 10_Aileen)
		Information provided from the HP	The participant's healthcare professional educated them on the procedure.	Yeah. So one was, obviously about the age that she said eventually, like once and 35 plus 40, she'd mentioned it would be a good idea to get it done. I had asked her, why aren't we doing it every year? Of course, she told me about the ohip not covering it every year. But then she also reassured me, she said, since you're married, and it's doesn't involve multiple partners, you should be fine on that score. So I guess that was a basic conversation. And then of course, that the awareness that down that if at all, for cervical cancers, the screening is done, you will be aware of it at a much earlier stage, if you don't, other than if you

				don't get it done. (Interview 17_Imani)
	HPV		Participant is knowledgeable about the condition/received educational resources about the condition.	I've read some stuff but I can't even remember what I read about it (..) I think it's I think it's sexually transmitted diseases or something? (Interview 4_Rose)
	HPV vaccines	General knowledge	Participant is knowledgeable about the screening procedure/received educational resources about the screening procedure.	No I know, it's for everybody, and they have to be very careful. And if they, they have very active sexual life, maybe they should consider to get more information to see how they can live a healthy life. And that's important. (Interview 12_Henrietta)
		Information provided from the HP	The participant's healthcare professional educated them on the vaccine.	Interviewer: Okay. And did she bring it up to you after it was done or just was never really discussed with, with your family physician? Participant: Afterwards yes. Like she did, because the some of the vaccines, they got at the family physician's office, so she was making sure that everything was on schedule, and she was happy to see that that was taken care of at the school itself. (Interview 17_Imani)
		Walk-in clinics were equipped to handle questions	Participant found walk-in clinics to be a helpful resource in answering questions related to the vaccine.	Yeah, and especially when we went to that place [Clinic Name] they give a lot of information to all these teenage girls. (Interview 6_Valerie)

		Vaccine eligibility	Participant was aware of who is eligible for the vaccines in Ontario/Canada.	I heard about that but I was (..) but isn't that vaccine (..) probably I'm wrong I don't know, isn't that vaccine for younger people? (Interview 3_Lenya)
		Independent research		I, you know, I'm a big advocate for vaccines. Right. So I believe that there were so I did briefly research, but my husband research research, research is generally more than I do. But he was comfortable. So I was comfortable. (Interview 15_Fayra)
Immigration (IM)	Health information provided upon arrival to Canada		Participant received information surrounding healthcare services or availability upon arrival to Canada.	Interviewer: And so then they also had some information about finding a family doctor here as well? Participant: Yes, yes. They told us that these are the things and because we couldn't speak well, English, we find an Iranian doctor in here. (Interview 12_Henrietta)
	Adapting to life in Canada		Participant recalls experiences/circumstances that helped ease their time adapting to life in Canada.	So I would go to the mall and don't feel any different than if I was in more of Indians back home, but so multicultural in Toronto. (Interview 15_Fayra)
Birthplace (BP)	Healthcare delivery	Organization	Healthcare delivery is organized similarly in the participant's birthplace, leading them to have an easier time adapting to Canadian health culture.	Yes, you could have annual, you do have annual checkups with the with your family doc. So you'd end up having a family Doc, which you go regularly, like every now and then to the same doctor you go like we have here. (Interview 15_Fayra)

		Pap test procedure/ regularity	Pap test procedure is similar in the participant's birthplace, encouraging their adherence to Pap tests in Canada.	Interviewer: And so so then in terms of how often you get it, I know that you said that it would be every three years, and were you, have you always got it every three years? Or were there times in Poland or here where where you weren't getting it as regularly? Participant: Approximately every three years? Yes. (Interview 18_Beatrix)
Educational Background (EB)	Health literacy		Higher health literacy* levels act as an enabler to enaging with/understanding information concerning health. *Higher health literacy was flagged when participants noted a greater ease engaging with the terminology used in health resources or by their health professional due to their level of education/professional background	I think most of the people are not educated about this. So me as a researcher, it was easy to find information. (Interview 11_Tiana)
Procedure (PR)	Past experience(s)		Participant recalls positive experiences with their Pap test screening.	I have had two different gynecologists in [Town in Ontario] and one had no personality so she didn't talk about what she was about to do (..) it was very clinical it was (gestures with hand as if handing our a pamphlet) here's the sheet you know put this on and it just started (..) and then the other one was the exact opposite she gave you little socks to put on so your feet were warm. (Interview 2_Celina)
	Explanation of the procedure		Participant's HP walked them through the procedure/ obtained consent throughout	Yes, she (..) she does. Like she knows I'm nervous. She knows that

			performing the exam/ checked-in with the participant and answered any questions they had.	something I don't enjoy doing it. So she, you know, she basically lets me know that it's going to be something quick. (Interview 9_Gracie)
	Ease of procedure		Participant's experiences with Pap tests are easy/quick/painless.	(..) so basically I've always done mine with um initially with my gynecologist and then later with my family physician friend but um I, I, don't even remember like anything much about it because it was quick fast and was easy I thought. (Interview 1_Mary)
Sexual Health (SH)	Comfortable discussing sexual health with HP		Participant feels comfortable discussing topics related to their sexual health with their HP.	Interviewer: And, and have you ever felt uncomfortable at all when you're discussing anything like that with doctors? Participant: No, no, no. 'Cause I know her well. (Interview 6_Valerie)
	Comfortable with questions about sexual activity status		Participant feels comfortable disclosing their sexual activity status and/or discussing sexual activity with their HP.	Again, I guess just being in the healthcare field makes you look at it more openly. (Interview 17_Imani)
Cancer Care Ontario (CCO)	Mail Reminders	Received	Participant receives mail reminders and/or results from CCO.	Yes I have everything in my file. Every time I go for like cervical cancer, I have (..) you know every time I go I have a letter from the Health Department to say Ingrid you're cancer free, you know all the time. (Interview 5_Ingrid)
		Good program	Participant is happy to receive the mail reminders/sees the CCO mail reminders as a good program.	Yeah reminders are always helpful as just because you tend to forget how many years it's being (..) or is it time or not (..) and so I think the reminders that they send you is

				always a good idea right? (Interview 1_Mary)
Adherence (AD)	Regular physicals/ check-ups		Participant receives regular physicals/check-ups.	No, I would not get a reminder, but I would go (..) normally I would go for my physical every year and that's when they would say, 'oh, now you're due for your Pap smear' so uh- (Interview 10_Aileen)
	Regular Pap tests	Self-advocate	Participant is motivated to adhere to screening and requests Pap tests from their HP.	No it's the doctor or it's me that reminds me. Even last week I (..) I check my file I supposed to get even like a (..) a mammogram and I called and I'm (..) I'm the one, you know, I keep track. (Interview 5_Ingrid)
		Believes it is a necessary procedure	Perceived risk of cervical cancer is high/participant feels that the Pap test is a necessary procedure.	I just think that it's a good idea because if there's something that uh (..) comes up and you should know about you can catch it in the early stages right? (Interview 4_Rose)
	Reminders	From HP/ health clinic	Participant receives and is dependent on reminders for Pap tests from HP or from clinic to properly adhere to regular screening.	I actually, my doctor just said to book this appointment right? In half a year. So I keep in mind, so I know I have to book in August. And yeah (..) just like this. But paper came after I spoke with her (..) the paper came because it comes in mail it takes a longer time. (Interview 14_Simone)
		From CCO	Participant receives and is dependent on reminders for Pap tests from CCO to properly adhere to regular screening.	It's easy because you don't remember it but the health card people send you a letter in in your Mail at home saying you're due for one and then you just call your family

				doctor and just book it. (Interview 1_Mary)
	HPV vaccine	Informed	Participant is aware of the vaccine's availability and/or their/ their child's eligibility for vaccination.	I'm pretty familiar. I know. It was a lot of controversy about this. But saying that I already allowed my daughter to be vaccinated. (Interview 11_Tiana)
		Believes it is a necessary procedure	Perceived risk of HPV/cervical cancer is high/participant feels that the vaccine is necessary.	So I mean, when I think of that, I just feel anything and everything to prevent is going to be better than having the disease. So yeah, it wasn't very difficult for me to convince myself to agree. (Interview 15_Fayra)
	Has a sexual health-related condition		The participant has other sexual health-related conditions that encourage them to establish a relationship with a gynecologist early on and adhere to regular screening.	I go to a doctor and the difference with me is I had problems right? So I start very young doing this because like I said I have to do treatments to (..) to get pregnant. So I start at the early age to do this and so I don't know if it was because of that and my friend, like the one I'm talking about, she never had problems just you know what I mean (..) like she had an easy life on that. (Interview 3_Lenya)
School Programs (SP)	Information provided	Vaccine purpose	School program provides clear information on the purpose of the vaccine.	So it was very brief, but I was given with the idea that what exactly it prevents, and why exactly, it's important for the child at the right age to get the vaccine. (Interview 17_Imani)
		Informed decision	Parent/student feels as though the school program has equipped them with enough	I did do it for my daughter and I felt like I think there was good information about that. I think mostly

			information to make an informed decision about vaccination.	because it was going (..) it was being done through the school system so I think they have a good (..) you know they communicate well and they make sure parents are informed and can make informed decisions (Interview 2_Celina)
	Open lines of communication		School programs include opportunities for parents/students to voice questions they have about the vaccine (ex: information night).	So there were emails and written communication that came to the parents. There were also inform nights so like if you wanted to know more about it you could go to an inform night. (Interview 2_Celina)
Social Influences (SI)	Family	Openly discusses sexual health topics	Participant's family members feel comfortable openly discussing sexual health topics.	But I raise my kids (..) I don't think the (..) the world changed, so why I go be like closed mind? I remember when my daughters started going out, like even don't have boyfriends, but when they go out and start to come home a little bit late (..) of course by heart is in my hands but I don't want to say no to my daughters (..) I have good conversations and I say right away 'listen I love you so much so please talk to your doctor if you guys start to take a pill.' (Interview 5_Ingrid)
	Friends	Pap test adherence	Participant's note that their friends adhere to regular Pap tests.	Yeah because you might not remember, that's all but most of it's like I never heard from my friend that someone didn't (..) didn't do the Pap test because they are scared or they are afraid or they think it's useless or something. But everybody's doing it that I know. (Interview 11_Tiana)

		HPV vaccine uptake	Participant's note that their friends choose to vaccinate their child/themselves with the HPV vaccine.	I remember when [my daughter] was supposed to get it in school then it was fairly new and I think she was in grade 11 or something and then there was a discussion going on about 'should we do it should we not do it'. And there was some side effects or some kids fainted after they got theirs and so the other parents got worried. But I think it was just (..) a phase and after that everybody is getting it done- (Interview 1_Mary)
		Comfort discussing with friends	Participant feels comfortable discussing topics concerning sexual health with their friends.	Yeah. Yeah. Some ladies are older. So they have other issues they're getting other things. Right. Right. Yeah. We all talk about it. Yeah. (Interview 6_Valerie)
Finances (FI)	Private Healthcare		Financial freedom allows for prioritization of health/preventive health opportunities.	For sure, I I have the opportunity to have private health, health, monetary and actually, I've done it once already, where I've done a full examination through med can which is a private provider. It was a male doctor, but I didn't do a Pap test. I am going to be booking my next one which will include a Pap test and there is a doctor that was assigned to me as a male doctor, so I have to still talk to them about whether I want that doctor or not. But in my meeting with that doctor, which was not about pap tests, but I was able to ask a lot of questions and he felt a lot better with her. (Interview 20_Yana)

Conflicting beliefs whether barrier/enabler or either (+/-)				
Label	**Sub-label**	**Sub-sub-label**	**Description**	**Example quotes**
Healthcare Professional (HP)	HP Preferences	Specialist vs General Physician	Participant doesn't have a preference or feel differently toward sexual health services conducted by a GP or a specialist.	But to make my Papanicolaou is all the time my OB. It's not because I don't trust my family doctor but because I have problems even he says Ingrid you better continue with your OB. (Interview 5_Ingrid)
		Gender	No preference for a HP of a specific gender.	That doesn't matter because they're doctors (..) I don't care if, if, if like my doctors doing for me Pap or female doctor. (Interview 14_Simone)
		Culture	No preference for a HP of a specific cultural background.	You know, if I had to speak to myself just based on my profession, I don't see a difference really? To me, probably it would more matter if my doctor is good, right? Because there, I know that there is variability. So I would really make sure that I'm comfortable with the doctor doesn't matter the ethnicity doesn't matter who they are. (Interview 15_Fayra)
		Spoken language(s)	Participant did not feel there was a need to offer information in their first language.	No resources, and no Russian speaking too. English was enough for me. I was feeling comfortable. (Interview 13_Alessia)
Sexual Health (SH)	Assumptions about sexual activity status because of marital status		HP makes assumptions about a participant's sexual activity status because they are married, so they are not asked/required to disclose that they are sexually active.	No because I'm married I have to have it otherwise my husband asked me for a divorce (laughter) so I'm sexually active it is never even asked (..) never came up in conversation. (Interview 3_Lenya)

Appendix I: Coding of inductive enablers and barriers to relevant domains within the TDF

Relevant Domain	Specific Enablers/ Barriers	Number of Utterances			Number of Participants Citing Domain	
		Total	Enabler (+)	Barrier (-)	Enabler (+)	Barrier (-)
Knowledge	OVERALL	135	78	57	18	15
	-IN (Lack of risk communication)	9	-	9	-	7
	-IN (Lack of women's health information)	7	-	7	-	4
	+IN (Cervical Cancer)	1	1	-	1	-
	+IN (HPV)	1	1	-	1	-
	+/-IN (Pap Tests)	35	25	10	12	8
	+/-IN (HPV Vaccine)	29	17	12	10	7
	+/-IM (Health information upon arrival to Canada)	10	1	9	1	5
	+/-SP (School Programs)	21	14	7	7	6
	-EB (Assumptions about knowledge)	2	-	2	-	2
	+/-PR (Explanation from HP)	11	10	1	8	1

	+HP (Effective health communication)	9	9	-	6	-
Skills	OVERALL	11	6	5	4	3
	+/-EB (Health literacy)	11	6	5	4	3
Beliefs about capabilities	OVERALL	7	7	0	5	0
	+PR (Past experiences)	4	4	-	3	-
	+PR (Ease of procedure)	3	3	-	3	-
Beliefs about consequences	OVERALL	91	38	53	16	18
	-PR (Past experiences)	4	-	4	-	4
	+/-AD (Pap test)	40	21	19	13	10
	+/-AD (HPV vaccine)	47	17	30	9	16
Motivation and goals	OVERALL	87	38	49	16	18
	+/-AD (Pap test)	40	21	19	13	10
	+/-AD (HPV vaccine)	47	17	30	9	16
	OVERALL	125	43	82	20	17

Environmental context and resources	+/-HP (Access to a HP)	42	14	28	12	12
	+/-IN (Resources)	33	12	21	8	11
	+/-CE (Clinic experience)	10	3	7	3	5
	-SP (Eligibility)	1	-	1	-	1
	-SP (Language accessibility)	1	-	1	-	1
	+/-IM (Adapting to life in Canada)	26	14	12	8	9
	-IM (Concern about residency status)	2	-	2	-	1
	-EM (Employment conditions)	10	-	10	-	6
Social Influences	OVERALL	78	39	39	17	16
	+/-SI (Family)	17	6	11	5	7
	+/-SI (Friends)	19	11	8	7	6
	+/-HP (Relationship with HP)	29	22	7	14	4
	-CU (Cultural-sepcific feelings or views)	8	-	8	-	4
	-CU (Taboo subjects)	5	-	5	-	4

Emotion	OVERALL	51	11	37	9	13
	-PR (Feelings toward the procedure)	24	-	24	-	12
	+/-SH (Dis/comfort discussing sexual health)	6	4	2	4	2
	+/-SH (Dis/comfort discussing sexual activity)	19*	7	9	6	5
	-CCO (Distress because of the mail reminders)	1	-	1	-	1
	-C19 (Discomfort entering health settings)	1	-	1	-	1
Behavioural Regulation	OVERALL	204	92	100	20	19
	+/-AD (Physicals/checkups)	8	7	1	7	1
	+/-AD (Reminders)	26	17	9	12	6
	+AD (Has a sexual health-related condition)	8	8	-	6	-
	+AD (Self-advocate)	13	13	-	10	-
	+/-HP (HP preferences)	60*	32	16	15	10
	+/-BP (Healthcare delivery)	24	4	20	3	8
	+/-CCO (Mail reminders) Excluding: Distress toward receiving the mail reminder	32	10	22	7	15

	+/-FI (Financial in/security)	11	1	10	1	9
	-FI (Cost of the HPV vaccine)	3	-	3	-	2
	-C19 (COVID-19) Excluding: Discomfort entering health settings	19	-	19	-	12

*Utterances not captured in the enabler/barrier count were coded as a conflicting belief whether barrier/enabler

Appendix J: Land Acknowledgement and Positionality

My graduate thesis was completed in what is known today as Waterloo, Ontario. Waterloo is situated on the Haldimand Tract, which is the land promised to the Six Nations and the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. The treaties of this land include the Between the Lakes Treaty No. 3 and the Haldimand Proclamation with the Six Nations of the Grand River. I am grateful to reside on this land and stand in solidarity with the Indigenous peoples of these lands and support their fight for reparations and self-determination.

As a public health researcher focused on women's health inequities, I acknowledge the devastating impact of colonialism on Indigenous women's health and its severe implications on the health and well-being of the Indigenous community. Many Canadian public health interventions solely reflect dominant, colonial paradigms that continue to promote the structural marginalization of Indigenous peoples. This includes current cervical cancer screening guidelines and prevention strategies, which are largely exclusionary of the Indigenous community as they are often inaccessible or culturally unsafe (Maar et al., 2013). Improving cervical cancer prevention strategies must incorporate Indigenous perspectives. Indigenous people who have a cervix, similar to immigrant communities, face disproportionate rates of HPV infection, invasive cervical cancer and are at a greater risk for being underscreened (Henderson et al., 2018; Vasilevska et al., 2012).

As a white, English-speaking, heterosexual, able-bodied, neurotypic, educated, cis-gendered woman, I have benefited from white privilege and from social norms perpetuated within our society. I recognize that these privileges have been enablers of my position today as a Master's candidate. As a researcher, my motivation to focus on women's health stems from both my own experiences and from the stories of my family and friends whose experiences with the Canadian health system have been largely impacted by language, cultural, and educational barriers. In my current and future research, I intend to centre meaningful community engagement - always remaining mindful of the unique barriers faced by women who belong to different socio-economic, cultural, racial, and educational backgrounds than my own.

I am also committed to the life-long journey of reflecting on how I can best research and live in ways that respect and support items 18-24 in the Truth and Reconciliation Commission of Canada: Call to Action, to improve the health and well-being of First Nations, Métis and Inuit peoples in what is currently Canada.