

**Cervical cancer screening among immigrant women in Ontario: The
influence of acculturation**

by
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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

Background: Cervical cancer is the second most common cancer among women worldwide and its incidence is higher for certain ethnic groups in Canada, compared to White Canadians. As more women immigrate to Canada, the potential for prevention increases. Failure to prevent cervical cancer is partly due to non-participation in regular screening. The objectives of the research were to (1) explore whether there are cervical cancer screening differences between non-immigrant and immigrant women; (2) explore cervical cancer screening decision-making among immigrant women; and (3) explore the influence of acculturation on cervical cancer screening.

Methods: This research consisted of two studies. The first study consisted of quantitative analysis of the 2007-2008 Canadian Community Health Survey (CCHS). Univariate analyses, cross-tabulations, and logistic regression modeling were conducted. Analyses were restricted to women aged 18-69 years old living in Ontario with no history of hysterectomy. Sample weights were applied and bootstrapping was performed. Analyses were conducted on the full Ontario sample (unweighted n=13,549) and the immigrant sample (unweighted n=2,904), the latter of which was stratified into two groups based on self-reported cultural/racial background: immigrant women more likely to report a time-appropriate Pap test (low risk) and those less likely to report a time-appropriate Pap test (high risk). The second study consisted of interviews conducted with 22 older (aged 50-69 years) South Asian immigrant women from Waterloo and Toronto, Ontario. The descriptive qualitative study was informed by grounded theory methodology. Interviews were audio-recorded and transcribed.

Results: The first study identified that almost 17% of women reported not having a time-appropriate Pap test. Immigrant women were more likely to report not having a time-appropriate

Pap test (21.73%) compared to non-immigrants (14.22%). Among immigrant women, almost 17% of White, Black, and other women (low-risk group) did not report a recent Pap test, compared to 28.67% of Chinese, South Asian, and other Asian women (high-risk group). Among the full Ontario sample, not having a time-appropriate Pap test was associated with being 50-69 years old, single, having low education and income, not having a regular doctor, being of Asian (Chinese, South Asian, other Asian) cultural/racial background, perceiving having less than excellent health, and being a recent immigrant. Among women in the low-risk group, not having a recent Pap test was associated with older age, lower household income, not having a regular doctor, and a lower proportion of life spent in Canada. Among women in the high-risk group, not having a time-appropriate Pap test was associated with lower education and not having a regular doctor. Within the second study, various themes emerged exploring cervical cancer screening decision-making among the sample. Six major categories emerged: (1) the influence of others, (2) health beliefs and knowledge, (3) responsibility over health, (4) experiences in healthcare, (5) components of culture, and (6) the process of acculturation. The influence of doctors on cervical cancer screening decision-making emerged as a strong theme within interviews.

Conclusion: Results provide insight into the inequities that still exist in terms of who is participating in cervical cancer screening, as well as the factors involved in screening decision-making and the relationships between them. This research provides an updated overview of Pap test participation in Ontario, as well as advancing our understanding of the influence of factors on screening decision-making among immigrant women. Through this research, it becomes clear that targeted efforts must be directed towards those less likely to get a Pap test.

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CHAPTER 1: INTRODUCTION

1.1 Statement of the Problem

In Canada, approximately 1,350 cervical cancer cases will be diagnosed among women and 390 women will die from it in 2012 (Canadian Cancer Society, 2012b). Additionally, cervical cancer is responsible for 9,300 potential years of life lost (PYLL) (CCS/NCIC, 2006). Failure to prevent cervical cancer is partly due to non-participation in regular screening (Parboosingh et al., 1996; Spayne et al., 2008). In Ontario, 72% of eligible women were screened for cervical cancer between 2008 and 2010 (Cancer Quality Council of Ontario, 2012). While participation rates have increased over time, they still do not meet the provincial target rate of 95% (Ontario Women's Health Council, Cancer Care Ontario, & Cancer Quality Council of Ontario, 2006). Additionally, screening rates are reportedly lower among certain groups of women in Canada, such as those of low socioeconomic status (SES) (Cancer Quality Council of Ontario, 2012), older (Cancer Quality Council of Ontario, 2012), and immigrant women (McDonald & Kennedy, 2007; Xiong, Murphy, Mathews, Gadag, & Wang, 2010). Immigrant women in Canada are less likely to participate in cervical cancer screening compared to non-immigrant women (Brotto, Chou, Singh, & Woo, 2008; Lofters, Moineddin, Hwang, & Glazier, 2010; McDonald & Kennedy, 2007; Woltman & Newbold, 2007; Xiong et al., 2010). Screening participation is even less likely among immigrant women from Asia (Lee, Parsons, & Gentleman, 1998; Tsui, Saraiya, Thompson, Dey, & Richardson, 2007; Xiong et al., 2010).

Numerous factors have been associated with lower cervical cancer screening rates among the general female population, such as older age (Hislop, Teh, Lai, Labo, & Taylor, 2000; S. J. Katz & Hofer, 1994; Latif, 2010; Lee et al., 1998), lower income (S. J. Katz & Hofer, 1994; Latif,

2010; Lee et al., 1998), lower education (Gupta, Kumar, & Stewart, 2002; Hislop et al., 2000; S. J. Katz & Hofer, 1994; Latif, 2010; Lee et al., 1998; McDonald & Kennedy, 2007), and not having a regular doctor (Latif, 2010). Among immigrant women, additional factors may impede participation in screening, such as having differing cultural beliefs and attitudes towards screening (Donnelly, 2006; Gupta et al., 2002; Oelke & Vollman, 2007; Xiong et al., 2010), low language proficiency (Hislop et al., 2000; Latif, 2010), and unfamiliarity with services (Guruge & Humphreys, 2009; Priebe et al., 2011). In order to develop and implement effective programs to increase and encourage screening, it is important to explore if screening inequities persist between immigrant and non-immigrant women, how identified barriers vary across immigrant women, and if and how acculturation to Canada influences screening participation. The influence and varying effects of acculturation among immigrant women has been a less-studied area in regard to cervical cancer screening, and may highlight valuable information that would increase our understanding of screening behaviour among immigrant women and in turn strengthen health service planning.

1.2 Structure of Thesis

The thesis presents research that extends the literature on cervical cancer screening among immigrant women in Ontario, Canada. The second chapter of this thesis is a review of the literature regarding the cervical cancer burden in Canada, its prevention, disparities in screening among women, barriers to screening, an overview of the acculturation literature, and the link between cervical cancer screening and acculturation. Chapter three provides the main objectives of the thesis and how the objectives were targeted. Chapter four examines cervical cancer screening participation among Ontario women, and specifically among immigrant women in Ontario. Chapter five explores cervical cancer screening decision-making among South Asian

immigrant women. Chapter six provides a general discussion of the thesis research, strengths and limitations, potential implications, and directions for future research. Lastly, chapter seven offers a concluding statement.

CHAPTER 2: REVIEW OF THE LITERATURE

2.1 Cervical Cancer Burden

Cervical cancer is the second most common cancer among women worldwide, with 500,000 new cases and 250,000 deaths each year (WHO, 2010a). The major risk factor for cervical cancer is infection with the human papillomavirus (HPV), a sexually transmitted infection (Canadian Cancer Society, 2009). Approximately 75% of sexually active individuals will be infected with HPV at some point in their lifetime, and most will be unaware due to the asymptomatic nature of HPV (Canadian Cancer Society, 2010).

The prevention of cervical cancer is important for several reasons: (1) most cervical cancers occur among younger women (30-59) (PHAC, 2009) compared to other cancers, such as breast or colorectal; (2) the 5-year relative survival rate (72-74%) is still lower than those for breast or prostate cancer (CCS/NCIC, 2006; PHAC, 2009); (3) cervical cancer is preventable, as it is preceded by a long pre-cancerous period (Health Canada, 2004; Saraiya, 2003); (4) inequities in cervical cancer incidence and survival rates still exist by socioeconomic status (SES) and ethnicity, despite having universal health care in Canada (Archibald, Coldman, Wong, Band, & Gallagher, 1993; Hislop, Bajdik, Regier, & Barroetavena, 2007; Mackillop, Zhang-Salomons, Groome, Paszat, & Holowaty, 1997); and (5) as more women immigrate to Canada from low- and middle-income countries (Chui, Tran, & Maheux, 2007), the potential for prevention increases. Cervical cancer is the most common cancer among women in low-income countries (WHO, 2010a) and 80% of women who die from cervical cancer come from low- and middle-income countries (WHO, 2010b). Further, only 31% of women from the poorest countries participate in cervical cancer screening compared to 91% from the richest countries; recent

screening rates (previous 3 years) are even lower (9% and 64%, respectively) (Gakidou, Nordhagen, & Obermeyer, 2008). The incidence of cervical cancer has also been reported to be higher for certain ethnic groups and refugees in Canada, compared to White Canadians, especially among older women (Archibald et al., 1993; McDermott et al., 2011). Failure to prevent cervical cancer is partly due to non-participation in regular screening (Parboosingh et al., 1996; Spayne et al., 2008). Though current vaccination against four types of HPV strains will further reduce the cervical cancer incidence and mortality rates, regular screening is still crucial (Canadian Cancer Society's Steering Committee on Cancer Statistics, 2012), as the vaccine does not protect against all types of cervical cancer causing HPV strains and vaccinated women may have already been exposed to HPV (Cancer Care Ontario, 2007).

2.2 Benefits of Pap Tests

Early detection of cervical cancer or its precancerous state through regular Papanicolau (Pap) tests¹ reduces the incidence of and mortality rates related to cervical cancer (Canadian Cancer Society's Steering Committee on Cancer Statistics, 2012; Parboosingh et al., 1996; Peto, Gilham, Fletcher, & Matthews, 2004; Quinn, Babb, Jones, & Allen, 1999), down by 50% and 60% respectively, since 1977 (CCS/NCIC, 2006). In Canada, it is currently recommended that women get tested between the ages of 21 and 70; age recommendations may vary depending on the province (Canadian Cancer Society, 2012a; Cancer Care Ontario, 2012b). In Ontario, recent recommendations indicate that women get tested every three years (Cancer Care Ontario, 2012b). British Columbia first began cervical cancer screening in Canada in 1949, with other provinces gradually following behind (CCS/NCIC, 2006; Parboosingh et al., 1996). Comprehensive organized screening programs have yet to be fully established in Canada;

¹ The terms 'Pap test' and 'cervical cancer screening' are used interchangeably throughout this thesis.

however, provinces have implemented varying components of organized programs (Health Canada, 2004).

2.3 Screening Among Non-immigrant and Immigrant Women in Canada

A 2006 report on cancer screening describes cervical cancer screening participation in Canada as ‘suboptimal’ (CCS/NCIC, 2006). Between 18% and 21% of women at risk for cervical cancer (excludes those who have had a hysterectomy) have not participated in screening in the previous three years (CCS/NCIC, 2006; Snider & Beauvais, 1998). Past research has explored and identified numerous factors associated with a decreased likelihood of cervical cancer screening among women in Canada, such as older age (Hislop et al., 2000; S. J. Katz & Hofer, 1994; Latif, 2010; Lee et al., 1998), lower education (Gupta et al., 2002; Hislop et al., 2000; S. J. Katz & Hofer, 1994; Latif, 2010; Lee et al., 1998; McDonald & Kennedy, 2007), lower income (S. J. Katz & Hofer, 1994; Latif, 2010; Lee et al., 1998), being overweight or obese (Mitchell, Padwal, Chuck, & Klarenbach, 2008), being single (Hislop et al., 2000; Latif, 2010; Lee et al., 1998; McDonald & Kennedy, 2007), being non-White (Latif, 2010), not speaking English or French (Hislop et al., 2000; Latif, 2010), recent immigration (Lofters, Glazier, Agha, Creatore, & Moineddin, 2007), living in rural areas (Latif, 2010; McDonald & Kennedy, 2007), and not having a regular physician (Latif, 2010).

There are 6,186,950 immigrants currently living in Canada, representing 19.8% of the total population, with 1,110,000 of them being recent immigrants² (Chui et al., 2007) and approximately half of them being women (Statistics Canada, 2009d). Immigrants born in Asia (including the Middle East) account for over half (58.3%) of all immigrants in Canada, while 16.1% come from Europe, 10.8% from Central and South America and the Caribbean, 10.6%

² Those immigrating in 2001 or later.

from Africa, and the remaining from the United States (US), Oceania, and other countries (Chui et al., 2007). Immigrants to Canada also tend to be young, with over half (57.3%) falling in the 25-54 age group (Chui et al., 2007).

In addition to being younger than the general population and mostly coming from Asia³ (Chui et al., 2007), recent immigrant women are less likely to speak English or French, to have a regular physician, and to have a higher income (Latif, 2010). Between 57% and 80% of immigrant women have reported ever participating in cervical cancer screening (Hislop et al., 2004; Ivanov, Hu, & Leak, 2010; A. E. Maxwell, Bastani, & Warda, 2000; McDonald & Kennedy, 2007), with only 41-56% of them reporting screening within the previous two years (Hislop et al., 2004; A. E. Maxwell et al., 2000). For example, 92.6% of native-born women reported ever having a Pap test, compared to 79.9% of immigrant women; 80.5% of native-born women reported a Pap test in the last three years, compared to 70.3% of immigrant women; and 57.4% of native-born women reported a Pap test in the last year, compared to 49% of immigrant women (McDonald & Kennedy, 2007). Additionally, these rates may be overestimates due to self-reporting by respondents (Fehringer et al., 2005). For example, one study among sexually active Tamil women (n=58) identified that 76% of them never had a Pap test (Gupta et al., 2002). Immigrant women in Canada are less likely to get Pap tests compared to non-immigrant women (Brotto et al., 2008; Lofters, Moineddin, et al., 2010; McDonald & Kennedy, 2007; Woltman & Newbold, 2007; Xiong et al., 2010), findings consistent with US research (Echeverria & Carrasquillo, 2006; Tsui et al., 2007). Screening participation is even less likely among certain immigrant women, such as those from Asia (Lee et al., 1998; Tsui et al., 2007; Xiong et al., 2010).

³ The potential of cervical cancer risk exists as cervical cancer tends to strike at a younger age (PHAC, 2009) compared to other common cancers, and women from Asia have the lowest cervical cancer screening rates (Lee et al., 1998; Tsui et al., 2007; Woltman & Newbold, 2007).

2.4 Factors Associated with Cervical Cancer Screening Among Immigrant Women

Among immigrant women, additional factors have been associated with decreased cervical cancer screening participation, such as language difficulties, low Pap test and cervical cancer knowledge, low health literacy, differing beliefs, values, and attitudes towards health and screening, the influence of others, and acculturation.

2.4.1 Language, knowledge, and health literacy

Immigrant women who do not understand or speak English or French are less likely to get Pap tests (Hislop et al., 2000; Latif, 2010), which may be due to the inability to communicate with physicians or obtain information on screening. Immigrant women may also not participate in cervical cancer screening due to lack of information about the test and cervical cancer (Donnelly, 2006; Gupta et al., 2002; Hislop et al., 2004; Oelke & Vollman, 2007), and past studies have reported low knowledge about cervical cancer among immigrant women (Hislop et al., 2004). The lack of knowledge may be due to the decreased focus on screening and increased focus on treatment in immigrant women's native non-Western countries. Lack of knowledge may also be due to avoidance of discussing cervical cancer or screening with others, due to its private nature (Oelke & Vollman, 2007). However, Brotto and colleagues (2008) found that minority immigrant women in Canada reported lower rates of Pap tests, compared to White immigrant women, even though they knew that testing should be done every two years. It must be noted, however, that the Indian immigrants in the study had higher reproductive knowledge than women living in India, which may be due to acculturation processes on knowledge (Brotto et al., 2008). Thus, there seems to be a gap between knowledge and behaviour among those who

are knowledgeable. Additionally, immigrant women with low functional health literacy may be less likely to get Pap tests (Garbers & Chiasson, 2004) and immigrants in Canada scored lower on health literacy measures compared to their Canadian-born counterparts (Ng & Omariba, 2010; Rootman & Gordon-El-Bihbety, 2008).

2.4.2 Beliefs, values, and attitudes

Culture has been reported to be a powerful influence on behaviour (Berry, Poortinga, Segall, & Dasen, 1992). Additional barriers immigrant women may face in participating in cancer screening stem from an incongruence between their cultural beliefs, customs, values, and attitudes and those from Canadian or Western culture. Immigrant women may view their bodies as being private (Donnelly, 2006) and may feel embarrassed or uncomfortable with physical examinations such as cervical cancer screening, no matter the gender of the physician (Donnelly, 2006; Matin & LeBaron, 2004). Discussions surrounding cervical cancer screening have also been reported to be uncomfortable, and even ethnic male physicians have reported feeling uncomfortable discussing screening with women from their own culture (Oelke & Vollman, 2007). Another belief held by many immigrant women is that one should seek health care only when symptoms arise, and cervical cancer screening in the absence of symptoms has been reported as being embarrassing and unnecessary (Donnelly, 2006; Gupta et al., 2002; Oelke & Vollman, 2007; Xiong et al., 2010). Immigrant women may hold the belief that diseases and cures are predetermined by a higher power, thus eliminating the need to participate in screening (Donnelly, 2006). Another reason why immigrant women may not participate in screening is the belief that if they maintain a healthy lifestyle, they will not need to seek health care, as healthy habits prevent the onset of diseases (Donnelly, 2006). Further, some immigrant women have

reported low confidence in western medicine's ability to diagnose and treat cancer, thus reducing their willingness to participate in screening (Donnelly, 2006).

As Pap tests and HPV are linked to sexual activity, those less acculturated or more traditional may be hesitant to participate in screening, as it would imply involvement in sexual activity. Specifically, this implication may be problematic among unmarried immigrant women from cultures that view premarital sex as unacceptable. Additionally, immigrant women may believe that attending cervical cancer screening conveys the message of promiscuity and infidelity due to the association between cervical cancer and HPV. A study conducted among a group of minority women in the United Kingdom (UK) reported that attending screening communicated these messages to others (McCaffery et al., 2003).

2.4.3 The influence of others

Physicians are highly respected by immigrant women who may believe that asking questions or requesting to be screened questions the physician's authority (Donnelly, 2006). For many, if her physician does not recommend a Pap test, she will not get screened (Oelke & Vollman, 2007). Families may also influence screening in different ways. For example, immigrant Sikh women have reported that family obligations are a priority and may prevent them from accessing health care and screening services (Oelke & Vollman, 2007). Additionally, out of respect or patriarchy, some women reported needing permission from family members, such as a mother-in-law or husband, to attend medical appointments (Oelke & Vollman, 2007).

Identified barriers to screening may vary across immigrant groups and may weaken or disappear over time as one may or may not acculturate to the host culture. The influence and varying effects of acculturation among immigrant women has been a less-studied area in regard to cervical cancer screening and may highlight valuable information that would increase our

understanding of screening behaviour among immigrant women. It is important to know at what stage of acculturation these barriers impede screening, in order to highlight crucial intervention points.

2.5 Acculturation

Acculturation has been defined, conceptualized, and operationalized in various ways, with some overlapping similarities. Due to the differences that do exist, however, acculturation research can be confusing and complex, with a plethora of different definitions, models, and measures (Olmedo, 1979). The following section is meant to offer a brief overview of the concept of acculturation, and establish the alignment of the thesis.

2.5.1 Defining acculturation

The concept and term ‘acculturation’ can be traced back to early American anthropology, as early as 1880, as a result of an increase in immigration and changes that occurred due to the interaction of different cultures (Hunt, Schneider, & Comer, 2004). A standard definition of acculturation was developed in the 1930s by Redfield and colleagues, a definition that has been consistently referred to in acculturation research in various disciplines, defining acculturation as “those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups” (Redfield, Linton, & Herskovits, 1936, p. 149). The above definition places emphasis on contact among different cultures and its consequences (Dohrenwend & Smith, 1962).

In early sociology, acculturation was viewed as unidirectional, whereby one eventually loses all aspects of their culture of origin, often viewed as inferior to the host ‘White’ culture (Warner

& Srole, 1945), a view also held by researchers in public health (MacCoy, 1938). Early work within sociology used the term ‘assimilation’ to describe the outcome of the acculturation process whereby a new cultural group inevitably becomes fully absorbed by the host culture (M. M. Gordon, 1964). These views slowly began to change as variations in acculturation and assimilation became visible, such as the possibility that assimilation is only one of many possible outcomes of acculturation (Alba & Nee, 1997; Portes & Rumbaut, 2001), in addition to integration, marginalization, and separation, further discussed in section 2.5.2, and that acculturation and assimilation are separate processes, where acculturation may occur without being assimilated (Teske & Nelson, 1974).

Acculturation in both anthropology and sociology placed emphasis on acculturation as a group process, and focused on socialization and social interaction (Chance, 1965). Historically, anthropologists have specifically focused on the target culture group, whereas sociologists have focused on the relations between culture groups (Spiro, 1955). On the other hand, psychologists placed emphasis on acculturation as an individual process and focused on individual changes such as attitudes and beliefs (Chance, 1965).

The study of acculturation became popular in the discipline of psychology around the 1970s (Olmedo, 1979) and has been referred to as “the process of cultural and psychological change that results following meeting between cultures” (Berry, 1997; Sam & Berry, 2010, p. 472), and where “individuals learn the values, behaviors, lifestyles, and language” of the new culture (Zane & Mak, 2003). Building upon Redfield and colleagues’ (1936) definition, Berry (1990) clarified that in practical settings, acculturation tends to occur in one of the groups, rather than both. The field of anthropology and psychology have contributed to the acculturation field by distinguishing between group- and individual-level acculturation, whereby change due to

acculturation may occur in the culture of a group or the psychology of an individual (Berry, 1997; Graves, 1967; Sam & Berry, 2010).

In the public health discipline, acculturation has been defined in various ways, which overlap with similar definitions found in the above-mentioned disciplines (Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005). It has been defined as a multidimensional process where one adopts the values, beliefs, lifestyles, and norms of the host culture (Alegria, 2009). Another term, enculturation, has been used in the health discipline to define the retention of one's culture of origin (Alegria, 2009).

Many terms have been used interchangeably with acculturation, such as assimilation, integration, and biculturalism, while distinctions between terms have been made within some disciplines (Sam & Berry, 2010). For clarity, the term acculturation will be used throughout this thesis to describe the process and changes that occur when cultural groups come into continuous contact.

2.5.2 Models of acculturation: How does one acculturate?

Early work in acculturation research focused mostly on a unidimensional model of acculturation whereby the acculturation process was viewed as linear and bipolar, from being unacculturated and fully engaged in the culture of origin to fully acculturated to the host culture, thus implying that as one adopts the host culture, one is also losing their culture of origin (Lara et al., 2005; Rogler, Cortes, & Malgady, 1991) (e.g., Suinn, Ahuna, & Khoo, 1992). Later, multifaceted models of acculturation were developed where acculturation was viewed as occurring on multiple levels, such as language, attitudes, and dress, yet still seen as a linear process (Oetting & Beauvais, 1990; Ryder, Alden, & Paulhus, 2000). Over time, the process of acculturation was increasingly viewed as non-linear, multifaceted, and bidimensional, as

individuals may retain or lose some or all of their ethnic culture while also adopting some or all of the host culture, highlighting that these two processes occur independently of one another (Berry, 1992, 1997; Jang, Kim, Chiriboga, & Kallimanis, 2007; Lara et al., 2005; Trimble, 2003). The bidimensional model of acculturation has also been referred to as multidimensional or orthogonal (e.g., Abe-Kim, Okazaki, & Goto, 2001; Costigan & Su, 2004) and these models of acculturation emphasize that change can occur on many domains, such as behaviour, values, and ethnic identity, and that one's level of acculturation may therefore not be the same on each domain.

Working off of a bidimensional model of acculturation in the discipline of psychology, four acculturation strategies may be adopted (see Figure 2.1): assimilation strategy is used when an individual adopts the host culture and loses their culture of origin; integration strategy is used when an individual adopts the host culture while also retaining their culture of origin; the marginalization strategy is used when individuals do not adopt the host culture while losing their culture of origin; and separation strategy is used when an individual does not adopt the host culture but retains their culture of origin (Berry, 1997, 2003; Sam & Berry, 2010). These acculturation strategies may change among individuals, depending on the context (Sam & Berry, 2010). For example, following the 9/11 attacks, Muslim-American youths found that they needed to revisit their identities (Sirin & Fine, 2007). Additionally, preference for these strategies varies by ethnic group and host country (Sam & Berry, 2010). For example, Berry and colleagues (2006) found that their overall sample of immigrants preferred the integration strategy. However, when stratifying by ethnic group, the preferred strategy among Turkish immigrants was separation, while Vietnamese immigrants preferred assimilation as well as integration and this depended on the host country they were settling in (i.e., 'settler society' countries such as Canada

and the US vs. countries such as Finland and Norway that are more homogeneous and have fewer immigrants and more strict immigration rules). Overall however, integration strategy is the most preferred and associated with positive adaptation, while marginalization is the least preferred and least adaptive strategy (Berry, 1997, 2003). It must also be noted that acculturation strategies may be chosen by individuals who have a choice in the ways they wish to interact with the host culture, but may also be influenced by the host culture, due to situational factors such as discrimination and strict immigration laws (Berry, 1997; Sam & Berry, 2010).

Similar acculturation strategies or types of acculturation have been developed in sociology, such as Portes and Rumbaut's (2001) consonant, dissonant, and selective acculturation among first-generation parents and their second-generation children, and Ali's (2008) acculturationists, partial acculturationists, de-acculturationists, and non-acculturationists. Portes and Rumbaut's (2001) consonant acculturation refers to the adoption of the host culture by both parents and children at the same pace; dissonant acculturation refers to the adoption of the host culture by the children faster than their parents; and selective acculturation refers to when both parents and children partially adopt the host culture while also partially retaining their culture of origin. Ali's (2008) acculturationists refer to those who adopt the host culture and disregard the culture of origin, similar to Berry's (1997) assimilation strategy; partial acculturationists refer to those who adopt the host culture while also retaining their culture of origin, similar to the integration strategy; de-acculturationists refer to those who at one time partially adopted the host culture, but slowly disregarded it and strengthened their ties to their culture of origin; and non-acculturationists are those who do not adopt the host culture and retain their culture of origin, similar to the separation strategy.

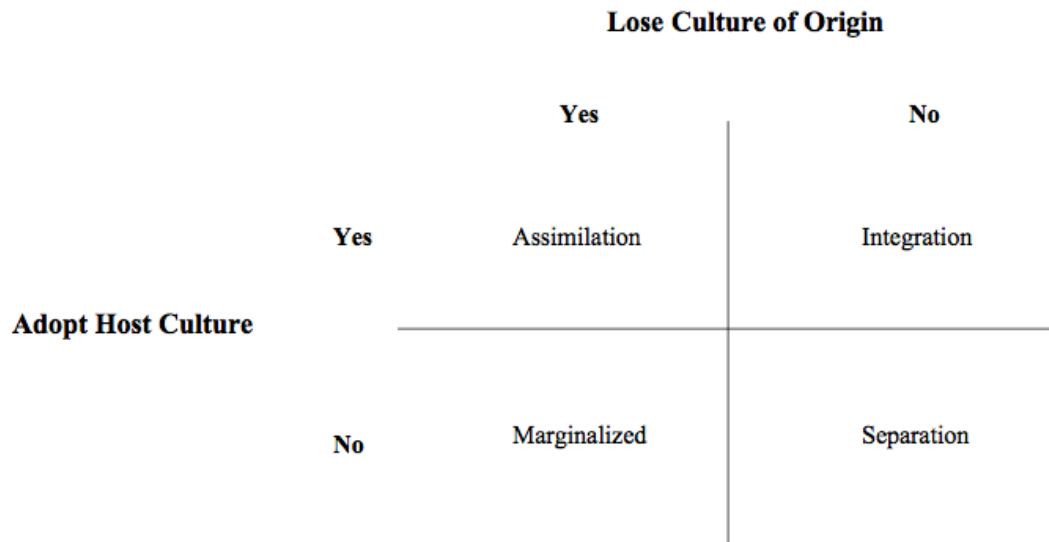


Figure 2.1: Acculturation strategies (Berry, 1997)

However, despite the growing literature on the complexity of acculturation, recent studies have continued to apply the unidimensional model of acculturation, limiting the clarity of results (Schwartz, Unger, Zamboanga, & Szapocznik, 2010).

2.5.3 Changes during acculturation

In psychology, Berry (2003) developed a framework conceptualizing acculturation and its process (see Figure 2.2). He highlights the importance of considering the characteristics of the cultures (e.g., values, attitudes, norms) and the individual (e.g., age, gender, education) prior to

coming into contact with each other, and the context in which contact occurs (e.g., social support, discrimination from host culture) in order to fully understand acculturation, also referred to as moderating factors prior to, and during, acculturation (Berry, 1997). Similarly, other researchers have noted that acculturation can only be understood in the context in which it takes place and factors such as ethnicity, culture, language, SES, type of migrant (i.e., voluntary immigrant, refugee, asylum seeker, sojourner), and characteristics of the migrants (e.g., age at immigration, living in ethnic enclaves vs. other communities in host country) are important to consider (Alegria, 2009; Cabassa, 2003; Gibson, 2001; Portes & Rumbaut, 2001; Schwartz et al., 2010). For example, a White English-speaking voluntary immigrant from the UK to Canada will most likely have a less difficult time acculturating compared to a non-English speaking Middle Easterner refugee from the Middle East. In addition, the context of reception—immigrants being received positively or negatively in their host country—via immigration policies or discrimination from natives in the host culture, for example, may also influence the process of acculturation (Alegria, 2009; Gibson, 2001; Portes & Rumbaut, 2001; Schwartz et al., 2010).

Additionally, it is important to consider the cultural and psychological changes among individuals incurred during acculturation which encompass affective, behavioural, and cognitive (“ABCs”) aspects of an individual (Ward, 2001), and each aspect is linked to a currently prominent theoretical framework of acculturation: stress and coping, cultural learning, and social identification, respectively (Sam & Berry, 2010). Outcomes due to the acculturation process are referred to as *adaptation* in the field of psychology and may encompass well to poor adaptation (Berry, 1997).

The affective perspective focuses on emotional changes that occur during acculturation, such as psychological well-being and life satisfaction, and is represented as acculturative stress in

Figure 2.2 (Sam & Berry, 2010). Using the stress and coping theoretical framework (Berry, Kim, Minde, & Mok, 1987), acculturation can be seen as a series of stressful life events, which may increase stress among individuals, especially among those lacking strong social support and adequate coping methods (Sam & Berry, 2010). Thus, acculturative stress can be defined as “a stress reaction in response to life events that are rooted in the experience of acculturation” (Sam & Berry, 2010, p. 474). However, acculturative stress may not occur among all individuals in the acculturation process, as other factors, such as gender, age, and social support may moderate or mediate the pathway between acculturation and acculturative stress (Sam & Berry, 2010).

The behavioural perspective focuses on behavioural changes that occur during acculturation, such as language use, and is represented as behavioural shifts in Figure 2.2 (Sam & Berry, 2010). The cultural learning framework posits that individuals in contact with a new and incompatible culture to their own are faced with the need to learn and adopt behavioural skills, in order to navigate within the new culture, such as learning the culture’s language and norms (Masgoret & Ward, 2006). Schwartz and colleagues (2010) identified these changes as behavioural and value acculturation. Cultural values have also been explored as changing due to acculturation; they include values that are generalized across ethnic groups (e.g., individualism and collectivism), and those that are ethnic specific (e.g., machismo among Hispanics, humility among Asians) (Schwartz et al., 2010).

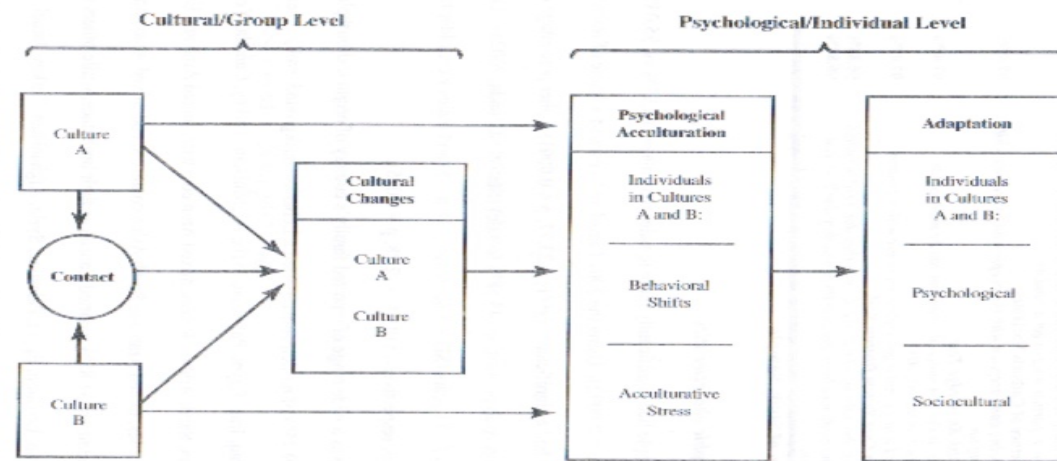


Figure 2.2: Berry's (2003) framework for conceptualizing acculturation

Under the cultural learning framework, acquisition and fluency of the new language is thought to be directly related to sociocultural adaptation (Masgoret & Ward, 2006), mainly external psychological adaptation, such as learning how to manage in daily life (Berry, 1997).

The cognitive perspective focuses on how individuals perceive themselves and others during the acculturation process (Sam & Berry, 2010). The social identity framework posits that individuals have a need to categorize themselves into specific social groups and compare themselves relative to other groups (Tajfel & Turner, 1986). Thus, in the context of acculturation, individuals in the acculturation process may define and question their identity relative to their ethnic group and to the new culture (Sam & Berry, 2010). Schwartz and colleagues (2010) identified these changes as identity-based acculturation, which has been conceptualized as having three components: exploration—an individual explores what their ethnic group means to them, resolution—deciding what one’s ethnic group means to them, and affirmation—feeling attached to ones ethnic group (Phinney, 1990; Umana-Taylor, Yazedjian, & Bamaca-Gomez, 2004).

Schwartz and colleagues (2010) have also proposed a multidimensional model of acculturation illustrating the three components of culture thought to change during acculturation—practices, values, and identifications—incorporating both host/receiving and ethnic/heritage cultures, thus making up six components in total (see Figure 2.3). These six components may change at different rates throughout the acculturation process, and some may not change at all (Schwartz et al., 2010).

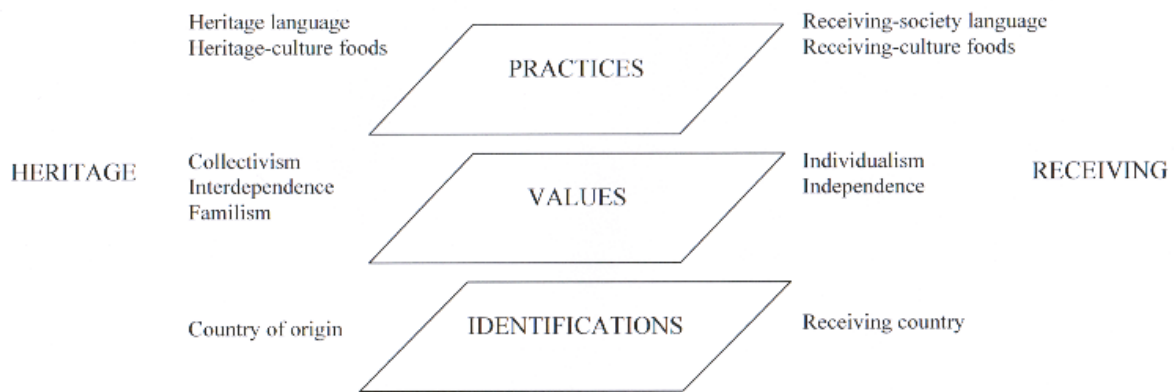


Figure 2.3: Multidimensionality of acculturation (Schwartz et al., 2010)

Similarly, Marin (1992) proposes that acculturation changes occur in different stages: superficial, intermediate, and significant changes. Superficial changes include the adoption and/or loss of cultural traditions, such as food and media use; intermediate changes occur at the level of behaviours used within social relationships, such as language use and ethnicity preference among those around them; and significant changes occur at the level of norms, attitudes, and beliefs (Marin, 1992). However, the majority of acculturation studies have targeted behavioural acculturation, thus providing an incomplete picture of acculturation (Schwartz et al.,

2010). For example, a study on Asian Americans found that many did not use their native language, yet strongly identified with their native countries and values (Portes & Rumbaut, 2001). Additionally, a body of research has been conducted on ethnic identity, but less so on Canadian identity (or other host cultures, such as the US or Australia)—the other part of integration or biculturalism—and its association with outcomes, such as health (Schwartz et al., 2010).

In the health discipline, other than targeting issues of measurement, the concept and assumptions of acculturation has been less explored and challenged (Hunt et al., 2004) compared to other disciplines. Much of the conceptualization and operationalization of acculturation in health research has been derived from psychology and anthropology disciplines.

2.5.4 Measures of acculturation

There are a plethora of acculturation measures in the literature, with varying assumptions underlying them. The assessment of acculturation can vary in three ways: by measures, models, and populations used.

First, measures used to assess acculturation have been primarily self-reported and focus mainly on two domains: attitudes and behaviours (Zane & Mak, 2003). For example, measures have included the assessment of “language use, preference, and proficiency; social affiliation; daily living habits; cultural traditions and customs; communication styles; perceived prejudice and discrimination; family socialization; cultural knowledge and beliefs; cultural values; and cultural identification, pride, and acceptance” (Lara et al., 2005; Zane & Mak, 2003, p. 39-40). Language use has been the most frequently used measure of acculturation (e.g., Corral & Landrine, 2008), probably due to its importance as a major component in the acculturation concept and its ability to explain most of the measured variance in acculturation (Arcia, Skinner,

Bailey, & Correa, 2001; Coronado, Thompson, McLerran, Schwartz, & Koepsell, 2005; Cuellar, Harris, & Jasso, 1980; Marin, 1992; Marin & Gamba, 1996; Rogler et al., 1991). However, variation even within this one measure also exists (e.g., assessments of language use, preference, or proficiency; across contexts such as language use with family, friends, or at work) (Zane & Mak, 2003).

Measures similar to language use and used alone or in combination with one another to measure acculturation are considered proxies, as they are likely measuring acculturation indirectly. These proxies include place of birth (Corral & Landrine, 2008), duration of residence in the host country (Alegria, Shrout, et al., 2007; Rogler et al., 1991), age at immigration (Dehlendorf, Marchi, Vittinghoff, & Braveman, 2010), generational status such as first- or second-generation immigrant (Rogler et al., 1991), language of interview, and ethnicity (Rogler et al., 1991). Many of these proxies, such as generational status, age at immigration, and duration of residence, are used with the assumption that as one has more contact with the host culture, the more likely they would be acculturated to it over time (Ryder et al., 2000). The range of measures illustrates the lack of consensus of what indicates a change in acculturation, thus highlighting confusion about the content validity of the measures (Zane & Mak, 2003). In using mental health outcome among Hispanics as an example, Rogler and colleagues (1991, p. 586) clearly explain the usage of such proxies in research: “After other relevant variables have been controlled, acculturation is injected into the interpretation of cultural group or intergenerational differences as a residual hypothesis explaining the remaining variance in mental health status.” Additionally, the use of proxies lacks precision in distinguishing between the consequences of acculturation and its process (Alegria, 2009). In order to fully understand the underlying mechanisms that link acculturation to specific outcomes, we need to move beyond using proxies

(Alegria, 2009). However, in certain situations, it may not be feasible to measure what *should* be measured (Alegria, 2009; Lara et al., 2005). Thus, proxies have been reported to be useful in assessing acculturation in instances when a more in-depth assessment is not possible (Cruz, Marshall, Bowling, & Villaveces, 2008). Specifically, three proxies have been shown to be strongly correlated to acculturation scales and to have high internal consistency and include language spoken at home or during interview, proportion of life lived in the host culture, and generational status (Cruz et al., 2008).

Second, acculturation measurement varies by the type of acculturation model used (e.g., unidimensional, bidimensional, multidimensional), thus differing in assumptions about how acculturation occurs (Zane & Mak, 2003). Unidimensional acculturation scales are prominent in past research, with the assumption that acculturation is a unidimensional and unidirectional process, inferring that as one acculturates to the host culture, they are also losing their culture of origin. These scales simplify the concept of acculturation using clearly identifiable behaviours, such as language use, but lack in terms of highlighting the importance of context, such as SES, thus decreasing the scales' validity (Recio Adrados, 1993) and excluding the concept of biculturality. Additionally, due to the bipolar nature of items in these acculturation scales, respondents are limited in their answer choices (Rogler et al., 1991). The Acculturation Rating Scale for Mexican Americans (ARSMA) (Cuellar et al., 1980), the original Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA) (Suinn et al., 1992), and the Short Acculturation Scale for Hispanics (SASH) (Marin & Sabogal, 1987) are examples of unidimensional scales.

Scales based on bidimensional models of acculturation measure acculturation separately for each culture (Rogler et al., 1991), thus distinguishing between maintenance of aspects of the culture of origin and the adoption of aspects of the host culture (Thomson & Hoffman-Goetz,

2009). Bidimensional scales of acculturation suggest that individuals may accommodate to the host culture to varying degrees, while also retaining or losing components of their culture of origin. Examples of such scales include the Bicultural Involvement Questionnaire (Szapocznik, Kurtines, & Fernandez, 1980), the revised SL-ASIA scale (5 items were added to the original version), Jang and colleagues' (2007) 12-item scale for Korean Americans, the Vancouver Index of Acculturation (VIA) (Ryder et al., 2000), and the Bidimensional Acculturation Scale for Hispanics (BAS) (Marin & Gamba, 1996).

Scales based on multidimensional models of acculturation have become more popular, acknowledging the complexities of the process, and use separate scales to measure acculturation on more than two dimensions and various domains of acculturation. Examples of multidimensional scales of acculturation include the Acculturation Rating Scale for Mexican Americans II (ARSMA II) (Cuellar, Arnold, & Maldonado, 1995) and the Hazuda scale (Hazuda, Stern, & Haffner, 1988).

Lastly, acculturation research can vary by the population (e.g., Asian, Hispanic) used to develop measures (Zane & Mak, 2003). Much of the acculturation research in the US, and in turn the developed measures, have targeted specific ethnic groups: African Americans, Asian Americans/Pacific Islanders, Native Americans, and Hispanics/Latinos (Chun, Organista, & Marin, 2003). This is not surprising as they are four of the main ethnic groups making up the US, after White Americans (Grieco & Cassidy, 2001). However, the ethnic mosaic in Canada is quite different from the US, making it difficult to use the culturally specific scales developed in the US.

Numerous researchers have expressed concerns over available measures of acculturation, doubting that current measures are truly measuring the changes that occur during the

acculturation process and the interaction one has with those around them (Thomson & Hoffman-Goetz, 2009). No consensus has yet been reached in terms of how acculturation should be measured and what exactly should be measured (Alegria, 2009).

2.5.5 Alignment of research

A psychology perspective was applied to the current research, where acculturation is viewed as a multifaceted, multidimensional, and non-linear process. Additionally, acculturation of the individual was the focus, as the health behaviour of the individual was of interest for the purpose of the research. The acculturation framework used in the research was based on Berry's (2003) and Schwartz and colleagues' (2010) multidimensional frameworks for conceptualizing acculturation, taking into account the many domains that may change during acculturation, in addition to the mediating and moderating factors, such as the characteristics of the cultures and the individual, that may result in variations in the process of acculturation.

2.6 The Influence of Acculturation on Health

Over the years, there has been an increase in research on the association between acculturation and health behaviour and health outcomes. For example, studies have reported associations between acculturation and physical activity (Perez-Stable, Marin, & Marin, 1994), diet (Kasirye et al., 2005; Kim & Chan, 2004), breast self examination (Guevarra et al., 2005), mental health (Rogler et al., 1991), cervical cancer screening (Chang, Woo, Gorzalka, & Brotto, 2010), sexual behaviour (Kasirye et al., 2005), alcohol consumption (Kasirye et al., 2005; Perez-Stable et al., 1994), tobacco use (Guevarra et al., 2005; Kasirye et al., 2005), and illicit drug use (Kasirye et al., 2005). For the most part, research has shown that those who are more acculturated to the host culture report worse health behaviours (e.g., substance use, diet),

compared to those less acculturated (Lara et al., 2005; Schwartz et al., 2010), a phenomenon sometimes referred to as the *immigrant paradox* (Alegria et al., 2008) and may be due to acculturation-related changes such as the loss of healthy heritage culture behaviours (Dixon, Sundquist, & Winkleby, 2000) or changing social norms (Marin, Perez-Stable, & Marin, 1989). However, those who are more acculturated to the host culture fare better in terms of access to health care (e.g., screening) and self-perceptions of health (Lara et al., 2005). In essence, the link made between acculturation and health is derived from a health behaviour/lifestyle model, which posits that individuals engage in certain behaviours due to culturally held attitudes, beliefs, and values (Dressler, 1993; Hunt et al., 2004).

However, the immigrant paradox becomes difficult to explore as a majority of health and acculturation research has relied on the unidimensional model of acculturation (Schwartz et al., 2010). Thus, it becomes unclear as to whether the immigrant paradox occurs because of loss of culture of origin, adoption of host culture, or both (Schwartz et al., 2010). Studies that have adopted a bidimensional model have most often reported the health benefits of integration/biculturalism (S. C. Wang, Schwartz, & Zamboanga, 2010), thus highlighting the importance of using such model of acculturation in research (Schwartz et al., 2010). Others have explained the association between acculturation and negative health outcomes (e.g., drug and alcohol use) as resulting from acculturative stress. In general, outcomes due to the acculturation process are referred to as adaptation in the field of psychology, and may encompass well to poor adaptation (Berry, 1997). Successful adaptation has been associated with the integration/bicultural acculturation strategy in terms of long-term health and wellbeing (Berry, 1997; Schmitz, 1992).

In terms of health service use, research indicates that as immigrants acculturate to Western culture, use of health services also increases (Lara et al., 2005; Salant & Lauderdale, 2003).

Research from the US and Australia support that Pap test rates do increase as duration in the host country increases (Lesjak, Hua, & Ward, 1999; A. E. Maxwell et al., 2000; Tsui et al., 2007) and three studies indicate that this may also be the case in terms of duration in Canada, but that the process may be slow (Gupta et al., 2002; Latif, 2010; McDonald & Kennedy, 2007) and convergence to native-born rates may not occur for all ethnic groups (McDonald & Kennedy, 2007). For example, Black, Hispanic, and White⁴ immigrant women report Pap test participation rates that are similar to those of Canadian-born women after 15-20 years living in Canada (McDonald & Kennedy, 2007). On the other hand, participation rates of immigrants from Asian⁵ backgrounds, or even Canadian-born women of Asian descent, do not reach those of Canadian-born women, even after 30+ years in Canada (McDonald & Kennedy, 2007). Among those who immigrate from English-speaking countries (i.e., UK, US, Australia), participation rates are similar to Canadian-born women, regardless of their years in Canada (McDonald & Kennedy, 2007). The findings among both Asian immigrants and Canadian-born women from Asian backgrounds indicate that barriers to screening may not only be related to access to health services, health literacy, or language barriers, but may be more rooted in cultural beliefs, values, and attitudes (McDonald & Kennedy, 2007).

In general, acculturation may be associated with screening behaviour through mechanisms or combinations of them such as education, change in beliefs, values, and attitudes (Marin & Gamba, 2003), health literacy (Todd & Hoffman-Goetz, 2011), language fluency [which is associated to health care access (Solis, Marks, Garcia, & Shelton, 1990)], and information and care seeking (Facione, Giancarlo, & Chan, 2000). Thus, these mechanisms may mediate the relationship between acculturation and cervical cancer screening.

⁴ Immigrants from continental Europe.

⁵ Chinese, South Asian, Southeast Asian, West Asian/Arab.

Studies exploring the association between acculturation and health outcomes may result in negative, positive, mixed, or no effect findings. In particular, there have been mixed results in terms of the association between acculturation and health behaviour (Corral & Landrine, 2008), including cervical cancer screening, where some studies have reported an association (Gupta et al., 2002; Hislop et al., 2000; Lesjak et al., 1999), while others have not (Ivanov et al., 2010). The inconsistencies in results may be due to the various ways acculturation has been operationalized and measured (Abraido-Lanza, Armbrister, Florez, & Aguirre, 2006; Hunt et al., 2004; Lara et al., 2005; Sue, 2003; Thomson & Hoffman-Goetz, 2009) or may be due to some other measured or unmeasured variable (Lara et al., 2005).

Clearly, the influence of acculturation on health outcomes seems to be complex and is not yet fully understood (Lara et al., 2005). To date, we still do not fully understand the mechanisms involved in the link between acculturation and health outcomes (Alegria, 2009). While there has been refinement in the definition, conceptualization, and operationalization of acculturation over the years, there exists a gap in terms of a theoretical framework outlining the mechanisms behind the influence of acculturation on health and health behaviour (Abraido-Lanza et al., 2006). In order to highlight crucial intervention points during integration into the host country among immigrant women, it would be important to understand *how* acculturation influences screening behaviour.

CHAPTER 3: THESIS OBJECTIVES AND COMPONENTS

3.1 Thesis Objectives

Given the importance of continuously obtaining up-to-date information on screening participation and the need to increase our understanding of the link between acculturation and health behaviour, three thesis objectives were addressed. The first objective was to explore whether there are cervical cancer screening differences between non-immigrant and immigrant women. The second objective was to explore cervical cancer screening decision-making among immigrant women. The third objective was to explore the influence of acculturation on cervical cancer screening. The overall goal of the thesis was to advance our understanding of cervical cancer screening behaviour and decision-making in order to develop effective programs aimed at increasing and maintaining regular screening practices.

3.2 Thesis Components and Rationale

Much of the acculturation and cervical cancer screening data from Canada has been based on large cross-sectional surveys and due to the pre-determined variables, limits the ability to explore whether there is a complex multidimensional influence of acculturation on cervical cancer screening. As Brotto and colleagues (2008) stated, we must explore the traditional and cultural values and beliefs that impede screening among immigrant women, the degree of cultural preservation that occurs after immigration, and the effects of acculturation on screening. Thus, two studies were conducted to target the three thesis objectives through a mixed methods approach.

The first study involved quantitative analysis of the Canadian Community Health Survey (CCHS) data to explore whether there are cervical cancer screening differences between non-

immigrant and immigrant women, as well as the relationship between acculturation proxies and cervical cancer screening among immigrant women of different cultural/racial backgrounds. This analysis provided an up-to-date⁶ overview of screening participation in Ontario and shed light on the current screening situation in which immigrant women are situated, in preparation for the second study. It was expected that inequities in cervical cancer screening would emerge between immigrant and non-immigrant women, and between women of different cultural/racial background. The second study involved qualitative analysis of face-to-face semi-structured interviews with immigrant women, to explore cervical cancer screening decision-making and the underlying mechanisms of the influence of acculturation. It was expected that acculturation would be involved in the decision to get a Pap test, influencing various other factors in the decision-making process, such as health beliefs and attitudes.

While the first study offered statistical power through the use of a large sample size and offered an overview of screening participation among immigrant women in Ontario, it measured acculturation indirectly, through proxies such as language use and duration in Canada. Thus, the second study was used to explore *if* and *how* the process of acculturation influences screening decision-making. Few studies have explored the influence of acculturation and cervical cancer screening among immigrant women in Canada, but this endeavor is important if we are to understand the unique experiences that immigrants face in their host countries, specifically surrounding screening behaviour.

⁶ Research on cervical cancer among all women and immigrant women in Ontario stemming from recent (2007 or later) CCHS data could not be located at the time of data analysis for the thesis.

CHAPTER 4: CERVICAL CANCER SCREENING AMONG WOMEN IN ONTARIO

Objective 1: To explore whether there are differences in Pap test participation (within 3 years vs. over 3 years ago or never) between non-immigrant and immigrant women in Ontario, Canada, and whether rates differ by cultural/racial background.

Objective 2: To identify factors associated with not having a time-appropriate Pap test among women in Ontario, Canada.

Objective 3: To explore the association between acculturation and Pap test participation among immigrant women in Ontario, Canada, and between low- and high-risk groups of immigrant women.

Objective 4: To identify factors associated with not having a time-appropriate Pap test among immigrant women in Ontario, Canada, stratified by low- and high-risk groups.

4.1 Introduction

Despite cervical cancer screening efforts, 12,170 new cases of cervical cancer will be diagnosed in 2012 in the United States (American Cancer Society, 2012) and 1,350 in Canada (Canadian Cancer Society, 2012b). Additionally, 4,220 and 390 will die from cervical cancer in the United States and Canada, respectively (American Cancer Society, 2012; Canadian Cancer Society, 2012b). While both the incidence and mortality rates have decreased overall, this is not necessarily the case among immigrant women (Seeff & McKenna, 2003). Differences in cervical cancer incidence and mortality rates between populations can be partly attributed to non-

participation in screening (Schleicher, 2007). In Canada, between 18% and 21% of women have not participated in a time-appropriate Pap test⁷ (CCS/NCIC, 2006; Snider & Beauvais, 1998). Additionally, screening rates are not homogenous across the population; rates are even lower among immigrant women and women of specific cultural/racial groups (McDonald & Kennedy, 2007). In the US, Pap tests rates varied from 65.6% to 80.1% in 2008, depending on the cultural/racial group, with Asians reporting the lowest and Blacks the highest participation (National Center for Health Statistics, 2010).

Low income (S. J. Katz & Hofer, 1994; Latif, 2010; Lee et al., 1998) and education (Gupta et al., 2002; Hislop et al., 2000; S. J. Katz & Hofer, 1994; Latif, 2010; Lee et al., 1998; McDonald & Kennedy, 2007), not having a regular doctor (Latif, 2010), being older (Hislop et al., 2000; S. J. Katz & Hofer, 1994; Latif, 2010; Lee et al., 1998), being single (Hislop et al., 2000; Latif, 2010; Lee et al., 1998; McDonald & Kennedy, 2007), being non-White (Latif, 2010), not speaking English or French (Hislop et al., 2000; Latif, 2010), recent immigration (Lofters et al., 2007), living in rural areas (Latif, 2010; McDonald & Kennedy, 2007) and having low cervical cancer screening knowledge have all been associated with not having a time-appropriate Pap test (Fort, Makin, Siegler, Ault, & Rochat, 2011; Hislop et al., 2004).

Among immigrant women, living in low-income neighborhoods, having a male doctor, having a doctor from the same region of the world (Lofters, Moineddin, Hwang, & Glazier, 2011), being of Asian descent (Woltman & Newbold, 2007), and having low cervical cancer screening knowledge (Hislop et al., 2004; Schleicher, 2007) have been associated with a decreased likelihood of screening. Additionally, acculturation has been associated with screening, where women less acculturated to the host country are less likely to get a Pap test compared to those more acculturated (Schleicher, 2007). The link between acculturation and

⁷ Within the past 3 years.

cervical cancer screening among immigrant women is not fully understood. It may be that other mechanisms mediate the relationship between acculturation and cervical cancer screening, such as changes in beliefs, values, and attitudes (Marin & Gamba, 2003), health literacy (Todd & Hoffman-Goetz, 2011), language fluency [which is associated to health care access (Solis et al., 1990)] (Lebrun, 2012), and information and care seeking (Facione et al., 2000).

Given the need for up-to-date information on screening behaviour, the purpose of the study was to explore differences in screening rates between immigrant and non-immigrant women in Ontario and across cultural/racial background, and to identify factors associated with screening behaviour.

4.2 Methods

The study consisted of secondary analysis of data drawn from the 2007-2008 Cycle 4.1 CCHS master file. A proposal was submitted to Statistics Canada/Social Sciences and Humanities Research Council (SSHRC) and approval to obtain access to the master file was granted on December 21, 2010. The following sections outline the procedures and analyses that were conducted.

4.2.1 Design

The CCHS is a cross-sectional survey that collects data on health status, health care use, and health determinants of the Canadian population on a yearly basis (Statistics Canada, 2009a). The CCHS questions were designed for computer-assisted interviewing, programming the flow of questions and “specifying the type of answer required” (e.g., some questions are in the format of multiple choice while others are numerical with a minimum and maximum value) (Statistics Canada, 2009a). Participation was voluntary. The CCHS was reasoned to be a suitable data

source for Study 1 as it provided recent population-level data on Pap test participation, in addition to social variables, such as immigration and cultural/racial background data.

Additionally, the CCHS collects data from a large sample of respondents, which was especially important for Study 1 analyses due to stratification across immigrant status and further across cultural/racial groups.

4.2.2 Population, sample, and recruitment

The population of interest for the 2007-2008 CCHS was all Canadians aged 12 years and older (Statistics Canada, 2009a). The CCHS covers 98% of the Canadian population aged 12 years and older in the provinces and 71-97% in the territories, and excludes those ‘living on Indian reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions’ (Statistics Canada, 2009a).

Three sampling frames were used to collect the CCHS sample: ‘49% of the sampled households come from an area frame, 50% comes from a list frame of telephone numbers and the remaining 1% comes from a Random Digit Dialing (RDD) telephone number frame’ (Statistics Canada, 2009a). Households are systematically sampled from the area frame, whereas telephone numbers are randomly chosen from the list frame (Statistics Canada, 2009a). The sample selection purposely over-represents those between 12 and 19 years old⁸, as was done in previous survey years. The participant in each contacted household was chosen at the time of the call, using ‘selection probabilities based on age and household composition’ (Statistics Canada, 2009a), as described below:

⁸ Over-representation is done for two reasons. First, there are fewer youths (12-19 years) in the Canadian population than other CCHS age groups. In order to have a large enough sample to analyze by age group, Statistics Canada needs to give higher selection probabilities to the youths when selecting interviewees. Otherwise, there may not be enough youths in the sample (Statistics Canada, personal communication, December 10, 2010). Second, the person level non-response rate for the 12-19 age group is high compared to other age groups. Therefore, over-sampling youths is needed to compensate for this expected higher non-response rate (Statistics Canada, personal communication, December 10, 2010).

“One person is selected per household using varying probabilities taking into account the age and the household composition. The selection probabilities resulted from simulations using various parameters in order to determine the optimal approach without causing extreme sampling weights. Table [4.1] gives the selection weight multiplicative factors used to determine the probabilities of selection of individuals in sampled households by age group. For example, for a three-person household (two adults of age 45 to 64 and one 15-year-old), the teenager would have 5 times more chance of being selected compared to the adults. To avoid extreme sampling weights, there is one exception to this rule: if the size of the household is greater than or equal to 5 or if the number of 12-19 year olds is greater than or equal to 3 then the selection weight multiplicative factor equals 1 for each individual in the household. Consequently, all people in that household have the same probability of being selected” (Statistics Canada, 2009b).

Table 4.1: Selection weight multiplicative factors for the person-level sampling strategy by age (Statistics Canada, 2009b)

	Selection Weight Multiplicative Factors				
Age	12-19	20-29	30-44	45-64	65+
Factor	5	2	2	1	1

4.2.2.1 *Creating the analysis sample*

The analysis sample was derived from the 2007-2008 Cycle 4.1 CCHS file, restricting the sample to women respondents who were living in Ontario⁹ at the time of the survey, and were between the ages of 18 and 69¹⁰. Subsequently, those who reported a history of hysterectomy were excluded from the analysis sample (because they are not at risk for cervical cancer). Those

⁹ The sample that was analyzed consisted of data only from Ontario in order for Study 2 results to be relevant, as participants were only recruited from Ontario.

¹⁰ The sample was restricted to those 18 years old or older as the Pap questions in CCHS were only asked of women in this age group. Additionally, Ontario screening recommendations at the time of data analysis began at 18 years old. The sample was restricted to those up to 69 years old because Canadian recommendations indicate screening up to 69 years old (Health Canada, 2006; Miller et al., 1991).

who identified themselves as Aboriginal¹¹ (i.e., North American Indian, Métis, Inuit) or never had sexual intercourse¹² were also excluded.

Missing data¹³ on the Aboriginal, sexual intercourse, and outcome variable (Pap test participation variables) were identified and deleted only after bivariate analyses were conducted, comparing cases that provided a response vs. those who did not, on various sociodemographic and descriptive variables (i.e., age, education, area of residence, marital status, income, perceived health, access to a medical doctor, cultural/racial background, immigrant status, proportion of life lived in Canada, language spoken at home, language of interview¹⁴). Variables were kept uncollapsed and in their original form wherever possible. The variables ‘Aboriginal status’, ‘sexual activity’, and ‘last time had a Pap test’ had 2.83%, 5.37%, and 1.90% missing cases, respectively, and were subsequently deleted from the analysis sample.

In order to meet the objectives for Study 1, analyses were first conducted on the full analysis sample and subsequently conducted on the immigrant sample.

¹¹ The sample excluded those who identified as Aboriginal as past studies have reported demographic (Statistics Canada, 2008; Young, McNicol, & Beauvais, 1997), health status (Smylie, Fell, & Ohlsson, 2010; Young et al., 1997), and health behaviour (McDonald & Trenholm, 2010; Young et al., 1997) differences between Aboriginals and the rest of the Canadian population, and would need to be analyzed separately, which was outside the scope of the study.

¹² The sample was restricted to those who have had sexual intercourse because Canadian recommendations at the time of data analysis indicated that women should get screened at 18 or as soon as they become sexually active. If the test is normal and they have never had sex, then they do not need to be re-screened until they become sexually active (Health Canada, 2006). However, only women aged between 15-49 were asked in the CCHS if they have ever had sexual intercourse. Thus, based on research examining the average age at sexual debut (Hansen, Mann, McMahan, & Wong, 2004), women between 50-69 were assumed to have had sexual intercourse and were included in the analyses.

¹³ Missing data on the CCHS are categorized as ‘don’t know’, ‘refused’, and ‘not stated’.

¹⁴ Comparisons on acculturation variables (proportion of life lived in Canada, language spoken at home, and language of interview) were only conducted if a significant difference existed between the completers and non-completers on the following variables: cultural/racial background, immigrant status, and location of birth.

4.2.3 Measures

4.2.3.1 Outcome variable

The outcome variable was: how long ago respondents had a Pap test, categorized as either within the past 3 years (time-appropriate Pap test) or over 3 years ago or never. The outcome variable was derived from two CCHS variables: whether the respondent ever had a Pap test (yes; no) and the recentness of the last Pap test (less than 6 months ago; 6 months to less than 1 year ago; 1 to less than 3 years ago; 3 to less than 5 years ago; 5 or more years ago). Participants who reported never having a Pap test were combined with the participants who reported having a Pap test over 3 years ago, thus creating the ‘risk’ category. Dichotomizing this variable has been previously done by researchers (Xiong et al., 2010) and aligned with Canadian recommendations to get Pap tests every one to three years, depending on previous test results (Miller et al., 1991).

4.2.3.2 Independent variables

Independent variables consisted of demographic, socioeconomic status (SES), and health and health care variables. Demographic variables included age (18-29; 30-39; 40-49; 50-59; 60-69), marital status (married/common-law; widowed/separated/divorced; single, never married), area of residence (urban; rural), location of birth (Canada; other North America; South, Central America and Caribbean; Europe; Africa; Asia; Oceania), cultural/racial background (White; Black; Chinese; South Asian; other Asian; all others), and immigrant status (yes; no). Immigrant status ‘yes’ was further broken down by years since immigration (under 10 years; 10 years or more) to be used in the logistic regression. SES variables included education level (some secondary school; up to secondary school graduation; some post-secondary school; post-secondary graduation) and total household income (\$0-\$14,999; \$15,000-\$29,999; \$30,000-

\$49,999; \$50,000-\$79,999; \$80,000+; missing). Health and health care variables included history of hysterectomy (no; missing), perceived health (excellent; very good; good; fair; poor), and access to a regular medical doctor (yes; no).

Additionally, language(s) spoken at home (English and/or French; Other), language of interview (English and/or French; Other), length of time in Canada since immigration, and proportion of life spent in Canada (calculated using age and age at immigration) were used as acculturation proxies in the analyses. Language use and proportion of life (or years lived) in the host country have been reported to be suitable proxies for acculturation (Alegria, Sribney, Woo, Torres, & Guarnaccia, 2007; Cruz et al., 2008). Specifically, language use has been the most reported proxy used for acculturation and the strongest single measure of acculturation (Alegria, 2009), while proportion of life spent in Canada acknowledges that differences may be present depending if women immigrated as children or as adults, even though they may have been in Canada for the same number of years (Salant & Lauderdale, 2003).

As most differences in health behaviour have been reported between high acculturated individuals and those low acculturated, proxies have been found to be useful in examining health behaviour between these two groups (Landrine & Klonoff, 2004). However, in agreement with past researchers (Thomson & Hoffman-Goetz, 2009), available measures of acculturation may not offer complete insight into the changes that occur during acculturation; a qualitative inquiry may be useful to supplement quantitative measures (see chapter 5).

In order to identify the low- and high-risk groups¹⁵ in terms of Pap test participation as outlined in Objectives 3 and 4, a cross-tabulation was created between cultural/racial background and Pap test participation among the sample of immigrant women. The cultural/racial groups

¹⁵ By high- and low-risk, we mean being at high- or low-risk of risks (i.e., not getting screened) among a vulnerable population (Frohlich & Potvin, 2008).

with the lowest reported Pap test participation 3 years ago or more or never were categorized as low risk, and the groups with the highest rates as high risk.

Lastly, the variables ‘reasons for not having a Pap smear test in the previous three years’¹⁶ (have not gotten around to it; didn’t think necessary; doctor didn’t think necessary; personal/family responsibilities; not available when required; not available in area; waiting time too long; transportation problems; language problem; cost; did not know where to go; fear; hysterectomy; hate/dislike having one done; unable to leave house/health problem; other) were included in the descriptive analyses.

4.2.4 Data analysis

4.2.4.1 Missing data

Missing data was calculated for all independent variables and did not exceed 1%, except for total household income (11.38%) and history of hysterectomy (17.18%). The high percentage of missing responses on the hysterectomy variable was due to an error during the flow of the interview, where women aged 50 and above inadvertently skipped this question (Statistics Canada, 2009c). Missing cases for both income and hysterectomy were retained as a separate category, whereas missing cases on the remaining variables were allowed to drop from analyses. Dealing with missing data in this way was reasoned to be a sensible choice¹⁷ (Thompson, M., personal communication, March 30, 2011; Mach, L., personal communication, April 7, 2011).

¹⁶ Each reason was framed as an independent question (yes; no) and therefore, participants may have responded ‘yes’ to more than one reason for not having a Pap test in the previous three years.

¹⁷ It was originally proposed to use multiple imputation for missing data. However, Statistics Canada does not recommend this method as the results can be misleading when working with a complex data set (Thompson, M., personal communication, March 30, 2011; Mach, L., personal communication, April 7, 2011).

4.2.4.2 Descriptive analyses

Characteristics of the analysis sample were described using weighted (see section 4.2.4.5) percentages. To meet Objectives 1 and 3, Rao-Scott Chi-Square¹⁸ analysis was used to explore differences in Pap test participation between non-immigrant and immigrant women, stratified by cultural/racial background, and to explore the association between acculturation proxies and Pap test participation among immigrant women, stratified by low- and high-risk groups.

4.2.4.3 Preparing for multivariate analyses

Separation of data: Cross-tabulations were created with all independent variables and the outcome variable to be entered into the logistic regression in order to ascertain that separation of the data¹⁹ did not occur. The minimum of 5 cases per cell was used as a rule of thumb (Mach, L., personal communication, October 5, 2011). Categories with fewer than 5 cases per cell were collapsed with another category (SAS, 2006).

Bivariate analyses: Bivariate analysis using Rao-Scott Chi-Square was conducted between the independent variables and the outcome variable to test for associations. The p-value cut-off for inclusion in the logistic regression was set at $p < 0.20$ (M. H. Katz, 1999). Based on this cut-off, location of residence was not retained in the full sample logistic regression analysis. Among the immigrant sample, area of residence, marital status, history of hysterectomy, perceived health, cultural/racial background, language of interview, proportion of life spent in Canada, and length of time in Canada were not retained in the high-risk logistic regression analysis, while location of residence, cultural/racial background, and language of interview were not retained in the low-risk logistic regression analysis.

¹⁸ Rao-Scott Chi-square test, a design-adjusted equivalent to the Pearson Chi-square test (SAS, 2011b), was used in order to take into consideration the complex survey design of the CCHS.

¹⁹ Separation of data occurs when all or most of the responses on a level of the predictor variable occur for $y=1$ and all or most of the responses on a different level of the predictor variable occur for $y=0$.

Multicollinearity: Multicollinearity was checked among the full and immigrant sample analyses using the variance inflation factor (VIF) values through a linear regression analysis. High VIF values (over 10) were used to identify possible multicollinearity (Schroeder, 1990). Among the full sample, location of birth was excluded from further analyses due to possible multicollinearity issues identified through high VIF values. Among the low-risk immigrant sample, length of time since immigration and proportion of time spent in Canada had high VIF values, and length of time since immigration was thus excluded from subsequent regression models. No sign of multicollinearity was identified among the high-risk immigrant sample.

Unadjusted odds: Unadjusted odds were calculated to explore the individual association between the outcome and each independent variable.

4.2.4.4 Multivariate analyses

Logistic regression modeling was conducted to explore factors associated with not having a time-appropriate Pap test. All independent variables were simultaneously entered in the logistic regression and backward selection was subsequently used to remove variables that were not significant at the $p < 0.20$ level, one at a time (Hosmer & Lemeshow, 2000). Backward selection was used to reduce the model to include the most important predictors of Pap test participation, as long as reduced models were not significantly different from previous models.

Evaluating the importance of removed variables: The importance of the removed variables during backward selection was calculated as follows:

$$(-2 \text{ Log Likelihood: Model 2}) - (-2 \text{ Log Likelihood: Model 1}) = -2 \text{ Log L difference}$$

The value difference was subsequently calibrated in a χ^2 distribution table, with $df = 1$, at a significance level of 0.05. If the difference was significant, the two models were considered to be significantly different from one another, highlighting the importance of the removed variable. On

the other hand, if the difference was not significant, the two models were not considered to be significantly different from one another.

Evaluating goodness-of-fit of models: The evaluation of the final logistic model fit was conducted using the Hosmer-Lemeshow goodness-of-fit test. The model was deemed to be ‘good’ if most of the subjects with outcome 0 were in the higher deciles of risk and if most of the subjects with outcome 1 were in the lower deciles of risk (Tabachnick & Fidell, 2007).

Additionally, the final model was compared to the constant-only model to evaluate if the independent variables, as a group, better predicted the outcome.

4.2.4.5 Weighting and bootstrapping

In order to take into account the unequal probabilities of selection and non-response and for the analysis results to be representative of the population of interest (Statistics Canada, 2009b), sample weights provided by Statistics Canada were applied to all analyses. Each participant has been assigned a survey weight corresponding to the number of people they were representing in the population (Statistics Canada, 2009b). Normalized weights²⁰ were created after restricting the data to 18-69 year old women living in Ontario (Toronto RDC, 2011). Bootstrap variance estimation was also conducted on all analyses unless otherwise stated, in order to account for the survey design effect on the precision of estimates (Toronto RDC, 2011). Significance was set at $p < 0.05$ unless otherwise stated. All analyses were performed using SAS 9.3 (SAS, 2011a).

Consulting was obtained from and subsets of the analyses were sent to a senior methodologist at the Data Analysis Resource Centre (DARC) at Statistics Canada for review and feedback.

²⁰ Normalized weights were created by taking the ratio of unweighted N to weighted N and multiplying that value by the population weight [normalized weight = (unweighted N / weighted N) x population weight] (Toronto RDC, 2011).

4.2.5 Ethics

4.2.5.1 Confidentiality and anonymity

Study 1 consisted of secondary data and the Research Data Centre (RDC) process and Statistics Canada guarantee privacy and informed consent. Additionally, anonymity of individuals are protected due to the large sample size. As per Statistics Canada (2009e), "[a]ll data sets have been stripped of personal details-such as names, addresses and phone numbers-that could be used to identify particular individuals." Also, "[r]esearchers whose projects are approved will be subject to a security check before being sworn in under the Statistics Act as 'deemed employees.' Deemed employees are subject to all the conditions and penalties of regular Statistics Canada employees, including fines and/or imprisonment for breach of confidentiality. In addition, all results to be physically removed from secure areas will be carefully screened for confidential data, whether as direct listings or as possible residual disclosures" (Statistics Canada, 2009e).

4.2.5.2 Risks and benefits

There are no direct risks or benefits to CCHS participants, as data has already been collected by Statistics Canada. Indirect risk due to the data analyses may include stigmatization of specific sub-samples identified at higher risk of not obtaining Pap tests. However, in order to reduce possible minimal indirect risk of stigmatization, care was taken not to 'blame the victim' when interpreting and writing the results of the analyses. Social intersections based on various factors, such as age, geography, and cultural/racial background, and "the impact of systems and processes of oppression and domination", such as racism and classism, were considered when interpreting the results of the data analyses (Hankivsky & Cormier, 2009). An indirect benefit of

the analyses is increased awareness of high-risk groups; ultimately individuals who fall in these groups may obtain more screening information and be moved to contemplate screening.

4.2.5.3 Dissemination of knowledge

Two manuscripts are in preparation stemming from Study 1 for submission to peer-reviewed journals for publication. One manuscript will address Objectives 1-2 while the second will address Objectives 3-4.

4.2.5.4 Ethics approval

The University of Waterloo's Office of Research Ethics (ORE) granted full ethics clearance to conduct Study 1 on December 10, 2010.

4.3 Results

4.3.1 Comparisons between question completers and non-completers

Restricting the analysis to women living in Ontario, aged between 18 to 69 years old resulted in a sample size of 17,566 respondents. Excluding women who had a hysterectomy removed 2,137 women. A total of 1,880 respondents were excluded from the analysis sample due to missing data on exclusion variables. Those that did not give a yes/no response on the Aboriginal status question were significantly different from those that did in terms of their location of residence, income, and perceived health. See Table 4.2 for significant results. All other comparisons were not significant.

Table 4.2: Comparisons on Aboriginal Status variable

Variables	Completers %	Non-Completers %	P Value
Area of residence			0.02
Rural	10.43	10.92	
Urban core	76.93	73.15	
Urban fringe	2.92	1.12	
Urban area outside of CMAS/CAS ^a	2.62	4.39	
Secondary urban core	1.61	1.90	
Mix of urban/rural areas	5.49	8.53	
Household Income			<0.0001
\$0 - \$29,999	13.25	1.16	
\$30,000 - \$49,999	14.84	1.01	
\$50,000 - \$79,999	22.51	2.34	
\$80,000+	36.43	3.28	
Missing	12.97	92.20	
Perceived Health			0.05
Excellent	22.56	16.50	
Very Good	39.89	38.44	
Good	27.29	35.53	
Fair	7.61	6.84	
Poor	2.64	2.7	

^aCMAS/CAS = Census metropolitan areas/Census agglomerations

Those who did not answer the sexual activity question were significantly different from those that did give an answer in terms of location of residence, marital status, income, cultural/racial background, immigrant status, language spoken at home, language of interview, proportion of life spent in Canada, and Pap test participation. See Table 4.3 for significant results. All other comparisons were not significant.

Table 4.3: Comparisons on Sexual Intercourse variable

Variables	Completers %	Non-Completers %	P Value/ 95% CI
Area of residence			0.0001
Rural area	12.25	11.22	
Urban area: less than 30,000 people	4.42	3.67	
Urban area: 30,000 to 99,999 people	4.51	2.89	
Urban area: 100,000 to 499,999 people	20.8	12.78	
Urban area: 500,000 people or more	58.01	69.44	
Marital status			0.0002
Married/Common-law	59.92	47.81	
Widowed/Separated/Divorced	8.52	7.78	
Single, Never Married	31.56	44.41	
Household Income			<0.0001
\$0 - \$14,999	4.41	3.22	
\$15,000 - \$29,999	8.58	5.62	
\$30,000 - \$49,999	13.95	10.21	
\$50,000 - \$79,999	22.65	13.88	
\$80,000+	38.31	9.87	
Missing	12.09	57.20	
Cultural/Racial Background			<0.0001
White	71.05	50.42	
Black	5.58	4.09	
Chinese	4.90	9.17	
South Asian ^a	7.18	24.17	
Other Asian ^b	7.49	4.92	
All Others ^c	3.8	7.24	
Immigrant Status			0.02
No	67.98	58.68	
Yes	32.02	41.32	
Language Spoken at Home			0.0001
English and/or French	83.04	66.41	
Not English/French (Other)	16.96	33.59	
Language of Interview			0.05
English and/or French	97.92	95.49	
Not English/French (Other)	2.08	4.51	
Last Time Had a Pap Test			0.001
Less than 3 years ago	79.71	69.12	
3+ Years Ago/Never	20.29	30.88	
Proportion of life Spent in Canada (Mean)	0.40	0.27	0.38-0.42 ^d 0.20-0.35 ^e

^a Such as East Indian, Pakistani, Sri Lankan

^b Such as Filipino, Japanese, Korean, Laotian, Cambodian, Indonesian, Vietnamese, Arab, West Asian

^c Such as multiple backgrounds, other

^d Completers

^e Non-completers

CI Confidence Interval

Those who did not answer the Pap test question were significantly different from those who did give an answer in terms of age, education, area of residence, household income, perceived health, cultural/racial background, immigrant status, and language spoken at home. See Table 4.4 for significant results. All other comparisons were not significant.

Table 4.4: Comparisons on Pap Participation variable

Variables	Completers %	Non-Completers %	P Value/ 95% CI
Age (Mean)	41.02	45.85	40.83-41.20 ^a 43.23-48.48 ^b
Education			<0.0001
Less than secondary school graduation	9.79	24.69	
Secondary school graduation	18.26	24.37	
Some post secondary	8.53	9.64	
Post secondary graduation	63.42	41.30	
Area of residence			0.03
Rural area	13.45	12.92	
Urban area: less than 30,000 people	4.66	2.16	
Urban area: 30,000 to 99,999 people	4.84	2.80	
Urban area: 100,000 to 499,999 people	20.28	15.75	
Urban area: 500,000 people or more	56.78	66.37	
Household Income			<0.0001
\$0 - \$14,999	4.26	7.92	
\$15,000 - \$29,999	8.58	9.06	
\$30,000 - \$49,999	14.45	14.36	
\$50,000 - \$79,999	22.03	17.25	
\$80,000+	35.89	15.12	
Missing	14.80	36.29	
Perceived Health			<0.0001
Excellent	22.42	20.69	
Very Good	40.22	20.77	
Good	27.45	31.40	

Fair	7.37	18.86	
Poor	2.53	8.28	
Cultural/Racial Background			0.002
White	73.62	58.22	
Black	4.74	3.71	
Chinese	4.85	6.06	
South Asian ^c	6.92	12.76	
Other Asian ^d	6.34	16.27	
All Others ^e	3.53	2.99	
Immigrant Status			0.001
No	65.73	49.11	
Yes	34.27	50.89	
Language Spoken at Home			<0.0001
English and/or French	83.03	63.21	
Not English/French (Other)	16.97	36.79	
^a Completers			
^b Non-completers			
^c Such as East Indian, Pakistani, Sri Lankan			
^d Such as Filipino, Japanese, Korean, Laotian, Cambodian, Indonesian, Vietnamese, Arab, West Asian			
^e Such as multiple backgrounds, other			
CI Confidence Interval			

4.3.2 Full Sample

4.3.2.1 Descriptive analyses

The final unweighted sample for analysis consisted of 13,549 participants; 34.20% (weighted) being immigrants. As illustrated in Table 4.5, there were significant differences in the distribution of most of the descriptive characteristics between non-immigrant and immigrant women: age, marital status, area of residence, location of birth, cultural/racial background, education, household income, history of hysterectomy, perceived health, language spoken at home, and language of interview.

Table 4.5: Distribution of descriptive characteristics of sample by immigrant status

Variables	Total Sample %	Non-Immigrants %	Immigrants %	P Value *
Age				<0.001
18 - 29	21.02	24.71	14.04	
30 - 39	22.91	22.63	23.34	
40 - 49	23.91	23.37	25.10	
50 - 59	20.26	18.82	22.96	
60 - 69	11.89	10.48	14.56	
Marital status				<0.001
Married/Common-law	67.97	65.81	72.11	
Widowed/Separated/Divorced	12.64	11.34	15.21	
Single, Never Married	19.39	22.85	12.68	
Area of residence				<0.001
Urban	86.39	81.22	96.26	
Rural	13.61	18.78	3.74	
Location of Birth				0.001 ^a
Canada	65.03	98.96	NA	
Other North America	1.60	0.13	4.42	
South, Central America and Caribbean	5.78	0.16	16.57	
Europe	11.46	0.52	32.48	
Africa	2.06	0.07 ^b	5.97	
Asia	13.95	0.17	40.29	
Oceania	0.11	NA ^b	0.27	
Cultural/Racial Background				<0.001
White	76.14	94.85	40.25	
Black	4.58	1.18	11.10	
Chinese	4.39	0.78	11.33	
South Asian ^c	5.63	0.53	15.44	
Other Asian ^d	5.84	1.38	14.43	
All Others ^e	3.43	1.28	7.45	
Education				<0.001
Some Secondary School	9.82	7.91	13.41	
Secondary School Graduation	18.14	17.85	18.57	
Some Post-Secondary	7.51	8.25	6.09	
Post-Secondary Graduation	64.54	65.99	61.92	
Household Income				<0.001
\$0 - \$14,999	4.23	3.74	5.15	
\$15,000 - \$29,999	8.49	7.16	11.07	
\$30,000 - \$49,999	14.80	13.31	17.74	
\$50,000 - \$79,999	22.92	21.73	25.24	
\$80,000+	38.19	43.32	28.52	
Missing	11.38	10.74	12.29	

History of Hysterectomy				0.002
No	82.82	83.93	80.78	
Missing	17.18	16.07	19.22	
Perceived Health				<0.001
Excellent	22.74	24.22	19.96	
Very Good	40.12	42.99	34.67	
Good	27.27	24.36	32.77	
Fair	7.24	6.27	9.12	
Poor	2.63	2.17	3.49	
Access to a Regular Medical Doctor				0.29
Yes	92.43	92.76	91.88	
No	7.57	7.24	8.12	
Language Spoken at Home				<0.001
English and/or French	84.33	98.87	56.50	
Not English/French (Other)	15.67	1.13	43.50	
Language of Interview				<0.001
English and/or French	97.34	99.86	92.50	
Not English/French (Other)	2.66	0.14	7.50	
* Comparisons between non-immigrants and immigrants				
^a Comparison excludes Canada category				
^b Africa collapsed with Oceania for confidentiality reasons				
^c Such as East Indian, Pakistani, Sri Lankan				
^d Such as Filipino, Japanese, Korean, Laotian, Cambodian, Indonesian, Vietnamese, Arab, West Asian				
^e Such as multiple backgrounds, other				

Overall, 16.8% of women in Ontario did not report a time-appropriate Pap test (see Table 4.6). The top three reasons given by women who had not had a Pap test in the past three years were that they did not get around to it, they did not think the test was necessary, or that their doctor did not think it was necessary. Immigrant women were more likely to indicate that they or their doctor did not think the test was necessary, whereas non-immigrants were more likely to report that they did not get around to having a Pap test.

Table 4.6: Pap test history

Variables	Total Sample %	Non-Immigrants %	Immigrants %	P Value ^a
Ever Had a Pap Test				<0.001
Yes	93.5	96.63	87.49	
No	6.5	3.37	12.51	
Last Time Had a Pap Test				<0.001
Less than 3 years ago				
Less than 6 months ago	24.44	25.16	22.99	
6 months to less than 1 year ago	34.02	34.61	32.99	
1 year to less than 3 years ago	24.74	26.00	22.29	
3+ Years Ago				
3 years to less than 5 years ago	4.94	5.02	4.80	
5 or more years ago	5.36	5.83	4.42	
Reasons For Not Having a Recent Pap Test^b				
Have not gotten around to it	33.41	39.95	25.03	<0.001
Respondent didn't think necessary	33.77	24.86	45.12	<0.001
Doctor didn't think necessary	16.26	13.09	20.18	0.03
Personal/Family responsibilities	1.04	1.57	**	-
Not available when required	1.57	1.64	1.48	0.86
Not available in area	0.68	1.02	**	-
Waiting time too long	1.05	0.85	1.31	0.46
Transportation problems	0.57	0.48	**	-
Cost	0.23	*	**	-
Did not know where to go	2.39	0.74	4.49	<0.001
Fear	4.21	5.84	2.19	0.01
Hate/dislike having one done	4.97	5.85	3.89	0.16
Unable to leave house/Health problem	0.11	*	**	-
Other	13.72	16.26	10.38	0.01

^a Comparisons between non-immigrants and immigrants
^b Among those who did not report having a Pap test within the past 3 years
* Combined (0.25%) for confidentiality reasons
** Combined (1.79%) for confidentiality reasons

Addressing Objective 1, Chi Square analyses identified that immigrants were less likely to report having a time-appropriate Pap test, compared to non-immigrants. White immigrants were less likely to report having a time-appropriate Pap test, compared to White non-immigrants (81.80% vs. 86%, respectively; $\chi^2 (1) = 8.07, p = 0.005$). Other Asian immigrants were also marginally less likely to report a time-appropriate Pap test, compared to other Asian non-

immigrants (72.96% vs. 88.47%, respectively; $\chi^2 (1) = 3.32, p = 0.07$). The remaining comparisons were not significant.

4.3.2.2 Multivariate analyses

Addressing Objective 2, logistic regression analyses identified factors associated with not having a time-appropriate Pap test. Backward selection models can be found in Appendix F. The final model identified that women who were 40-69 years old, single, had low education and income, did not have a regular doctor, were of Asian (Chinese, South Asian, other Asian) cultural/racial background, perceiving having less than excellent health, and who were a recent immigrant, were more likely to report not having a time-appropriate Pap test (Table 4.7).

Table 4.7: Odds ratios for not having a time-appropriate Pap test, final model

Variables	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age (ref=18-29)		
30 - 39	0.87 (0.70-1.08)	1.08 (0.84-1.40)
40 - 49	0.93 (0.75-1.17)	1.31* (1.01-1.69)
50 - 59	1.39** (1.11-1.75)	2.02*** (1.57-2.59)
60 - 69	2.08*** (1.68-2.57)	2.72*** (2.08-3.56)
Marital status (ref=Married/Common-law)		
Widowed/Separated/Divorced	1.14 (0.96-1.35)	1.15 (0.91-1.46)
Single, Never Married	1.41** (1.13-1.74)	1.43*** (1.16-1.76)
Education (ref= Post-Secondary Graduation)		
Some Secondary School	2.77*** (2.20-3.49)	2.03*** (1.61-2.56)
Secondary School Graduation	1.49*** (1.24-1.79)	1.41*** (1.16-1.71)
Some Post-Secondary	1.24 (0.95-1.62)	1.12 (0.84-1.50)
Household Income (ref=\$80,000+)		
\$0 - \$14,999	2.61*** (1.89-3.61)	1.39 (0.98-1.98)
\$15,000 - \$29,999	2.28*** (1.75-2.97)	1.41* (1.06-1.88)
\$30,000 - \$49,999	1.96*** (1.59-2.40)	1.36** (1.08-1.70)
\$50,000 - \$79,999	1.34** (1.10-1.64)	1.09 (0.88-1.37)
Missing	1.99*** (1.55-2.56)	1.32* (1.02-1.71)
Access to a Regular Medical Doctor (ref=Yes)		

No	2.91 ^{***} (2.34-3.61)	3.12 ^{***} (2.50-3.89)
Perceived Health (ref=Excellent)		
Very Good	1.36 ^{**} (1.10-1.69)	1.26 [*] (1.01-1.57)
Good	1.69 ^{***} (1.37-2.07)	1.29 ^{**} (1.02-1.62)
Fair	1.89 ^{***} (1.39-2.59)	1.21 (0.89-1.65)
Poor	2.41 ^{***} (1.65-3.51)	1.64 ^{**} (1.11-2.44)
Cultural/Racial Background (ref=White)		
Black	1.09 (0.70-1.70)	0.91 (0.54-1.52)
Chinese	2.23 ^{***} (1.44-3.46)	1.93 ^{**} (1.23-3.03)
South Asian	2.44 ^{***} (1.72-3.47)	1.85 ^{**} (1.23-2.80)
Other Asian	1.88 ^{***} (1.34-2.63)	1.69 [*] (1.11-2.56)
All Others	0.91 (0.60-1.40)	0.82 (0.52-1.30)
Immigrant Status (ref=Non-Immigrant)		
Recent Immigrant (Less than 10 years)	2.61 ^{***} (2.01-3.41)	1.81 ^{**} (1.24-2.63)
Long-Term Immigrant (10+ years)	1.37 ^{**} (1.13-1.66)	0.87 (0.68-1.10)
Language Spoken at Home (ref=English and/or French)		
Not English/French (Other)	2.16 ^{***} (1.69-2.76)	1.30 (0.94-1.79)
Language of Interview (ref=English and/or French)		
Not English/French (Other)	1.99 [*] (1.09-3.61)	0.66 (0.34-1.28)
* p<0.05, ** p<0.01, *** p<0.001; OR Odds Ratio; CI Confidence Interval		

Evaluating the importance of removed variables: Two variables were removed from the logistic regression using backward selection, creating three models. The importance of the first removed variable ‘history of hysterectomy’ was calculated as follows:

$$(-2 \text{ Log Likelihood: Model 2}) - (-2 \text{ Log Likelihood: Model 1})$$

$$11358.81 - 11357.14 = 1.67, \text{ df} = 1$$

Calibrating the results in a χ^2 distribution identified that the difference between the two models was not significant at the 0.05 level, indicating that the removed variable ‘history of hysterectomy’ was not important in predicting the outcome. Similarly, the importance of the second removed variable ‘language of interview’ was calculated as follows:

$$(-2 \text{ Log Likelihood: Model 3}) - (-2 \text{ Log Likelihood: Model 2})$$

$$11401.76 - 11358.81 = 42.95, df = 1$$

Calibrating the results in a χ^2 distribution identified that the difference between the two models was significant at the 0.05 level. Thus, Model 2 was kept as the final model.

Evaluating goodness-of-fit of model: Using the Hosmer-Lemeshow goodness-of-fit test, the final model was deemed to be ‘good’ as most of the subjects with outcome 0 were in the higher deciles of risk and most of the subjects with outcome 1 were in the lower deciles of risk.

Additionally, comparing the constant-only model to the final model, the Likelihood Ratio Chi square test was significant ($\chi^2 (28) = 975.00, p < 0.0001$), concluding that the group of independent variables better predicted the outcome compared to the constant-only model.

4.3.3 Immigrant Sample

4.3.3.1 Descriptive analyses

The unweighted immigrant sample consisted of 2,904 women. A cross-tabulation between cultural/racial background and Pap test participation identified the low-risk and high-risk-groups. White, Black, and all other immigrant women were categorized as low risk, and Chinese, South Asian, and other Asian immigrant women were categorized as high risk (18.20%, 14.77%, 13.07% vs. 28.94%, 30%, 27.04% reported having a Pap test 3 years ago or more or never; respectively). Women in the high-risk group were significantly more likely to have reported not having a time-appropriate Pap test, compared to those in the low-risk group (28.67% vs. 16.90%, respectively; $\chi^2 (1) = 24.27, p < 0.0001$).

As illustrated in Table 4.8, low-risk immigrants significantly differed from high-risk immigrants on numerous characteristics, including age, marital status, area of residence, household income, language spoken at home, language of interview, length of time spent in

Canada since immigration, proportion of life spent in Canada, history of hysterectomy, and perceived health.

Table 4.8: Descriptive characteristics of immigrant sample

Variables	Low-Risk %	High-Risk %	P value/ 95% CI
Age			<0.001
18 - 29	12.94	15.66	
30 - 39	19.64	28.69	
40 - 49	24.52	26.00	
50 - 59	24.86	20.15	
60 - 69	18.04	9.51	
Marital status			<0.001
Married/Common-law	67.59	78.56	
Widowed/Separated/Divorced	19.21	9.50	
Single, Never Married	13.21	11.94	
Area of residence			<0.001
Urban	93.92	99.61	
Rural	6.08	0.39	
Location of Birth			
North America	7.44	9.80	
South, Central America and Caribbean	24.46		
Europe	54.72		
Africa & Oceania	8.07		
Asia	5.30	90.20	
Education			0.97
Some Secondary School	13.42	13.38	
Secondary School Graduation	18.88	18.18	
Some Post-Secondary	6.32	5.78	
Post-Secondary Graduation	61.37	62.67	
Household Income			0.04
\$0 - \$14,999	5.14	5.18	
\$15,000 - \$29,999	12.17	9.54	
\$30,000 - \$49,999	16.79	18.88	
\$50,000 - \$79,999	23.04	28.46	
\$80,000+	31.48	24.41	
Missing	11.37	13.54	
Language Spoken at Home			<0.001
English and/or French	69.85	37.30	
Not English and/or French (Other)	30.15	62.70	

Language of Interview			<0.001
English and/or French	95.80	87.76	
Not English and/or French (Other)	4.20	12.24	
Length of Time Spent in Canada Since Immigration (Mean)	26.13	14.71	25.17-27.08 ^a 13.71-15.71 ^b
Proportion of life Spent in Canada (Mean)	0.53	0.33	0.51-0.55 ^a 0.31-0.35 ^b
Proportion of Life in Canada			<0.001
Up to ¼ of life	20.19	43.34	
More than ¼ to ½ of life	23.10	31.30	
More than ½ to ¾ of life	33.94	20.68	
More than ¾ of life	22.78	4.68	
History of Hysterectomy			<0.001
No	77.05	86.29	
Missing	22.95	13.71	
Perceived Health			0.002
Excellent	22.67	16.08	
Very Good	35.46	33.64	
Good	28.53	38.69	
Fair	8.94	9.41	
Poor	4.40	2.17	
Access to a Regular Medical Doctor			0.63
Yes	91.55	92.31	
No	8.45	7.69	
^a Low-risk			
^b High risk			
CI Confidence Interval			

Overall, 21.73% of immigrant women in Ontario did not report a time-appropriate Pap test. The top three reasons given by immigrant women who had not had a Pap test in the past three years were that they did not get around to it, they did not think the test was necessary, or that their doctor did not think it was necessary. High-risk immigrant women were more likely to indicate that they did not think the test was necessary, and marginally more likely to indicate that their doctor did not think the test was necessary, compared to the low-risk group (see Table 4.9).

Table 4.9: Pap test history among immigrant women

Variables	Low-Risk %	High-Risk %	P Value
Last Time Had a Pap Smear Test			<0.001
Less than 3 years ago			
Less than 6 months ago	25.03	20.13	
6 months to less than 1 year ago	34.26	31.05	
1 year to less than 3 years ago	23.81	20.15	
3+ Years Ago/Never			
3 years to less than 5 years ago	4.81	4.78	
5 or more years ago	5.10	3.47	
Never	6.99	20.42	
Top Reasons For Not Having a Recent Pap Test^a			
Have not gotten around to it	29.11	21.56	0.16
Respondent didn't think necessary	33.89	54.77	0.001
Doctor didn't think necessary	15.24	24.32	0.06
Did not know where to go	6.47	2.80	0.15
Fear	3.38	1.17	0.09
Hate/dislike having one done	5.25	2.73	0.23
Other	13.47	7.75	0.10

^a Among those who did not report having a Pap test within the past 3 years

Addressing Objective 3, Chi Square analyses identified that immigrant women who spoke a language other than English or French at home were more likely to report not having a time-appropriate Pap test, compared to those who spoke English and/or French at home (27.10% vs. 17.60%, respectively; $\chi^2 (1) = 12.78, p = 0.0003$). Among women in the low-risk group, those who spoke a language other than English or French at home were more likely to report not having a time-appropriate Pap test, compared to those who spoke English and/or French at home (21.54% vs. 14.89%, respectively; $\chi^2 (1) = 5.39, p = 0.02$).

Immigrant women who reported a lower proportion of life lived in Canada were more likely to report not having a time-appropriate Pap test, compared to those reporting a higher proportion (mean: 0.38, SE: 0.02, 95% CI: 0.35-0.42 vs. mean: 0.47, SE: 0.01, 95% CI: 0.45-0.48, respectively). Lastly, immigrant women who reported a shorter length of time in Canada since immigration were more likely to report not having a time-appropriate Pap test, compared to those

reporting a longer length of time (mean: 18.95, SE: 0.91, 95% CI: 17.16-20.73 vs. mean: 22.11, SE: 0.41, 95% CI: 21.30-22.92, respectively). The remaining comparisons were not significant.

4.3.3.2 Multivariate analyses: High-risk group

Addressing Objective 4, logistic regression analyses identified factors associated with not having a time-appropriate Pap test among women in the high-risk group. Women who reported less than a secondary school graduation education and did not have access to a regular medical doctor were more likely to report not having a time-appropriate Pap test (see Table 4.10).

Table 4.10: Odds ratios for not having a time-appropriate Pap test, final model: High-risk group

Variables	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age (ref=18-29)		
30 - 39	0.76 (0.44-1.30)	0.71 (0.39-1.30)
40 - 49	0.66 (0.37-1.20)	0.67 (0.34-1.31)
50 - 59	0.78 (0.34-1.80)	0.74 (0.34-1.63)
60 - 69	1.9 (0.95-3.79)	1.66 (0.76-3.63)
Education (ref= Post-Secondary Graduation)		
Some Secondary School	2.42* (1.15-5.09)	2.18* (1.03-4.61)
Secondary School Graduation	1.59 (0.89-2.83)	1.52 (0.80-2.89)
Some Post-Secondary	0.78 (0.31-1.96)	0.68 (0.25-1.83)
Household Income (ref=\$80,000+)		
\$0 - \$14,999	1.85 (0.80-4.27)	1.34 (0.52-3.47)
\$15,000 - \$29,999	1.7 (0.67-4.29)	1.32 (0.50-3.45)
\$30,000 - \$49,999	1.55 (0.82-2.92)	1.28 (0.64-2.57)
\$50,000 - \$79,999	0.80 (0.43-1.51)	0.76 (0.40-1.47)
Missing	2.15* (1.01-4.58)	1.52 (0.69-3.33)
Access to a Regular Medical Doctor (ref=Yes)		
No	2.64** (1.26-5.53)	2.96** (1.31-6.73)
Location of Birth (ref=Other)		
Asia	1.51 (0.79-2.90)	1.47 (0.67-3.24)

* p<0.05, ** p<0.01; OR Odds Ratio; CI Confidence Interval

Evaluating the importance of removed variables: Two variables were removed from the high-risk logistic regression using backward selection, creating three models. The importance of the first removed variable ‘language spoken at home’ was calculated as follows:

$$(-2 \text{ Log Likelihood: Model 2}) - (-2 \text{ Log Likelihood: Model 1})$$

$$2168.04 - 2168.01 = 0.03, \text{ df} = 1$$

Calibrating the results in a χ^2 distribution identified that the difference between the two models was not significant at the 0.05 level, indicating that the removed variable ‘language spoken at home’ was not important in predicting the outcome. Similarly, the importance of the second removed variable ‘location of birth’ was calculated as follows:

$$(-2 \text{ Log Likelihood: Model 3}) - (-2 \text{ Log Likelihood: Model 2})$$

$$2172.25 - 2168.04 = 4.21, \text{ df} = 1$$

Calibrating the results in a χ^2 distribution identified that the difference between the two models was significant at the 0.05 level. Thus, Model 2 was kept as the final model.

Evaluating goodness-of-fit of model: Using the Hosmer-Lemeshow goodness-of-fit test, the final model was deemed to be ‘good’ as most of the subjects with outcome 0 were in the higher deciles of risk and most of the subjects with outcome 1 were in the lower deciles of risk.

Additionally, comparing the constant-only model to the final model, the Likelihood Ratio Chi square test was significant ($\chi^2 (14) = 147.32, p < 0.0001$), concluding that the group of independent variables better predicted the outcome compared to the constant-only model.

4.3.3.3 Multivariate analyses: Low-risk group

Addressing Objective 4, logistic regression analyses identified factors associated with not having a time-appropriate Pap test among women in the low-risk group. Women who were 50 to 59 years old, reported a household income of \$15,000 to \$29,999, did not have access to a

regular doctor, and spent up to a quarter of their lives in Canada were more likely to report not having a time-appropriate Pap test (see Table 4.11).

Table 4.11: Odds ratios for not having a time-appropriate Pap test, final model: Low-risk group

Variables	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age (ref=18-29)		
30 - 39	0.59 (0.29-1.18)	0.79 (0.32-1.92)
40 - 49	0.70 (0.34-1.44)	1.01 (0.42-2.39)
50 - 59	1.37 (0.71-2.61)	2.31* (1.00-5.32)
60 - 69	1.37 (0.75-2.52)	1.91 (0.85-4.28)
Marital status (ref= Married/Common-law)		
Widowed/Separated/Divorced	1.60* (1.01-2.54)	1.36 (0.87-2.14)
Single, Never Married	0.98 (0.58-1.64)	1.19 (0.66-2.14)
Education (ref= Post-Secondary Graduation)		
Some Secondary School	2.12** (1.30-3.45)	1.53 (0.93-2.50)
Secondary School Graduation	1.09 (0.68-1.74)	1.00 (0.61-1.64)
Some Post-Secondary	1.06 (0.50-2.25)	0.78 (0.36-1.68)
Household Income (ref=\$80,000+)		
\$0 - \$14,999	2.93* (1.19-7.23)	1.89 (0.82-4.34)
\$15,000 - \$29,999	2.58** (1.36-4.89)	2.14* (1.08-4.26)
\$30,000 - \$49,999	1.90* (1.09-3.32)	1.63 (0.93-2.86)
\$50,000 - \$79,999	1.24 (0.73-2.10)	1.30 (0.76-2.25)
Missing	1.81 (0.98-3.35)	1.24 (0.66-2.35)
Location of Birth (ref=North America)		
South, Central America & Caribbean	1.00 (0.49-2.06)	0.79 (0.36-1.71)
Europe	1.58 (0.90-2.77)	1.49 (0.80-2.76)
Africa & Oceania	1.28 (0.59-2.80)	1.09 (0.45-2.59)
Asia	2.53 (0.82-7.76)	1.77 (0.61-5.14)
Perceived Health (ref=Excellent)		
Very good	1.31 (0.76-2.25)	1.07 (0.61-1.89)
Good	1.39 (0.86-2.27)	1.02 (0.61-1.73)
Fair	1.24 (0.61-2.50)	0.89 (0.42-1.86)
Poor	2.97** (1.31-6.76)	2.03 (0.82-5.01)
Access to a Regular Medical Doctor (ref=Yes)		
No	2.67*** (1.57-4.56)	3.26*** (1.79-5.93)
Proportion of Life in Canada (ref=More than ¾ of life)		
Up to ¼ of life	2.29** (1.41-3.71)	2.89*** (1.61-5.21)

More than ¼ to ½ of life	0.84 (0.53-1.35)	0.99 (0.58-1.70)
More than ½ to ¾ of life	1.26 (0.81-1.95)	1.16 (0.74-1.84)

* p<0.05, ** p<0.01, *** p<0.001; OR Odds Ratio; CI Confidence Interval

Evaluating the importance of removed variables: Three variables were removed from the logistic regression using backward selection, creating four models. The importance of the first removed variable ‘history of hysterectomy’ was calculated as follows:

$$\begin{aligned} &(-2 \text{ Log Likelihood: Model 2}) - (-2 \text{ Log Likelihood: Model 1}) \\ &2236.94 - 2236.91 = 0.03, \text{ df} = 1 \end{aligned}$$

Calibrating the results in a χ^2 distribution identified that the difference between the two models was not significant at the 0.05 level, indicating that the removed variable ‘history of hysterectomy’ was not important in predicting the outcome. Similarly, the importance of the second removed variable ‘language spoken at home’ was calculated as follows:

$$\begin{aligned} &(-2 \text{ Log Likelihood: Model 3}) - (-2 \text{ Log Likelihood: Model 2}) \\ &2238.13 - 2236.94 = 1.19, \text{ df} = 1 \end{aligned}$$

Calibrating the results in a χ^2 distribution identified that the difference between the two models was not significant at the 0.05 level, indicating that the removed variable ‘language spoken at home’ was not important in predicting the outcome. The importance of the third removed variable ‘location of birth’ was calculated as follows:

$$\begin{aligned} &(-2 \text{ Log Likelihood: Model 4}) - (-2 \text{ Log Likelihood: Model 3}) \\ &2260.31 - 2238.13 = 22.18, \text{ df} = 1 \end{aligned}$$

Calibrating the results in a χ^2 distribution identified that the difference between the two models was significant at the 0.05 level. Thus, Model 3 was kept as the final model.

Evaluating goodness-of-fit of model: Using the Hosmer-Lemeshow goodness-of-fit test, the final model was deemed to be ‘good’ as most of the subjects with outcome 0 were in the higher deciles of risk and most of the subjects with outcome 1 were in the lower deciles of risk. Additionally, comparing the constant-only model to the final model, the Likelihood Ratio Chi square test was significant ($\chi^2 (26) = 244.87, p < 0.0001$), concluding that the group of independent variables better predicted the outcome compared to the constant-only model.

4.4 Discussion

4.4.1 Participation in cervical cancer screening

Findings highlighted that 16.8% of all women and 21.73% of immigrant women in Ontario did not report a time-appropriate Pap test, indicating that a percentage of women in Ontario remain underscreened and more efforts are needed to reach the screening goal in Ontario. These rates may also be underestimates due to self-reporting. Using administrative data, Lofters, Hwang, Moineddin, and Glazier (2010) reported that only 61.3% of Ontario women had a time-appropriate Pap test (38.7% underscreened). In another study, Lofters, Moineddin, Hwang, and Glazier (2011) found that only 53.1% of Ontario immigrant women living in urban areas had a time-appropriate Pap test (46.9% underscreened).

The three most common reported reasons for not getting a time-appropriate Pap test consisted of: (1) not getting around to it, (2) not thinking it was necessary, and (3) the doctor not thinking it was necessary, consistent with past research (Xiong et al., 2010). Women identifying that they did not get around to it and thinking that a Pap test within the past three years was not necessary indicates the influence of held knowledge and beliefs towards Pap tests, in addition to low risk perception. A gap in knowledge may be present among underscreened women in terms

of the importance in obtaining regular Pap tests. Additionally, women may have competing priorities in their lives and place screening as less important or urgent. Women also indicated that they did not get a Pap test within the past three years because their doctor did not think it was necessary, indicating the influence of doctors on women's screening decision-making. Additionally, it may reflect doctors' deviation from Canadian cervical cancer screening recommendations. A past study found that physicians' perception of screening guidelines diverged from Canadian Task Force guidelines set up for specific cancer screening (Tudiver et al., 2002).

Findings also indicated that immigrant women are less likely to be screened than non-immigrant women, consistent with past research (Akers, Newmann, & Smith, 2007; Blackwell, Martinez, & Gentleman, 2008; Xiong et al., 2010) and highlighting that inequities in screening persist. Immigrant women were more likely than non-immigrant women to indicate that they did not get a Pap test within the last three years because they did not think the test was necessary, a finding previously reported (Xiong et al., 2010). Immigrant women may be less familiar with the importance or purpose of Pap tests depending on their home countries' health and screening priorities. Among non-immigrant women, their lack of participation in cervical cancer screening in the past three years was more likely due to not getting around to it, highlighting possible competing priorities and lack of urgency or low risk perception.

Additionally, Pap test participation among immigrant and non-immigrant women differed across cultural/racial backgrounds. White immigrant women were less likely to report having a time-appropriate Pap test compared to White non-immigrants, and other Asian immigrants were also marginally less likely to report a time-appropriate Pap test compared to other Asian non-immigrants. The lack of association between immigration status and Pap test participation among

other cultural/racial groups may indicate that immigrant status may not be associated with screening among other cultural/racial groups. The lack of association may also have been due to the sample size among immigrants, which was further reduced by stratifying by cultural/racial background. However, results may also have been influenced by other unaccounted variables, such as the distribution of age groups, which differed by immigrant status. Recentness of immigration may also have played a role in the lack of association between immigrant status and Pap test participation among certain cultural/racial groups.

White, Black, and all other immigrant women (except for Chinese, South Asian, and other Asian) were categorized as low risk due to lower rates of time-inappropriate Pap test participation (16.90%), and Chinese, South Asian, and other Asian immigrant women were categorized as high risk, due to higher rates of time-inappropriate Pap test participation (28.67%). These rates are not surprising when considering that cervical cancer screening rates are low in Asian countries, such as in Bangladesh (Gakidou et al., 2008), Kuwait (Al Sairafi & Mohamed, 2009), Jordan (Barghouti, Takruri, & Froelicher, 2008), Thailand (Thanappapasr, Deesamer, Sujintawong, Udomsubpayakul, & Wilailak, 2012) and higher in European and Latin American countries (Gakidou et al., 2008). However, rates are also low among African countries (Gakidou et al., 2008) but the CCHS Ontario sample consisted of a larger proportion of immigrant women from South and Latin American and the Caribbean than from Africa. These findings are also similar to past research highlighting that Indo-Canadian women were more likely to be underscreened compared to Euro-Canadians (Brotto et al., 2008). Additionally, high-risk immigrant women were more likely to indicate that they did not think the test was necessary and marginally more likely to indicate that their doctor did not think the test was necessary, compared to the low-risk group. This may be an indication of a knowledge gap in terms of the

purpose and importance of Pap tests among the high-risk group. Additionally, there may exist cultural differences in terms of doctors recommending the Pap tests to their patients. For example, De Alba and Sweningson (2006) found that women who were proficient in English were more likely to get a Pap test recommendation from their doctors, compared to those less proficient with English.

Overall, findings highlight that inequities in cervical cancer screening persist and have implications for public health planning. Screening efforts must be targeted to those less likely to get a time-appropriate Pap test in order to reduce inequities and improve screening rates among all women.

4.4.2 Factors associated with screening

4.4.2.1 Full sample

Findings identified that women who were 40-69 years old, single, had low education and income, did not have a regular doctor, were of Asian (Chinese, South Asian, other Asian) cultural background, perceiving having less than excellent health, and who were a recent immigrant were more likely to report not having a time-appropriate Pap test. Sociodemographic factors such as age, marital status, education, and income have consistently been reported to be associated with cervical cancer screening and other cancer screening, such as mammography (Akers et al., 2007; Amankwah, Ngwakongnwi, & Quan, 2009; Kaida, Colman, & Janssen, 2008; C. J. Maxwell, Bancej, Snider, & Vik, 2001; Park, Park, Choi, Jun, & Lee, 2011; Shields & Wilkins, 2009). Older women may have other health-related priorities and thus not place high importance on Pap tests, especially if they do not think the test is necessary. Women with low SES may have less knowledge on the importance and purpose of getting Pap tests (Akers et al., 2007) or may have fewer opportunities to take time off work to visit the doctor. Single women

may have less social support compared to married women and thus may be less likely to receive encouragement and advice to get screened. Additionally, single women may hold more responsibilities at home without the help of a partner, and have less time to get a Pap test (Branoff, Santi, Campbell, Roetzheim, & Oler, 1997).

The finding that women who perceive having less than excellent health are more likely to not have a time-appropriate Pap test may be due to placing priority on more demanding health issues, compared to focusing on secondary prevention methods. Past research has identified that those with many co-morbidities are less likely to screen for cervical cancer (Lofters, Hwang, et al., 2010). Results also indicated that recent immigrants and women from an Asian cultural background are less likely to get a recent Pap test. These findings are consistent with past studies (Amankwah et al., 2009; Lofters et al., 2007; Lofters, Moineddin, et al., 2010; C. J. Maxwell et al., 2001; McDonald & Kennedy, 2007; Woltman & Newbold, 2007; Xiong et al., 2010). Recent immigrants may face challenges due to immigration and cultural differences (N. Fowler, 1998) such as language difficulties (Saldov, 1991; Weerasinghe, Mitchell, Hamilton, & Ragheb, 2000) and migration stress (George & Ramkissoon, 1998; Meleis & Hatter-Pollard, 1995). Additionally, recent immigrants may not be familiar with Pap tests or the Canadian health care system in general. Women from different cultural backgrounds may hold values or beliefs that are incompatible with Western ones which may serve as unique barriers to participation in recommended health screening, such as screening without the presence of symptoms and holding values related to modesty and keeping the body private (Schoueri-Mychasiw, Campbell, & Mai, 2012). Women from Asian backgrounds have been especially highlighted in past research as being less likely to get a Pap test (Akers et al., 2007; Amankwah et al., 2009; C. J. Maxwell et al., 2001) and may be due to cultural factors as discussed above, or a lack of culturally-

appropriate services or lack of access to them. Additionally, recent immigrants and those of Asian cultural/racial background may have low health literacy (Akers et al., 2007; Todd & Hoffman-Goetz, 2011), which has been associated with a decreased likelihood of participating in cancer screening (Garbers & Chiasson, 2004).

Having a regular doctor was also associated with Pap test participation and is consistent with past research (Akers et al., 2007; Amankwah et al., 2009; Kaida et al., 2008; C. J. Maxwell et al., 2001). Having a regular doctor may be an indication of access to care, providing women with the mechanism to obtain a Pap test. This strong finding underscores the importance of having access to a doctor and their influence on women's health decisions and behaviour through screening recommendations and/or referrals.

4.4.2.2 Immigrant sample

Among women in the high-risk immigrant group, those who reported less than a secondary school graduation education and did not have access to a regular medical doctor were more likely to report not having a time-appropriate Pap test. In comparison, women in the low-risk group who were 50 to 59 years old, reported a household income of \$15,000 to \$29,999, did not have access to a regular doctor, and spent up to a quarter of their lives in Canada were more likely to report not having a time-appropriate Pap test.

The association in both groups between access to a regular doctor and cervical cancer screening among immigrant women has been previously reported (Lofters, Hwang, et al., 2010; Lofters et al., 2011) and underscores the importance of having a regular doctor. Low education was an important predictor of not having a time-appropriate Pap test among the high-risk group, but not among the low-risk one. Similarly, older age and a lower income were predictive of not having a time-appropriate Pap test among the low-risk group, but not among the high-risk one.

Time-inappropriate cervical cancer screening and older age has been reported previously, as has the association between lower income and cervical cancer screening among immigrant women (Lofters, Hwang, et al., 2010). These SES differences between cultural/racial backgrounds highlight the heterogeneity among immigrant women.

Study 1 findings on factors associated with cervical cancer screening have the potential to inform public health planning in terms of who or what needs to be considered when creating social marketing campaigns and screening programs. Moving in this direction will allow for the development of evidence-based programs with the goal of improving screening rates among both immigrant and non-immigrant women.

4.4.3 Acculturation and screening

Among the low-risk group, having spent a smaller proportion of life in Canada was predictive of not having a time-appropriate Pap test, consistent with past research (Lebrun, 2012; McDonald & Kennedy, 2007; Tsui et al., 2007). However, contrary to our expectations, acculturation proxies were not found to be associated with Pap test participation among the high-risk group. Language spoken at home was associated with Pap test participation among the full sample but did not predict participation once other factors were taken into account, such as immigrant status and education level. However, this finding is in line with previous research indicating no association between English and/or French language ability and Pap test participation (Hislop et al., 2003; Hislop et al., 2000; Xiong et al., 2010).

The finding that women who speak another language other than English or French at home are less likely to report a Pap test has been reported in past research (Woloshin, Schwartz, Katz, & Welch, 1997). It is interesting to note that the association between language spoken at home and screening among the high-risk group was not significant at the bivariate level. This may be

due to the fact that immigrant women from Asian countries consistently report lower screening rates, irrespective of acculturation levels. For example, McDonald and Kennedy (2007) reported that Pap test rates among White, Black, and Hispanic immigrants eventually reached Canadian-born rates after 15 to 20 years in Canada, but rates among women from Asian countries never reached Canadian-born rates. This may be due to cultural barriers to screening, such as held beliefs and knowledge towards Pap tests.

Immigrant women who reported a lower proportion of life lived in Canada were more likely to report not having a time-appropriate Pap test, compared to those reporting a higher proportion. Similarly, immigrant women who reported a shorter length of time in Canada since immigration were more likely to report not having a time-appropriate Pap test, compared to those reporting a longer length of time. These results are consistent with past research exploring acculturation and screening both in Canada and the USA (Lebrun, 2012). The association between duration in Canada and screening may be mediated by other factors, such as familiarity with the health care system, Pap tests and cervical cancer knowledge, and beliefs and attitudes towards Pap tests and cervical cancer.

Study 1 findings illustrate the variability of results regarding the association between acculturation and cervical cancer screening. It also identifies the importance of other factors, such as SES and having access to a regular doctor, which may be more critical in understanding participation in cervical cancer screening. Overall findings strengthen existing literature on inequities in cervical cancer screening participation and offer direction on who and what factors to target via public health planning efforts.

CHAPTER 5: CERVICAL CANCER SCREENING DECISION-MAKING AMONG OLDER SOUTH ASIAN IMMIGRANT WOMEN

Objective 1: To develop a preliminary theory to understand what factors influence older South Asian immigrant women's decision to participate in cervical cancer screening.

Objective 2: To explore if and how acculturation influences the decision to participate in cervical cancer screening among older South Asian immigrant women.

5.1 Introduction

Immigrant women in Canada and the US are less likely to participate in cervical cancer screening compared to non-immigrant women (Brotto et al., 2008; Echeverria & Carrasquillo, 2006; Lofters, Moineddin, et al., 2010; McDonald & Kennedy, 2007; Tsui et al., 2007; Woltman & Newbold, 2007; Xiong et al., 2010). Specifically, older South Asian immigrant women have reported lower Pap test participation rates compared to other immigrant women, as illustrated in Appendix A and in past research (Lofters, Hwang, et al., 2010). For example, studies have reported Pap test participation rates between 33% to 47.9% among South Asian immigrant women (Mehrotra, Gaur, & Petrova, 2012; Menon, Szalacha, & Prabhugate, 2012).

Limited research has been conducted on cervical cancer screening among South Asian immigrant women. The research that is available identified factors associated with screening and have included education, past cancer screening behaviour, language acculturation (Menon et al., 2012), lack of knowledge regarding Pap tests and cervical cancer, language barriers, and differing health beliefs (Gupta et al., 2002). The association between acculturation and cancer

screening is complex and needs further research. However, low acculturation has been linked to a decreased likelihood of screening among South Asian women, possibly through mechanisms such as low Pap test knowledge, which is associated with low acculturation (Gupta et al., 2002) and language proficiency (Ahmed & Lemkau, 2000).

It is crucial to focus on immigrant women in terms of increasing their participation in cervical cancer screening due to their lower participation rates. In order to do so, we need to understand the reasons underlying their lower participation rates and the barriers that impede them from not only getting screened, but also from making the *decision* to get screened. In order to be successful at reducing health inequities, an important aim for many population health strategies, we must understand why these inequities exist in the first place. Among South Asian immigrant women, there may be unique barriers to screening. Given these needs and the fact that South Asians make up the largest visible minority group in Canada (Statistics Canada, 2011a), the current study aimed to develop a preliminary theory to illustrate the influence of factors, such as acculturation, involved in the decision to get a Pap test among older South Asian immigrant women.

5.2 Methods

5.2.1 Grounded theory methodology

Study 2 was informed by grounded theory methodology; a methodology developed by Glaser and Strauss (1967). Grounded theory is used to develop a theory of a process, action, or interaction based on collected data from participants (Creswell, 2003) and takes form via the interaction between data collection and analysis, which occurs simultaneously (Charmaz, 2002; Strauss & Corbin, 1998). Two of the main characteristics of grounded theory are theoretical

sampling and the method of constant comparative analysis (Corbin & Strauss, 2008), further discussed in section 5.2.6.

Grounded theory methodology was an appropriate strategy to use in Study 2 for at least three reasons. First, one of the aims of the study was to *discover* the decision-making process that precedes participation or non-participation in cervical cancer screening, as opposed to *testing* a pre-determined model or variables, a distinguishing feature of qualitative research and grounded theory methodology (Corbin & Strauss, 2008). Second, due to the gap in the literature regarding the process in which immigrant women decide to get screened or not and the influence of the acculturation process on this decision, the development of a preliminary theory grounded in the experiences of immigrant women was thought to be useful. Third, the application of grounded theory methodology has frequently been used in health research (Mullen, 1985-86) and has been used to describe and explain decision-making processes pertaining to one's health. For example, grounded theory was used in studies identifying mammography decision-making processes (Canales & Geller, 2004; B. A. Fowler, 2006; Greco, Nail, Kendall, Cartwright, & Messecar, 2010; Purtzer, 2010) and breast (Lam, Fielding, Chan, Chow, & Or, 2005) or prostate (O'Rourke, 1999) cancer treatment decision-making processes.

5.2.2 Design

Conducting in-depth or one-on-one interviews has been reported to be a well-suited data collection method for grounded theory (Charmaz, 2002). One-on-one interviewing was chosen for Study 2 for at least two reasons. First, this type of interview allows the acquisition of detailed and in-depth information from participants compared to other interview techniques, such as focus groups, where we may only get surface information (Campanelli, 2008; Powell & Single, 1996) due to the limited talk time each participant has in a group. Second, the one-on-one

interview may arguably have been better suited for the personal and sensitive information gathered, as interviews were private (Nichols, 1991).

5.2.3 Population and sample

Due to the fact that acculturation may influence health behaviour differently in different cultural/racial groups (Corral & Landrine, 2008), interviews were conducted among a specific group. The population of interest was based on preliminary results of Canadian Community Health Survey (CCHS) analyses from Study 1, which identified a specific group of immigrant women less likely to participate in cervical cancer screening based on age, education, and culture/racial background. CCHS analyses illustrated that immigrant women of South Asian background, aged between 50-69 years old, with up to a secondary school education were less likely to have had a recent Pap test (Lofters, Hwang, et al., 2010). See Appendix A for the steps taken to identify the population for Study 2.

5.2.3.1 Eligibility criteria

To be eligible for participation in the study, participants must: (1) have been female, (2) have been aged 50-69 years old, (3) have had up to a secondary school graduation education, (4) have been a first- or second-generation immigrant²¹ of South Asian descent, (5) have been able to comprehend, speak, read, and write English, (6) not have been diagnosed with cervical cancer²², and (7) not have had a full hysterectomy.

The eligibility criteria was modified a month after recruitment began based on feedback from contacts at key organizations working with the target population. The feedback pertained to the education criteria, where participants had to have a high school education or less in addition to

²¹ To ensure broad levels of acculturation.

²² We did not exclude women who had previous positive Pap tests or other gynecological issues.

understanding, speaking, reading, and writing in English. The concern was that it would be very difficult to find low educated women who were comfortable with the English language. Based on the feedback and the difficulty in recruiting participants during the first month, the education criteria was removed in consultation with the researcher's supervisor and ethics modification clearance. Participation in the study increased soon after.

5.2.4 Recruitment

Participants were recruited from both Toronto and Waterloo regions in several ways: (1) advertising using posters placed around immigrant and multicultural organizations, (2) advertising through contacts at key organizations, such as community and health centres working with the target population, (3) snowball sampling through participants, (4) advertising at a South Asian fair, and (5) through the Ontario Women's Health Network (OWHN) mass email list. Refer to Appendix B for recruitment material. Screening participation was tracked among participants with the purpose of recruiting an approximately equal number of screened and underscreened women.

Potential participants were directed to an email address and phone number to indicate their interest in participating in Study 2 and screening for eligibility followed over the phone (see Appendix C for the eligibility screening form). If participants were eligible, they were asked to select an interview date and time. Interviews took place in multicultural centres (Focus for Ethnic Women (FEW) in Waterloo and the South Asian Women's Centre (SAWC) in Toronto), community housing in Scarborough, and a Sikh temple in Toronto. Conducting interviews from these locations was intended to offer as many participants as possible a convenient, safe, and

familiar environment. Recruitment of participants was ongoing and continued until saturation²³ of the data was reached, as data analysis was conducted simultaneously (Charmaz, 2002).

5.2.5 Remuneration

Participants were offered remuneration of \$25 cash as a token of appreciation for their time and covering any transportation costs incurred due to participating in the study. A receipt was signed by both the participant and interviewer at the end of the study to acknowledge payment. A copy was given to the participant and one was retained by the research team (see Appendix E for a copy of the receipt).

5.2.6 Data collection and analysis

In accordance with grounded theory literature (Charmaz, 2002; Corbin & Strauss, 2008), data collection, coding, and analysis were conducted simultaneously as much as possible. Coding data consisted of a three-step process beginning with open coding, axial coding, and selective coding, further discussed in section 5.2.6.3. In addition to alternating between data collection and data analysis, steps taken while coding did not follow a linear step-by-step approach²⁴ but instead alternated throughout.

Since data collection and analysis occurred simultaneously, questions, ambiguities, or leads that arose through early data analysis directed further data collection, or theoretical sampling²⁵ (Charmaz, 2002), creating a cyclical process. For example, once it became clear that the influence of doctors was a key theme throughout interviews, a question was added among those

²³ When new data no longer offered new information (Boeije, 2002).

²⁴ Compared to analyses that may go through steps one after another in a linear manner, analyses in Study 2 jumped to different steps in a non-linear manner. For example, analyses began at step 1 (open coding), continued to steps 2 (axial coding) and 3 (selective coding), and subsequently went back to step 1 or 2.

²⁵ Theoretical sampling is defined as “[a] method of data collection based on concepts/themes derived from data. The purpose of theoretical sampling is to collect data from places, people, and events that will maximize opportunities to develop concepts in terms of their properties and dimensions, uncover variations, and identify relationships between concepts” (Corbin & Strauss, 2008, p. 143).

with a family doctor regarding their experience with finding their doctors, sampling the concept of access to physicians. It was felt that more discussion was needed in terms of barriers and facilitators to screening, and questions targeting these concepts were added to the interview guide. Also, efforts to recruit both screened and underscreened women and women born from various countries within South Asia were important to increase the variations and dimensions within and between concepts.

Additionally, a constant-comparative method of analysis was used whereby data from within and across interviews was constantly compared in order to derive and code themes. As theoretical sampling was employed, comparisons were made between already analyzed data and new data (Boeije, 2002). Using the constant-comparative method also allowed the identification of deviant data, and incorporating that information into the developed preliminary theory may have increased the validity of the theory (Green, 1998).

5.2.6.1 The interview process and measures

The researcher (PhD candidate) conducted English-language semi-structured interviews with participants, one-on-one. It was recognized that some immigrant women who indicated that they were comfortable with the English language might still have difficulty conveying concepts or expressing detailed or subtle concepts in English. In the few cases where a need for a bilingual interviewer existed, either based on language eligibility questions (see Appendix C for the eligibility form, questions 8-10) or by participant request, one was provided to them.

Multilingual interviewers were recruited from the two multicultural organizations where interviews took place (FEW and SAWC) and were trained on how to conduct the interviews, thus increasing research capacity by teaching qualitative interviewing skills. Care was taken to recruit all female interviewers. Three interviewers were recruited from Toronto and one from

Waterloo to cover the four main South Asian languages (i.e., Hindi, Urdu, Tamil, and Punjabi). Training sessions (one 5-hour day and several shorter meetings) were conducted in Toronto with two interviewers who were paid \$225 for their time. It was decided to hold off on training the remaining interviewers until the need arose, which did not occur. Trained interviewers were also paid \$50 per interview.

All interviews were tape-recorded using two battery-operated voice recorders in case one malfunctioned. The researcher attended interviews conducted by multilingual interviewers in order to ensure consistency across interviews and in case questions or concerns arose. None of the participants reported any problems with this arrangement. Interviews began with a short overview of the study and the interview process, along with assuring the confidentiality of participants. Participants were also advised that they could decline to answer any questions and had the option to withdraw from the study at any time without penalty. The consent form was explained to participants and they provided informed consent by signing the form, which was available in English, Hindi, Punjabi, Tamil, and Urdu²⁶ (see Appendix B for the English version). The interview subsequently began and a questionnaire was administered at the end of the interview.

Interview measures: Semi-structured interview questions were developed to explore the process of cervical cancer screening decision-making and the influence of acculturation on this process. Most of the interview questions were adapted from past research, as identified in Appendix C. However, as theoretical sampling was employed, questions asked during the interviews were modified with the ongoing analysis of data collected (Corbin & Strauss, 2008), as previously discussed. The first four interviews were considered as pilot in order to make any major

²⁶ The consent form was professionally translated into the 4 South Asian languages and back translated to English by bilingual upper-year undergraduate student volunteers.

adjustments to questions. The flexibility of grounded theory methodology allowed change to occur among the interview questions in order to follow leads that arose during previous interviews (Charmaz, 2006). Changes made following these four interviews were not major and the pilot interviews were kept in the final analysis sample.

Questionnaire measures: A questionnaire was administered following the interview in order to collect data on the characteristics of the participants, including sociodemographic information, fatalism attitude, and acculturation (see Appendix C for the interview guide and questionnaire). The questions included in the questionnaire were developed to match those from the CCHS wherever possible.

Acculturation was measured using similar proxies as were used in the CCHS—language(s) most often spoken at home, length of time in Canada since immigration, and age at immigration—in order to calculate proportion of life spent in Canada. In addition, the revised Suinn-Lew Asian Self Identity Acculturation (SL-ASIA) scale was administered (see Appendix C for the questionnaire, questions 17-42) and follows the bidimensional approach to acculturation (Suinn, n.d.) in accordance with the acculturation alignment of this thesis. The scale was developed for an Asian population; thus, minor wording changes were made to the SL-ASIA to make it relevant for a South Asian population, as has been done in past research (Iyer & Haslam, 2003; Kumar & Nevid, 2010; Reddy & Crowther, 2007). For example, ‘Asian’ was changed to ‘South Asian’. The 26-item SL-ASIA measures various acculturation dimensions, such as language, traditions, food, friends, and generational background. Items are rated differently, with most using multiple-choice options and four items rated on a 5-point scale ranging from 1 (do not believe/fit in) to 5 (strongly believe/fit very well). The sum of the first 21 items, divided by 21, reflects the participants’ acculturation score. Scores can range from 1 (low

acculturation) to 5 (high acculturation). If two answers were chosen, the average score was used for that question. Missing data on questions (5 questions or less left blank) were dropped and the average score was calculated based on the remaining number of questions. Items 22-26 are used to classify participants using a bidimensional framework of acculturation (Suinn, n.d.).

Reliability, measured by Cronbach's alpha was .91. Concurrent validity for SL-ASIA ranged from .41 to .62 (Suinn et al., 1992). Among the studies applying the scale to South Asian populations, reliability ranged between .72 to .88 (Iyer & Haslam, 2003; Kumar & Nevid, 2010; Reddy & Crowther, 2007)²⁷.

Additionally, due to the influence of fatalism on screening behaviour, fatalism was measured using a 3-item subscale (see Appendix C for the questionnaire, questions 14-16) derived from the Cultural Cancer Screening Scale (CCSS) (H. Betancourt, Flynn, Riggs, & Garberoglio, 2010). Items are rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Reliability for the fatalism subscale, measured by Cronbach's alpha, ranged from .74 to .81 (H. Betancourt et al., 2010).

5.2.6.2 Field and reflective notes

Field notes were taken during and right after interviews in order to capture the interview environment (e.g., location, room set up, disruptions, background noise), non-verbal cues from participants, and any analytical thoughts that began to emerge from the researcher during data collection (Corbin & Strauss, 2008). Additionally, analytic memos were hand-written during several stages of analysis to record more in-depth and detailed thoughts and reflections (Corbin & Strauss, 2008) such as how the researcher came to a specific interpretation or conclusion. Analytic memos were taken during the first listen through the interview as well as during coding.

²⁷ Reliability and validity scores were calculated using the first 21 items on the SL-ASIA.

Two types of memos were taken during coding of interviews. The first was keeping track of thoughts that came to mind as coding took place. If a thought specifically related to a node came up, a separate electronic memo was created in NVivo, linked to the respective node.

5.2.6.3 Analysis: Coding data and theory building

Initially, interviews were reviewed before coding in order to capture ‘the big picture’. All interviews were listened to and transcripts were edited for any remaining transcription errors. Each transcript was uploaded in NVivo and assigned an attribute related to screening (screened or underscreened). As the first step in analysis, data was coded. It is acknowledged that in addition to the information reflected in the data, derived themes also reflected the researcher’s perspectives (Charmaz, 2002) and accumulated knowledge and experiences (Corbin & Strauss, 2008), being both a woman and an immigrant.

Open coding was conducted by breaking down the data through line-by-line coding, being as detailed as possible, identifying initial codes from the raw data (Charmaz, 2002; Corbin & Strauss, 2008). After coding several transcripts, initial codes were grouped into more manageable free nodes that were similar in concept, if possible. This was done by printing a list of the initial nodes and grouping them by hand into free nodes.

Axial coding was conducted in order to categorize the free nodes into major categories that made the most analytical sense to the topic at hand. Not all free nodes were grouped, keeping in mind not to force certain free nodes into major categories. Relating the emergent themes to one another also began at this stage and diagrams were used to organize the derived themes and their relationships to one another (Corbin & Strauss, 2008). Coding remaining transcripts continued, and grouping initial codes, free nodes, and major categories occurred simultaneously.

Finally, selective coding was conducted to integrate the themes and processes into a preliminary theory, identifying actions (e.g., sequence) and interactions between the emergent themes, and in turn, identifying a process. Lastly, descriptive univariate analyses were conducted using the data from the questionnaire in order to describe the sample.

5.2.6.4 Validation of interview methods and cultural interpretation

A fellow PhD candidate in the School of Public Health & Health Systems with past experience in interviewing listened to a subset (n=4) of the interviews and provided feedback on the quality and flow of the interviews. Feedback was incorporated into subsequent interviews. Additionally, clarification and interpretation of cultural concepts were obtained as needed during data analysis from members of the South Asian community.

5.2.7 Social location and reflexivity

Another important aspect of qualitative research includes the consideration of the researcher's social location and engagement in reflexivity, exploring the influence of the researcher on the research process (Corbin & Strauss, 2008). In an effort to be as transparent as possible, this section examines the researcher's social location in relation to Study 2 and describes efforts to remain reflexive.

I am a 30-year old immigrant woman from Beirut, Lebanon, and moved to Toronto, Ontario in my childhood years due to the political unrest in my home country. I have studied and worked in the health research field in Canada for the past 10 years and have focused on immigrant and minority health during the latter half of that time. During my time in health research, I became increasingly interested in health disparities across gender, race, ethnicity, and immigrant status and became passionate at understanding why these disparities existed in the first place, and how

they could be reduced. This desire prompted me to further my undergraduate education, and I pursued graduate studies. I completed a Master of Science degree before starting my PhD in Health Studies and I also worked on projects related to HIV prevention among Middle Eastern-Canadians, condom use and power inequality across gender, and breast cancer screening among immigrant and minority women.

My decision to focus my research in this area as a non-South Asian women stemmed from feeling that setting the research aside for only South Asian researchers would further marginalize the issue of low screening rates among South Asian women as a South Asian population ‘problem’ (Hall, 2004). Additionally, I was aware of the lack of research conducted among South Asians even though this population is growing in Canada. I felt that I could add to this gap in the literature and further the understanding of South Asian women’s experience with cervical cancer screening and have their voices heard. I felt that my background and experience in health research that focused on immigrant and minority health sensitized me to the cultural differences that exist across race, ethnicity, and immigrant status and its application to health behaviour, needs, and barriers. Additionally, I embarked on this research with some knowledge of immigrant experiences of South Asian women, stemming from close personal relationships with South Asian women.

In conducting Study 2, I was conscious of two major thoughts: first that I was embarking in the research as a young, non-South Asian woman, and second, that I had a point of commonality with the participants and felt sensitized to immigration issues because I have personal familiarity with such an experience, through my own and my family’s experience. However, I was aware that as much as I thought I had an understanding of such issues, I could not be completely familiar with the participants’ experiences, as they had emigrated from different home countries,

at different ages and stages of their lives, and for different reasons. As such, feeling sensitized to the participants' experiences may have led me to assume that I understood their experiences during interviews based on my own experiences, and not necessarily theirs. Additionally, it was clear that I was a young researcher conducting a study among older women. The stigma of age came up throughout the recruitment stage, whereby members from the South Asian community advised me that older women may not be comfortable identifying their age in front of their peers. In a sense, my younger age was an advantage in that women were concerned about identifying their age around women closer to their own age and efforts were made to discuss the study not only among women as a group, but in private as well. On the other hand, my younger age may have limited my understanding of health and health care experiences women may face at an older age. However, the procedure of reflecting my thoughts and steps in analysis in memos helped me to consistently assess my assumptions. Additionally, effort was concentrated on the repetition of emerging themes and focusing on the data in order to distance myself from my own experiences and assumptions.

I perceived myself to be an 'outsider' as I began to recruit participants from the multicultural organizations and the South Asian fair. I enlisted the help of South Asian settlement workers from the organizations, as well as a close South Asian friend who accompanied me to the South Asian fair in order to recruit participants. Over a short period of time, my regular presence, especially at the South Asian Women's Centre, allowed me to gain the trust not only of the employees at the centre, but also from the women attending. Additionally, discussions related to my cultural background aided the process of gaining trust and my interactions with women attending the centre became friendly and more relaxed quite quickly. During interviews, I considered my attire, where I sat, and how I addressed the participants in order to portray my

respect for them. I dressed conservatively to reflect participants' attire, I allowed them to choose where they wanted to sit, and addressed them as I would an elder in my own family. I also found it useful to record my thoughts about the interaction between the participant and myself immediately following the interview. Doing so allowed me to be aware of interaction issues, such as my attire, which prompted me to dress more conservatively in subsequent interviews early on in the data collection phase. Overall, remaining reflexive allowed me to constantly be aware of my social location relative to the study participants and how my presence may have affected data collection and analysis.

5.2.8 Data management

Similar to past research (Karwalajtys et al., 2010), interviews were transcribed verbatim by volunteer upper-year undergraduate Health Science students from the University of Waterloo. Each student signed an oath of confidentiality indicating that they would abide by ethical conduct (see Appendix D). One student transcribed and translated a Hindi interview and one of the multilingual interviewers transcribed a Hindi and a Punjabi interview. NVivo 9 (QSR International, 2010) was used to assist in managing the data obtained from interviews.

5.2.9 Ethics

5.2.9.1 Confidentiality

All participants were asked to choose a false name (pseudonym) and use it accordingly during the interviews. This way, participants' privacy was protected throughout transcription of interviews and during data analysis and reporting. Past research reported that participants appreciated the option of choosing a pseudonym (Purtzer, 2007). All participants were advised that they could decline to answer any questions and had the option to withdraw from the study at

any time without penalty. Participants who agreed to participate were asked to read and sign a consent form, available in English, Hindi, Tamil, Punjabi, and Urdu. Participants were asked if they had any questions prior to providing consent. Participants were not able to participate in the study unless they provided informed consent (see Appendix B for the consent form).

Voice recordings were uploaded to a password-protected online service that allows sharing of files with specified others and using encrypted methods to share and store files. Transcribers were given access to one interview at a time and uploaded their completed transcripts within this service. Transcribers received training in terms of how to handle the data during and after transcription, ensuring that confidentiality was maintained. All other data was protected allowing access only to the researcher. Additionally, multilingual interviewers and transcribers were required to sign an oath of confidentiality (see Appendix D). Electronic data was stored on a password-protected encrypted computer, printed transcripts were stored in a locked filing cabinet in the researcher's office, and voice recordings were stored on a password-protected encrypted USB key in a locked filing cabinet in the researcher's office. Voice recordings will be deleted and printed transcripts will be shredded seven years following the end of the study.

5.2.9.2 Risks and benefits to participants

Direct risks were minimal to participants due to their involvement in Study 2 and may have consisted of participants feeling uncomfortable answering sensitive questions. However, an information package with details about Pap tests, HPV, cervical cancer, where to get a Pap test, and how to get a physician was provided to participants at the end of their participation (see Appendix E). The fact sheet on Pap tests, HPV, and cervical cancer was retrieved from the Cancer Care Ontario website (<http://www.cancercare.on.ca/pcs/screening/cervscreening/>

hcpresources/) and was available in the five languages relevant to Study 2. The fact sheet on how to find a physician in Ontario was retrieved from <http://www.health.gov.on.ca/en/ms/healthcareconnect/public/factsheets.aspx> and was also available in the five languages. Indirect risks may have included participants feeling upset if someone close to them had been affected by HPV, cervical cancer, or other cancers or feeling worried about the possibility of getting HPV and/or cancer. However, the information package provided participants with helpful information and further resources on the topics. A letter of appreciation was also provided to participants with the researcher's contact details in case questions or concerns arose following the interview (see Appendix E).

Direct benefits to participants included \$25 remuneration and an information package with details about Pap tests, HPV, cervical cancer, where to get a Pap test, and how to get a physician. Participants were also given the opportunity to request a future summary highlighting the major findings of Study 2. Indirect benefits included an opportunity to discuss Pap tests. Among women who did not have a recent Pap test, indirect benefits included an awareness of its use and benefits and women were able to obtain more screening information and be moved to contemplate screening.

5.2.9.3 Dissemination of knowledge

One manuscript will be developed out of the qualitative study for submission to a peer-reviewed journal for publication, addressing both study objectives. Additionally, a summary sheet will be developed outlining important findings from Study 2, which will be available for dissemination to participants and the general public after the successful defense of this thesis.

5.2.9.4 Ethics approval

The University of Waterloo's Office of Research Ethics (ORE) granted full ethics clearance to conduct Study 2 on June 15, 2011. Modifications to the eligibility criteria were granted full ethics clearance on August 2, 2011 (see section 5.2.3.1 for details on the modifications).

5.3 Results

5.3.1 Description of process

A total of 39 women communicated interest in participating in Study 2. Nine women were not eligible due to being younger (n=2) or older (n=2) than the target age range, having low English proficiency (n=1), or having had a full hysterectomy (n=4). One respondent was contacted after her initial interest in participating in the study but later indicated that she did not have time to come to the place of interview. Additionally, 4 respondents did not reply back to email or phone messages after their initial interest in participating. Three eligible respondents were not scheduled for an interview because we were no longer taking screened women from Toronto (further discussed in section 5.3.1.1). The final sample consisted of 22 participants.

5.3.1.1 Recruitment

Recruitment began in July 2011 and ended in October 2011. Four participants were recruited from word of mouth through a SAWC settlement counselor, 6 through the SAWC wellness group, 5 from word of mouth through participants, 3 through the SAWC seniors' group, 2 through a South Asian fair, 1 through the Scarborough Community Health Centre Tamil seniors' group, and 1 through a mass email notice sent through OWHN.

Seventeen interviews took place in Toronto, 2 in Scarborough, and 3 in Waterloo. Sixteen interviews in Toronto took place at SAWC and one took place at a Sikh temple. Both interviews

in Scarborough took place in an empty nurse's office in a community housing building, and all three interviews in Waterloo took place at FEW.

Originally, an equal amount of participants were to be recruited from Toronto and Waterloo, and half of each were to be screened and underscreened. Toronto participants were recruited at a faster rate than from Waterloo. Additionally, recruiting an equal number of underscreened participants proved to be challenging. At a certain point when saturation was thought to have been reached among screened women, recruitment was stopped in Toronto among screened women. As the analysis of data continued, it was decided that saturation was reached among the sample as a whole after 22 interviews, as similarities arose even among underscreened women.

5.3.1.2 Interviews

Interviews lasted an average of 46.25 minutes (range = 12-83.75 minutes). Complete meetings (i.e., greeting and introduction to study, consent form, interview, questionnaire, information package) with participants lasted on average 73.86 minutes (range = 40-120 minutes). Three participants were interviewed by a multilingual interviewer. When given the questionnaire to fill out, several participants inquired if the answers would be submitted to the Canadian government; another participant refused to fill it out. All participants were assured that answers were confidential and were for our research purposes only. Additionally, several participants preferred to have the interviewer read out each question for them.

5.3.2 Sample description

All participants were first-generation immigrants to Canada. It was originally proposed to recruit both first- and second-generation South Asian women, however it proved difficult in locating eligible women that fit this criterion. Additionally, Statistics Canada (2011b) data

revealed the low percentage (0.65%) of South Asian second-generation immigrant women aged 45-74 years old living in Ontario out of the total generation status fitting this criterion. Recruiting high-aculturated immigrant women was also difficult. Participants' average age was 60.59 years old (range 50-69 years old) (see Table 5.1 for sample characteristics). Most of the women completed their highest level of education in South Asia (n=16), with the remaining in UK, USA, or Canada (n=3), and East Africa (n=1). Household income was mostly low (see Table 5.1), while others did not know their household income. Almost all participants were Canadian citizens (n=16), with the remaining three landed or permanent residents (n=3 missing). Country of birth varied, India the most common. The average age at immigration was 41.61 years and proportion of life spent in Canada was 0.31. The average number of years lived in Canada was 18.98 (range 1-48 years). Most participants were Hindu and spoke another language other than English often in their homes.

Table 5.1: Sample characteristics

Variables	Total	Percent of total (n=22)
Age		
50-54	6	27.27
55-59	3	13.64
60-64	4	18.18
65-69	9	40.91
Household income		
None or below \$15,000	5	22.73
\$15,000-\$29,999	4	18.18
\$30,000-\$49,999	4	18.18
\$50,000-\$79,999	2	9.09
\$80,000 or more	0	0.00
Don't know	5	22.73
Prefer not to answer	2	9.09
Education		
Primary school	1	4.55
Some high school	1	4.55
High school graduation	6	27.27

Trades certificate of apprenticeship	1	4.55
College/University	12	54.55
Country of birth		
Sri Lanka	3	13.64
Bangladesh	3	13.64
India	10	45.45
Pakistan	3	13.64
Burma/Myanmar	1	4.55
Religious affiliation		
Hindu	15	68.18
Muslim	4	18.18
Sikh	2	9.09
Christian	1	4.55
Age at immigration		
10-19	1	4.55
20-29	3	13.64
30-39	5	22.73
40-49	7	31.82
50-59	5	22.73
60-69	1	4.55
Years lived in Canada		
1-10	5	22.73
11-20	9	40.91
21-30	3	13.64
31-40	4	18.18
41-50	1	4.55
Language spoken often at home		
English	9	40.91
Other	16	72.73

All but one participant had a family doctor; most of them had a female and South Asian doctor and spoke in English with them (see Table 5.2). All participants had a Pap test at some point in their lives, with 31.82% not having a time-appropriate Pap test.

Table 5.2: Health care characteristics

Variables	Total	Percent of total (n=22)
Gender of family doctor		
Male	7	31.82
Female	13	59.09
Cultural/Racial background of family doctor		
White	6	27.27
Asian	3	13.64
South Asian	9	40.91
West Asian	1	4.55
Other	1	4.55
Language spoken with family doctor		
English	15	68.18
Urdu	1	4.55
Hindi	1	4.55
Punjabi	1	4.55
Gujurati	1	4.55
Tamil	1	4.55
Last time had a Pap test		
Less than 3 years ago		
Less than 6 months ago	5	22.73
6 months to less than 1 year ago	3	13.64
1 year to less than 3 years ago	7	31.82
3+ Years Ago		
3 years to less than 5 years ago	5	22.73
5 or more years ago	2	9.09

There was a discrepancy among two participants in terms of the recentness of their last Pap test between interview and questionnaire answers. Their responses in the questionnaire were used as the final answer due to possible response bias within interviews and with corroboration from their age at screening mentioned within interviews. Unfortunately, the questions in the interview were asked assuming they had a recent Pap test based on their verbal answer. However, the goal of the interviews was to understand screening decision-making whether it be having had a recent Pap test or not. It is important to note that while the majority of the sample

was screened, many (7 out of 13 participants who indicated the number of past Pap tests) reported that their most recent Pap test was their only one. Four of the 13 participants reported having had only 2 or 3 past Pap tests.

Fatalism scores could range from strongly disagree (1) to strongly agree (7) on the three questions. Participants scored low to moderately on the fatalism questions: ‘it is not important to screen for cervical cancer because everyone will die anyways’ (2.90), ‘it is not necessary to screen for cervical cancer because it is in God’s hands’ (2.5), and ‘if nothing is physically wrong, then you do not need to screen for cervical cancer’ (3.05).

Acculturation scores (questions 1-21) ranged from 1.25-3.05 (mean=1.95; n=21) indicating a low acculturated to bicultural sample. Questions 22-26 on the SL-ASIA offered a more comprehensive and multidimensional perspective of acculturation and confirm a South Asian-oriented to bicultural sample, as illustrated in Table 5.3.

Table 5.3: Multidimensional acculturation

Acculturation	Total n	Total underscreened
South Asian-identified values, bicultural behaviour, and bicultural South Asian self-identity	5	2
South Asian values, South Asian behaviour, and bicultural South Asian self-identity	3	0
South Asian values, South Asian behaviour, and bicultural, bicultural self-identity	2	1
South Asian values, bicultural behaviour, and Western self-identity	2	1
South Asian values, South Asian behaviour, South Asian self-identity	1	0
South Asian values, bicultural behaviour, and South Asian self-identity	1	0
South Asian values, Western behaviour, and bicultural, Western self-identity	1	0
Bicultural values, South Asian behaviour, and bicultural, Western self-identity	1	1
South Asian values, bicultural behaviour, and bicultural, bicultural self-identity	1	1
Bicultural values, bicultural behaviour, and bicultural, South Asian self-identity	1	0

Among those underscreened, the average proportion of life spent in Canada was 0.22 and the average number of years lived in Canada was 14.29, compared to 0.36 and 21.17, respectively, among the screened women. The average acculturation score among the underscreened women was 1.94 compared to 1.96 among the screened women.

5.3.3 Open coding

Transcripts were analyzed by breaking down the data through line-by-line coding, as discussed in section 5.2.6.3. After coding 7 interviews, initial codes were grouped into more manageable free nodes. Not all initial nodes were initially grouped, keeping in mind not to force certain initial nodes into free nodes. Several free nodes were retitled and regrouped over time as needed. This process continued as new interviews were added to the analysis, with 78 free nodes eventually created. A last scan of the free nodes was done in order to ensure there was no duplication in concepts as it relates to the current study across the nodes. When duplication of concepts was found, the nodes were combined. For example, ‘Pap test reminder from doctor’ was combined in ‘influence of doctor’. Additionally, and as discussed by Charmaz (2006), the free nodes were examined and reflected upon several times in terms of their purpose to the developing theory in answering the objectives of Study 2. The free nodes that were deemed not relevant to the purpose of the present study were discarded. The final list consisted of 48 free nodes. Free nodes covered topics related to acculturation, managing through the health care system, concepts of health and health behaviour, and Pap tests (see table 5.4 for a list). The last three interviews did not add new free nodes, suggesting reasonable saturation of data was achieved.

Table 5.4: Final list of free nodes

Free Node	Description	Interviews Coded (n=22)
Adjusting to a new culture or country	Experiences of adjusting to Canada and its culture after immigration	22
Experience with doctor	Experience and relationship with past and current doctors	22
Health practices	Behaviours practiced that maintain and/or increase health or prevent disease	22
Maintaining culture	The process and experiences related to maintaining cultural traditions, values, and/or rituals	21
Adopting a new culture	Adopting aspects of Canadian/North American culture	21
Pap beliefs	Beliefs surrounding the Pap test	21
Comparing countries and cultures	Comparisons made between countries and/or cultures	20
Experience with Pap tests	Experiences with having a Pap test	20
Influence of doctor	The influence of doctors on their health behaviour and knowledge	19
Lack of knowledge	Identification of gaps in health knowledge in themselves or others at some point in their lives	19
Taking health into own hands	Taking initiative towards and responsibility over own health	19
Family	The importance and necessity of family in their lives	18
Pap knowledge	Their knowledge about Pap tests	18
Beliefs towards home and host country/culture	Beliefs and attitudes towards Canada and/or Canadians and towards their home country and/or culture	17
Religious practices	Behaviours practiced that are religious-based	17
Religious values and beliefs	Religious values and beliefs held	16
Logistics of doctor visits	Experiences in finding and meeting with a doctor and logistically getting to a doctor in Canada	16
Changes among children	Changes and differences occurring between parents and children	16
Respect	Importance and presence of respect in their lives	16
Traditions	Discussions related to traditions and rituals practiced in their home country and culture	16
Health and health behaviour beliefs	Beliefs held related to health and health behaviour	15
Health knowledge	Knowledge on various health topics	14

(In)dependence	Discussions related to dependence and independence	14
Identity	Cultural and religious identification	14
Familiarity of Pap	Level of familiarity of Pap tests	13
Influence of others	The influence of family and peers on their health behaviour	13
Fresh and natural	A focus placed on fresh and natural foods and remedies	13
Risk perception	Risk perception related to cancer and/or needing a Pap test	13
Gender of doctor	Issues and experiences related to the gender of their doctors	12
Togetherness	The importance of togetherness within one's community	12
Familiarity with cancer	Level of familiarity and experience with cancer	11
Doctor on a pedestal	Placing unquestioned trust and faith in their doctors	10
Employment in Canada	Experiences and perspectives on employment and working in Canada	10
Gender (in)equality	Discussions surrounding gender equality and inequality in Canada and their home countries	10
Interacting with other cultures	Experiences in interacting with other cultures in Canada	9
Modesty	Indications of the importance of modesty	9
Flexibility and open-mindedness	Being flexible with and open-minded about one's culture	9
Bicultural	Incorporating aspects of two cultures	8
Responsibility lies with doctor	Placing the responsibility of initiating screening on their doctors	8
Distance from Canadian culture	Separation from Canada and Canadian culture	8
Fear	Fears expressed related to various aspects of health and screening	8
Health program	Experiences and expressed need for health programs	8
Education	Discussions related to the importance of and getting an education	7
Marriage	The importance of marriage in one's life	7
Free will	Awareness of having free will and choice	5
Obedience	Behaving based on obedience	4
Simplicity	Maintaining simplicity in life	3
Taking a stand	Taking a stand and speaking out on certain issues	3

5.3.4 Axial coding

Axial coding was conducted in order to categorize the free nodes into major categories that made the most analytical sense to the topic at hand. In some instances, sub-categories were created within major categories. Free nodes were written on individual pieces of paper and were arranged into different categories. Axial coding took place simultaneously to open coding through a back and forth process. Relating the emergent categories to one another also began at this stage and diagrams were used to organize the derived categories and their relationships to one another (Corbin & Strauss, 2008).

Originally, 7 major categories were created. Following reflections on each category, the ‘health belief’ and ‘health knowledge’ categories were grouped into the ‘health beliefs and knowledge’ category as the separate categories did not serve distinctly different purposes in the theory (Charmaz, 2006). The final list consisted of 6 major categories (see Table 5.5 for a list of the major categories and a brief description and Table 5.6 for the complete coding framework). The following sections describe each category in more detail, illustrating each with verbatim quotes from participants. The quotes are followed by the country where they were born, the number of years lived in Canada since immigration, and whether they had a time-appropriate Pap test (screened) or not (underscreened).

Table 5.5: List of major categories

Major Category	Description
Influence of others	The influence of doctors and others on health and Pap test knowledge acquisition and behaviour decision-making
Health beliefs and knowledge	Beliefs and knowledge expressed regarding health, health behaviour, and Pap tests, in addition to participant-identified knowledge gaps
Responsibility over health	Where the responsibility to take care of one's health lies
Experiences in healthcare	Experiences related to doctors, health programs, and Pap tests in the Canadian health care system
Components of culture	The components of culture that may or may not have changed throughout the acculturation process: identity, practices, and values
Process of acculturation	The process and experience of acculturating to Canada and its culture

5.3.4.1 Influence of others

The ‘influence of others’ category is central to the model in terms of screening decision-making. When asked about how participants decided to get a Pap test or not, repeated discussions revolved around the influence, or lack thereof, of someone else. The category consists of two free nodes: ‘influence of doctor’ and ‘influence of others’. The ‘influence of doctor’ free node relates to the influence doctors have on the participants’ health knowledge and behaviour and specifically, cervical cancer screening decision-making. The majority of the women indicated that their doctors played a role in their Pap test knowledge acquisition and participation decisions. Underscreened women reported that they did not get a recent Pap test because they did not have a family doctor, their doctor told them it wasn’t necessary, or that their doctor did not remind them to get one. For example, a participant who did not have a recent Pap test indicated that she would have done a Pap test if her doctor had recommended it:

“That’s good thing that if my doctor suggest me. I could have done that. Yes, I could have done that.” – *Bangladesh, 12 years in Canada, underscreened*

On the other hand, a screened participant highlighted the influence of her doctor in deciding to get a Pap test:

“Our family doctor said the first time, a family doctor ask me I come every tests he give me a lecture on important you are young, first you do it. Second time doctor ‘I can’t go’, ‘no, no you must do’ then I go third time I do that test, everything is okay.” – *Sri Lanka, 10 years in Canada, screened*

Similarly, the ‘influence of others’ free node relates to the influence family and peers have on the participants’ health and screening knowledge acquisition and Pap test decision-making. Some women indicated that they did not get a Pap test due to family or no one else reminding them to. Others indicated that advice from family or peers were influential in their Pap test decision-making, as illustrated by the following quote:

“When my family doctor said about that, I came and told my husband. Husband told you have to do that. After that I went and told my family doctor, she told ‘we tell, you won’t agree, your husband tell only you agree?’” – *Sri Lanka, 18 years in Canada, screened*

5.3.4.2 Health beliefs and knowledge

The ‘health beliefs and knowledge’ category relates to the beliefs and knowledge participants expressed regarding health, health behaviours, and Pap tests, in addition to identified knowledge gaps. The category captures the knowledge base and foundation with which health decisions were based on or used to rationalize health decisions. This category contains three subcategories: ‘Pap beliefs and knowledge’, ‘other health and health behaviour beliefs and knowledge’, and ‘lack of knowledge’, which is in itself a free node.

The ‘Pap beliefs and knowledge’ subcategory includes knowledge and beliefs held by participants that relate to Pap tests, their purpose, importance, the familiarity of Pap tests, and their pros and cons. Four free nodes were grouped within this subcategory: ‘familiarity of Pap’, ‘Pap beliefs’, ‘Pap knowledge’, and ‘risk perception’. The ‘familiarity of Pap’ free node captures

discussions related to Pap test practices in their home countries and Pap test discussions or lack thereof with family members and/or peers. The majority of discussions within this free node identified that participation in Pap tests was or is not a common practice in their home countries:

“In our country I don’t think I’ve ever heard about Pap smears. Nobody had done it long time before. But I do not know, I don’t, I’m not so used to our country’s new things. But nobody ever had my, my family elderly one, they never had this, never heard it.” - *Bangladesh, 16 years in Canada, underscreened*

Additionally, the majority of participants who made reference to communications about Pap tests identified the absence of any communication, and communication that did occur was reported as being framed negatively. It became clear throughout the interviews that Pap tests were more often than not a new practice after immigrating to Canada.

‘Pap beliefs’ consisted of both positive and negative beliefs held by participants regarding Pap tests. The majority of participants believed that the Pap test was a positive and simple procedure that benefits women and their health, as illustrated by the following participant:

“I think they, they should check it because you, because they can check in lab and then they find if anything coming up so then we can protect any other things as any diseases developing in the body so then we, we can look after, try to look after myself.” – *Pakistan, 35 years in Canada, screened*

The few negative beliefs that were discussed included the possibility of getting inconclusive results, the Pap test as being an uncomfortable experience, and the harm that Pap tests may do to one’s health. It seemed through the discussions that acceptance towards Pap tests is slowly becoming more popular among those in their culture.

The ‘Pap knowledge’ free node consisted of discussions related to various aspects of the Pap test that participants were aware of and consisted of both accurate and inaccurate information. For example, whereas knowledge regarding when Pap tests are no longer recommended was

accurate, knowledge on the age at which Pap tests commence was usually vague and did not match Pap test participation recommendations set out for Canada:

“I think as you get older, I don’t need, you need them as often or when you’re in your 50s you do or something like that.” – *India, 48 years in Canada, screened*

Among other accurate information, participants made the link between Pap tests and the identification of cancer, the importance of getting screened, and the recommended frequency of Pap tests. Among inaccurate information, participants indicated that Pap tests should be initiated when symptoms arise, are unnecessary if women take care of themselves, and Pap tests screening the uterus or ovaries.

The ‘risk perception’ free node captured discussions related to the perceived level of necessity of Pap tests and risk of cancer. Both low and high necessity and risk were discussed. Those who perceived a low necessity to get a Pap test discussed not having any symptoms, Pap tests not being on their minds, and being at low risk for cancer. The perception of being at low risk of getting cancer was based on the fact that they did not have cancer in their family history or did not have a current partner or multiple partners. One underscreened participant illustrates the perception that Pap tests are necessary if you have symptoms through the following quote:

“If people have uterus cancer or something they get bleeding. That is what I do not know right or wrong, but I have heard it they get bleeding, they have this that when my bleeding stopped, I mean menstruation stopped. It stopped. It hasn’t come back so I feel safe little bit inside.” – *Bangladesh, 16 years in Canada, underscreened*

Those who perceived a higher necessity to get a Pap test discussed having symptoms or being at risk of getting cancer. The risk of getting cancer was based on not knowing what is happening within one’s own body, thus the need to screen, as illustrated in the following way:

“After 40 is coming, after it’s okay. See sometimes it happens something, right? You don’t know. Today I’m fine maybe next month that’s why she check, doctor...Important.

Sometime cancer, ovary, anything right? You don't know nothing one minute.” – *India, 25 years in Canada, screened*

The ‘other health and health behaviour beliefs and knowledge’ subcategory includes knowledge and beliefs held by participants regarding health, health behaviour (aside from Pap tests), and doctors. Cancer and screening were common themes throughout this subcategory. Five nodes were grouped in this subcategory: ‘doctor on a pedestal’, ‘familiarity with cancer’, ‘fear’, ‘health knowledge’, and ‘health and health behaviour beliefs’. The ‘doctor on a pedestal’ free node relates to the beliefs one has towards doctors in terms of their authority, power, and competence in health care. It became clear across interviews that the participants held high respect for doctors, trusted that they were in good hands, did not question their competence, and followed the advice or recommendations given. The following discussion with one of the participants highlights this concept:

“Physician knows. He’s like God... We have just, I mean, he’s the boss. He knows about whatever he knows. We can, if we doubt it, we can have second opinion. But we will not. We will do whatever he tells us to do.” - *Country of birth unknown, 12 years in Canada, underscreened*

‘Familiarity with cancer’ consisted of discussions on the prevalence of cancer. Half of the participants had stories about someone they knew that was diagnosed with cancer and expressed sadness over the news, as illustrated in the following way:

“Maybe I was 40’s or something and one of, not close friend, but one, one of the lady I knew she had that cancer and she died. I felt very, very sad. Very sad.” – *Country of birth unknown, 12 years in Canada, underscreened*

The ‘fear’ free node relates to being fearful of screening, cancer, disease, and death. The terms ‘Pap test’ and ‘cervical cancer screening’ were discussed during the interviews and a group of women linked these terms to fear, as in the following way:

“That fears me, fear of death. I don’t want to die, like you know. Not at this time, when I’ll be old I’ll die. And so, fear of death.” – *Bangladesh, 12 years in Canada, underscreened*

The ‘health knowledge’ free node captured discussions related to knowledge on health and health behaviour, aside from Pap tests. Topics included causes of disease, such as canned food causing cancer, disease from public toilets, pollution, and being sedentary and disease prevention and health promotion through healthy eating, visiting the doctor, and screening:

“Fibrous food is good for you know, avoiding cancer, those fibrous foods”. – *Bangladesh, 12 years in Canada, underscreened*

The ‘health and health behaviour beliefs’ free node centered on the beliefs that health, preventing disease, and screening are important in one’s life. Participants expressed the importance of their own and their children’s health, the belief that if screening services are available, one should take advantage of them, and their changed beliefs regarding the importance of screening on one’s health:

“We never have this mammogram before there. Now they do. But at that time when we were there, there was no mammogram...Now we totally changed our views. It’s a good awareness...It’s good for our health.” – *India, 13 years, underscreened*

The ‘lack of knowledge’ subcategory/free node includes identified gaps in knowledge by participants in terms of health and health behaviour. Two themes ran through the discussions within this free node—past and current lack of knowledge. Discussions related to previous lack of knowledge consisted of gaps in health awareness mostly when they were living in their home countries. Participants indicated that the availability of various health information and awareness was lacking in the past. Discussions related to current lack of knowledge highlighted the gaps in knowledge the participants had at the time of the interviews. These gaps ranged from not

knowing how to get a female doctor in Ontario, not knowing what a Pap test was or which cancer the Pap test screened for, how often one should get a Pap test, and why a Pap test is performed, illustrated by the following quote:

“I’m not sure how or why or when I should get the Pap test”. – *India, 13 years in Canada, screened*

This category highlighted that in general, the participants were knowledgeable regarding the benefits of Pap tests and more general Pap knowledge, were positive towards and held schemas regarding health promotion and disease prevention, and identified gaps in knowledge related to more specific details about Pap tests.

5.3.4.3 Responsibility over health

The ‘responsibility over health’ category relates to where the responsibility to take care of one’s health is placed. The category consists of two free nodes: ‘responsibility lies with doctor’ and ‘taking health into own hands’. The ‘responsibility lies with doctor’ free node relates to leaving Pap test decision-making and reminders up to doctors. For example, one participant indicated the following about Pap tests and her doctor:

“When the need will arise, she will let me know” – *Pakistan, 35 years in Canada, underscreened*

Conversely, other participants discussed taking the initiative and the responsibility over their health and health decisions, as characterized by the ‘taking health into own hands’ free node. These actions and decisions included asking their doctors for a specific screening test, taking responsibility for not having a recent Pap test, and keeping track of Pap tests or physicals in order to initiate future ones. A participant illustrated this best in the following way:

“A woman needs to take control and get a Pap test and given that it’s her health that’s at stake here” – *India, 48 years in Canada, screened*

Additionally, some participants indicated that they got previous Pap tests in order to stay healthy, prevent cancer, or identify problems at an early stage, illustrating that they were taking the initiative and control over their health.

5.3.4.4 Experiences in health care

The ‘experiences in healthcare’ category relates to experiences the participants have had with doctors and health programs, experiences in finding and getting to a doctor, and experience with Pap tests and consists of four free nodes: ‘health program’, ‘logistics of doctor visits’, ‘experience with doctor’, and ‘experience with Pap test’. The ‘health program’ free node consists of positive discussions related to health programs that facilitated screening. Participants reported that receiving mammogram reminder letters facilitated their screening behaviour, health programs they attended increased their awareness to get screened, past programs that were currently closed made it easy for them to get Pap tests, and the need for health programs to teach and remind them about Pap tests. One participant, when asked about Pap tests, brought up the importance of health programs in raising awareness:

“Breast health education program was you know, like, it’s gone. Fund was not coming so that program was not that, if you hear something then you can be like, you know, I am aware but I don’t know, um, think that I have to do this.” – *Bangladesh, 12 years in Canada, underscreened*

The ‘logistics of doctor visits’ free node consists of discussions related to the difficulties in finding a doctor in Canada, the long wait times in a doctor’s clinic and the short duration of doctor appointments, and the importance of having a doctor close to home. For some participants, having a doctor close to home was important due to transportation issues such as the long distance and the cost of getting to a doctor:

“Even you go in the morning, you’re 12 to 12:30 and by the time you take the bus, the TTC and this and that and by the time you home, it’s 4 o’clock.” – *Pakistan, 35 years in Canada, screened*

Other participants discussed the problem of long wait times at the doctor’s clinic and the short appointment times, leading some to even change doctors. As one participant puts it:

“I also didn’t like sometimes being kept waiting 2 hours in a waiting room for an appointment. So I said no, my time is valuable, so, moving on...” - *India, 48 years in Canada, screened*

The ‘experience with doctor’ free node consists of discussions related to positive and negative experiences participants have had with their doctors. Positive experiences included doctors being sensitive to their patients’ needs and beliefs, doctors taking the time to explain information to patients, and doctors taking care of their patients. Negative experiences included having to change doctors due to the inappropriateness of a doctor’s behaviour, errors made by a doctor, and an overreliance of prescription medications with sometimes a lack of medical resolution, as one participant illustrates:

“Doctor write down and if you have because you get the means in one bottle. So many tablets and after the doctor say if you don’t feel relief so you come again” – *India, 5 years in Canada, screened*

The ‘experience with Pap test’ free node consists of discussions related to participants’ experiences with getting a Pap test. Discussions included both positive and negative experiences. Positive experiences included the feelings of relief once Pap tests were completed and results did not identify a problem, as illustrated by the following quote:

“But once the test result is out then I am relieved that everything is ok.” – *Pakistan, 35 years in Canada, underscreened*

Additionally, many participants identified the anxiety and fear they felt prior to their first Pap tests but were aware of the absence of these feelings during and following Pap tests. Negative

experiences included being laughed at by a doctor, being uncomfortable and/or being in pain during a Pap test, fearing negative results following a Pap test, and being scared prior to doing the Pap test:

“First time I had this test I’m scared for doctor. So I don’t know what doctor going to do because I don’t know nothing, right?” – *India, 36 years in Canada, screened*

5.3.4.5 Components of culture

The ‘components of culture’ category relates to the three components of culture that may or may not change throughout the acculturation process: identity, practices, and values (Schwartz et al., 2010). The category consists of three subcategories: ‘identity’, ‘practices’, and ‘values’. The ‘identity’ subcategory is a free node in itself and relates to how participants identified who they were. More often than not, participants framed their identity around their religion, in the following way:

“I’m Christian. I’m not Hindu. Not Muslim. I’m a Christian.” – *India, 36 years in Canada, screened*

A smaller group of participants indicated a cultural identity, most incorporating both their home and Canadian cultures:

“I can still say that I’m from the country that I am, but still call myself Canadian as well.” – *India, 48 years in Canada, screened*

The ‘practices’ subcategory relates to practices engaged in which were influenced by both home and host cultures. The subcategory includes three free nodes: ‘health practices’, ‘religious practices’, and ‘traditions’. The ‘health practices’ free node relates to the health behaviours that are practiced, with influences from home and host cultures. There was a large focus on disease prevention using natural and behavioural practices, including a healthy diet, specific food

combining, breathing exercises (Pranayama), physical activity through house work, walking, and yoga, bathing, natural remedies, breastfeeding, and avoiding harmful behaviours, such as having many partners, drinking alcohol, and housework while menstruating, as depicted through the following quotes:

“I try to do breathing yoga in the morning to keep fit.” – *Country of birth unknown, 25 years in Canada, screened*

“Before praying we always wash every part, open parts in the 3 times hands and goggles and nose and face 3 times and arms and feet everything in with water, clean water wash 5 times a day...That’s why basically cleanliness and yeah, germs are of bad thing every day and clean clothes avoid I think many diseases.” – *Pakistan, 11 years in Canada, screened*

A smaller group of participants also discussed getting physicals and participating in screening:

“And time to time get yourself checked up and all these things.” – *Country of birth unknown, 12 years in Canada, underscreened*

The ‘religious practices’ free node relates to the behaviours that are practiced and rooted in religion. Fasting, attending religious events, and making food offerings to God were discussed, but the major practices that were consistently discussed were attending places of worship and praying:

“I love my, you know, like everything, like I am going to temple and praying and worship and praying. Doing, you know, my Pooja [prayers], performing my Pooja, and all the rituals.” – *Bangladesh, 12 years in Canada, underscreened*

The ‘traditions’ free node relates to day-to-day cultural traditions and rituals (outside of health and religion) that were discussed as being practiced. These included eating cultural foods, speaking their native language, wearing traditional clothing, following traditional practices before and after marriage (not living together prior to marriage, wearing the ‘sindhu’ red dot after marriage), and celebrating cultural holidays:

“When we go our function, I wear sari. I put everything. I dress our culture.” – *Sri Lanka, 18 years in Canada, screened*

The ‘values’ subcategory relates to beliefs and attitudes held which were influenced by both home and host cultures and make up one’s value system. The subcategory includes 16 free nodes: ‘education’, ‘family’, ‘togetherness’, ‘marriage’, ‘fresh and natural’, ‘gender (in)equality’, ‘gender of doctor’, ‘free will’, ‘(in)dependence’, ‘modesty’, ‘obedience’, ‘respect’, ‘simplicity’, ‘taking a stand’, ‘flexibility and open-mindedness’, ‘religious values and beliefs’. The ‘education’, ‘family’, and ‘marriage’ free nodes relate to the discussions on the importance of these life components and events. The ‘education’ free node included discussion on the importance of their children and grandchildren’s education and described their own and family members’ education:

“Our Sri Lankan people, first they will do hard work and they study. Lot of engineer, doctors they are our Sri Lankan people. First they like to hard work and like their parents set in Sri Lanka, you must study...I ask my children, first you’ll go to the university.” – *Sri Lanka, 10 years in Canada, screened*

Discussions within the ‘family’ free node highlighted the importance of family in one’s life. The majority of participants placed their number one priority on their family. Participants highlighted the importance of keeping their families free of conflict, maintaining bonding with one another, keeping family together either through living with one another or maintaining constant communication through visiting and phone calls, and taking care of one another. One participant highlighted the importance of family in the following way:

“You are doing anything and everything for your family” – *Country of birth unknown, 12 years in Canada, underscreened*

The ‘togetherness’ free node included discussions related to the importance of getting together with one’s community, getting together with friends, attending appointments and events with someone else, and the connectedness among community members:

“Also during Eid at my house...in my community, the Bangladeshis and then so I call everybody. It’s like open house. They come home and...we celebrate, it’s like that...they all come anytime, anybody comes it’s like open house so whole day I don’t go out. People come and next year maybe when people invite we go other houses.” – *Bangladesh, 16 years in Canada, underscreened*

Similarly, discussions within the ‘marriage’ free node highlighted the importance of getting married and getting their children married, with one participant indicating that it would be a problem if one remained unmarried. Getting married only once in a lifetime and marriage within one’s own culture were also discussed as being important, as highlighted by another participant:

“Actually, I like my daughters they have to marry same community, same religion, same culture, I like. Even religion not a big problem. Different religion is okay. But same language, same community, I like. But if they like different community, I will agree for that.” – *Sri Lanka, 18 years in Canada, screened*

The ‘fresh and natural’ free node relates to the value in using fresh and natural items in one’s day-to-day life. Participants talked about the importance they placed on eating fresh foods, staying in fresh air, and using natural remedies. They discussed their dislike for artificial and synthetic things such as frozen foods:

“This is my culture that we believe in the natural things, rather than artificial and synthetic things.” – *Burma (Myanmar), 1 year in Canada, screened*

Both ‘gender (in)equality’ and ‘gender of doctor’ free nodes included text that dealt with issues related to gender. ‘Gender (in)equality’ relates to cultural gender norms that place men above women and restrictions placed on women’s freedom, such as not being able to go out in public

without a chaperone. Participants discussed norms related to gender inequalities within their cultures:

“In our culture, our ladies if they get divorce, the society they won’t respect that lady. They will separate that lady. That ladies they can’t go for a function, they can’t mix with the other people. Nobody respect them.” – *Sri Lanka, 18 years in Canada, screened*

Participants also indicated experiencing gender equality and more freedom in Canada:

“After coming to Canada, I’m enjoying more freedom, my husband does not control me. I like it here and I liked living in India as well, but someone used to accompany us all the time.” – *India, 25 years in Canada, screened*

Similarly, the ‘gender of doctor’ free node included discussions related to gender, specifically regarding gender preference of one’s doctor. Some participants indicated a preference for female over male doctors, with one participant attributing this preference to their culture:

“I’m gonna move to the doctor but that doctor is a man. So I don’t want to. I’m not comfortable with a man.” – *Pakistan, 35 years in Canada, screened*

Others reported no preference and indicated that having a female or male doctor did not matter—both are still doctors:

“I don’t care whether the doctor is female or male and my family also doesn’t care what our family physician is a male... We just care that that physician is experienced and good and not female, male. But some families have, and I know that some families want some female doctors for gynecology...but I don’t have any problem.” – *Bangladesh, 12 years in Canada, underscreened*

The ‘free will’, ‘(in)dependence’, ‘modesty’, ‘obedience’, ‘respect’, ‘simplicity’, ‘taking a stand’, and ‘flexibility and open-mindedness’ free nodes relate to a personal set of values in which one lives by. The ‘free will’ free node relates to the value of having the choice to act and believe in certain ways without restraint. One participant indicated the lack of choice they have in their home country in terms of marriage, gender of doctor, and living situations, whereas others indicated that they have free will to choose to behave or believe in certain ways. For

example, one participant discussed the amount of freedom she had growing up and its alignment with her religious beliefs:

“Because I was also not very, very, I mean...Not I should say closed or I am not atheist, but in our family it was very, very...it was freedom. Whatever you like to choose. Even in Hinduism there are so many Gods...So, it is not necessarily I have to believe in one particular. Whatever like to choose, I can choose.” - *Country of birth unknown, 12 years in Canada, underscreened*

The ‘(in)dependence’ free node relates to the value of being independent in one’s life, whether it be economically or within day-to-day living. Participants discussed the importance and freedom of being independent and their goals to remain this way, while other discussed their economic dependence on others due to necessity. One participant discussed the link between women’s economic dependence on their husbands and abuse against women and discussed the availability of breaking from that dependence in Canada:

“Like, to stop hassle also the economic emancipation, that’s economic free, of freeness that here we’re working, everybody is working, they have their economic, the financial, you know, strength.” – *Bangladesh, 12 years in Canada, underscreened*

The ‘modesty’ free node relates to the value of being modest, not dressing provocatively, and being too shy to get Pap tests:

“First time I went to a doctor, I am shy. I say to my family doctor, no I can’t.” – *Sri Lanka, 10 years in Canada, screened*

The ‘respect’ free node relates to the value of mutual respect and respecting others and most participants discussed the importance of respecting elders and people with authority, as illustrated by the following quote:

“If parents tell something, we listen to them. We never reject that. Teachers, parents, elder people, always we respect them, we listen.” – *Sri Lanka, 18 years in Canada, screened*

Overlapping with the ‘respect’ free node, the ‘obedience’ free node relates to obeying others with authority and restraining from questioning authority, as illustrated in the following way:

“Blindly, elderly people say this is the thing you have to do, you did it, that’s all. We never ask questions... You can’t ask questions. They say you have to do it, we will do it. That’s all. Just obedience.” – *India, 13 years in Canada, screened*

The ‘simplicity’ free node relates to the value of living simply and not complicating traditions over time. The ‘taking a stand’ free node relates to participants taking a stand for something they believed in or family members doing the same for them. The ‘flexibility and open-mindedness’ free node relates to the value of being flexible and keeping an open mind when it comes to culture, traditions, and rituals. Participants discussed the need to be flexible and open-minded with cultural traditions and rituals considering the country and time they are living in:

“Rituals sometime they are very very difficult to take or bring it on all, with our time that has to be change. Although there were a few things in our culture but to that ritual, okay, you have to worship very early in the morning and...that was olden days okay. Our ancestor, they did. But it was not feasible, not practical for these days. We cannot do those things.” – *Country of birth unknown, 12 years in Canada, underscreened*

There was an understanding that traditions and rituals need to shift and adapt to modern times and modern schedules. Discussions also included being flexible with passing down cultural traditions to their children and not forcing it upon them just for the sake of it. Participants also discussed the changing views in their culture regarding Pap tests and the reduced stigma associated with it.

The ‘religious values and beliefs’ free node consisted of discussions related to values and beliefs stemming from religion. Participants discussed their belief in their religion, God, and in religious teachings, such as the importance of health and that females should not show their bodies to males. Some participants indicated that religion was their most important priority:

“Basic Muslims, we are Muslims. Our faith and Islam and we think base our Islam and we want to...like first religion, and then other things.” – *Pakistan, 11 years in Canada, screened*

5.3.4.6 Process of acculturation

The ‘process of acculturation’ category relates to the participants’ acculturation experiences following immigration to Canada. This category contains three subcategories: ‘two worlds’, ‘maintaining’, and ‘adoption’. The ‘two worlds’ subcategory includes the act of making comparisons between their home and host cultures and between themselves and their children and the experiences of adjusting to Canada and its culture. Four nodes were grouped within this subcategory: ‘comparing countries and cultures’, ‘beliefs towards home and host country/culture’, ‘changes among children’, and ‘adjusting to a new culture or country’.

The ‘comparing countries and cultures’ free node relates to making comparisons between their home and host countries and cultures on various different topics, including clothing, education, equality of people, infrastructure, living situations, food, and weather. For example, half of the participants made comparisons between the health care systems between Canada and their home cultures, indicating positivity for Canada’s universal health care coverage:

“They don’t have treat like here. Here is more care. Over there is, if you have money so you can treat. Otherwise, even the patient die, even if they sell everything. Private health care, you pay for it.” – *India, 33 years in Canada, screened*

The ‘beliefs towards home and host country/culture’ free node relates to beliefs and attitudes towards Canada and/or Canadians and towards their home country/culture. It seemed that forming and holding beliefs related to their host and home cultures was and is part of their acculturation process and may be a result of the comparisons made between both countries/cultures. Both positive and negative aspects of both their home and host

cultures/countries were discussed. Positive discussions related to Canada and Canadians included the infrastructure, such as the transportation and health care systems, the availability of freedom, law, and order, and described Canadians as friendly and open-minded. The main negative discussion centered on the weather and the limitations it causes:

“In the winter season very hard, take care or take help because I’m sick.” – *Bangladesh, 18 years in Canada, screened*

Positive discussions related to participants’ home country and/or culture included having enjoyed their life back home, believing in their culture, and describing their culture as lively and good.

Negative discussions related to their home countries or culture included not liking the practice of arranged marriages, the conservative and strict nature of the culture, and problems in their home country:

“I never want to go my back home...Because they actually, they, they have lots of problems.” – *Bangladesh, 18 years in Canada, screened*

The ‘changes among children’ free node relates to comparisons made between themselves and their own or others’ children or the younger generation. Comparisons were centered on the differing level of acculturation between themselves and children and included topics related to behaviour, such as eating certain foods and dressing in certain ways and values, such as levels of traditionalism and caring for one’s home culture. For example, some participants discussed that the younger generation and/or their children are losing their cultural values, as depicted in the following quote:

“When I see that it’s the girls are having good time or are they going to...they, they diverse really easily nowadays. Their cultural values is going, in my opinion, that’s all. Probably I’m still in that 19th century not in the 20th century. Probably it’s not that easy to change myself to the 20th century.” – *India, 13 years in Canada, screened*

The 'adjusting to a new culture or country' free node relates to difficulties or ease in adjusting to Canada after immigration. Participants indicated that they needed to adjust to employment, living situations, language, and cold weather in Canada. Some participants adjusted well, while others discussed facing difficulties, such as feeling alone and missing family back home. Difficulties stemmed from an incongruence between their home culture/country and Canada. Ease in adjusting was related to being knowledgeable about what to expect, keeping busy through volunteering, employment, childcare, and housework, and having family support:

“If I came single and that’s why I facing many difficulties, many problems. But my husband, my sons, my daughter, everyone is here. My family’s here, I can share each other... That’s why I’m okay. I’m happy.” – *Pakistan, 11 years in Canada, screened*

The 'maintaining' subcategory relates to the maintenance of home culture traditions, values, and rituals and to the distance from Canadian culture. Two nodes were grouped within this subcategory: 'maintaining culture' and 'distance from Canadian culture'. The 'maintaining culture' free node relates to level of home culture maintenance participants engage in.

Participants discussed maintaining various aspect of their culture, including clothing, food, events, and values and discussed the importance of their culture and in maintaining it:

“If that tradition is broken down, then we are broken down.” – *Burma (Myanmar), 1 year in Canada, screened*

Some women indicated difficulties or the inability to maintain aspects of their culture, while others indicated ease in doing so, as the following participant describes:

“It’s not, if, if someone wants from her hearts or his hearts, it’s easy to follow in this.” – *Bangladesh, 12 years in Canada, underscreened*

Participants also discussed the frustration and difficulties they face in trying to get their children or grandchildren to maintain their culture.

The 'distance from Canadian culture' free node relates to the distance and separation participants place between themselves and Canadian culture. Discussions consisted of not adopting many Canadian traditions or values, dislike for Canadian lifestyle or food, their family not wanting to live in Canada, their preference for their home culture, and not interacting with others outside their culture, as illustrated by the following quote:

“...I don't want to meet other kind of people, their habits are different. They whatever they do, they think this is right but to me it's not right. That's why I want to live by my own, close the door and I stay at my own, with my own culture, with my own living, with my own food, with my own thinking. I don't want to change it.” – *Pakistan, 35 years in Canada, screened*

The 'adoption' subcategory consists of discussions related to adopting Canadian traditions, habits, and values and interacting with other cultures. In a sense, comparisons were also made here between cultures and countries, as the adoption of certain ways meant that they were different than what they were used to back home. Four nodes were grouped within this subcategory: 'adopting a new culture', 'employment in Canada', 'interacting with other cultures', and 'bicultural'. The 'adopting a new culture' free node relates to the adoption of various aspects of Canadian culture after immigration. Participants discussed adopting Canadian cooking methods, foods, laws, being independent, clothing, shaking hands, English language, and events:

“The new things which I picked up was that when I used to work I used to wear pants and shirts, pants and top whereas had I been in India I couldn't have worn them specially the era which I come from, women never wore these kinds of clothes. They used to wear the traditional salwar kameez and they had to cover their heads all the time. Here nobody cares what you wear.” – *India, 25 years in Canada, screened*

Attitude towards the adoption of Canadian culture was also discussed by several participants, varying from believing that it is only necessary if employed, feeling sad about adopting more

Canadian culture than maintaining one's host culture, and believing that adoption was natural, inevitable, or important:

“Like when you do as the Romans do while in Rome, so if you are here you have to do as other people are doing. You can't survive in your own way. So you have to do it.” – *India, 2 years in Canada, underscreened*

The 'employment in Canada' free node relates to employment experiences in Canada and is related to facilitating the adjustment to Canada after immigration. Participants discussed the importance of working, of working hard, and the stress and difficulties they faced in looking for work, as one participant links the stress she felt and not being able to find work:

“But I have a problem that time with two sons and husband I came here, that time no job nothing, I thinking about. That's for I think so too much stress that time.” – *Bangladesh, 18 years in Canada, screened*

The 'interacting with other cultures' free node includes discussions related to experiences in interacting with other cultures than their own. Participants discussed both positive and negative experiences, such as having friends and socializing with others from different cultural backgrounds, being scared when initially interacting with others, and experiencing discrimination:

“But here when you go to work...when we put that they are looking as a newcomer. Other community people they are looking as a newcomer, they are thinking we don't know anything about Canada. They treat us different.” – *Sri Lanka, 18 years in Canada, screened*

The 'bicultural' free node relates to discussions about both maintaining one's home culture and adopting Canadian culture. Most discussions within this free node were positive, indicating the ability in incorporating and achieving a balance between both cultures:

“We don’t mind when we are living in the multiculture, we should have adopted this culture also. It’s important balance. Balance is okay.” – *India, 13 years in Canada, underscreened*

Table 5.6: Complete coding framework

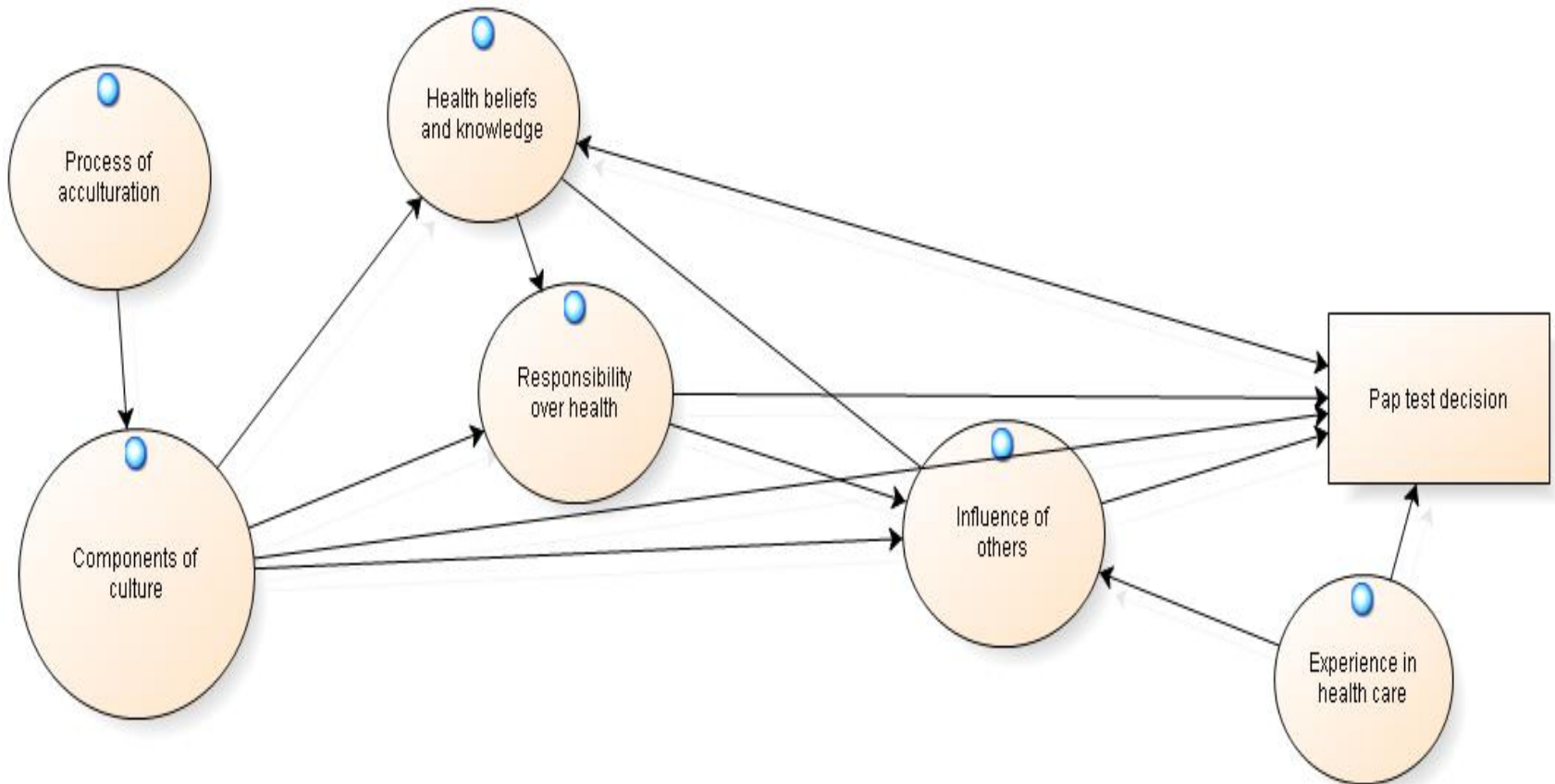
Subcategory	Free nodes
MAJOR CATEGORY: INFLUENCE OF OTHERS	
	Influence of doctor
	Influence of others
MAJOR CATEGORY: HEALTH BELIEFS AND KNOWLEDGE	
Pap beliefs and knowledge	Familiarity of Pap
	Pap beliefs
	Pap knowledge
	Risk perception
Other health and health behaviour beliefs and knowledge	Doctor on a pedestal
	Familiarity with cancer
	Fear
	Health and health behaviour beliefs
	Health knowledge
Lack of knowledge	
MAJOR CATEGORY: RESPONSIBILITY OVER HEALTH	
	Responsibility lies with doctor
	Taking health into own hands
MAJOR CATEGORY: EXPERIENCES IN HEALTHCARE	
	Health program
	Logistics of doctor visits
	Experience with doctor
	Experience with Pap test
MAJOR CATEGORY: COMPONENTS OF CULTURE	
Identity	
Practices	Health practices
	Religious practices
	Traditions
Values	Education
	Family
	Togetherness
	Marriage
	Fresh and natural
	Gender (in)equality
	Gender of doctor
	Free will
	(In)dependence
	Modesty

	Obedience
	Respect
	Simplicity
	Taking a stand
	Flexibility and open-mindedness
	Religious values and beliefs
MAJOR CATEGORY: PROCESS OF ACCULTURATION	
Two worlds	Beliefs towards home and host country/culture
	Comparing countries and cultures
	Changes among children
	Adjusting to a new culture or country
Maintaining	Maintaining culture
	Distance from Canadian culture
Adoption	Adopting a new culture
	Employment in Canada
	Interacting with other cultures
	Bicultural

5.3.5 Theory development

Finally, selective coding was conducted to integrate the major categories and processes into a preliminary theory, identifying linkages between the emergent major categories, and in turn, identifying a process. Figure 5.1 provides an illustrative representation of the preliminary Pap test decision-making theory. Each circle represents one of the major categories discussed in section 5.3.4 and the rectangle represents the outcome, Pap test decision. The following section offers a rationalization between each linkage, starting from the left-hand side of the theory, to the right-hand side.

Figure 5.1: Preliminary Pap test decision-making theory



‘Process of acculturation’ is linked by a one-way arrow to ‘components of culture’. The process of participants’ acculturation and their acculturation levels at the time of the interviews set a foundation for how they identified themselves, the practices they engaged in, and the values they held. For example, a participant discussed adapting to Canada following immigration and integrating both a home and host cultural identity:

“Now I should be very, what I say is, uh, because being Canadian and I get all the benefits now so I should be grateful to Canada. At the same time, I can’t leave my country and still in my mind I have the background that I belong to India. I can’t, still I’m not able to come out of that...” – *India, 13 years in Canada, screened*

‘Components of culture’ is linked with one-way arrows to four categories: ‘health beliefs and knowledge’, ‘responsibility over health’, ‘influence of others’, and directly to the outcome ‘Pap test decision’. ‘Components of culture’ is linked with a one-way arrow to ‘health beliefs and knowledge’. Many components of participants’ culture either directly or indirectly helped form their beliefs and knowledge related to health. Health practices engaged in since childhood and passed down through generations and through elders indirectly helped form one’s ‘health philosophy’—one’s beliefs and knowledge, or lack thereof, towards health. Similarly, held values helped form one’s beliefs and knowledge towards health. For example, the importance of naturalness may have formed one’s belief and knowledge about health and disease:

“You know my father is 96, still he’s very active...Because he never drink coke...He never eat everything in the outside. Everything he eat in the house made...Because you know, he always told us, ‘don’t eat outside. You know. It’s not good, it’s not clean.’...Natural things are good for health.” – *India, 13 years in Canada, underscreened*

‘Components of culture’ is linked with ‘responsibility over health’ via a one-way arrow. One’s values may help shape their locus of control over health. For example, among those who strongly value obedience and respect for those with authority may place more of their health

responsibility in the hands of their doctors. For others who value, for example, independence and free will may place more responsibility in their own hands. 'Components of culture' is also linked to 'influence of others' by a one-way arrow. One's values and previous health practices may shape their willingness to be influenced by others when it comes to health decisions. As previously illustrated, among those who strongly value obedience and respect for elders and those with authority may be more influenced by their doctors and family members. Similarly, they may await directions from those figures in order to make health decisions or engage in certain health behaviours:

“When I come here my family doctor told I have to go for Pap smear test. Actually I didn't want but my family doctor forced me, you have to go. So after that every year I go for that test. And bone density, this mammogram once in 2 years I go. For that test also. I talk to my friends, they also most of the ladies going because when they go to the family doctor, the family doctor advise everybody we must do that. That's why most of the people do it.” – *Sri Lanka, 18 years in Canada, screened*

'Components of culture' is also linked directly to the outcome 'Pap test decision' through a one-way arrow. Values held, such as being modest, influence decisions regarding Pap tests. For example, if one feels shy in showing their bodies, they may avoid getting a Pap test.

“Now because I don't want to show anybody anything. And also male doctor. I mean the way we brought up our culture. Here suppose its all doctor is doctor, all lawyer is lawyer, you don't shy, you don't feel anything. But our culture always men are, you know, different. We mustn't be so free with males like that, that also inside my head.” – *Bangladesh, 16 years in Canada, underscreened*

Similarly, health practices revolving around prevention and maintaining health, influenced by culture, may directly influence Pap test decisions, coupled with 'health beliefs and knowledge' related to the purpose of Pap tests.

'Health beliefs and knowledge' is linked with a two-way arrow to 'Pap test decision'. Health beliefs and knowledge, such as Pap tests detect cancer at earlier and more treatable stages, Pap

tests helps you to avoid bigger problems in the future, and Pap tests are necessary only when you have symptoms, influence Pap test decision-making. This link may be coupled with other factors, such as being advised by a doctor to get screened.

“I think till the time I don’t become bedridden, I will get my tests done to ensure that I never get bedridden.” – *India, 25 years in Canada, screened*

Additionally, experience with getting Pap tests also influences health beliefs and knowledge through knowledge acquisition by the doctor during a visit or having a positive or negative experience during a previous Pap test:

“Because I already go for the Pap test, so I know I have to go”. – *India, 13 years in Canada, underscreened*

As discussed above, ‘health beliefs and knowledge’ is linked in an associative manner with ‘influence of others’. Recommendations to get screened from others may be rationalized partly using one’s health and Pap test beliefs and knowledge base, leading to a screening decision. For example, having a belief that doctors should be listened to is an influential concept when receiving advice from one’s doctor.

“Whatever she says I follow that. I surrender completely...She said she wants to get it done, it is good for me, I said okay.” – *Burma (Myanmar), 1 year in Canada, screened*

‘Health beliefs and knowledge’ is linked with a one-way arrow to ‘responsibility over health’. In order to take control over their health, participants needed the knowledge to do so. For example, women whose rationale for participating in Pap tests was to reduce the risk of cancer require the knowledge that Pap tests may achieve this outcome prior to deciding to get one:

“Because you know, women has lots of problems inside, uterus problems and then now if I don’t, I don’t go there so I can’t find out problem, right? A growth, this growth comes one day, 3-4 years after so like a big, right?” – *Bangladesh, 18 years in Canada, screened*

‘Responsibility over health’ is linked with a one-way arrow to ‘influence of others’. Among those who place responsibility of their health with their doctors require their doctors to initiate screening in order for it to happen. ‘Responsibility over health’ is also linked with a one-way arrow to the outcome ‘Pap test decision’. Among those who take health into their own hands and book their appointments because they know when it is due, screening may then take place. Among those who place the responsibility with their doctors, they require an extra step in the decision-making process that consists of a recommendation from their doctors:

“And when the need will arise, she will let me know.” – *Pakistan, 35 years in Canada, underscreened*

The ‘influence of others’ category emerged as a strong link to deciding whether or not to get a Pap test. It was present in one way or another among each participant’s stories, with variations influenced by other factors stemming from the other major categories. Therefore, ‘influence of others’ is linked by a one-way arrow to the outcome ‘Pap test decision’. Either getting a recommendation to screen or not, or the absence of a recommendation, lead to a Pap test decision. For example, one participant indicated that she had not gotten a recent Pap test due to her physician indicating that it was unnecessary:

“Because my doctor said it’s not required.” – *Pakistan, 35 years in Canada, underscreened*

‘Experience in healthcare’ is linked by a one-way arrow to ‘influence of others’. One’s relationship with their doctors, whether it is negative or positive, may determine the strength their doctor’s influence has on their Pap test decision-making. For example, while discussing her reasons for complying with medical recommendations, a participant described her experience with her physician:

“But doctor is good, very good. Very good explain everything. Sometime I no understand...So he take out the chart and put too like body part and he explain everything. Good this, good this, good this. So doctor is very good.” – *India, 36 years in Canada, screened*

‘Experience in healthcare’ overlaps with ‘Pap test decision’ as it involves an experience in the health care system (all participants had at least one Pap test in their lifetime). Participants’ experiences in the health care system includes their past Pap test decisions to screen. ‘Experience in healthcare’ is linked with ‘Pap test decision’ though a one-way arrow, as previous experiences with getting a Pap test, both positive and negative, lead to either a repeat or cease of participation in Pap tests.

5.4 Discussion

5.4.1 Factors influencing cervical cancer screening participation

The first objective was to develop a preliminary theory to understand what factors influence older South Asian immigrant women's decision to participate in cervical cancer screening. To the author's knowledge, few researchers have developed a theory on cancer screening decision-making and the current model is believed to be the first outlining the cervical cancer screening decision-making process among older South Asian immigrant women.

Various factors were found to be involved, directly or indirectly, in the screening decision-making process among the sample: the process of acculturation, components of one's culture, health beliefs and knowledge, responsibility over health, the influence of others, and experiences in health care. While these factors were important in the decision-making process, it became clear that they were usually less influential compared to a central factor. It was immediately identified that the influence of others, mainly doctors, was a key factor in this decision-making

process, in line with past research (Akers et al., 2007; Brown, Wilson, Boothe, & Harris, 2011; Hislop et al., 2003; Lofters, Hwang, et al., 2010; Taylor et al., 2002). The influence of doctors, family, and peers exhibited themselves through screening recommendations and/or reminders and knowledge offered to participants through these key figures. The remaining factors seemed to support or contradict doctors' recommendations, but most often than not, the doctors' advice was followed.

Components of culture (identity, practices, and values) developed through one's acculturation process (further discussed in section 5.4.2) was also found to be directly and indirectly involved in the screening decision-making process. Past research has consistently linked these components, such as held values regarding preference for female doctors, to screening behaviour. For example, research has shown an association between gender of doctors and Pap test participation, with decreased screening associated with male doctors (Akers et al., 2007; Lofters et al., 2011). Past research has also found that women may feel more comfortable having a female doctor perform their Pap tests (Donnelly, 2006; Oelke & Vollman, 2007) and this may affect screening decision-making. However, similar to our findings, Oelke and Vollman (2007) found that some participants did not have a gender preference; they just wanted competent doctors. The value of being modest has also been reported to be a barrier to get screened, in terms of feeling too shy to get a Pap test (Oelke & Vollman, 2007). However, the current model differed from Puschel and colleagues' (2010) results in terms of other factors. While the current model identified components of culture involved in the screening decision-making process, such as modesty through held values regarding preference for female doctors, shame and secrecy identified as barriers to cancer screening in Puschel and colleagues' (2010) study were not identified in the current study.

Health beliefs and knowledge were also found to play a role in the screening decision-making process. There seemed to be some lack of knowledge regarding Pap tests, which may have stemmed from lack of screening in their home countries, consistent with past findings among Sikh women (Oelke & Vollman, 2007). Among those who had some knowledge regarding Pap tests and viewed it in a positive light, there still lacked knowledge about its purpose, which Oelke and Vollman (2007) also reported. While some women indicated that regular screening was important, others waited for their doctors to recommend it or felt it necessary to get screened again only if needed. These findings indicate that gaps in knowledge regarding cervical cancer's slow progression and thus the need for regular screening exist among our sample. The beliefs of low risk perception and lack of screening necessity in the absence of symptoms may be reflective of the health care system priorities on curative rather than preventive behaviour in the participants' home countries (Brotto et al., 2008). However, more often than not, there seemed to be a positive attitude towards Pap tests due to its benefits to women's health. The role of health beliefs and knowledge in the cancer screening decision-making process is also consistent with other models. Puschel and colleagues (2010), Greco and colleagues (2010), Purtzer (2010), Bong and McCool (2011), and Ferrante, Shaw, and Scott (2011) all reported on the influence of health beliefs and/or knowledge within their cancer screening decision-making models.

Placing the responsibility of one's health and knowledge on health in the hands of doctors is not a new finding. For example, Sikh participants in a past study reported that it is the doctor's responsibility to take the time to explain Pap tests to them (Oelke & Vollman, 2007). On the other hand, participants who took the initiative and responsibility in getting screened directly influenced their behaviour. Empowering women, either with the responsibility of scheduling

regular screening appointments or with the provision of screening information, may help them to decide to participate in cervical cancer screening (South Riverdale Community Health Centre, Mount Sinai Hospital, & Toronto Public Health, 2010). Similar to Greco and colleagues' (2010) mammogram model, responsibility over health was a key factor in the screening decision-making process. In light of the fact that Greco and colleagues' (2010) sample differed from the sample in the current study by consisting of women with a family history of breast cancer, both models highlighted the influence of a responsibility over health in the decision-making process. The current model differed in that it consisted of two concepts within this major category: women taking responsibility over their health and placing responsibility with doctors whereas Greco and colleagues' (2010) model only consisted of the former concept. However, this may be related to the nature of their high-risk sample.

Related to the influence of doctors, one's experience in health care, whether it be negative or positive, was influential in the screening decision-making process. For example, Harris and colleagues (2012) found that there was an association between racial discrimination by a health professional and reduced participation in Pap tests among Maori participants. Similarly, having a negative or positive experience with an influential figure such as doctors was an important factor in the screening decision-making process among the sample. The influence of women's experiences in health care was also influential in Fowler's (2006) mammogram decision-making model among African American women. However, the current model differed from Fowler's (2006) in terms of the influence of religion and the relationships built within places of worship. Women in the current study identified the importance of religion in their lives and its influence in shaping their identity and cultural practices, but it took a more distal role in screening decision-making.

The preliminary theory developed in Study 2 offers a more in-depth understanding of the factors involved in making the decision to get a Pap test among older South Asian women. While further research is needed to strengthen the validity of the theory, it offers public health planners insight into major barriers/facilitators to screening and may inform promotion and program development to increase and maintain Pap test participation among this group of women.

5.4.2 The influence of acculturation

The data suggests that acculturation is involved in the screening decision-making process among the sample, and is so in an indirect way. The process and experience of acculturation seemed to shape participants' identity, practices, and values, in alignment with Schwartz and colleagues' (2010) multidimensional model of acculturation. It is through these components that acculturation is linked to screening decision-making. The pathways between the acculturation process, components of culture, and screening decision-making is in line with the health behaviour/lifestyle model, which posits that individuals engage in certain behaviours due to culturally held attitudes, beliefs, and values (Dressler, 1993; Hunt et al., 2004). The presented model supports the general conclusions that acculturation may be associated with screening behaviour through mechanisms or combinations of them such as education, change in beliefs, values, and attitudes (Marin & Gamba, 2003), health literacy (Todd & Hoffman-Goetz, 2011), Pap test knowledge (Gupta et al., 2002), and information and care seeking (Facione et al., 2000). It is these mechanisms that mediate the relationship between the acculturation process and cervical cancer screening decision-making. Thus, it may not be surprising that some cross-sectional results do not indicate an association between acculturation proxies and screening, if taking into account such mechanisms (Lara et al., 2005).

Looking at the questionnaire data, there does not seem to be a great difference between low and higher acculturation scores in relation to screening. However, this may be due to lack of acculturation level range in Study 2 or the lack of an acculturation measure designed specifically for South Asians, as their acculturation process may be different from Asians. However, examining the proportion of life and years lived in Canada indicates a difference between screened and underscreened women, where more recent immigrants and those who have lived in Canada for a smaller proportion of their lives were on average more likely to be underscreened. This supports past research conducted in the USA, Australia, and Canada that Pap test rates increase as duration in the host country increases (Gupta et al., 2002; Latif, 2010; Lesjak et al., 1999; A. E. Maxwell et al., 2000; McDonald & Kennedy, 2007; Tsui et al., 2007). Most of the participants in Study 2 immigrated to Canada later in their lives. They did not grow up in Canada and go through the Canadian education system. So while many may have lived in Canada for many years, they remain low acculturated or bicultural. This highlights the importance of looking at both proportion of life *and* years lived in Canada. Additionally, time lived in Canada cannot be assumed to indicate acculturation, as illustrated among the sample. Indication that underscreened women were on average more recent immigrants in Canada may be due to decreased connections or contact with the health care system, compared to those in Canada for longer periods.

Study 2 results support the distal association between acculturation and cervical cancer screening. Results also highlight mixed findings, which may be due to the various ways acculturation was measured. However, it may also indicate that exploring the influence of acculturation on screening participation may not be strongly warranted. Further research may consider focusing on other critical factors, such as the influence of physicians and experiences in

health care. In doing so, cervical cancer screening participation among immigrant women may be better understood.

CHAPTER 6: GENERAL DISCUSSION AND RECOMMENDATIONS

The following chapter includes a discussion of key findings, addressing the three thesis objectives outlined in section 3.1. Additionally, the studies' strengths and limitations are discussed, including a discussion of the potential implications of the research findings, and directions for future research.

6.1 Summary of Key Findings

The purpose of this thesis was to examine Pap test participation among immigrant and non-immigrant women and to understand the screening decision-making process among immigrant women in Ontario, Canada through a mixed methods approach. The influence of acculturation was explored across studies. The thesis objectives were met through two sequential linked studies: the first study involved quantitative analysis of CCHS data to explore whether there are cervical cancer screening differences between non-immigrant and immigrant women, as well as the relationship between acculturation proxies and cervical cancer screening among immigrant women of different cultural/racial backgrounds. Additionally, based on results of the CCHS analyses, the population of interest for the second study was identified among a specific group of immigrant women less likely to participate in cervical cancer screening based on age, education, and culture/racial background (see section 5.2.3). The second study was informed by grounded theory methodology and consisted of a qualitative analysis of face-to-face semi-structured interviews with older South Asian immigrant women where various themes emerged, exploring their cervical cancer screening decision-making process and the underlying mechanisms of the influence of acculturation. Major findings highlight the importance of having access to a doctor and the influence a doctor has on health decisions.

6.1.1 Cervical cancer screening inequities

Thesis objective 1: To explore whether there are cervical cancer screening differences between non-immigrant and immigrant women.

The quantitative analyses in Study 1 found that immigrant women are less likely to participate in cervical cancer screening than non-immigrant women. Specifically, the results demonstrate that recent immigrants are less likely to get a time-appropriate Pap test compared to non-immigrants. Additionally, reasons for not having a time-appropriate Pap test differed across immigrant status. Differences were found not only between immigrants and non-immigrants, but also within immigrants across cultural/racial groups. Chinese, South Asian, and other Asian immigrant women reported higher rates of time-inappropriate Pap test participation compared to White, Black, and all other immigrant women. Factors associated with not having a time-appropriate Pap test also differed between these two groups of women. Among Chinese, South Asian, and other Asian immigrant women, education and access to a regular medical doctor were associated with screening, while age, household income, access to a regular doctor, and proportion of life spent in Canada were associated with screening among White, Black, and all other immigrant women. Among the Study 2 sample, differences related to screening emerged when examining acculturation proxies: women who were underscreened were on average living in Canada for a shorter duration and smaller proportion of their lives, compared to those who had a time-appropriate Pap test, further discussed in section 6.1.4. Overall, the results highlight the heterogeneity among women in Ontario and among immigrant women.

Past research reported differences between non-immigrant and immigrant women in terms of cervical cancer screening (Akers et al., 2007; Blackwell et al., 2008; Xiong et al., 2010) and the current research offers evidence that these inequities still exist. Inequities between immigrant and non-immigrant women are not limited to cervical cancer screening. Immigrant women are less likely to participate in other cancer screening (Breen & Meissner, 2005) such as mammograms (Shields & Wilkins, 2009), both in Canada and the US. Additionally, immigrants are less likely to screen for gender-neutral colorectal cancer, compared to non-immigrants (Goel et al., 2003; Koo et al., 2010; Shih, Elting, & Levin, 2008). Even among men, a smaller percentage of immigrants reported prostate specific antigen (PSA) testing compared to non-immigrants (Swan, Breen, Coates, Rimer, & Lee, 2003).

Although examining reasons why there exists cervical cancer screening inequities between immigrant and non-immigrant women was outside the scope of the thesis, Study 1 and 2 results offer some insight. Study 1 identified that the recentness of immigration may be what distinguishes immigrants from non-immigrants in terms of cervical cancer screening. Factors associated with being a recent immigrant may be acting as barriers to screening. For example, unfamiliarity with or difficulty accessing the health care system (Goel et al., 2003; Zanchetta & Poureslami, 2006), preference for physician characteristics such as gender (Ahmad, Gupta, Rawlins, & Stewart, 2002), low knowledge on Pap tests (Redwood-Campbell, Fowler, Laryea, Howard, & Kaczorowski, 2011), and differing beliefs and attitudes regarding screening (A. Garcia, 2006; C. J. Maxwell et al., 2001; Schoueri-Mychasiw et al., 2012) may prevent immigrant women, especially recent immigrants, from getting a Pap test. Health literacy may be another factor linked with screening disparities between immigrants and non-immigrants and has been found to be associated with screening among immigrants, especially regarding less familiar

cancer screening (Todd, Harvey, & Hoffman-Goetz, 2011). As Study 2 results identified, many participants discussed breast cancer and mammograms, possibly due to the high amount of social marketing on the issue, and less so regarding cervical cancer and Pap tests. While health literacy was not specifically explored in the thesis, Study 1 findings identify education as a correlate of screening while Study 2 findings suggest low levels of Pap test and cervical cancer knowledge. As a social determinant of health, literacy is crucial in predicting health status and health behaviour and immigrants, especially women, are more likely to have lower literacy scores (Ronson & Rootman, 2004). Study 2 identified factors consistent with past research that may help to explain screening inequities. For example, participants identified many disease preventive health behaviours, such as eating healthy and exercising, but few identified secondary prevention or screening. Secondary prevention may be foreign to immigrant women whose home countries may not have cancer screening as a top health priority (Schleicher, 2007). Preferences regarding the gender of one's doctor also came up in Study 2 interviews, but participants did not consistently indicate a preference. This finding is consistent with the little data indicating modesty issues as barriers to cervical cancer screening among Study 2 participants, similar to past findings among South Asians (Gupta et al., 2002). Frustration and difficulties accessing health care was reported among Study 2 participants and this may have implications for continued screening. Additionally, the importance of access to a doctor and getting a recommendation to screen was apparent in both studies. Past research has identified disparities in physician recommendations based on cultural/racial background and immigrant status of the physician and/or patient (Ho & Dinh, 2011; Koo et al., 2010). It is possible that screening disparities may in part be due to differing recommendations from physicians.

Overall, the thesis points to existing differences among women in Ontario in relation to cervical cancer screening. A better understanding of why these inequities exist is still needed. This matters because if we do not understand why these inequities exist, then we cannot target them, leaving vulnerable populations at risk. This is especially troubling considering the increasing immigrant population in Canada (Statistics Canada, 2012). Clearly, population-based interventions are not enough, as they do not address the social inequities common among immigrants, which may be underlying health inequities. We need to complement these interventions with targeted efforts focused on vulnerable populations (Frohlich & Potvin, 2008), further discussed in section 6.3.

6.1.2 Screening decision-making

Thesis objective 2: To explore cervical cancer screening decision-making among immigrant women.

Study 1 identified that the three most common reasons for not getting a time-appropriate Pap test among immigrant women consisted of: (1) not getting around to it, (2) not thinking it was necessary, and (3) the doctor not thinking it was necessary. Additionally, factors associated with screening among immigrants included education, age, income, access to a doctor, and acculturation. Study 2 built upon Study 1 by developing a preliminary theory on screening decision-making among a South Asian sample. Factors identified in screening decision making in Study 2 consisted of: the process of acculturation, components of one's culture, health beliefs and knowledge, responsibility over health, the influence of others, and one's experiences in health care. Risk perception was identified in both studies as being involved in the decision to

get a Pap test. However, the association between not getting around to getting a Pap test and screening was not prominent in Study 2 and may be due to the characteristics of the sample. It is possible that the Study 2 sample excluded women with barriers linked to time, as the participants had the time to give to the research study. Several factors involved in the decision to screen in Study 2 were also found to be associated with participation in Study 1, such as acculturation and the role of doctors. Support in Study 1 for the remaining factors identified in Study 2 may be limited due to the absence of questions measuring these factors in the CCHS.

Thesis results are consistent with past research. Reasons identified for not having a time-appropriate Pap test were consistent with past analyses of CCHS data (Xiong et al., 2010). Factors identified in screening decision-making are also supported by past research on cancer screening. Specifically, evidence has been found on the association between length of time spent in the host country and cervical cancer screening (Schleicher, 2007), the influence of one's culture on health beliefs and its association with cervical cancer screening (Schleicher, 2007), the influence of health beliefs and knowledge on cervical cancer screening (Johnson, Mues, Mayne, & Kiblawi, 2008), risk perception and prostate cancer screening (Ferrante et al., 2011), the link between attributing responsibility of one's health internally or externally and mammogram participation (Rothman, Salovey, Turvey, & Fishkin, 1993), having a source of care and its association with cervical cancer screening participation (Schleicher, 2007), and negative experiences in health care and reduced breast and cervical cancer screening (Harris et al., 2012).

Access to and/or the influence of doctors was a key factor highlighted in both studies and past research (Akers et al., 2007; Amankwah et al., 2009; Brown et al., 2011; Hislop et al., 2003; Kaida et al., 2008; Lofters, Hwang, et al., 2010; Lofters et al., 2011; C. J. Maxwell et al., 2001; Taylor et al., 2002). The influence of doctors has not only been reported among studies looking

at cervical cancer screening, but also among mammogram participation. In agreement with Puschel and colleagues' (2010) research where 48 Chilean women were interviewed to understand the barriers and facilitators to mammogram participation, doctors' advice to get screened was a crucial factor to getting a mammogram. The thesis findings underscore the importance of having access to health care, a determinant of health (McGibbon, Etowa, & McPherson, 2008; Raphael, 2004). Specifically, results indicate the strength of physicians' influence on women's health decisions and behaviour through screening recommendations and/or referrals. Study 1 and 2 used different research methods and samples yet had similar findings in terms of the influence of doctors as a factor in cervical cancer screening behaviour. This finding is particularly worrying considering that previous research has identified that immigrants are less likely to have a doctor compared to non-immigrants (Lebrun & Shi, 2011). Although the current research does not provide support for the inequity regarding access to physicians, access between immigrants and non-immigrants may differ across provinces, location of residence (rural vs. urban), SES levels, and/or recentness of immigration.

The preliminary model aligns with other theories identifying individual-based factors, such as knowledge, risk perception, and beliefs involved in cancer screening decision-making (Ackerson & Preston, 2009; Greco et al., 2010; Purtzer, 2012) and external factors such as getting a screening recommendation for a physician (Greco et al., 2010). However, no such model exists among older South Asian women exploring cervical cancer screening decision-making and the proposed model offers a better understanding of such a decision among a specific group of women in Ontario. Additionally, the developed model extends previous decision-making theories by situating the influence of acculturation on screening decision-making. However, in order to understand screening decision-making and behaviour in a

comprehensive manner, other perspectives must also be taken. For example, an examination of structural and organizational factors involved in cancer screening participation may highlight barriers and facilitators to screening at a non-individual level.

The current research extends past knowledge by highlighting the manner in which these factors may be linked within screening decision-making. This thesis also underscores the importance of mixed methods research. Whereas Study 1 was useful in identifying groups of women less likely to screen and the factors associated with screening, the complexities involved in screening decision-making is difficult to lift from cross-sectional survey data, whereas the qualitative study offers a glimpse as to what may be going on. Looking at results from both studies, it becomes clear that a web of factors are involved in influencing screening participation. Overall, the thesis findings suggest various factors involved in screening decision-making, strengthening the idea that offering cancer screening through a universal health care system is not sufficient in increasing behaviour to optimal levels in all segments of the population. Although cervical cancer screening rates have increased at a population level over the years, inequities persist, leaving the vulnerable populations, such as recent immigrant women, still vulnerable. This is especially worrisome when considering that the immigrant population is continuously increasing in Canada (Statistics Canada, 2012).

6.1.3 The influence of acculturation

Thesis objective 3: To explore the influence of acculturation on cervical cancer screening.

Study 1 findings identified an association between a low proportion of life lived in Canada and a decreased likelihood of Pap test participation among White, Black, and other immigrant

women. Study 2 identified similar findings among older South Asian immigrant women, in addition to qualitative support for the indirect influence of acculturation on cervical cancer screening decision-making.

As discussed in section 2.6, past research results on the association between acculturation and health outcomes have been mixed. This is also true specifically regarding the association between acculturation and cervical cancer screening. Acculturation measured via proxies (e.g., language, duration in the host country) has been associated with cervical cancer screening among Hispanic populations (Ackerson & Gretebeck, 2007; Watts et al., 2009) and Asian Americans (Ho & Dinh, 2011; Lin et al., 2009), whereas another study found no association among an older Mexican American population (Reyes-Ortiz & Markides, 2010). Among a South Asian sample, no association was found between cervical cancer screening and acculturation using the original SL-ASIA scale. However, a positive association was found when looking only at the language acculturation subscale (Menon et al., 2012). Similar to the body of research literature, the thesis results on acculturation and screening were mixed. Proportion of life lived in Canada was predictive of cervical cancer screening among the low-risk immigrant group in Study 1, consistent with past research exploring acculturation and screening both in Canada and the USA (Lebrun, 2012). However, acculturation proxies were not found to be associated with Pap test participation among the high-risk immigrant group. Additionally, language spoken at home was not predictive of Pap test participation among the full sample. In Study 2, differences between low and higher SL-ASIA scores in relation to screening were also not prominent. However, proportion of life lived and length of time in Canada since immigration seemed to distinguish between screened and underscreened South Asian women. Additionally, qualitative results from Study 2 suggest that acculturation is involved in screening decision-making, and is so in an

indirect way through shaping participants' identity, practices, and values, in accordance with the acculturation framework used in the thesis (Schwartz et al., 2010). It is through these components that acculturation is linked to screening decision-making. The fact that we did not find major differences in Pap test participation between different levels of acculturation is in line with Study 1 findings and past research using the SL-ASIA (original version) among South Asian immigrants (Menon et al., 2012).

The mixed results across the two studies may be due to numerous reasons. First, results may vary due to the different acculturation measures used. While proxies are routinely used to measure acculturation, they lack the ability to take individuals' context into account. Acculturation is multifaceted, non-linear, bidimensional, and occurs at multiple levels (e.g., language, dress, attitudes). The problem with using proxies is that they do not take a multifaceted approach to measuring acculturation. Study 2 was used to fill this gap by incorporating a bidimensional acculturation scale and a qualitative component and identifying acculturation through women's lived experiences. It is possible that duration of residency, language, and/or proportion of life spent in Canada may be insufficient to capture acculturation among some groups of women. Additionally, acculturation may play a distal role in the link to screening, a hypothesis supported by the preliminary theory developed in Study 2. Second, mixed results may be due to the narrow range of acculturation level among the Study 2 sample. The sample was low acculturated to bicultural, limiting the variability in acculturation. Third, no measure of acculturation exists specifically designed for South Asian samples, and the adaptation of a measure designed for Asians may not be targeting the complexities of acculturation among South Asians, as their acculturation process may be different. Fourth, associations between acculturation and screening may vary across racial and even ethnic groups (Lin et al., 2009), and

the association between acculturation and screening among Chinese, South Asian, and other Asian immigrant women may have been evident by stratifying samples by cultural/racial group. However, stratification would have limited the sample sizes. Lastly, acculturation may simply not be a critical factor in understanding and predicting cervical cancer screening behaviour. Thesis results may indicate that focusing on acculturation may not have much merit in the future and other factors, such as the influence of physicians and experiences in the health care system seem to be more critical. Reducing health inequities is an important public health priority, but focusing on acculturation may not assist us in achieving this goal.

6.2 Strengths and Limitations

To the author's knowledge, this thesis is the first to use recent CCHS data to examine cervical cancer screening among women in Ontario, and the first to develop a preliminary theory on cervical cancer screening decision-making among older South Asian immigrant women. The thesis provides an update on screening differences in an Ontario population. Considering the demographic profile of Canada where South Asians are the largest visible minority group (Statistics Canada, 2011a), directing screening efforts where they are most needed is crucial. The thesis further explores screening behaviour by taking an in-depth look at a vulnerable population. By using a mixed methods approach, it was possible to explore screening participation at both a broad and detailed level, further expanding our understanding of cervical cancer screening participation in Ontario. Additionally, the thesis addresses the association between acculturation and screening participation. The thesis results may also be beneficial for participants themselves, as the evidence from the research may be used to develop effective and relevant programs to improve their interaction with the Canadian health care system and their overall health status.

As with all research studies, limitations exist. Regarding the overall research, analyses were limited to women. This was an appropriate choice due to the female-specific cancer explored. However, it would be interesting to explore male-specific cancer participation among similar immigrant groups to identify if inequities may be due in part to gender differences. Regarding Study 1, using the CCHS and conducting secondary data analysis have its limitations. The cross-sectional nature of the data does not allow us to make causal conclusions between independent and outcome variables, as data was collected at a single point in time. Additionally, data was self-reported and response and recall bias may be present. Over-estimating screening behaviour through self-reporting has been illustrated in past research (Montano & Phillips, 1995). Further, due to small cell sizes in some analyses, collapsing variables was required. However, only a few of these instances occurred, limiting the impact on results. It was also necessary to delete cases where certain important variables were not answered and there were significant differences between those deleted and those who remained. For example, cases were deleted due to missing information on the sexual intercourse question. Deleted cases were more likely to report not having a time-appropriate Pap test, but this may be due to never having sexual intercourse. Without knowing one's sexual history, leaving these cases in the analyses may have diluted the precision of results in the remaining analyses. Lastly, due to data limitations, Pap test participation could not be compared across other characteristics, such as generation status (first-generation immigrant vs. second-generation immigrant), which may have been an important acculturation proxy. However, a distinction was made between immigrant and non-immigrant women of different cultural/racial background, as many studies fail to do this (Akers et al., 2007), even though immigrant populations are heterogeneous and within group differences are important to explore. Doing so increases our understanding of subgroup populations in order to

help inform culturally relevant public health planning. Overall however, using the CCHS was a strength because it offered population-based data which is representative of the Ontario population, allowing us to generalize the findings to the target Ontario population. Additionally, secondary data analysis allowed the use of high-quality data using limited resources.

Regarding Study 2, limitations centered on data collection and analysis. South Asian women were only recruited from two cities in Ontario. It is possible that South Asian immigrant women from rural areas or other provinces experience different decision-making processes. However, this approach was appropriate due to limited resources and time. Measures used to collect data also had their limitations. The three fatalism questions seemed to have caused confusion among several participants and thus the scores may not be accurate reflections of fatalistic views among the sample. However, fatalism was not a strong theme emerging from the qualitative data and may not have a large influence on the screening decision-making among our sample. Regarding acculturation measures, an adapted version of SL-ASIA was used, which has not been specifically created for a South Asian population. Additionally, it does not take into consideration the rate at which acculturation may occur, as change happens over time (Phinney, 2006). However, the SL-ASIA has been used in the past among South Asians (Iyer & Haslam, 2003; Kumar & Nevid, 2010; Menon et al., 2012; Reddy & Crowther, 2007) and is a bidimensional acculturation scale to measure acculturation levels, a move away from using unidimensional models. The use of acculturation proxies taking time into consideration, such as the proportion of life lived in Canada, helped to address the fact that acculturation may occur at different rates depending on if individuals immigrate early or later on in their lives (Phinney, 2006).

The age of participants may not be accurate due to stigma, as women from the South Asian community advised the researcher that many do not like to indicate their age, especially among the presence of others from the same community. However, the researcher is not part of the South Asian community and participants may have felt more comfortable indicating their true age. Additionally, English language eligibility questions may not have fully captured participants' level of English comprehension. Among those that were offered the option of having a bilingual interviewer, a few declined. These participants may have had more trouble conveying their thoughts during the interviews and key information may have been missed. However, strategies were used within the interview process to ensure, as much as possible, comprehension between participant and interviewer. For example, some participants found it useful to read the interview questions themselves. Additionally, similar to Study 1 limitations, participants may have underestimated the time since their last Pap test (N. P. Gordon, Hiatt, & Lampert, 1993; Suarez, Goldman, & Weiss, 1995). However, two recall discrepancies were identified during analysis and corrected using both interview and survey data. Participants' suspicions about survey answers being sent to the Canadian government may also be an indication of response bias in the surveys. However, participants were assured prior to completing the survey that all answers would remain confidential and were solely for research purposes.

Regarding analysis, it was only possible to use a single data analyst for data coding and theory development, which prevented the testing of inter-rater reliability. That said, it enabled the analyst to get an in-depth understanding of the data, which is important in order to develop a preliminary theory in the data. The limitation of a single analyst was addressed, however, by recruiting an external researcher who offered feedback on interviewing practices after reviewing

a sample of interviews and cultural interpretation of data was obtained through members of the South Asian community. Additionally, the preliminary model was not validated through obtaining member checks. However, emerging themes within the data were consistently discussed across interviews and among deviant cases, and member checks would likely not have substantially changed the results. Establishing an audit trail, which included memos describing coding decisions, thoughts regarding the data, and preliminary drawings of emerging linkages between themes, obtaining peer feedback on several interviews, and clarifying cultural concepts with members from the South Asian community also increased trustworthiness of the study.

The proposed decision-making model cannot be generalized to all South Asian women in Ontario, as our sample was small and specific to women who were already connected to multicultural organizations. Additionally, women who agreed to participate in this study may have been more comfortable talking about Pap tests, more acculturated to Canada, and may have held less conservative values and beliefs, compared to those who did not come forward to participate. Thus, caution must be practiced in generalizing the results to the target population. However, the developed model provides insight as to the web of factors involved in women's screening decision-making. Additionally, the sample includes a heterogeneous group of women from various countries within South Asia and who have been living in Canada for various numbers of years, thus incorporating diversity within the decision-making model.

In spite of the research limitations, the thesis extends the literature and offers new insight on cervical cancer screening among a vulnerable population in Ontario, providing public health planners with culturally specific results in order to focus resources where they are most needed.

6.3 Potential Implications

The findings from this thesis have potential implications for health promotion and screening interventions. Results from both Study 1 and 2 highlight the importance of complementing population-based interventions with interventions targeting vulnerable populations (Frohlich & Potvin, 2008). Not only is it important to continue the promotion and delivery of cervical cancer screening at a population-level, but we also need intersectoral programs aimed at reducing inequities among vulnerable groups. For example, results identified that older women are less likely to get a time-appropriate Pap test compared to younger women. It may thus be important to identify this group of women and develop interventions that addresses their barriers to screening, as the risk of developing cervical cancer increases as one ages (Cancer Care Ontario, 2011). Among the Study 2 participants who consisted of older women, variability existed in terms of getting a physician recommendation to get a Pap test. It may be possible that some physicians are not consistently recommending screening to older women (Mandelblatt & Yabroff, 2000). Thus, better educating physicians on cervical cancer screening age recommendations may address screening barriers faced by older women. However, further research is needed from the perspectives of physicians, as discussed in Section 6.4.

Additionally, health promotion efforts and interventions should focus on the needs of women of Asian cultural background, considering the lower screening rates among this population. It is important to note the different predictive factors of screening among immigrant women of various cultural/racial backgrounds, as needs and barriers may be different. Thus, tailoring public health messages and interventions to these specific groups of women is crucial for uptake by underscreened women, and should incorporate the knowledge and health literacy levels of the target population, translated material, and values specific to the targeted group (South Riverdale

Community Health Centre et al., 2010). For example, cervical cancer screening messages targeting older South Asian women can highlight the importance of regular Pap tests in order to remain healthy and productive within one's family unit, considering the high importance placed on family identified by participants in Study 2. In doing so, information uptake may be facilitated and may in turn increase knowledge and consideration to screen among the target group.

Findings from both Study 1 and 2 identified gaps in knowledge regarding Pap tests and cervical cancer. Participants in Study 2 also communicated their interest in learning more about Pap tests and disseminating knowledge regarding the purpose, importance, and process of Pap tests must be highlighted. In doing so, women may be more likely to consider participating in cervical cancer screening and may have a better understanding of what to expect during a Pap test. Considering the importance of social networks, togetherness, family, and religious and cultural community identified in Study 2, health information can be delivered through these informal communication pathways (Ahmad et al., 2004) and may increase receptivity and uptake. Additionally, communication between women, their family members, and their friends and peers must be promoted. Discussions must be initiated to get people talking about Pap tests, as participants in Study 2 identified a lack of communication among women regarding Pap tests. By increasing communication, familiarity with Pap tests can be increased, which may in turn facilitate physician-patient discussions regarding screening and increase participation.

Considering the importance of natural remedies and Ayurvedic medicine discussed by participants in Study 2 and past research (Choudhry, 1998), a focus on holistic and comprehensive health needs to be incorporated when planning health promotion programs and messages to be delivered to South Asian women. Emphasizing the benefits of secondary

prevention to possibly avoid more invasive procedures in the future may be helpful to women as many participants indicated that Pap tests were important in order to avoid future health problems. It may also be useful to facilitate the process of getting a Pap test, as women cited that they did not get around to it as one of their reasons for not having a recent test. Discussion related to the logistics of getting a Pap test and transportation issues were also highlighted. Programs that make it convenient and easy to get screened may be useful, such as mobile clinics that make stops at women's workplaces and community centres. This way, barriers related to transportation and locations of health clinics can be alleviated. It must be noted that public health interventions and messages incorporating new research findings must be evaluated in order to achieve a better and practical understanding of their impact on women's cervical cancer screening access and behaviour.

The findings from this thesis also have potential implications for physicians and other health care providers. Considering the influence physicians have on the care of women as identified in this thesis, they must take a larger role with their patients. Relationships with patients must be maintained and nurtured, building trust and ensuring approachability for communication. Barriers such as shyness and lack of knowledge regarding Pap tests can be overcome with a good relationship between patient and physician (Donnelly, 2008). Additionally, increased attention needs to be given to patient-centered culturally competent health care. Participants in Study 2 identified negative experiences they had with their physicians and may be indications of a lack of culturally competent care. A recent US study found that advanced medical students could benefit from increased training in caring for patients from diverse cultural/racial backgrounds (Mirsu-Paun, Tucker, & Hardt, 2012). Training for health care practitioners must strengthen cultural competency, integrating it throughout a practitioner's medical education (Macleod & Frank,

2010). Health care workers not only need to be aware of and sensitive to differences among their patients, but also possess the skills to respond to these differences (J. R. Betancourt, Green, & Carrillo, 2002). Based on the sample in Study 2, women were open to the recommendation of getting a Pap test as long as it was done sensitively, competently, and along with providing information on its purpose and its importance to women's health. Cultural competency must be integrated in health care, incorporating the understanding that a biomedical model of health care may not be in everyone's schema. Lack of trust in physicians and/or the Canadian health care system may also be present due to an overreliance on prescriptions and lack of medical resolution, as identified by some participants in Study 2. Communication and gaining an understanding of a patient's needs is crucial in gaining trust. It is also important to consider that older South Asian women may refrain from asking their physicians questions out of respect. Thus, questions and concerns should be encouraged within an approachable and safe environment. The adoption of cultural safety among health care practitioners may be a useful approach to serving diverse patients. Cultural safety involves practitioners being aware of their influence on patients, the power differentials between themselves and their patients, and to work towards building an environment consisting of communication, respect, and empathy (De & Richardson, 2008).

As identified in Study 1, women may have other competing health-related priorities and so it is important for health care practitioners to help determine and maintain appropriate screening practices among all their patients. However, it may be important for physicians to place some of the responsibility to get regular screening in their patients' control. Considering physicians' increasing patient volume, directing some of the responsibility may help to maintain regular and consistent screening practices among patients. Many participants in Study 2 were taking control

of their health and encouragement from physicians to do so in terms of being proactive in regular screening may be useful and empowering. Public health efforts can also be directed to supply women with the knowledge and skills to become proactive in their health care. Some participants also highlighted preference for female physicians. As it is not possible for all women to have female doctors, it may be practical to have female health workers qualified to perform Pap tests, such as nurse practitioners, collaborating with male physicians in order to offer screening when needed (Bottorff, Balneaves, Sent, Grewal, & Browne, 2001).

Patients' experiences in the health care system, such as waiting long periods of time in waiting rooms, having short interactions with their physicians, and not knowing what to expect during a Pap test, have also found to be influential in cervical cancer screening decision-making among the Study 2 sample. Organizational barriers within the health care system such as wait times and short physician-patient visits must be removed in order to facilitate the process of obtaining a Pap test for all women. It would also be useful to prepare women before their first Pap test, discussing the step-by-step process involved in getting a Pap test and its results, as this will increase their knowledge on what to expect and feelings of anxiety and fear can be reduced (Ahmed & Lemkau, 2000). For example, a South Asian Pap Test Clinic was established in British Columbia which addressed such organizational barriers by ensuring time was taken to prepare women for their Pap tests and answer any questions and/or concerns they may have had in a sensitive manner (Grewal, Bottorff, & Balneaves, 2004). Additionally, participants in Study 2 discussed the barrier of time it takes them to get to a doctor and their decision to change doctors based on distance. As past research has shown that the availability of health care depends on geographical location (L. Wang, 2009), efforts to ensure physical access to health care practitioners delivering Pap tests in all communities must be prioritized in order to decrease

travel time and increase access to health care for women. Additionally, some women may not have a regular physician, as identified across both studies. It is imperative to facilitate and establish linkages between the health care system and women as access to and the influence of a doctor were found to be crucial on screening participation across Study 1 and 2.

Comprehensive organized screening programs have yet to be fully established in Canada but may be useful in reminding women when to get Pap tests. Several participants in Study 2 discussed their positive experiences with health programs and the helpfulness of mammogram reminder letters as precursors to engaging in screening. Similarly, Pap test reminder letters sent to women may facilitate screening behaviour. With provinces already having implemented varying components of organized programs (Health Canada, 2004), including Ontario (Cancer Care Ontario, 2012a), the progression to comprehensiveness must be continued (Duggan, 2012). Additionally, health programs focused on delivering screening messages and facilitating the process of obtaining Pap tests must be continued. Participants frequently mentioned mammograms during the interviews and some women identified the importance of increasing their knowledge regarding Pap tests. These health programs should be delivered at locations where older South Asian women are already situated, such as cultural organizations similar to the South Asian Women's Centre. These are places where women are comfortable and feel safe going, they are familiar with the staff and volunteers, and know how and have access to get to these locations.

6.4 Directions for Future Research

Research on cancer screening among immigrant women in Canada is increasing. The current thesis contributes to this literature by providing an up-to-date overview of cervical cancer screening in Ontario, in addition to outlining a preliminary screening decision-making model

among a specific group of underscreened women. The thesis results have implications for future research in terms of research methodology and research conducted with immigrant women. Research in the area of cervical cancer screening must be continued in order to continually improve our understanding of screening behaviour among underserved populations.

The thesis points to the usefulness of mixed methods research and the triangulation of data sources. Both quantitative and qualitative methods to research have its strengths and limitations, and using both to explore an area of research was found to be useful in addressing weaknesses of individual methods. Research conducted in the future may consider a mixed methods approach to answering research problems. Results also have implications for future CCHS cycles. Further depth is needed within the Pap test modules, such as knowledge, beliefs, and frequency of screening. It would also be useful to include variables to distinguish between generation status among non-immigrants (e.g., second- or third-generation immigrants), which may offer more indication of acculturation, and variables exploring physician characteristics, such as gender, cultural/racial background, and language spoken with one's physician may identify patterns in the influence of physicians on screening behaviour.

The process of conducting Study 2 has implications for future research working with immigrant women. It is important as researchers to be aware of how one's presence may shape interviews and retrieved data. In the current example, dressing conservatively, respecting dress customs during an interview conducted in a Sikh temple, and accepting social invitations following interviews were helpful in creating an environment of respect and cultural sensitivity. Discussions addressing participants' questions to the researcher regarding culture and immigration status immediately prior to interviews also helped to 'break the ice', established

trust and rapport, and began interviews on a friendly note²⁸. These interactions may all have shaped the quality and accuracy of interviews and may have influenced participants' decision to advertise the study to others.

The need for future research in the area of cervical cancer screening among immigrant women remains. Due to small sample sizes, within cultural/racial group differences could not be analyzed. However, it would be important to do such analyses as cultural/racial groups are heterogeneous within themselves and highlighting differences may be important for public health planning. For example, South Asian immigrant women living in ethnic enclaves may report different barriers to screening compared to those living in other communities. Exploring the screening decision-making process among other immigrant groups may also be important to uncover similarities and/or differences and would have implications for health promotion and intervention development. Additionally, analyses conducted in Study 1 should be replicated using CCHS data from the remaining provinces and territories, and as Canada as a whole in order to identify across province/territory differences and/or similarities and to gain an overall picture of cervical cancer screening in Canada.

While future acculturation research should be continued to further strengthen the operationalization and measurement of the concept, the thesis results indicate that other factors, such as having access to a regular doctor, SES, women's experiences in the health care system, and other structural and organizational factors, may be more critical in understanding and predicting cervical cancer screening participation. While research to further reduce health

²⁸ Bearing a first name that the South Asian community recognizes ('Nour/Noor' means light in many cultures), participants asked me about my cultural/racial background and if I was born in Canada or not. I believe that once they knew I was also an immigrant from a collectivist culture, it helped me to be less of an 'outsider' and made conversations and interviews less formal and restrictive.

inequities must be continued, focusing on the influence of acculturation may not help us achieve our goals.

Considering the influence of physicians on women's screening behaviour, it is also important to explore the reasoning and rationale as to why some doctors think the Pap test is not necessary among at-risk women. Additionally, it would be important to explore physicians' perspectives and experiences related to recommending Pap tests among older South Asian immigrant women in order to get the full picture of such interactions, similar to Donnelly's (2008) work with healthcare providers and Vietnamese Canadian women.

Lastly, the preliminary decision-making model should be tested on another sample of older South Asian immigrant women to strengthen its validity. South Asian women recruited from other sources may also be important; our sample mostly came from multicultural organizations and participants may have been more established in their communities, more aware of and connected to social and health programs, and more independent, compared to women recruited from other places. Additionally, the relationships between each major category can be tested through quantitative research methods and strengthen the evidence of support for or improve upon the current model.

CHAPTER 7: CONCLUSIONS

The current research offers an up-to-date overview of cervical cancer screening among women in Ontario and indicates that certain groups of women remain underscreened. Additionally, the screening decision-making process is outlined among a sample of older South Asian immigrant women and highlights the importance of a web of factors, such as the influence of doctors and women's experiences in the health care system. The findings from this thesis underscore the importance of efforts through public health promotion and interventions to target women less likely to obtain Pap tests and to encourage primary health care physicians' role in women's screening decisions. The current research contributes to the growing literature on cervical cancer screening among immigrant women in Canada and has implications for the continual improvements in our health care system and cancer prevention efforts.

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APPENDICES

Appendix A: Identifying the Population for Study 2

Identifying the population for Study 2

1) Identifying high-risk cultural/racial groups based on recent Pap participation percentages

Chi square analyses were conducted among immigrant respondents, identifying an association between cultural/racial background and Pap participation ($\chi^2 (5) = 24.04, p = 0.0002$). The cultural/racial background groups²⁹ with the highest percentages of women reporting no recent Pap test were categorized as the ‘high risk’ group and the lower percentages as the ‘low risk’ group.

Result: Immigrant women reporting White, Black, or all others cultural/racial background had the lowest percentages of not having a recent Pap test and were categorized as the ‘low risk’ group. Immigrant women reporting Chinese, South Asian, or other Asian cultural/racial background had the highest percentages of not having a recent Pap test and were categorized as the ‘high risk’ group (see Table A.1).

Table 1: Cross-tabulation Cultural/Racial Background x Pap test participation

Variables	3 years ago or more or never (%)	Less than 3 years ago (%)
Cultural/Racial Background		
White	18.20	81.80
Black	14.77	85.23
<i>Chinese</i>	<i>28.94</i>	<i>71.06</i>
<i>South Asian</i>	<i>30.00</i>	<i>70.01</i>
<i>Other Asian</i>	<i>27.04</i>	<i>72.96</i>
All Others	13.07	86.94
High-risk group in italics		

Among the high-risk group, South Asian women were chosen as the target population for Study 2. South Asians are the largest visible minority group in Canada (Statistics Canada, 2011a)

²⁹ The variable ‘cultural/racial background’ was collapsed due to small cell numbers among the immigrant sample when cross-tabulated with pap smear participation. ‘White’, ‘Black’, ‘Chinese’, and ‘South Asian’ categories remained the same. ‘Korean’, ‘Filipino’, ‘Japanese’, ‘Southeast Asian’, ‘Arab’, ‘West Asian’ were collapsed to create the ‘Other Asian’ category, and ‘Latin American’, ‘Other’, and ‘multiple ethnicities’ were collapsed to create the ‘All Others’ category. Decisions on how to collapse were based on a combination of past research using the CCHS data (Woltman & Newbold, 2007; Xiong et al., 2010).

and research among this group is low. Additionally, one cultural/racial group was chosen, taking Dr. Hoffman-Goetz’s comments into consideration regarding complicating the issue of acculturation when working with more than one cultural/racial group.

2) Identifying population characteristics for Study 2 based on cross-tabulations

Due to a small number of cases in several unweighted cells (due to the Statistics Canada RDC regulations, using data with cell counts under n=5 is not permitted), a concurrent cross-tabulation consisting of age by education³⁰ by Pap participation could not be created. Thus, cross-tabulations consisting of age and education by Pap participation were created one at a time in order to identify the highest risk group.

A cross-tabulation among South Asian immigrant women was conducted consisting of age by Pap participation. A Chi-square analysis identified an association between age and Pap test participation ($\chi^2 (4) = 9.34, p = 0.05$). The top three age groups less likely to screen were 18-29, 50-59, and 60-69 (See Table 2). Concerns with targeting younger women for Pap test participation were raised during the proposal defense. Dr. Mai mentioned that Ontario Pap test recommendations may soon change advising screening to begin at a slightly later age than what is currently recommended³¹, following Alberta’s move (Duggan, 2012). The discussions during the proposal defense and the analysis results indicating that 30-49 year old women are least likely to report no recent Pap test (it seems that many of the 18-29 year old women eventually get screened) were taken into consideration when choosing the population for Study 2. Thus, women aged 50-69 were chosen as the target population.

Table 2: Cross-tabulation Age x Pap participation

Variables	3 years ago or more or never (%)	Less than 3 years ago (%)

³⁰ Categories consisted of ‘up to secondary school graduation’ and ‘post-secondary graduation’.

³¹ The Ontario recommendation to screen at an older age did change during the course of the thesis research.

Age		
18-29	44.32	55.68
30-39	26.66	73.34
40-49	17.35	82.65
50-59	32.02	67.98
60-69	47.94	52.06

Lastly, a cross-tabulation consisting of education by Pap test participation identified that those with secondary school education or less were more likely to report a time-inappropriate Pap test compared to those with a post-secondary school graduation (40.65% vs. 24.18%, respectively; $\chi^2 (1) = 5.68, p = 0.02$). In conclusion, it was decided to target South Asian women 50-69 years old, with a high school education or less for Study 2.

Appendix B: Recruitment Material and Consent Form

Community Organizations/Centres: Kitchener-Waterloo and the GTA

Kitchener-Waterloo:

Adult Recreation Centre

<http://www.waterloo.ca/desktopdefault.aspx?tabid=1269>

Breithaupt Community Centre

<http://www.kitchener.ca/en/livinginkitchener/BreithauptCentre.asp>

Centreville Chicopee Community Centre

<http://www.kitchener.ca/en/livinginkitchener/CentrevilleChicopeeCommunityCentre.asp>

Country Hills Community Centre

<http://www.kitchener.ca/en/livinginkitchener/CountryHillsCommunityCentre.asp>

Downtown Community Centre

<http://www.kitchener.ca/en/livinginkitchener/DowntownCommunityCentre.asp>

Focus for Ethnic Women

<http://few.on.ca/>

Forest Heights Community Centre

<http://www.fhcakitchener.ca/>

Kingsdale Community Centre

<http://www.kingsdaleecc.com/>

Kitchener Downtown Community Health Centre

<http://www.kdchc.org/>

Kitchener-Waterloo Multicultural Centre

<http://www.kwmc.on.ca/>

Mill Courtland Community Centre

<http://www.kitchener.ca/en/livinginkitchener/MillCourtlandCommunityCentre.asp>

Rockway Centre

<http://www.kitchener.ca/en/livinginkitchener/RockwayCentre.asp>

SHARE Support Services

<http://www.kitchener.ca/en/livinginkitchener/ShareSupportServices.asp>

Tamil Cultural Association of Waterloo Region

<http://www.tamilculturewaterloo.org/>

The Working Centre
<http://www.theworkingcentre.org/>

YMCA Cross-Cultural & Immigrant Services
http://ymcacosscultural.icreate3.esolutionsgroup.ca/en/kitchenerwaterloo/location_and_hours.asp

Greater Toronto Area (GTA):

Access Alliance
<http://accessalliance.ca/>

Anne Johnston Health Station
<http://www.ajhs.ca/ajhs.htm>

Community Action Resource Centre
<http://www.communityarc.ca/>

Community MicroSkills Development Centre
<http://www.microskills.ca/>

Council of Agencies Serving South Asians (CASSA)
<http://www.cassaonline.com/index4/>

Davenport-Perth Neighbourhood and Community Health Centre
<http://dpnchc.ca/>

East End Community Health Centre
<http://www.eastendchc.on.ca/>

Flemingdon Health Centre
<http://www.fhc-chc.com/>

Immigrant Women's Health Centre
<http://www.immigranthealth.info/home.html>

Intercultural Dialogue Institute
<http://www.interculturaldialog.com/>

Learning Enrichment Foundation
http://www.lefca.org/about_us/index.shtml

LOFT Community Services
<http://www.loftcs.org/>

Newcomer Women's Services
<http://www.newcomerwomen.org/>

North York Community House
<http://www.nych.ca/>

Ontario Women's Health Network
<http://www.owhn.on.ca/>

Parkdale Activity Recreation Centre
<http://parc.on.ca/>

Parkdale Community Health Centre
<http://www.pchc.on.ca/>

Parkdale Intercultural Association
<http://www.piaparkdale.com/>

Rexdale Community Health Centre
<http://www.rexdalechc.com/>

Rexdale Women's Centre
<http://www.rexdalewomen.org/>

Riverdale Immigrant Women's Center
<http://www.riwca.ca/>

Scarborough Centre for Healthy Communities
<http://www.schcontario.ca/>

Scarborough Women's Centre
<http://www.scarboroughwomenscentre.ca/>

Sherbourne Health Centre
<http://www.sherbourne.on.ca/>

Silver Circle: West Toronto Services for Seniors
<http://www.silvercircle.ca/about/>

Sistering
<http://www.sistering.org/>

South Asian Women's Centre
<http://www.sawc.org/>

South Riverdale Community Health Centre
<http://www.srchc.ca/>

St. Christopher's House
<http://www.stchrishouse.org/>

St. Joseph's Women's Health Centre
<http://www.stjoe.on.ca/programs/family/women.php>

St. Stephen's Community House
<http://www.ststephenshouse.com/>

Stonegate Community Health Centre
<http://stonegatechc.org/>

TAIBU Community Health Centre
<http://www.taibuchc.ca/>

The North York Women's Centre
<http://www.nywc.org/>

Times Change Women's Employment Centre
<http://www.timeschange.org/>

Wellesley Community Centre
<http://www.toronto.ca/parks/prd/facilities/complex/451/index.htm>

Women's Health in Women's Hands
<http://www.whiwh.com/>

Woodgreen
<http://www.woodgreen.org/>

Working Women Community Centre
<http://www.workingwomencc.org/>

YMCA GTA Newcomer Centre
<http://www.ymcagta.org/en/newcomers/index.html>

Draft Email Communication sent to Organizations for Potential Recruitment Venue

Good afternoon/morning Mr./Ms. (name of contact person),

I am a PhD candidate from Health Studies at the University of Waterloo and I am currently working on my thesis which will focus on understanding decision-making around getting a Pap smear test.

We are looking for participants to take part in our study, which will include a one-on-one interview with myself or a bilingual interviewer and a short 10-minute survey; together they will take about 1-1.5 hours. Participation and answers will remain confidential. Additionally, participants will receive \$25 for taking part in the study.

I will be recruiting about 40-45 immigrant women of South Asian descent, aged between 50-69, with a high school education or less. The cultural/racial group, age, and education level of potential participants was decided on based on previous research identifying this group of women as least likely to participate in time-appropriate (within the past 3 years) Pap smear tests. More details regarding eligibility are included in the attached recruitment poster³².

This study has been reviewed by, and received ethics clearance through the Office of Research Ethics at the University of Waterloo. Recruitment is expected to begin in June. I wanted to talk to you about the possibility of recruiting participants from your centre, as it is a safe and trusted place for women.

Would it be possible to discuss this?

Thank you very much!

Nour

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nschouer@uwaterloo.ca

³² Note to ethics reviewers: The recruitment poster will be electronically attached to this email.

University of Waterloo, Dept. of Health Studies & Gerontology

PARTICIPANTS NEEDED FOR RESEARCH ON HEALTH SCREENING DECISION-MAKING

We are looking for participants to take part in a study exploring the relation between culture and immigration to cervical cancer screening. Participation will include a one-on-one interview with the researcher* and a short 10-minute survey; together they will take about 1 to 1.5 hours. Participation and answers are confidential.

In order to take part in the study, participants must:

- be female,
- be 50-69 years old,
- have a high school education or less,
- have immigrated, or at least one of your parents must have immigrated, to Canada
- be of South Asian descent (such as Sri Lankan, Pakistani, Indian, etc.), or one of your parents must be of South Asian descent,
- be able to understand, speak, read, and write English,
- NOT have been diagnosed with cervical cancer or had a full hysterectomy.

Participants in the study will receive \$25.

* Based on a few answers you give us when we see if you are eligible to volunteer for the study, some participants will be given the option of being interviewed by a bilingual interviewer.

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

Nour Schoueri, MSc, PhD candidate

nschouer@uwaterloo.ca

Waterloo/Kitchener: (519) 888-4567 Extension 36810

Toronto: (416) 318-6509

This study has been reviewed by, and received ethics clearance through the Office of Research Ethics, University of Waterloo.

Contact: Nour Schoueri (416) 318-6509 nschouer@uwaterloo.ca	Contact: Nour Schoueri (416) 318-6509 nschouer@uwaterloo.ca	Contact: Nour Schoueri (416) 318-6509 nschouer@uwaterloo.ca	Contact: Nour Schoueri (416) 318-6509 nschouer@uwaterloo.ca	Contact: Nour Schoueri (416) 318-6509 nschouer@uwaterloo.ca	Contact: Nour Schoueri (416) 318-6509 nschouer@uwaterloo.ca	Contact: Nour Schoueri (416) 318-6509 nschouer@uwaterloo.ca	Contact: Nour Schoueri (416) 318-6509 nschouer@uwaterloo.ca	Contact: Nour Schoueri (416) 318-6509 nschouer@uwaterloo.ca
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Student Researcher

Nour Schoueri, MSc, PhD candidate
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Faculty advisors

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Cervical Cancer Screening Among Immigrant Women in Ontario

Participant Information Letter

Purpose of the study

Thank you for your interest in this study. You are being invited to participate in a research study exploring the relation between culture and immigration to how people make decisions about having a Pap smear test.

Procedure

If you are interested in volunteering for this study, please contact Nour Schoueri by phone or email. Once contact has been made, we will ask you twelve questions to assess your eligibility to participate in the study. If you are eligible to participate, we will set up a date and time to meet at a community centre for the next part of the study. Based on a few answers you give us, some participants will be given the option of being interviewed by a bilingual interviewer.

When we meet, you will be asked to read a consent form. If you consent to volunteer for this study, you will be asked to sign the form. A private and confidential face-to-face interview will then be conducted between the interviewer, and you, the participant. All interviews will be conducted in English and audio recorded. If a bilingual interviewer interviews you, you will have the option of switching to your main language, when needed.

Once the interview has ended, you will be asked to complete a short survey about you and your family's background. The interview and survey together will take about 1 to 1.5 hours.

Disclosure of risks

You may feel uncomfortable answering some of the sensitive questions, or may be upset if someone close to you has been affected by the human papillomavirus (HPV, a common virus found in both men and women) or cervical cancer. During the interview you will be asked questions about your culture and its influence on health decisions, your history of getting Pap smear tests, and how you decided to get a Pap smear test or not. The survey will have questions about you and your family, such as age, income, religion, and cultural preferences. You may decline to answer any question(s) you prefer not to answer during the interview or in the survey.

Description of benefits

An information package with details about Pap smears, HPV, cervical cancer, where to get a Pap smear, and how to find a physician will also be provided to you at the end of your participation.

The information collected in this study will allow a better understanding of the influence of culture and immigration on your decisions around getting Pap smear tests. If you are interested in the results of this study, you will have a chance to indicate your interest at the end of the interview.

Remuneration for the study

You will receive \$25 for your participation in the interview. The amount received is taxable. It is your responsibility to report the amount received for income tax purposes.

Confidentiality and security of data

Your interview will be audio recorded and the information you provide us with will remain private. After signing the consent form, you can choose to go by another name during the interview in order to hide your identity on the audio recording. That way, the research assistants who will transcribe the recording will not know your real name. Only the researcher/interviewer will know your real name.

Computerized and printed information will be protected. Audio recordings and computerized data will be encrypted. Only the investigators on the research team will have access to it and the computer holding the data will be protected by a password. Printed information will be stored in a locked filing cabinet at the researcher's office. Your voice recording will be stored on a password-protected encrypted USB key, in a locked filing cabinet at the researcher's office. Voice recordings will be deleted and printed information will be shredded 7 years following the end of the study. Seven years is the standard time that information is kept before it is destroyed.

Participation

Participation in the study is voluntary. If you wish to stop participating in the study during the interview or survey, please let the interviewer know. If you wish to withdraw agreement to participate before or after the interview/survey date, you can do so by contacting the researcher or the faculty advisors by phone or email. You will still receive \$25 for your participation even if you choose to withdraw from the study.

Do you have any questions about the study? Please feel free to contact Nour Schoueri.

The study has been reviewed and received ethics clearance through the Office of Research Ethics (ORE) at the University of Waterloo. However, the final decision to participate is yours. If you have comments or concerns resulting from your involvement in this study, you may contact Dr. Susan Sykes, Director, ORE, (519) 888-4567, Ext. 36005, ssykes@uwaterloo.ca.

Participant Consent Form

In order to continue with the study, please confirm the following by checking the box

I have read the information letter.

I have had an opportunity to ask the interviewer any questions I had about the study.

My questions have been answered to my satisfaction.

I agree to have my interview audio recorded.

I understand that I can withdraw from the study at any time without penalty.

I understand that the study is voluntary and participation is confidential.

I agree to participate in the study ‘Cervical Cancer Screening Among Immigrant Women in Ontario’.

Participant Name Interviewer Name

Participant Signature Interviewer Signature

Date

Nour Schoueri is a student researcher at the University of Waterloo, under the supervision of Dr. Sandra L. Bullock and Dr. Paul W. McDonald.

Appendix C: Measures

Sample Eligibility Form to be Conducted Over the Phone

Hello and thank you for your interest in this study. My name is Nour Schoueri and I am a 4th year PhD student at the University of Waterloo, in the department of Health Studies. I am conducting a study to explore the influence of culture and immigration on how women make the decision to get a Pap smear test or not.

Participation in the study is voluntary. If you are eligible and you decide to participate, we will set up a date and time convenient for you to meet for the interview and short survey. The interview and short survey will be conducted at the South Asian Women's Centre on Lansdowne Ave (for Toronto participants)/Focus for Ethnic Women on Columbia St. W. (for Waterloo/Kitchener participants).

During the interview, which will be audio recorded, you will be asked questions about your culture and its relation to health decisions, your history of getting Pap smear tests, and how you made your decision to have a Pap smear test or not. The survey will have questions about you and your family, such as age, income, religion, and cultural preferences. You may decline to answer any question(s) you prefer not to answer.

If you are interested, I have a few questions to ask you now to see if you are eligible to participate in the study. A couple of the questions are sensitive, such as asking you your history of hysterectomy and cervical cancer. However, we need to ask these questions to make sure you are eligible to participate in the study. The questions I am about to ask you will be confidential and your name will not be attached to your answers.

Would you like to continue?

Yes

No

If yes: Great! Let's see if you are eligible to volunteer in the study (go to eligibility form).

If no: Thank you for your interest and calling in. If you know of anyone who may be interested in the study, it would be greatly appreciated if you can pass on the study information to them. Thank you again and have a nice day.

Eligibility Form

1) Are you female?

Yes

No → Not eligible to participate in study

2) Are you between the ages of 50 and 69?

Yes

No → Not eligible to participate in study

3) Do you have more than a high school education?

Yes → Not eligible to participate in study

No

4) Are you or were at least one of your parents an immigrant to Canada?

Yes → How old were you when you came to Canada? _____

I am an immigrant/My parent is an immigrant (researcher to circle one)

No → Not eligible to participate in study

5) Are you of South Asian descent (such as Sri Lankan, Pakistani, Indian)?

Yes

No → Not eligible to participate in study

6) Are you able to understand, speak, read, and write English?

Yes

No → Not eligible to participate in study

7) What language(s) can you speak?³³

_____ → Information to fill in underlined blanks in questions 8-10

8) What language do you prefer?³⁴

Above-mentioned language only

Mostly above-mentioned language, some English

Above-mentioned language and English about equally well

Mostly English, some above-mentioned language

Only English

9) Do you

Read mostly in above-mentioned language?

Read above-mentioned language better than English?

³³ If more than one, other than English, participants will be asked which language they prefer.

³⁴ If participants choose one of the first 2 answer options on question 8 AND chooses the first option on question 9 OR 10, participants will be offered the option of having a bilingual interviewer conduct their interviews.

Read both above-mentioned language and English about equally well?
Read English better than above-mentioned language?
Read only English?

10) Do you

Write mostly in above-mentioned language?
Write above-mentioned language better than English?
Write both above-mentioned language and English about equally well?
Write English better than above-mentioned language?
Write only English?

11) Have you had a full hysterectomy?

Yes → Not eligible to participate in study
No

12) Have you been diagnosed with cervical cancer?

Yes → Not eligible to participate in study
No

If participant is eligible: Thank you for answering these questions. Based on your answers, you are eligible to participate in this study. Are you interested in participating?

If yes: Thank you. We can now set up a day and time for you to come in to the centre.
(Availability and centre location will be discussed with participants).

If no: Thank you for your interest in the study. If you know of anyone who may be interested in the study, it would be greatly appreciated if you can pass on the study information to them. Thank you again and have a nice day.

If participant is NOT eligible: Thank you for answering these questions. However, based on your answers, you are not eligible to participate in this study. Thank you for your interest. If you know of anyone who may be interested in the study, it would be greatly appreciated if you can pass on the study information to them. Thank you again and have a nice day.

For researcher use only:

Participant is eligible for study

Does the participant agree to participate? Yes No

Date and time of interview: _____

Participant is not eligible for study

Qualitative Interview (Original version)

Hello and thank you for attending today's interview. My name is Nour Schoueri, and I am a 4th year PhD student at the University of Waterloo, in the department of Health Studies and Gerontology. As I mentioned to you via email or over the phone, I am conducting a study to explore the influence of culture and immigration on how women decide to get a Pap smear or not. I will be asking you questions and recording the interview. The questions that I will be asking you will focus on your experience settling in to Canada, cultural values and beliefs, cultural upbringing, health and prevention of disease, and how you make decisions about whether or not to have a Pap smear or get screened for cervical cancer.

You may consider some of the questions to be personal and you may feel uncomfortable talking about them. I hope that you feel you are able to openly talk about your experiences, but as I mentioned previously, you can withdraw from this study at any time or choose not to answer questions without penalty. I also want to remind you that what we discuss today will remain confidential, so no one will be able to identify you as a participant, except for the research team. You will choose a false name to use in the interview, and your false name will not be linked to your real name. Do you have any questions before we begin the interview?

I'll begin with asking you some questions about your cultural beliefs and values and your experience with immigrating to Canada.

- What are the most important cultural values to you? Adapted from (V. Garcia, 2005)
- What cultural values were taught to you while growing up that you believe relate to health and prevention of disease? Adapted from (V. Garcia, 2005)
- Is there anything you feel you have needed to adjust to while living in Canada that was different from how you were raised? Adapted from (V. Garcia, 2005)
- How important is it for you to maintain your cultural values? Adapted from (V. Garcia, 2005)
- How important is it for you to preserve some of your cultural values and to adopt some Canadian or North American values? Adapted from (V. Garcia, 2005)
- What are some Canadian or North American values that you practice that are different from the values of your culture of origin? Adapted from (V. Garcia, 2005)
- Do you ever feel your values conflict with your family's? Adapted from (V. Garcia, 2005)

- Do you ever feel your values conflict with your physician's? Adapted from (V. Garcia, 2005)

Thank you for answering these questions so far. Now I will ask you some questions about Pap smear tests and your decisions surrounding it.

- What do you know about Pap smear tests today? Why are they done? Is there any benefit to you? What are the negatives about having one?
- What are your thoughts and feelings when you hear the words Pap smear or cervical cancer screening? Adapted from (B. A. Fowler, 2006)
- Do you see yourself getting screened in the future?
- Do any of your beliefs/traditions of your heritage culture support and/or oppose getting a Pap smear test? Adapted from (Canales & Geller, 2004)
- Have your views on screening changed since you came to Canada? Why do you think that is?
- Have you ever had a Pap smear test?
 - (If yes to above question) When did you get your most recent Pap smear test?

**Note to interviewer: If the answer to 'have you ever had a Pap smear test' is no, OR the answer is yes AND the answer to 'when did you get your most recent Pap smear test' is 'over 3 years ago', then use interview Sheet A for the remainder of the interview. If the answer to 'have you ever had a Pap smear test' is yes AND the answer to 'when did you get your most recent Pap smear test' is 'within 3 years ago', then use Interview Sheet B for the remainder of the interview.

Interview Sheet A

- Can you describe the events or the process that led up to you deciding not to get a Pap smear test?
- Tell me about how you came to make the decision to not get a Pap smear test? Adapted from (Charmaz, 2002)
- Did anyone influence your decision to not get screened? If so, how did they influence you?
- Can you describe how you view Pap smear tests?

- As you look back on how you made your decision about not getting a Pap smear test, are there any events that stand out in your mind? Could you describe them? How did these events affect your decision? How did you respond to these events?

Interview Sheet B

- What was your experience with getting your most recent Pap smear test?
- How did you happen to get your most recent Pap smear test? Can you describe the events or the process that led up to your test? Adapted from (Charmaz, 2002)
- Tell me about how you came to make the decision to get a Pap smear test? Adapted from (Charmaz, 2002)
- Did anyone influence your decision to get screened the last time you went? If so, how did they influence you? Adapted from (Charmaz, 2002)
- How would you describe how you viewed Pap smear tests before you had one? How would you describe how you now view Pap smear tests?
- What did you know about Pap smear tests before you had one? Why are they done? Is there any benefit to you? What are the negatives about having one?
- As you look back on how you made your decision about getting your most recent Pap smear test, are there any events that stand out in your mind? Could you describe them? How did these events affect your decision? How did you respond to these events?
- Has your frequency of getting screened changed over the years? How so?
- How do you know when to get screened? Does your doctor's office remind you? Do you note it in your calendar?
- Considering that you have had a Pap smear test before, what advice would you give to another woman like yourself who has not had a Pap smear test yet?

End Statements

- Is there anything else that you would like to add or ask me?

Thank you very much for participating in this study. The information you provided has been very valuable. If you have any questions after this interview, please do not hesitate to contact me via email or phone number.

Qualitative Interview (Final version)

Thank you for attending today's interview. My name is Nour Schoueri, and I am a 4th year PhD student at the University of Waterloo, in the department of Health Studies. As I mentioned to you via email or over the phone, I am conducting a study to explore the link between culture and immigration on how women decide to get a Pap smear or not.

I will be asking you questions and recording the interview. The questions that I will be asking you will focus on your experience in Canada, cultural values and beliefs, cultural upbringing, health and prevention of disease, and how you make decisions about whether or not to have a Pap smear or get screened for cervical cancer.

You may consider some of the questions to be personal and you may feel uncomfortable talking about them. I hope that you feel you are able to openly talk about your experiences, but as I mentioned previously, you can withdraw from this study at any time or refuse to answer certain questions without penalty.

I also want to remind you that what we discuss today will remain confidential, so no one will be able to identify you as a participant, except for myself. You will choose a false name to use in the interview, and your false name will not be linked to your real name. Do you have any questions before we begin the interview?

I'll begin with asking you some questions about your cultural beliefs and values and your experience living Canada.

- What are the most important cultural values, beliefs, traditions, or rituals to you?
 - a. Some women have mentioned that respecting elders is important to them.
 - b. Some women have mentioned that family is important to them.

- What cultural values were taught to you while growing up that you believe has to do with health and preventing disease?

- How important is it for you to keep your cultural values?

- Is there anything you feel you have needed to get used to while living in Canada that was different from how you were raised?

- How important is it for you to keep some of your cultural values but also pick up some Canadian or North American values?

- What are some Canadian or North American values that you practice that are different from the values of your culture of origin?

- Do you ever feel your values conflict with or are different from your family's?
- Do you ever feel your values conflict with or are different from your doctor's?

Thank you for answering these questions so far. Now I will ask you some questions about Pap smear tests and your decisions about it.

- What do you know about Pap smear tests today? Why are they done? What are the good things about it? What are the bad things about it?
- What are your thoughts and feelings when you hear the words Pap smear or cervical cancer screening?
- Do you think you will get screened in the future?
- Do any of your beliefs/traditions of your culture support or oppose getting a Pap smear test?
- Can you describe how you view Pap smear tests?
- Have your views on screening changed since you came to Canada? Why do you think that is?
- Have you ever had a Pap smear test?
 - (If yes to above question) When did you get your most recent Pap smear test?

****Note to interviewer:**

If the answer to 'have you ever had a Pap smear test' is no, OR the answer is yes AND the answer to 'when did you get your most recent Pap smear test' is over 3 years ago, then use interview Sheet A for the remainder of the interview.

If the answer to 'have you ever had a Pap smear test' is yes AND the answer to 'when did you get your most recent Pap smear test' is within 3 years ago, then use Interview Sheet B for the remainder of the interview.

Interview Sheet A (never/under screened)

- Can you describe why you decided not to get a Pap smear test (recently)?
- Did anyone influence your decision to not get a Pap test? If so, how did they influence you?
- What barriers or problems do you think there are stopping you from getting a Pap smear test?
- What would help you decide to get a Pap smear test?
- If you have ever had a Pap smear test, what was your experience (feelings, comfort level, thoughts) with getting it?
- If you have ever had a Pap smear test, why has the frequency of getting them changed?
 - Have you had a Pap test in your home country?
- Do you have a family doctor? How did you get a family doctor?
- What would you tell another woman like yourself who has not had a Pap smear test before?

End Statements

- That ends the interview. Thank you so much for your time. Is there anything else that you would like to add or ask me?

Thank you very much for participating in this study. The information you provided has been very valuable. If you have any questions after this interview, please do not hesitate to contact me via email or phone number.

Interview Sheet B (screened)

- What was your experience (feelings, comfort level, thoughts) with getting your most recent Pap smear test?
- Tell me about how you decided to get a Pap smear test?
- What helps you decide to get a Pap smear test?
- Did anyone influence your decision to get screened the last time you went? If so, how did they influence you?
- Do you have any problems in going to get a Pap smear test?
- How would you describe how you thought of Pap smear tests before you had one?
- What did you know about Pap smear tests before you had one?
- Has the frequency of getting screened changed over the years? How so?
 - Have you had a Pap test in your home country?
- How do you know when to go get a Pap smear test?
- Do you have a family doctor? How did you get a family doctor?
- What would you tell another woman like yourself who has not had a Pap smear test before?

End Statements

- That ends the interview. Thank you so much for your time. Is there anything else that you would like to add or ask me?

Thank you very much for participating in this study. The information you provided has been very valuable. If you have any questions after this interview, please do not hesitate to contact me via email or phone number.

Background Information Survey

Thank you for participating in the interview! Before you go, we would like some background information about you and your family. It will help us to get a better idea about who the women are that we are talking to. Please remember that all the information you give us will be kept private. Some of the questions are sensitive, such as asking you your household income and religion. Please remember that you may decline to answer any question(s) you prefer not to answer.

Pseudonym _____

1) How old are you?

2) What is your best estimate of the total income, before taxes and deductions, of all household members from all sources in the past 12 months?

1 None or below \$15,000

2 \$15,000 - \$29,999

3 \$30,000 - \$49,999

4 \$50,000 - \$79,999

5 \$80,000 or more

7 Don't know

8 Prefer not to answer

3) What is the highest level of education that you have completed?

1 No education

2 Primary school

3 Some high school

4 High school graduation

5 Trades certificate of apprenticeship

6 College/University

7 Other: _____

77 Don't know

4) In what country did you complete your highest level of education?

5) In what country were you born?

6) If you were born in Canada, in what country(ies) were your parents born?

7) If you were born outside of Canada, how old were you when you immigrated to Canada?

_____ years of age

8) If you were born outside of Canada, what is your current immigration status?

- 1 Canadian citizen
- 2 Landed/permanent resident
- 3 Refugee/protected person
- 4 Refugee claimant/person in need of protection
- 5 Temporary work papers
- 6 Visitor
- 7 No status
- 8 Other: _____
- 77 Don't know
- 88 Prefer not to answer

9) How often do you speak each of the following languages at home?

	Often	Sometimes	Rarely	Never
A. English				
B. French				
C. Hindi				
D. Punjabi				
E. Tamil				
F. Urdu				
G. Other: _____				

10) What, if any, is your religion?

- 1 No religion (agnostic, atheist)
- 2 Christian
- 3 Jewish
- 4 Islam (Muslim)
- 5 Hindu
- 6 Buddhist
- 7 Sikh
- 8 Other: _____
- 77 Don't know
- 88 Prefer not to answer

11) Do you currently have a family doctor?

- 0 No (Go to question 12)
- 1 Yes

a. What is your family doctor's gender?

- 1 Male
- 2 Female

b. What is your family doctor's cultural/racial background?

- 1 White
- 2 Black
- 3 Asian (such as Korean, Filipino, Japanese, Chinese)
- 4 South Asian (such as Sri Lankan, Pakistani, Indian)
- 5 Southeast Asian (such as Cambodian, Indonesian)
- 6 Arab (such as Lebanese, Iraqi)
- 7 West Asian (such as Iranian, Afghani)
- 8 Latin American
- 9 Other: _____
- 77 Don't know

c. What language do you speak with your family doctor?

12) Because the chance of developing cervical cancer is greater among people who have had sexual intercourse, or sex, in their lives, the following question is very important to understand whether or not you are at risk:

Have you ever had sexual intercourse (have you ever had sex)?

0 No

1 Yes

13) Have you ever had a Pap smear test?

0 No (Go to question 14)

1 Yes

7 Don't know (Go to question 14)

- When was the last time you had a Pap smear test?

1 Less than 6 months ago

2 6 months to less than 1 year ago

3 1 year to less than 3 years ago

4 3 years to less than 5 years ago

5 5 or more years ago

7 Don't know

Please indicate how strongly you agree or disagree with the following three statements:

14) It is not important to screen for cervical cancer regularly because everyone will eventually die of something anyway.

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

15) It is not necessary to screen for cervical cancer regularly because it is in God's hands anyway.

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

16) If nothing is physically wrong, then you do not need to screen for cervical cancer.

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

The following questions are for the purpose of collecting information about your historical background as well as more recent behaviours which may be related to your cultural identity. Choose the one answer which best describes you.

17) What language can you speak?

- 1 South Asian only (for example, Hindi, Punjabi, Tamil, Urdu, etc.)
- 2 Mostly South Asian, some English
- 3 South Asian and English about equally well (bilingual)
- 4 Mostly English, some South Asian
- 5 Only English

18) What language do you prefer?

- 1 South Asian only (for example, Hindi, Punjabi, Tamil, Urdu, etc.)
- 2 Mostly South Asian, some English
- 3 South Asian and English about equally well (bilingual)
- 4 Mostly English, some South Asian
- 5 Only English

19) How do you identify yourself?

- 1 Sri Lankan, Pakistani, Indian, etc.
- 2 South Asian
- 3 South Asian-Canadian
- 4 Sri Lankan-Canadian, Pakistani-Canadian, Indian-Canadian, etc.
- 5 Canadian

20) Which identification does (did) your mother use?

- 1 Sri Lankan, Pakistani, Indian, etc.
- 2 South Asian
- 3 South Asian-Canadian
- 4 Sri Lankan-Canadian, Pakistani-Canadian, Indian-Canadian, etc.
- 5 Canadian

21) Which identification does (did) your father use?

- 1 Sri Lankan, Pakistani, Indian, etc.
- 2 South Asian
- 3 South Asian-Canadian
- 4 Sri Lankan-Canadian, Pakistani-Canadian, Indian-Canadian, etc.
- 5 Canadian

22) What was the ethnic origin of the friends and peers you had, as a child up to age 6?

- 1 Almost exclusively South Asians, South Asian-Canadians, Orientals
- 2 Mostly South Asians, South Asian-Canadians, Orientals
- 3 About equally South Asian groups and Anglo groups
- 4 Mostly Anglos, Blacks, Hispanics, or other non-South Asian ethnic groups
- 5 Almost exclusively Anglos, Blacks, Hispanics, or other non-South Asian ethnic groups

23) What was the ethnic origin of the friends and peers you had, as a child from 6 to 18?

- 1 Almost exclusively South Asians, South Asian-Canadians, Orientals
- 2 Mostly South Asians, South Asian-Canadians, Orientals
- 3 About equally South Asian groups and Anglo groups
- 4 Mostly Anglos, Blacks, Hispanics, or other non-South Asian ethnic groups
- 5 Almost exclusively Anglos, Blacks, Hispanics, or other non-South Asian ethnic groups

24) Whom do you now associate with in the community?

- 1 Almost exclusively South Asians, South Asian-Canadians, Orientals
- 2 Mostly South Asians, South Asian-Canadians, Orientals
- 3 About equally South Asian groups and Anglo groups
- 4 Mostly Anglos, Blacks, Hispanics, or other non-South Asian ethnic groups
- 5 Almost exclusively Anglos, Blacks, Hispanics, or other non-South Asian ethnic groups

25) If you could pick, whom would you prefer to associate with in the community?

- 1 Almost exclusively South Asians, South Asian-Canadians, Orientals
- 2 Mostly South Asians, South Asian-Canadians, Orientals
- 3 About equally South Asian groups and Anglo groups
- 4 Mostly Anglos, Blacks, Hispanics, or other non-South Asian ethnic groups
- 5 Almost exclusively Anglos, Blacks, Hispanics, or other non-South Asian ethnic groups

26) What is your music preference?

- 1 Only South Asian music (for example, Hindi, Punjabi, Tamil, Urdu, etc.)
- 2 Mostly South Asian
- 3 Equally South Asian and English
- 4 Mostly English
- 5 English only

27) What is your movie preference?

- 1 South Asian-language movies only
- 2 South Asian-language movies mostly
- 3 Equally South Asian/English-language movies
- 4 Mostly English-language movies only
- 5 English-language movies only

28) What generation are you? (circle the generation that best applies to you)

- 1 1st Generation = I was born in South Asia or country other than Canada
- 2 2nd Generation = I was born in Canada, either parent was born in South Asia or country other than Canada
- 3 3rd Generation = I was born in Canada, both parents were born in Canada, and all grandparents born in South Asia or country other than Canada
- 4 4th Generation = I was born in Canada, both parents were born in Canada, and at least one grandparent born in South Asia or country other than Canada and one grandparent born in Canada
- 5 5th Generation = I was born in Canada, both parents were born in Canada, and all grandparents also born in Canada
- 5 Don't know what generation best fits since I lack some information.

29) Where were you raised?

- 1 In South Asia only
- 2 Mostly in South Asia, some in Canada
- 3 Equally in South Asia and Canada
- 4 Mostly in Canada, some in South Asia
- 5 In Canada only

30) What contact have you had with South Asia?

- 1 Raised one year or more in South Asia
- 2 Lived for less than one year in South Asia
- 3 Occasional visits to South Asia
- 4 Occasional communications (letters, phone calls, etc.) with people in South Asia
- 5 No exposure or communications with people in South Asia

31) What is your food preference at home?

- 1 Exclusively South Asian food
- 2 Mostly South Asian food, some Canadian
- 3 About equally South Asian and Canadian
- 4 Mostly Canadian food
- 5 Exclusively Canadian food

32) What is your food preference in restaurants?

- 1 Exclusively South Asian food
- 2 Mostly South Asian food, some Canadian
- 3 About equally South Asian and Canadian
- 4 Mostly Canadian food
- 5 Exclusively Canadian food

33) Do you

- 1 Read only a South Asian language?
- 2 Read a South Asian language better than English?
- 3 Read both South Asian and English equally well?
- 4 Read English better than a South Asian language?
- 5 Read only English?

34) Do you

- 1 Write only a South Asian language?
- 2 Write a South Asian language better than English?
- 3 Write both South Asian and English equally well?
- 4 Write English better than a South Asian language?
- 5 Write only English?

35) If you consider yourself a member of the South Asian group (Sri Lankan, Pakistani, Indian, South Asian, South Asian-Canadian, Sri Lankan-Canadian, etc., whatever term you prefer), how much pride do you have in this group?

- 1 Extremely proud
- 2 Moderately proud
- 3 Little pride
- 4 No pride but do not feel negative toward group
- 5 No pride but do feel negative toward group

36) How would you rate yourself?

- 1 Very South Asian
- 2 Mostly South Asian
- 3 Bicultural
- 4 Mostly Westernized
- 5 Very Westernized

37) Do you participate in South Asian occasions, holidays, traditions, etc.?

- 1 Nearly all
- 2 Most of them
- 3 Some of them
- 4 A few of them
- 5 None at all

38) Rate yourself on how much you believe in South Asian values (e.g., about marriage, families, education, work):

1	2	3	4	5
Do not believe				Strongly believe in South Asian values

39) Rate yourself on how much you believe in Canadian (Western) values:

1	2	3	4	5
Do not believe				Strongly believe in Western values

40) Rate yourself on how well you fit with other South Asians of the same ethnicity:

1	2	3	4	5
Do not fit				Fit very well

Appendix D: Oath of Confidentiality

Oath of Confidentiality for Bilingual Interviewers

I, _____, agree to regard all data related to the study '*Cervical Cancer Screening among Immigrant Women in Ontario: The Influence of Acculturation*' as strictly confidential. I will not discuss or disclose any information collected for this study, whether written or verbal, with anyone other than the research team. I will maintain the confidentiality of all study participants. I will accurately collect and report all data following the procedures outlined in the interview training and study protocol and I will not falsify or change any responses. I agree to keep all information in a secure location. I understand the need to ensure that confidential data remain private and are not left in places where others may see them. I understand that a violation of this oath could result in immediate dismissal.

Signature Date

Researcher Date

Oath of Confidentiality for Data Transcribers

I, _____, agree to regard all data related to the study ‘*Cervical Cancer Screening among Immigrant Women in Ontario: The Influence of Acculturation*’ as strictly confidential. I will not discuss or disclose any information pertaining to this study, whether written or verbal, with anyone other than the research team. I agree to keep all confidential material in a locked place. I understand the need to ensure that confidential materials are not left lying around for others to see. I will accurately transcribe all data as heard on the study tapes. I will not falsify data or change any responses. I understand that a violation of this oath could result in immediate dismissal.

Signature Date

Witness Date

Appendix E: Information Package

THANK YOU!

Thank you very much for participating in this study. Your voice is extremely important and we are happy you took the time to share your experiences with us.

This research is important for exploring the influence of culture and immigration on how people make decisions about having Pap smear tests.

I want to remind you that any information we asked you will be kept confidential. If you have any questions or concerns about your participation in this study, please contact me or my faculty advisors through the phone numbers or email addresses listed at the bottom of this letter.

If you would like a summary of the results, please let me know now and we will take your email or mailing address³⁵. When the study is completed, I will send it to you. The study is expected to be completed by December 2011. Your email or mailing address will not be linked with the information you provided us in the interview or survey.

Attached to this letter is some information that we thought might be useful to you. It has information on Pap smear tests, HPV, cervical cancer, where to get a Pap smear test, and how to obtain a physician.

Thank you again for your participation!

As with all University of Waterloo projects involving human participants, this project was reviewed by, and received ethics clearance through, the Office of Research Ethics at the University of Waterloo. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes in the Office of Research Ethics at 519-888-4567, Ext., 36005 or ssykes@uwaterloo.ca.

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³⁵ Note to reviewers: If participants were interested, the interviewer gave them a sheet to fill out their email or mailing address (please see following page). This sheet was kept separate from any other document or information.

**Yes, I am interested in receiving a summary of results once the study has been completed.
Please remember that information below will not be attached with information you
provided in the interview or survey.**

My mailing address is:

My email address is:

Pap Tests for Good Health!

Make a Pap test part of your regular health check-up!

What is a Pap test?

A Pap test:

- looks for changes in the cells of the cervix (*the opening of the uterus*)
- is done by a doctor, nurse or nurse practitioner.

Why do I need to have a Pap test?

- A Pap test can prevent cancer of the cervix.
- *Regular* Pap tests find cell changes in the cervix early.



- Small changes in the cells of the cervix can sometimes lead to cancer.
- Most early changes can be treated before they become cancer.

Your risk of getting cancer of the cervix increases as you get older.

Who needs a Pap test?

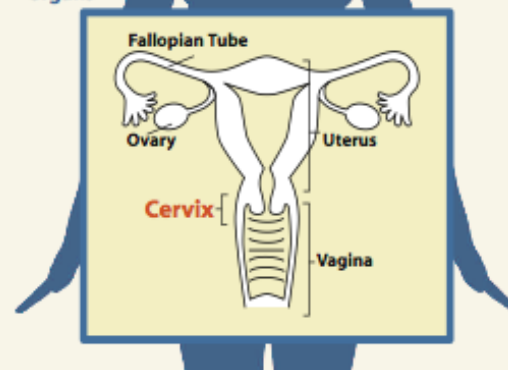
All women who have ever had *any* sexual contact need to have regular Pap tests. This includes:

- women who have had sexual touching with a partner
- women who no longer have sex
- women who have sex with women
- women who have reached menopause (*no more monthly bleeding*).

Some women who have had a hysterectomy may also need to have Pap tests. Talk with your health care provider about what you need!



Your Cervix and nearby organs



How often should I have a Pap test?

- Your first test should happen within 3 years of your first sexual activity.
- If you have normal test results for 3 years in a row then you need a Pap test every 2 to 3 years after that.
- Women aged 70 and over can stop having Pap tests if they have had at least three normal tests in the past 10 years.

If my Pap test shows cell changes, what does this mean?

- For most women, an "abnormal" Pap test does NOT mean you have cancer.
- Often, these cell changes go away without any treatment.
- If they do not go away, you can receive treatment for the cell changes. Your treatment will depend on the kind of cell changes you have and your needs.

Follow your treatment plan. It is the most important thing you can do.



action cancer ontario
programme ontarien de dépistage du cancer du col de l'utérus



What is HPV?

- HPV is a common virus called **Human Papillomavirus**.
- It is found in both men and women.
- There are over 100 types of HPV.
 - some HPV types can cause skin or genital warts.
 - other types of HPV can cause cancer of the cervix.

How do people get HPV?

- HPV can spread, through any sexual activity with a partner (such as skin-to-skin contact, oral or anal sex, sexual intercourse or sharing sex toys)
- About 4 out of 5 people who have sex will come into contact with HPV at some time.
- Your body's own defenses (immune system) can often fight off this virus, but that doesn't always happen.
- Most of the time, there are no symptoms. You may not even know that you have HPV.

What is the link between HPV and cancer of the cervix?

- Some types of HPV can cause cell changes (infections) in the cervix.
- Most HPV infections go away on their own.
- Sometimes, they do not and over time, these changes may cause cancer if they are not found early and treated.
- Most women with HPV infection do **NOT** get cancer of the cervix.



It is hard to avoid HPV if you are sexually active, but you can reduce your risk.

How can I lower my risk of getting HPV?

- Limit the number of sexual partners.
- Use a condom.
- Delay first sexual activity.
- Avoid tobacco.
- Take good care of your health.
- Ask your doctor if you should get HPV vaccine.

What is HPV vaccine?

- It is a vaccine for girls and women 9 to 26 years old.
- It protects against some types of HPV that can cause cancer of the cervix.
- Grade 8 females in Ontario may get the vaccine for free at school.

HPV vaccine does not protect you from all types of HPV. That's why it is very important to have *regular Pap tests*.

TO LEARN MORE:

- Talk to your doctor, nurse or nurse practitioner.
- Visit the Ontario Cervical Screening Program's website: <http://www.cancercare.on.ca/english/home/pcs/screening/cervscreening/>
- Call the Canadian Cancer Society at: 1-888-939-3333 or visit www.cancer.ca
- Call your local Public Health Unit. Look in your local telephone book for the number or visit: http://www.alphaweb.org/ont_health_units.asp
- Visit the Government of Ontario's website: www.hpvontario.ca or call the INFOLine at 1-866-559-4598.

Health Clinics Providing Pap Smear Tests in the Waterloo Region

Staff provide assessment, treatment, education and referral services for a variety of sexual health issues. Clinics are staffed by public health nurses, nurse practitioners and a clinic physician.

All services are **FREE** and **CONFIDENTIAL**. No health card is required to receive services. **Call 519-883-2267. Drop-in Clinics operate on a first come, first served basis.** They reserve the right to limit the number of clients during drop-in clinics.

<p>WATERLOO 99 Regina St. S. 2nd floor 519-883-2267</p>	<p>Appointment Hours Tuesday: 1 pm - 2 pm Wednesday: 9 am - 6:45 pm</p>	<p>Drop-in Hours Tuesday: 2:30 pm - 6:30 pm Thursday: 2:30 pm- 6:30 pm</p>
<p>CAMBRIDGE 150 Main St. 1st floor, at the rear of building After 4:30 pm please enter clinic via the back parking lot door 519-883-2267</p>	<p>Appointment Hours Tuesday: 10 am - 3 pm Wednesday: 10 am - 3 pm</p>	<p>Drop-in Hours Tuesday: 1:30 pm - 6:30 pm</p>

Health Clinics Providing Pap Smear Tests in the Toronto Region

Access Alliance Multicultural Health and Community Services

For newcomers and immigrants.

No Ontario health card is required. Service is free.

Call (416) 324-8677 or visit www.accessalliance.ca for more information.

Association of Ontario Health Centres

Community Health Centres (CHCs) are centres that serve either a particular neighbourhood or a particular population (such as immigrants). Many do not require a health card and services are free of charge. For a list of CHCs in your area call (416) 236-2539 or visit www.aohc.org.

Immigrant Women's Health Centre

No Ontario health card is required. All services are free.

489 College Street, Suite 200

Toronto, Ontario, M6G-1A5

Ph #: 416-323-9986

<http://www.immigranthealth.info/home.html>

Women's Health in Women's Hands Community Health Centre

No Ontario health card is required. Service is free.

2 Carlton Street, Suite 500

Toronto, ON M5B 1J3

Telephone: 416-593-7655

<http://www.whiwh.com/>



Helping you find a family doctor or nurse practitioner

ontario.ca/healthcareconnect

Health Care Connect helps people who are without a family health care provider to find one.

How does Health Care Connect support your search for a family health care provider?

Health Care Connect is a program that will help people without a regular health care provider find one in their community. The program identifies doctors or nurse practitioners who are accepting patients and links them with people who are in need of a family health care provider.

How to join the program

Registering for Health Care Connect is easy. When you call 1-800-445-1822 you will speak to someone who will ask you a short series of questions and sign you up for the program. You can also sign up online at ontario.ca/healthcareconnect

Health Care Connect gives priority to those most in need of a family health care provider

Priority is given to individuals with greater health needs.

You will be referred to a family doctor or nurse practitioner in your community once one is found.

Health Care Connect is here to assist you. But you should keep looking for a health care provider on your own as well.

What you need to know about Health Care Connect

- Health Care Connect assists you in your search for a family doctor or nurse practitioner
- It does not guarantee that one will be found, so you should also continue looking on your own
- You should have an OHIP number.

A Care Connector supports your search for a family health care provider

Once you've joined Health Care Connect, a nurse, called a Care Connector, will be assigned to help you find a health care provider in your area.

Your Care Connector and You
Be sure to get in touch with your Care Connector if your contact information or health changes.

Do you need a family doctor or nurse practitioner? Call 1-800-445-1822 or visit ontario.ca/healthcareconnect



Please note that this service is free and that you need a valid Ontario health card.

Receipt for \$25 Remuneration

The ‘Cervical Cancer Screening Among Immigrant Women in Ontario’ Study

Date: _____

Remuneration: \$25

Participant’s signature confirming payment: _____

Interviewer’s signature confirming payment: _____

Appendix F: Backward Selection Models

Backward selection, full sample

Variables	Model 1: OR (95% CI)	Model 2: OR (95% CI)	Model 3: OR (95% CI)
Age (ref=18-29)			
30 - 39	1.09 (0.84-1.40)	1.08 (0.84-1.40)	1.08 (0.84-1.39)
40 - 49	1.31* (1.01-1.70)	1.31* (1.01-1.69)	1.28 (0.99-1.66)
50 - 59	2.13*** (1.60-2.83)	2.02*** (1.57-2.59)	1.98*** (1.55-2.54)
60 - 69	2.86*** (2.14-3.83)	2.72*** (2.08-3.56)	2.70*** (2.06-3.53)
Marital status (ref=Married/Common-law)			
Widowed/Separated/Divorced	1.15 (0.91-1.46)	1.15 (0.91-1.46)	1.15 (0.91-1.46)
Single, Never Married	1.42*** (1.16-1.75)	1.42*** (1.16-1.75)	1.43*** (1.16-1.76)
Education (ref= Post-Secondary Graduation)			
Some Secondary School	2.03*** (1.61-2.56)	2.03*** (1.61-2.56)	1.99*** (1.58-2.51)
Secondary School Graduation	1.41*** (1.16-1.71)	1.41*** (1.16-1.71)	1.38** (1.13-1.69)
Some Post-Secondary	1.12 (0.84-1.50)	1.12 (0.84-1.50)	1.12 (0.84-1.50)
Household Income (ref=\$80,000+)			
\$0 - \$14,999	1.39 (0.98-1.98)	1.39 (0.98-1.98)	1.37 (0.96-1.95)
\$15,000 - \$29,999	1.41* (1.06-1.89)	1.41* (1.06-1.88)	1.41* (1.05-1.88)
\$30,000 - \$49,999	1.36** (1.09-1.71)	1.36** (1.08-1.70)	1.36** (1.09-1.70)
\$50,000 - \$79,999	1.10 (0.88-1.37)	1.09 (0.88-1.37)	1.10 (0.88-1.37)
Missing	1.32* (1.02-1.71)	1.32* (1.02-1.71)	1.29 (1.00-1.67)
History of Hysterectomy (ref=No)			
Missing	0.91 (0.73-1.13)	-	-
Access to a Regular Medical Doctor (ref=Yes)			
No	3.12*** (2.49-3.89)	3.12*** (2.50-3.89)	3.11*** (2.49-3.89)
Perceived Health (ref=Excellent)			
Very Good	1.26* (1.01-1.56)	1.26* (1.01-1.57)	1.26* (1.01-1.56)
Good	1.29* (1.02-1.62)	1.29** (1.02-1.62)	1.27* (1.01-1.60)
Fair	1.21 (0.89-1.65)	1.21 (0.89-1.65)	1.20 (0.88-1.64)
Poor	1.64* (1.10-2.45)	1.64** (1.11-2.44)	1.63* (1.09-2.43)
Cultural/Racial Background (ref=White)			
Black	0.91 (0.54-1.52)	0.91 (0.54-1.52)	0.93 (0.56-1.54)
Chinese	1.92** (1.23-3.01)	1.93** (1.23-3.03)	1.79* (1.14-2.82)
South Asian	1.85** (1.23-2.80)	1.85** (1.23-2.80)	1.89** (1.26-2.84)
Other Asian	1.68* (1.11-2.55)	1.69* (1.11-2.56)	1.72** (1.14-2.59)
All Others	0.82 (0.52-1.30)	0.82 (0.52-1.30)	0.81 (0.51-1.28)
Immigrant Status (ref=Non-			

Immigrant)			
Recent Immigrant (Less than 10 years)	1.81** (1.25-2.64)	1.81** (1.24-2.63)	1.78** (1.23-2.58)
Long-Term Immigrant (10+ years)	0.87 (0.68-1.10)	0.87 (0.68-1.10)	0.87 (0.69-1.11)
Language Spoken at Home (ref=English and/or French)			
Not English/French (Other)	1.29 (0.94-1.78)	1.30 (0.94-1.79)	1.23 (0.90-1.70)
Language of Interview (ref=English and/or French)			
Not English/French (Other)	0.66 (0.34-1.29)	0.66 (0.34-1.28)	-

* p<0.05, ** p<0.01, *** p<0.001; OR Odds Ratio; CI Confidence Interval

Backward selection, high-risk immigrant sample			
Variables	Model 1: OR (95% CI)	Model 2: OR (95% CI)	Model 3: OR (95% CI)
Age (ref=18-29)			
30 - 39	0.71 (0.38-1.31)	0.71 (0.39-1.30)	0.69 (0.38-1.27)
40 - 49	0.66 (0.34-1.32)	0.67 (0.34-1.31)	0.65 (0.33-1.29)
50 - 59	0.74 (0.34-1.63)	0.74 (0.34-1.63)	0.73 (0.33-1.60)
60 - 69	1.66 (0.75-3.65)	1.66 (0.76-3.63)	1.62 (0.74-3.52)
Education (ref= Post-Secondary Graduation)			
Some Secondary School	2.17* (1.03-4.56)	2.18* (1.03-4.61)	2.22* (1.05-4.67)
Secondary School Graduation	1.52 (0.80-2.89)	1.52 (0.80-2.89)	1.50 (0.79-2.86)
Some Post-Secondary	0.68 (0.25-1.85)	0.68 (0.25-1.83)	0.68 (0.25-1.81)
Household Income (ref=\$80,000+)			
\$0 - \$14,999	1.34 (0.51-3.50)	1.34 (0.52-3.47)	1.34 (0.52-3.46)
\$15,000 - \$29,999	1.31 (0.50-3.41)	1.32 (0.50-3.45)	1.34 (0.51-3.51)
\$30,000 - \$49,999	1.27 (0.63-2.58)	1.28 (0.64-2.57)	1.28 (0.64-2.57)
\$50,000 - \$79,999	0.76 (0.39-1.47)	0.76 (0.40-1.47)	0.77 (0.40-1.48)
Missing	1.51 (0.70-3.28)	1.52 (0.69-3.33)	1.54 (0.71-3.36)
Access to a Regular Medical Doctor (ref=Yes)			
No	2.97** (1.30-6.77)	2.96** (1.31-6.73)	2.94* (1.27-6.78)
Location of Birth (ref=Other)			
Asia	1.46 (0.65-3.25)	1.47 (0.67-3.24)	-
Language Spoken at Home (ref=English and/or French)			
Not English/French (Other)	1.02 (0.61-1.69)	-	-

* p<0.05, ** p<0.01; OR Odds Ratio; CI Confidence Interval

Backward selection, low-risk immigrant sample

Variables	Model 1: OR (95% CI)	Model 2: OR (95% CI)	Model 3: OR (95% CI)	Model 4: OR (95% CI)
Age (ref=18-29)				
30 - 39	0.79 (0.32-1.92)	0.79 (0.32-1.92)	0.79 (0.32-1.92)	0.76 (0.33-1.74)
40 - 49	1.00 (0.42-2.39)	1.00 (0.42-2.39)	1.01 (0.42-2.39)	0.97 (0.43-2.20)
50 - 59	2.34 (0.96-5.74)	2.31* (1.00-5.35)	2.31* (1.00-5.32)	2.41* (1.09-5.29)
60 - 69	1.94 (0.81-4.62)	1.91 (0.85-4.29)	1.91 (0.85-4.28)	2.01 (0.93-4.38)
Marital status (ref=Married/Common-law)				
Widowed/Separated/Divorced	1.37 (0.86-2.18)	1.37 (0.86-2.18)	1.36 (0.87-2.14)	1.30 (0.83-2.05)
Single, Never Married	1.20 (0.66-2.17)	1.20 (0.66-2.17)	1.19 (0.66-2.14)	1.05 (0.60-1.84)
Education (ref= Post-Secondary Graduation)				
Some Secondary School	1.52 (0.91-2.52)	1.52 (0.92-2.51)	1.53 (0.93-2.50)	1.64 (1.00-2.69)
Secondary School Graduation	1.00 (0.61-1.64)	1.00 (0.61-1.64)	1.00 (0.61-1.64)	1.03 (0.62-1.70)
Some Post-Secondary	0.79 (0.37-1.69)	0.79 (0.37-1.69)	0.78 (0.36-1.68)	0.76 (0.34-1.70)
Household Income (ref=\$80,000+)				
\$0 - \$14,999	1.87 (0.81-4.33)	1.87 (0.81-4.32)	1.89 (0.82-4.34)	1.78 (0.75-4.22)
\$15,000 - \$29,999	2.13* (1.06-4.30)	2.13* (1.06-4.29)	2.14* (1.08-4.26)	2.09* (1.06-4.12)
\$30,000 - \$49,999	1.61 (0.92-2.81)	1.60 (0.92-2.80)	1.63 (0.93-2.86)	1.64 (0.94-2.89)
\$50,000 - \$79,999	1.30 (0.75-2.25)	1.30 (0.75-2.25)	1.30 (0.76-2.25)	1.23 (0.71-2.12)
Missing	1.24 (0.65-2.35)	1.23 (0.65-2.35)	1.24 (0.66-2.35)	1.19 (0.64-2.21)
History of Hysterectomy (ref=No)				
Missing	0.97 (0.61-1.56)	-	-	-
Location of Birth (ref=North America)				
South, Central America & Caribbean	0.79 (0.36-1.72)	0.79 (0.36-1.72)	0.79 (0.36-1.71)	-
Europe	1.47 (0.78-2.74)	1.46 (0.78-2.74)	1.49 (0.80-2.76)	-
Africa & Oceania	1.09 (0.45-2.60)	1.09 (0.45-2.60)	1.09 (0.45-2.59)	-
Asia	1.73 (0.61-4.91)	1.73 (0.62-4.88)	1.77 (0.61-5.14)	-
Perceived Health (ref=Excellent)				

Very Good	1.07 (0.61-1.88)	1.07 (0.61-1.88)	1.07 (0.61-1.89)	1.10 (0.62-1.94)
Good	1.02 (0.60-1.73)	1.02 (0.60-1.72)	1.02 (0.61-1.73)	1.07 (0.64-1.80)
Fair	0.88 (0.42-1.84)	0.88 (0.42-1.84)	0.89 (0.42-1.86)	0.86 (0.42-1.78)
Poor	2.03 (0.83-4.99)	2.03 (0.82-4.98)	2.03 (0.82-5.01)	1.85 (0.79-4.34)
Access to a Regular Medical Doctor (ref=Yes)				
No	3.26 ^{***} (1.79-5.93)	3.25 ^{***} (1.79-5.92)	3.26 ^{***} (1.79-5.93)	3.16 ^{***} (1.74-5.75)
Proportion of Life in Canada (ref=More than ¾ of life)				
Up to ¼ of life	2.83 ^{**} (1.49-5.37)	2.82 ^{**} (1.48-5.38)	2.89 ^{***} (1.61-5.21)	2.56 ^{**} (1.45-4.51)
More than ¼ to ½ of life	0.97 (0.55-1.71)	0.97 (0.55-1.71)	0.99 (0.58-1.70)	0.86 (0.50-1.47)
More than ½ to ¾ of life	1.15 (0.72-1.83)	1.15 (0.72-1.82)	1.16 (0.74-1.84)	1.03 (0.65-1.62)
Language Spoken at Home (ref=English and/or French)				
Not English/French (Other)	1.05 (0.66-1.66)	1.05 (0.66-1.67)	-	-
* p<0.05, ** p<0.01, *** p<0.001; OR Odds Ratio; CI Confidence Interval				