PHYSICAL ACTIVITY EXPERIENCES OF PERSIAN WOMEN RECENTLY IMMIGRATED TO CANADA

by

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A thesis submitted to the School of Kinesiology and Health Studies
In conformity with the requirements for
the degree of Master of Science

Queen’s University
Kingston, Ontario, Canada
(September, 2016)

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Abstract

New immigrants to Canada are generally in similar or better physical and mental health than people born in Canada, however, many studies suggest that their health tends to decline quickly after immigration. Lower physical activity levels among new immigrants might be contributing to this phenomenon. There is a paucity of information regarding the physical activity behaviour of the Canadian immigrant population in general and of West Asian women, such as Iranians (Persians), in particular. Given that this group is characterised by an increasing population growth and lower rates of physical activity, it is critical to understand how best to address physical activity promotion in this population. **Purpose:** To understand the physical activity experiences of Persian women recently immigrated to Toronto, Canada in order to develop recommendations for the design and implementation of tailored physical activity programs. **Methods:** A qualitative interpretive description approach was chosen to collect and describe ideas, experiences, and perceptions of physical activity within 10 new immigrant women. Using an inductive approach, two fundamental techniques of immersion and crystallization were used throughout the analysis. Thematic analysis was conducted by performing a sequential process of open and axial coding. Emerged themes were further conceptualized through a socio-ecological lens. **Results:** The facilitators and barriers to physical activity among the women were situated within five overarching categories, 1) Perceptions about physical activity, 2) New physical environment and social structure, 3) Cultural heritage values, 4) Settlement and immigration factors, and 5) Physical activity program features. **Discussion:** Findings revealed that Persian new immigrant women’s engagement in physical activity after immigration is influenced by factors across the individual, sociocultural, environmental, institutional, and policy levels. Newcomer women’s physical activity was influenced by their
transition from their society of origin to the host society and the challenges and successes experienced throughout the settlement and acculturation process. The most noticeable barrier to physical activity in Canada for the women emerged as the lack of communication of physical activity information to newcomers. A set of recommendations is provided for developing efficient physical activity programs for Persian immigrant women, which may also be relevant for other immigrant groups in Canada.
Acknowledgements

First and foremost, I would like to express my appreciation to my supervisor Dr. Lucie Lévesque. Without her, this thesis would not have been possible. She has provided outstanding support and guidance throughout the duration of my graduate studies. Her patience, thoughtfulness and invaluable feedback are remarkable and I am extremely grateful for that. Lucie has been an exceptional advisor fostering valued learning experiences and professional engagement opportunities based on her students’ needs, abilities, and goals. Lucie, you helped me to develop my professional abilities and address my limitations. You challenged me for the better, and inspired me to be better. Without your constant support, and compassion, I never could have finished this degree. I leave your lab with immense respect for you and your work and with the confidence and skills I need for future success.

Next, I would like to thank all of my friends and lab colleagues at SKHS – you have all helped make this a truly wonderful and memorable experience. Colin, Jyoti, Karla, Chao, Kori, Ashley J, Hoda and Sarah B, thank you for your support and friendship; I would not have made it through without you. Your positive attitude, cheerfulness, friendly smiles, and awesome chats, always rescued me when I was rattled. Special thanks to Jyoti, and Ashley for their help on this project. Hoda and Colin, your insights and guidance helped me a lot during the data analysis and I really appreciate it. I am truly grateful for all of the friendship and encouragement I received from you all during my years at SKHS.

Next, I would like to thank my parents and my sister for being so supportive, encouraging, and always believing in me. Mom and Dad, your constant care in all aspects of my life has made life to be a lot shinier. Without your generous support, advice and encouragement, I never could risk getting back to graduate school after years of being out of medical school!
A special thanks to my partner in life for his patience and understanding. Eisa, living apart from you was the most difficult part of the school years for me. Thank you for sharing the difficult and joyful moments, and for brightening my life with your love.

Finally, I am thankful for the role of the Welcome Centre Immigrant Services, and University Settlement Organization in connecting me to the newcomer women who made this enquiry possible. To the women who shared their experiences, I express my deepest appreciation for your valuable time and candor; I can only hope that I did justice to your personal stories.
Prologue

Researcher Positionality

The identities of both researcher and participants have the potential to impact the research process via our perceptions, and the ways others perceive us (Bourke, 2014). By being mindful of our own biases, we posit our approach to a research setting and how we might seek to engage with participants. It is thus useful for me to explain my positionality in conducting research about physical activity in new immigrant women.

I am a Persian-Canadian woman, a researcher with academic and professional knowledge of health behaviour practices and preventive medicine in both countries. Also, I have life experiences as an immigrant woman who immigrated to Canada as a medical doctor in the Economic immigration category. Life in both countries made me quite familiar with health behaviour practices of women in both countries. My passion to make a difference in population health is reflected through my professional experience as a medical doctor, health researcher, and Public Health specialist. Through personal and professional experiences, I have gained a better understanding of issues surrounding health behaviour practices such as physical activity among women in Iran. After immigrating to Canada, I started to notice the lifestyle changes among women in the community, as well as the speedy health decline in years after immigration. This is when I realized my desire to pursue my passion in contributing in people’s health by somehow making a change in Canadian new immigrants’ life experiences soon after immigrating into the new country. By consulting with the existing literature and speaking with the women in the Persian community I realized that physical activity is one the most concerning health behaviours for them in their life after immigration. Thus, I decided to pursue this Masters Degree and
designed a research project aiming to develop an understanding about factors influencing physical activity practices of new immigrant women during life after immigration.

Through reflexivity (Ruby, 1980; Thorne, 2008, P.70), the research process can be partly examined in the context of researcher positionality (Bourke, 2014). As Bourke (2014) expresses: “the researcher’s beliefs, political stance, cultural background (gender, race, class, socioeconomic status, educational background) are important variables that may affect the research process.” Having this in mind assisted me in staying aware of my own subjectivity throughout the whole research process. Keeping a reflexive, analytic journal allowed me to maintain awareness of my own probable biases and preconceptions that could influence my interpretation of the data during the data analysis procedure (Ruby, 1980). Throughout the course of my research, from the design to the final report, I constantly reflected on my preconceptions and how they might impact and shape the accounts of my participants. My familiarity with the contextual settings of physical activity experiences in both countries pre- and post-immigration, enabled me to apply a purposeful sampling strategy which could best represent the variation in physical activity experiences for Persian-Canadian new immigrant women. During the recruitment process, my personal background as a new immigrant, as a member of Persian-Canadian community and as a healthcare professional privileged me to establish rapport and partnership with people holding key positions within the immigrant service organizations and community centres serving Persian-Canadian clients. Through them, I was able to connect and establish rapport with potential participants because of shared language, cultural values, and life experiences. Also, I believe my background as a female medical doctor further aided me to gain participants’ trust and respect, which fostered greater openness between them and myself during the interview discussions.
During the interviews, participants sometimes summarized their past and current experiences assuming, rightly so, that I had prior knowledge about the topics and had a shared understanding with them. Through probing and interview techniques including reframing, repetition, and/or expansion of the interview questions, where appropriate, I gained more accurate and in-depth information relevant to the inquiry (May, 1991). Moreover, my familiarity with the contextual setting of the researched phenomenon and my “prolonged engagement” with the phenomenon under study further enhanced the credibility of my research findings (Lincoln & Guba, 1985).
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List of Abbreviations

Citizenship and Immigration Canada (CIC)
Immigration and Refugee Protection Act (IRPA)
Global Physical Activity Questionnaire (GPAQ)
Canadian Society for Exercise Physiology (CSEP)
Chapter 1

Introduction

1.1 Background Information

Upon arrival in Canada, landed immigrants are generally in similar or better physical and mental health than their Canadian-born counterparts (McDonald & Kennedy, 2004). Within a few years of immigrating, however, the health of this population typically declines, especially in women (Fuller-Thomson, Noack, & George, 2011; Gushulak, Pottie, Roberts, Torres, & DesMeules, 2011; Hyman & Guruge, 2002).

Even though research about immigrants’ health and health behaviours is scarce, the literature that has been published suggests that the health decline among this population is typically related to the development of chronic disease conditions such as cardio-metabolic diseases (Khan, Kobayashi, Lee, & Vang, 2015). Modifiable risk factors that contribute to the development of cardio-metabolic diseases include behaviours such as tobacco smoking, alcohol use, unfavourable dietary habits, and physical inactivity (Hu, 2011; Public Health Agency of Canada, 2015). By contrast, healthy behaviours can serve to protect health. For example, maintaining regular physical activity can prevent all-cause mortality and premature death, cardiovascular diseases, type 2 diabetes, a number of cancers, osteoporosis, and osteoarthritis (Pate et al., 1995; Warburton, Nicol, & Bredin, 2006).
Newcomers to Canada generally exhibit health behaviours that vary in comparison to the Canadian-born population: on the one hand, unfavourable health behaviours including alcohol consumption and daily cigarette smoking are lower among this population. On the other hand, however, participation in moderate to vigorous physical activity is also lower among newcomers to Canada (Ng, Wilkins, Gendron, & Berthelot, 2005; Perez, 2002) and research on immigrants’ physical activity shows lower levels of physical activity engagement among this population in comparison to non-immigrant groups (Dogra, Meisner, & Ardern, 2010; Tremblay, Bryan, Pérez, & Ardern, 2006). Moreover, among Canadian ethnic subgroups, South Asian and West Asian immigrants, especially women, have been shown to have the lowest levels of physical activity (Dogra et al., 2010).

Despite these differing patterns of physical activity between immigrant and non-immigrant populations in Canada, scholars do not commonly consider how ethnicity, immigration status and years lived in Canada impact immigrant health behaviours. In fact, within the existing health literature, many scholars do not distinguish between the ethnic heritage and immigration status of different ethnic groups (Khan et al., 2015). This can result in uncertainty about health outcomes being related to immigration attributes, affiliated changes in life context and acculturation.

In order to address inadequate levels of physical activity in the immigrant population living in Canada, it is important to understand why physical activity practices are less frequent among this segment of the Canadian population and to uncover whether
or not these patterns are a larger reflection of the immigration experience. In comparison to the general population, recently immigrated women often face multiple barriers to enhancing or maintaining healthy behaviours, including social, language, cultural, economic, and informational barriers (Statistics Canada, 2010; Hyman & Guruge, 2002). Researchers have hypothesized that prolonged time since immigration and more favourable acculturation/integration potentials such as being younger upon arriving in the host country, and proficiency in the country’s official language may positively influence physical activity behaviour (Gushulak et al., 2011; Lara, Gamboa, Kahramanian, Morales, & Hayes Bautista, 2005; Marsiglia, Booth, Baldwin, & Ayers, 2013). This would seem to suggest that in addition to known psychosocial, demographic, interpersonal, organizational and political factors influencing individuals’ physical activity behaviour (Bauman et al., 2012; Sallis, Bauman, & Pratt, 1998; Trost, Owen, Bauman, Sallis, & Brown, 2002), factors specifically related to the immigration experience should be considered (Dave et al., 2015; Im et al., 2015). For instance, many new immigrants may have disparate social norms regarding physical activity compared to the mainstream population as a result of their heritage and sociocultural influences (Im & Choe, 2004; Kriska & Rexrod, 1998; Vahabi & Damba, 2015). Moreover, immigrants to Canada have been shown to have higher rates of unemployment and underemployment (Yssaad, 2012) and longer work hours than non-immigrant groups (Gilmore, 2009), which may leave little time for physical activity or recreational activities.

There is a paucity of information regarding the factors that influence physical
activity behaviour among the Canadian immigrant population. The scarcity of related research in the Canadian context, coupled with not considering the effects of immigration on physical activity behaviour, necessitate further research to explore this behaviour among the immigrant population. Furthermore, the diversity of the Canadian immigrant population warrants a more in-depth investigation of subgroups with higher rates of population growth and lower rates of physical activity, including new Canadian women of West Asian origin such as Iranians (Persians). The findings of such research can inform physical activity programmes and physical activity decision-making bodies and help them to develop and implement promising interventions that are tailored to the specific barriers and enablers of physical activity participation among this growing population of Canada.

1.2 Purpose and Objectives of the Thesis

This study stems from a need to gain a more in-depth and complex understanding of physical activity behaviours among recently immigrated Persian (Iranian) women living in Toronto, Canada. The overarching purpose of this thesis is to understand the physical activity experiences of Persian women recently emigrated from Iran to Toronto, Canada in order to develop recommendations for the design and implementation of physical activity programs that are tailored to the needs of new immigrant women within the context of existing structures and opportunities. More specifically, the first objective of this thesis is to describe the current perspectives, preferences, and practices of Persian-Canadian women in Canada relative to physical activity involvement and to compare
these with their previous physical activity practices in their home country. The second objective is to provide an interpretive exploration of the facilitators and barriers to engagement in physical activity in their newly adopted country.

1.3 Overview of the Thesis

This thesis is presented in a traditional style format and adheres to the requirements outlined in the Queen’s School of Graduate Studies’ “General Forms of Theses” as well as the guidelines set by Queen’s School of Kinesiology and Health Studies. Five chapters are included in this thesis. Chapter 1 provides background information regarding the issue, the objectives of the thesis, and the overview of the thesis. Chapter 2 portrays the immigrant population in Canada, gives an overview of the current literature on factors influencing physical activity behaviour. Chapter 3 describes the methods used to conduct the study including the data collection and analysis. Chapter 4 reports the results of the study. In Chapter 5, the results are interpreted and discussed within the context of existing research. Chapter 5 also outlines the limitations of the study, future directions, and the contributions of the study. Finally, a summary and conclusion are also provided in Chapter 5.
1.4 References


Chapter 2

Literature Review

2.1 Physical Activity Benefits and Guidelines

Regular physical activity of moderate-intensity, on most days of the week for at least 30 minutes, can have significant health benefits (Bauman, 2004; Warburton, Charlesworth, Ivey, Nettlefold, & Bredin, 2010). Higher volumes and intensities of activity, and specific types of activity such as strength training can have additional health benefits (Centres for Disease Control and Prevention U.S., 1999). Canadian physical activity guidelines for adults, revised in 2010, stipulate that adults between the ages of 18 to 64 years should “accumulate at least 150 minutes of moderate-to-vigorous physical activity (MVPA) in 10-minute bouts or more each week in addition to completing muscle and bone strengthening training using the major muscle groups twice a week for additional health benefits” (Canadian Society for Exercise Physiology [CSEP], 2012). These are consistent with Physical Activity Guidelines of the World Health Organization (World Health Organization, 2011). Individuals who do not meet the guidelines are considered to be at an increased risk of disease compared to those who meet the guidelines (Warburton et al., 2010).

2.2 Demographics of Physical Activity in Canada

Despite the well-documented benefits of physical activity, statistics generated
from the self-reported Canadian Community Health Survey (CCHS) in 2013 showed that almost half of Canadian adults were not meeting physical activity recommendations (Canadian Fitness and Lifestyle Research Institute, 2015). Findings from directly measured physical activity in Canadian adults are even more concerning, as data from the 2007 to 2011 Canadian Health Measures Survey (CHMS) showed that only 15% of Canadian adults were meeting physical activity guidelines, with slightly higher rates found in men (17%) as compared to women (13%) (Statistics Canada, 2013a). Thus, a considerable majority of the Canadian adult population, particularly women, do not conform to the recommended weekly physical activity dose and are at risk of developing physical inactivity health consequences.

2.2.1 Physical Activity in the Immigrant Population Living in Canada. Few studies have investigated physical activity patterns among ethnic minorities and the immigrant population living in Canada (Bryan, Tremblay, Pérez, & Ardern, 2006; Dogra, Meisner, & Ardern, 2010; Tremblay, Bryan, Pérez, & Ardern, 2006). The most recently examined Canadian data in adults stems from 2005, when Dogra and colleagues (2010), using self-reported Canadian Community Health Survey data, found that the new immigrant population who had been living in Canada for less than 10 years, had lower physical activity levels than non-immigrant groups. Using three cycles of CCHS data from 2000 to 2005, the researchers showed that 63.8% of West Asians, including Afghans, Iranians, and Arabs who lived in Canada, were inactive (Dogra et al., 2010).
2.2.2 Gender Differences in Physical Activity of the Asian Immigrant Population.

Immigrant women are especially inactive, reporting lower rates of physical activity than men (Tremblay et al., 2006). Moreover, among ethnic subgroups, south Asian and west Asian immigrant women have been shown to have the lowest rates of physical activity (Dogra et al., 2010). This finding is supported by a report produced by Toronto Public Health and Access Alliance Multicultural Health and Community Services using the 2001 to 2008 CCHS data. The report states that among newcomers to Toronto, South Asian, West Asian, Arabs, East and Southeast Asian immigrants, women in particular, have lower rates of physical activity as compared to Caucasian newcomers (Khandor, 2011).

The gendered physical activity pattern seems to mirror results from the 2007 national survey of non-communicable disease risk factors in Iran, which measured work, commuting, and leisure time physical activity via the Global Physical Activity Questionnaire (GPAQ). Findings from this survey revealed that of the 40% (12.5 million) of the population aged 25 to 64 years classified in the low physical activity category, a majority were women (48.6 vs. 31.6, p<0.001). Based on this survey, approximately 1 out of 6 Iranian women had no physical activity related to work, commuting, or recreation. Furthermore, over 90% of the women surveyed did not engage in vigorous physical activity (91.2± 0.7%)(Esteghamati et al., 2011). Overall, Iranian women shown to have lower levels of physical activity in all domains except for household physical activity, which is noticeably higher among women as compared to men (Esteghamati et
Self-reported barriers to physical activity involvement among Iranian women living in a relatively populated traditional, religious city of Iran included prioritizing family needs over physical activity, lack of energy, not having an exercise partner, and inaccessible sports facilities (Dashti et al., 2014). In a study of 570 women between the ages of 25 to 40 years, women reported the government's lack of concern and lack of support of leisure opportunities for women as the principal limitations of leisure engagement for Iranian women in Iran (Arab-Moghaddam, Henderson, & Sheikholeslami, 2007). The authors mentioned that the lack of attention to the matter by the government is likely associated with existing gender-segregation policies and the government’s tendency to domesticize women’s role in society. Perceptions that leisure time is mostly for men, coupled with concerns for women’s security related to overcrowding, pollution, and harassment were raised as additional challenges that Iranian women face to participating in leisure activities, especially in the outdoors (Arab-Moghaddam et al., 2007). This pattern of gender differences in physical activity with reported lower rates among women is consistent with trends that are seen in other industrialized nations (Dassanayake et al., 2011) as well as within the general adult population of Canada (Craig, Russell, Cameron, & Bauman, 2004).
2.3 The Immigrant Population in Canada

To begin to understand the situation of new immigrant health and physical activity behaviours, it is necessary to examine the context within which immigrants arrive and settle in Canada. While migration is not a new phenomenon, never have there been more immigrants in the world than at the present time (Sam & Berry, 2006). The increasing global population and the pronounced socioeconomic gap between low and high-income countries has led to emigration in search for a better quality of life. Immigrants resettle in a new country for personal, political or religious reasons, but mostly to find a better economic position, or to be reunited with family members (Sam & Berry, 2006). According to Citizenship and Immigration Canada, landed immigrants to Canada are either permanent or temporary residents. Canadian permanent residents have all the rights under the Canadian Charter of Rights and Freedoms except for the right to vote. Temporary residents are people who are authorized to enter to Canada on a temporary basis with a student, visit or work visa and who must leave Canada by the end of the permitted period (Citizenship and Immigration Canada [CIC], 2009).

Based on the Immigration and Refugee Protection Act (IRPA), accepted reasons for coming to Canada in order to resettle as a permanent resident are divided into three major categories including: Economic, Family class, and Refugee. The Economic class immigrants are people with specific skills and abilities that can contribute to Canada’s economy; at 63.4% of all new immigrants, they constitute the highest proportion of the yearly national immigrant uptake (CIC, 2015), and the most important resource for
population and economic growth of the country (Gu & Wong, 2010). Family class immigrants represent 25.6% of the new immigrant population to Canada; these are the spouse, partner, parents, grandparents and certain other relatives sponsored by Canadian Citizens or permanent residents. Finally, people who are in danger of imprisonment, punishment or unusual treatment in their home countries may seek protection in Canada in the Refugee category, making up the last category of new landed immigrants (CIC, 2015).

The majority of recent immigrants to Canada emigrate from Asia and the Middle East (Statistics Canada, 2013b). Immigrants to Canada typically settle in major cities including Toronto, Montreal, and Vancouver. The aforementioned metropolitan areas are called home by 63.4% of the country's total immigrant population of which 62.5% are newcomers to Canada (Statistics Canada, 2013b). Approximately 2.5 million immigrants live in the Toronto region, which accounts for 46 percent of the region’s population (Statistics Canada, 2013b). Based on Statistics Canada projections, approximately 30% of the Canadian population will be foreign born by 2031, with Arabs and West Asian (Iranians, Afghans, etc.) having the fastest growth between 2006 and 2031 (Statistics Canada, 2010).

2.3.1 The Iranian (Persian) Canadian Population and Their Cultural Heritage. The Iranian community is relatively new to Canada. After the Iranian revolution in 1979, immigration figures rose significantly and the trend has continued to
Based on the 2011 National Household Survey, there were 163,290 Iranians in Canada of which over 90% live in Ontario, Québec and British Columbia (Statistics Canada, 2013b).

Iran, a country in Southwest Asia with a population of more than 75 million, is home to diverse national and ethnic subgroups, including, but not limited to the Fars (majority), Azerbaijanis, Lors, Arabs, Armenians, Assyrians, and Balochis. These groups are of diverse faiths such as Christianity, Judaism, the Baha’I Faith, and Zoroastrianism. The official language of Iran is Farsi or Persian and the prevalent faith in current Iran is Shi'i Muslim (Axworthy, 2008). In addition to the multi-ethnic constitution of the country, the class-based cultural stratification has created traditional and modern classes as well as upper, middle, working, and lower classes with social prestige based on wealth, property ownership, education and occupation (Curtis & Hooglund, 2008).

Despite the heterogeneity of Iranian culture and practices, some commonalities in cultural values affect the daily lives of Iranians regardless of where they live (Iran or Canada). For example, the principles of family relations rooted in Iranian collectivistic cultural norms, as well as patriarchal cultural beliefs and practices have moulded the totality of living arrangements for Iranian families (Hamedani, Purvis, Glazer, & Dien, 2012). According to McGoldrick, Giordano, & Garcia-Preto, (2005), familial ties are strong in Iranian households, as family and family relations typically dominate the individual’s total life. In addition to strong attachments to the nuclear family, the extended family plays an important role as a significant psychological and bonding entity
in Iranian culture (McGoldrick et al., 2005). According to the Hofstede centre, Persian culture is characterized as ‘moderately’ collectivistic, which means individuals can be unique, but group relations are also emphasized. Iran’s collectivism manifests as: loyalty to family, extended family, and close friends; a shared responsibility for one another and the tendency to conform to group norms (“Iran - Geert Hofstede,” n.d.).

In Iranian culture, self-sacrifice and advancing the needs of family over one’s own needs and desires, are strong values, especially with regards to the motherhood responsibility to be very affectionate towards children. Correspondingly, child rearing, both emotionally and financially, continues until long after the children have families of their own as adults. In return, children are required to be obedient, respectful, and caring towards their parents and other older members of the family.

In patriarchal Iranian culture, women are expected to take care of the home and children while men are expected to be the responsible breadwinner of the family (Saba Soomekh, 2008). However, according to Moghadam, an increase in the number of university educated women and economic changes towards industrialization, many women are now seeking employment to contribute to the family’s economy without having shed their home-based responsibilities (Moghadam, 2004a). Such dual role expectations have caused problems for working married women and mothers who must rely on their extended family to help with overwhelming parenting and housekeeping roles in addition to their professional responsibilities (Karimi, 2008).

Although cultural practices associated with patriarchy have changed during the
last century in Iran, and in modern and educated family classes, there is relative egalitarianism between men and women, this is not necessarily being supported by legal codes and societal rules. In fact, the mass population of Iran and more traditional families, particularly in the smaller cities and rural areas, still follow the traditional patriarchal practices that subordinate the role of women in society and family, and emphasize their domestic roles (Moghadam, 2004b).

Post-revolutionary rules further reinforced oppressive practices towards women including mandatory religious rules such as wearing the hijab in public places and encouraging the traditional notions of domestic and caregiving roles of women (Povey & Rostami-Povey, 2012). As a result of the social oppression and lack of religious freedom, many highly educated Iranian professionals have left their home country. Furthermore, the economic instability, exacerbated by imposed sanctions against Iran, as well as the quest for better educational opportunities for children, have led others leave the country (Delavari, Sønderlund, Mellor, Mohebbi, & Swinburn, 2015; Kalvir, 2011).

Iranians who emigrate to Canada mostly come from urban areas, particularly large and mid-size cities (Rahnema, 2011). Despite coming from a Muslim country, a 2009 Canadian study revealed that over 80% of Iranian-Canadians do not consider themselves to be religious and tend towards secularism (Moghissi, Rahnema, & Goodman, 2009). The majority of Iranians immigrating to North America constitute the more modern and educated classes who, despite their modernized ways, may still hold traditional patriarchal attitudes about gender roles (Ansari & Martin, 2014).
Considering the principal role of Canadian immigrants in increasing the human capital and economic growth of the country (Gu & Wong, 2010), the constant shift in the demographic profile of the population needs to be the focus of health promotion research in Canada. Indeed, further research targeted to the health behaviours of foreign-born Canadian ethnic minorities, particularly among the newest and the fastest growing ethnicities such as west Asians and Arabs, is warranted to garner new insights in promoting and sustaining health among this rising Canadian population.

2.4 Healthy Immigrant Effect

The great majority of landed immigrants report very good to excellent health upon arrival to Canada and are generally in similar or better physical and mental health compared to their Canadian-born counterparts (McDonald & Kennedy, 2004; Perez, 2002). This finding, known as the “healthy immigrant effect”, has been reported in other immigrant host countries such as the US, Australia, and the UK (Health Canada, 2010; Kennedy, McDonald, & Biddle, 2006).

Various explanations of the “healthy immigrant effect” exist (McDonald & Kennedy, 2004). First, the Citizenship and Immigration Canada (CIC) health screenings and selection policies restrict entry to healthy and highly educated people. Also, people who are more likely to have higher socioeconomic status in their home country and higher psychophysical stamina are considered to be more able to take the challenge of immigrating into a new milieu. Finally, this group’s better health status may be
explained by their ability to live a healthier lifestyle in their country of origin (Gushulak, Pottie, Roberts, Torres, & DesMeules, 2011; Newbold & Danforth, 2003; Ng, Wilkins, Gendron, & Berthelot, 2005).

Many studies have shown that immigrants’ health tends to decline post-arrival to Canada (Gushulak et al., 2011; Hyman & Guruge, 2002). The Longitudinal Survey of Immigrants to Canada conducted by Statistics Canada and CIC between April 2001 and November 2005 revealed that among landed immigrants aged 20-50 years, 15% reported a two-step decline in self-reported health (e.g., from Excellent to Good or from Very Good to Fair) in the first four years after arriving in Canada. In comparison, only 6% of non-immigrants from a similar age group reported a two-step decline in health during the same time period (Fuller-Thomson, Noack, & George, 2011). While immigrants have demonstrated age standardized mortality rate advantages over the Canadian born population and even over ethnic minorities born in Canada, (Sheth, Nair, Nargundkar, Anand, & Yusuf, 1999), some studies have shown that Canadian ethnic minorities are more susceptible to develop cardio-metabolic diseases (Khan, Kobayashi, Lee, & Vang, 2015). Congruently, some immigrant groups such as south Asians in Canada and in the United States have been found to be at higher risk for developing chronic diseases such as type 2 diabetes, cardiovascular disease, and metabolic syndrome (Bainey & Jugdutt, 2009; McNeely & Boyko, 2004; Misra & Khurana, 2009). Likewise, rates of developing hypertension tend to increase among South-Asian immigrant women, by years lived in Canada (Kaplan, Chang, Newsom, & McFarland, 2002).
2.5 Acculturation

Immigration results in contact between people of different cultures and diverse backgrounds. This meeting of cultures can cause changes in the lifestyle and culture of the parties involved and the formation of new communities. This phenomenon is called acculturation (Sam & Berry, 2006). The cultural characteristics that accompany individuals into the acculturation process, in addition to the combination of political, economic, and demographic conditions being faced by individuals in their society of origin, need to be contemplated while studying individuals that are experiencing acculturation. For example, the features of the host society, including societal attitudes towards immigrants and effective comprehensive integration policies in government, institutions, and communities (e.g., culturally sensitive social services such as healthcare, and school curricula) that support cultural pluralism can provide a more positive settlement context for newcomers and facilitate their integration process (Berry, 1997; Penninx, 2003).

2.5.1 Acculturation/Integration and Immigrants’ Well-Being. The effects of integration processes on immigrants’ physical and mental health have been the subject of interest by researchers (Abraído-Lanza, Armbrister, Flórez, & Aguirre, 2006; Akram, 2012; Johansson, Sundquist, & Wiking, 2004; Pérez-Escamilla & Putnik, 2007; Sam & Berry, 2006; Wiking, 2004). Immigrants encounter various changes during the process of adaptation to a new society, which can be categorized as: physical, biological, cultural, social and psychological (Berry, Kim, Mindeh, & Mok, 1987). The physical and
biological changes for newcomers to the country start in the early stages of acculturation. These changes stem from a new place of living, different type of housing, and changed climate as well as different microbial agents that are new to the immigrants’ immune system and which may cause them to acquire new diseases soon after initiating their new life in the host country.

A number of factors are associated with acculturation stress including: age, gender, income, racism, sense of coherence, and perceived social support (Dossa, 2002; Rashidian, Hussain, & Minichiello, 2013; Sam & Berrry, 2010). More acculturative stress has been found among immigrants who are women, are of older age, have lower social support and lower socioeconomic status (Sam & Berrry, 2010; Jibeen & Khalid, 2010). However, Noh, Wu, Speechley, & Kaspar (1992) corroborated that even immigrant women who were married, employed, and had a post-secondary education had higher rates of depression than men experiencing the same circumstances. In-depth interviews with 14 highly-educated immigrant women living in British Colombia revealed the struggles faced by these women related to validating professional attainments, gender role responsibilities, lack of social support and efforts spent for resettlement (Suto, 2009). More specifically, women immigrating from countries with traditional gender roles that position them as the main housekeeper, whom also seek employment due to financial constraints or in hopes of a better quality of life for their families, will experience a work overload that leaves little time for healthy practices such as regular physical activity (Im et al., 2015; Noh et al., 1992). The health advantage of
new immigrants may collapse as immigrants adopt unhealthy lifestyles that are more prevalent in the industrialized societies such as: smoking, excessive alcohol consumption, or consumption of high-fat convenience foods, whether as means to cope with acculturative stresses or due to assimilation within the dominant cultural group (Kliewer, 1992; Sam, 2006).

On the other hand, prolonged time since immigration and having higher acculturation potential, such as being younger upon arriving to the new country, being proficient in the official language of the host country, having employment based on earned qualifications and credentials, and having higher cultural heritage “groundedness” and inter-cultural bondings, as well as cultural norms of reciprocal solidarity with both nuclear and extended family, may facilitate access to health care and health promotion services, which can affect the health of new immigrants in a positive manner (Gushulak et al., 2011; Lara, Gamboa, Kahramanian, Morales, & Hayes Bautista, 2005; Marsiglia, Booth, Baldwin, & Ayers, 2013).

In sum, differing acculturation potential should be considered when studying immigrant health. In addition, the model of immigration in Canada, which mostly places the burden of favourable integration and maintaining wellbeing on immigrant individuals themselves while failing to address the social, structural and systemic impediments (Dossa, 2002), should be considered. Given that sociocultural background and past and current lived experiences of immigrants affect their acculturation process, studying the unique Iranian (Persian) immigrant experience of integration into Canadian society is
warranted (Dossa, 2002; Rashidian et al., 2013; Safdar et al., 2003, 2009).

2.5.2 Acculturation and Physical Activity. Given the diversity of conceptualizations of acculturation in the literature – sometimes measured as duration of residence in the receiving country, age of arrival, and/or language use (Lara et al., 2005) - and given the differences in physical activity measures used across studies, the relationship between acculturation and physical activity is not clear (Gerber, Barker, & Pühse, 2012). Due to the structural barriers faced by immigrants in their efforts to integrate into the new society, time passed since immigration does not necessarily translate into better acculturation outcomes (Dossa, 2002). Even though researchers have hypothesized that the relationship between physical activity and acculturation might be influenced by changes in health beliefs and related cultural norms, improved knowledge and access to information regarding the benefits of being physically active, as well as health promotion campaigns; the patterns of association are not yet clear (Gerber et al., 2012). A systematic review of 44 studies of acculturation and physical activity among adults and youth yielded mixed results, with nine studies showing a positive association between acculturation and physical activity, 16 studies showing a partial positive association, four studies showing a negative association, and 15 studies showing no association (Gerber et al., 2012). Hence, there is a need to better understand the relationship between immigration and physical activity behaviours to inform the design of culturally relevant health promotion programs to stimulate and facilitate physical activity participation among new immigrants (Domnich, Panatto, Gasparini, & Amicizia,
2.6 Factors Influencing Physical Activity in Adults

In addition to considering acculturation, it is important to understand evidence-based correlates of physical activity behaviours when designing and implementing effective physical activity interventions for specific population, groups (Sallis & Owen, 1998). A substantial body of literature has examined the correlates of physical activity in adults. Six categories of physical activity correlates have been identified: demographic and biological factors; psychological, cognitive and emotional factors; behavioural attributes and skills; sociocultural factors; physical environment factors; and physical activity characteristics (Owen, Spathonis, & Leslie, 2005).

Consistent demographic and biological correlates of physical activity among adults are: health status, gender, age, education levels, ethnicity, genetics, obesity, income and socioeconomic status (Bauman et al., 2012; Sallis & Owen, 1998; Trost, Owen, Bauman, Sallis, & Brown, 2002). With respect to psychological factors, strong positive associations have been found between physical activity and self-efficacy, self-motivation, intention to exercise, benefits realization, and stage of change. However, stress as well as time constraints, fatigue, and fear have been shown to have inverse associations with leisure time physical activity. Among behavioural factors, a history of previous physical activity has been shown to have a consistent direct association with adulthood physical activity. In terms of sociocultural factors, social support from friends
and family; instrumental aid and service from the community, and advice, suggestions and information from healthcare professionals have been shown to be strong, consistent, positive correlates of adult physical activity, while social isolation has been shown to have a negative impact on physical activity engagement. Moreover, among environmental factors, weather conditions, the transportation environment (e.g., paved roads and safety of crossings), the aesthetics of a neighbourhood (e.g., greenness and attractiveness), and the availability and access to recreational facilities have been consistently related to leisure time physical activity among the adult population. Lastly, the characteristics of the physical activity itself, such as the required exertion of effort, has been shown to have a strong inverse correlation with physical activity, while the enjoyable aspects of physical activity have been shown to have the opposite effect (Bauman et al., 2012; Sallis & Owen, 1998; Trost et al., 2002).

Consistent with the above correlates, a survey of 5167 Canadians aged 15-79 years conducted by Pan and colleagues (2009), showed that self-efficacy, intention, education, household income, objective health status, perceived health benefits and access to exercise facilities were independently related to physical activity. Among these correlates, intention and self-efficacy were strongest with perceived barriers and level of education being the most influential factors on women’s engagement in physical activity (Pan et al., 2009).

Despite an extensive literature on physical activity correlates among the general population, physical activity correlates among immigrants to Canada remain
understudied. Given insufficient levels of physical activity among this population (Dogra et al., 2010), further research is needed to understand influential factors in acquiring and maintaining physical activity behaviour, especially among women who are at higher risk of not engaging in recreational physical activity after immigration.

2.7 Factors Influencing Physical Activity in New Immigrants

Physical activity barriers associated with being new to a country can include: a lack of social support from extended families, close relatives, and friends (Im et al., 2015); difficulty accessing facilities due to cost, transportation, distance (Eyler et al., 1998); and, a lack of familiarity with the new city and the location of the facilities (Taylor et al., 2008). Language barriers, unfamiliar, harsh weather conditions, physical activity program costs, lack of culturally-relevant programming, and concerns about safety also constitute commonly cited barriers to physical activity (Babakus & Thompson, 2012; Dave et al., 2015; Eyler et al., 1998; Im et al., 2015; Taylor et al., 2008).

On the other hand, facilitators of physical activity among immigrants can include: positive attitude of the host society towards physical activity (Delavari et al., 2015; Eyler et al., 1998; Im & Choe, 2004), having role models and exercise partners among friends and family as well as tangible supports from family, friends, coworkers and community (Dave et al., 2015; Eyler et al., 1998), access to a safe, convenient and aesthetically pleasant physical environment (Eyler et al., 1998; Kriska & Rexrod, 1998), recognizing
the benefits of physical activity (Eyler et al., 1998; Im & Choe, 2004), culturally relevant physical activity programs (Dave et al., 2015; Vahabi & Damba, 2015), and previous positive experiences with physical activity.

It is important to note that the above review of barriers and facilitators to physical activity applies to immigrants in general. Studies investigating physical activity behaviour in multicultural ethnic subgroups within the same host society have found factors influencing physical activity behaviour to be specific to each ethno-cultural subgroup (Caperchione, Kolt, & Mummery, 2009; Eyler et al., 1998; Hosper et al., 2008; Södergren, Hylander, Törnkvist, Sundquist, & Sundquist, 2008). For example, Caperchione et al. portrayed that the difference in the sociocultural context between the host country and the country of origin can influence the physical activity behaviour of the participants. An investigation of physical activity behaviour among Bosnian, Arabic speaking, Filipino and Sudanese women in three Australian regions of New South Wales, Victoria, and Queensland revealed that moving from a rural area of the country of origin to an urban setting in the host society could result in a decrease in physical activity. As women in this study expressed, after immigration, urbanization and reliance on cars for transportation and motorized labour saving appliances for daily chores reduced the daily body exertion they used to practice before immigration (Caperchione et al., 2009). On the other hand, in the same study, Filipino women who had high socioeconomic status and well paid jobs in the Philippines were more likely to have a similar lifestyle in the host country in terms of access to a private vehicle for transport, gym for exercise, and less
labour intense daily life chores (Caperchione et al., 2009).

All in all, there is a paucity of information regarding the factors influencing physical activity behaviour in immigrant subgroups. Few studies have been conducted in the Canadian context and few studies have distinguished between new and established immigrants. Existing investigations tend to consider immigrants as a homogenous group called “Ethnic minority”, ignoring the diversity of this population and factors pertaining to the effects of acculturation on physical activity (O’Driscoll, Banting, Borkoles, Eime, & Polman, 2014).

2.7.1 Factors Influencing Physical Activity in New Immigrant Women.

Immigrant women’s practices and experiences of physical activity and exercise have not been adequately studied. Physical activity researchers rarely incorporate the totality of immigrants’ women’s life experience in their exploration of these women’s physical activity involvement. A woman’s lived experience is anchored within her biological, psychosocial, sociocultural, and environmental context; none of these factors alone fully explain women’s health behaviours. It is thus critical to consider the full spectrum of influences upon immigrant women’s physical activity involvement in order to gain a comprehensive understanding of the phenomenon (Im & Choe, 2001). Bearing this in mind, it is important to consider that immigrant women lives are influenced by both eras of personal pre and post immigration (Dossa, 2002).

A number of qualitative studies have investigated the physical activity behaviour of ethnic minority women living in host countries including Canada, US, Australia,
Sweden, UK. Although some cultures do believe in the benefits of some types of physical activity, which can encourage participation (Im et al., 2015; Im & Choe, 2004; Vahabi & Damba, 2015), studies overwhelmingly discuss how immigrants’ beliefs, attitudes and cultural norms are barriers to physical activity (Babakus & Thompson, 2012; Caperchione et al., 2009; Dave et al., 2015; Im & Choe, 2004; Vahabi & Damba, 2015). For example, some south Asian women perceive intense physical activity as harmful (Babakus & Thompson, 2012), and a “no physical activity during menstruation” rule is often obeyed among Korean women (Im & Choe, 2004). Correspondingly, sociocultural values and norms about relations and responsibilities within the nuclear and extended families, as well as gender norms such as the domestic role of women (who may also be working outside the home) and patriarchal practices, are also frequently raised as impediments to engaging in physical activity by immigrant women (Alvarado, Murphy, & Guell, 2015; Babakus & Thompson, 2012; Caperchione et al., 2009; Dave et al., 2015; Eyler et al., 1998; Im et al., 2015; Im & Choe, 2004; Vahabi & Damba, 2015). In addition, collectivist cultural values, such as self-sacrifice and prioritizing family needs over one’s own needs, may also prevent women from investing in their own health (Vahabi & Damba, 2015).

2.8 Socio-Ecological Approach

There is widespread consensus that the complex nature of physical activity behaviour acquisition and maintenance can be best conceptualized as resulting from the
interaction between intrapersonal, socio-cultural, environmental, and policy factors (Green, Richard, & Potvin, 1996; McLeroy et al., 1988; Sallis & Owen, 2002; Stokols, 1992). Considering the multiple types of correlates and levels of behavioural influence reviewed above, ecologically-informed interventions might be more effective than single-level individual interventions in encouraging behaviour change and maintenance (Sallis & Owen, 2002; Richard et al., 2011). Thus, to better understand and promote health behaviours, including physical activity, researchers are encouraged to adopt a socio-ecological lens. The interplay of ethnicity, immigrant status, and context as mediators of individual level factors are especially important to consider (Mermelstein & Revenson, 2013).

2.9 Purpose of the Study

Given the growing immigrant population in Canada, and considering the insufficient levels of physical activity among immigrants in general, and immigrant women in particular, as a possible explanation for their health deterioration, physical activity promotion programs that are relevant to diverse subgroups are needed to enable more people to satisfy physical activity recommendations based on Canadian physical activity guidelines (CSEP, 2012). Given changing patterns of immigration, and gaps in knowledge regarding the barriers and facilitators of maintaining or changing physical activity behaviours, an investigation of these factors is timely and warranted. Gaining insight that can inform the development of promising interventions tailored to the needs
of specific immigrant subgroups has the potential to reduce health inequalities and the health deterioration typically experienced by immigrants to Canada. Thus, the overall purpose of this research is to understand the physical activity experiences of new immigrant women from Iran through an exploration of their past and current physical activity practices and the facilitators and barriers they encounter in their efforts to be physically active.
2.10 References


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Chapter 3
Methods

3.1 Methodological Orientation

To best capture the physical activity experiences of immigrant women from Iran, a qualitative interpretive description approach was chosen as an ideal way to describe ideas, experiences, and perceptions that might be difficult to study using quantitative methodologies (Thorne, Kirkham, & MacDonald-Emes, 1997). Interpretive description originated from the need for an applied, rather than theoretical qualitative research method that can generate new knowledge to address everyday issues in practice (Thorne, 2008). Having roots in the well established qualitative methodologies of ethnography, phenomenology, and grounded theory, interpretive description acknowledges the geographical, sociocultural, political, and ideological context of the phenomenon under study (Thorne, 2008; Thorne et al., 1997). Thus, it moves beyond simple description to generate a more useful socially constructed reality by discovering the relationships and the “so what” meanings underlying the subjective experiences (Thorne, 2008). As Thorne stated: “Interpretive description explicitly locates itself within a philosophical tradition that tells us- at least in matters involving human experience- the “more probable truths” (Kikuchi & Simmons, 1996; Sandelowski, 1996) are those that we have arrived at, using multiple angles of vision” (Thorne, 2008, P. 78). This relatively new qualitative approach explicitly values the researcher’s theoretical and practical prescience of the phenomenon under study in regards to interpretation of the subjective and intersubjective findings (Thorne, 2008). However, it emphasizes that the researcher needs to constantly “surface, acknowledge, and
reflect upon” the pre-existing ideas that might affect the direction of the study (Thorne, 2008, p.70).

3.2 Data Collection

3.2.1 Sampling. Purposive sampling of Iranian women newly immigrated to Canada was conducted to achieve a balanced sample (Patton, 1990; Sandelowski, 1995) and to optimize variation (Guest, Bunce, & Johnson, 2006) in terms of physical activity levels, total household income levels and years lived in Canada (see Appendices A, and B). Immigrant women were eligible for the study if they: were born in Iran, held permanent resident status in Canada in any economic immigration category, were between 18 and 64 years of age, had lived in Canada for 3 months to 5 years, did not have a physical or mental health condition that could prevent them from being physically active, and could communicate in either English or Farsi. Screening questions were used to determine if women met the inclusion criteria (see Appendix A).

3.2.2 Recruitment. Potential participants were clients who use services, or somehow are associated with the following community organizations in the Greater Toronto Area, with which I had an established rapport: University Settlement, Costi Immigration Services, Welcome Centre Immigrant Services in Richmond Hill and Markham North, Richmond Hill Central Library, Markham Public Library, and North York Central Library. To recruit eligible women, I enlisted the help of key personnel at each of these partner organizations and institutions, contacting them in person or by email to provide them with a brief description of the study. After receiving initial positive interest from the contacted personnel, I provided them with the ethic's clearance letter (Appendix C), recruitment poster (Appendix D), recruitment script (email and phone version; Appendix E), and the screening questionnaire (email and phone version) both in
English and Farsi language (Appendix A). These key personnel assisted in connecting me to the immigrant women, by placing English and Farsi versions of the study recruitment poster on a notice board in their organization and/or by allowing me to speak to their clients. For example, in order to build rapport with potential participants I coordinated and delivered a number of brief group presentations about the study purpose, procedure and implications at the community partner facilities. The presentations were scheduled during regular workshop times or during advanced ESL classes, where a number of eligible potential participants might be in attendance. Interested women were invited to share their contact information and to complete the screening questions. Once eligibility was ascertained, a copy of the Letter of Information and Consent Form were provided to each participant and an interview date and convenient location (e.g., a private interview room at the community partner’s facilities or by telephone) were determined with consenting participants. Participants were recruited and interviewed until theme saturation was reached.

### 3.2.3 Participant Characteristics

The 10 participating women were between the ages of 35 to 54 years and had been in Canada 6 months to 5 years by the time of the interview. Almost all of the participants reported very good or good mental and physical health according to a 5-point scale (See Appendix B). Only one participant reported fair physical health. In regards to the category of immigration, eight participants immigrated under the skilled worker immigration category and two under the business class immigration category (See Appendix B). Most of the women were married; six of the women had live-at-home children. Most of the women reported being less active since arriving in Canada as compared to their activity level in Iran. Further characteristics of the study participants are shown in Table 1.

**Table 1** Demographic characteristics of the participants.
<table>
<thead>
<tr>
<th>Participant ID</th>
<th>Age</th>
<th>Years in Canada</th>
<th>Marital Status</th>
<th>Household Income</th>
<th>Employment Status</th>
<th>Highest Education Reached</th>
<th>Level of PA since arriving in Canada</th>
<th>Current PA (weekly minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>46</td>
<td>4</td>
<td>Separated</td>
<td>60-69K</td>
<td>Fulltime</td>
<td>Undergraduate</td>
<td>More active</td>
<td>&lt;150</td>
</tr>
<tr>
<td>02</td>
<td>43</td>
<td>5</td>
<td>Married</td>
<td>&lt;20K</td>
<td>Unemployed</td>
<td>Graduate</td>
<td>Less active</td>
<td>&lt;150</td>
</tr>
<tr>
<td>03</td>
<td>47</td>
<td>3.5</td>
<td>Married</td>
<td>&lt;20K</td>
<td>Part-time</td>
<td>Undergraduate</td>
<td>More active</td>
<td>&lt;150</td>
</tr>
<tr>
<td>04</td>
<td>54</td>
<td>5</td>
<td>Married</td>
<td>&gt;80K</td>
<td>Part-time</td>
<td>Undergraduate</td>
<td>Same</td>
<td>≥150</td>
</tr>
<tr>
<td>05</td>
<td>54</td>
<td>3.5</td>
<td>Married</td>
<td>40-49K</td>
<td>Unemployed</td>
<td>College</td>
<td>Less active</td>
<td>≥150</td>
</tr>
<tr>
<td>06</td>
<td>46</td>
<td>4</td>
<td>Married</td>
<td>30-39K</td>
<td>Fulltime</td>
<td>Undergraduate</td>
<td>Less active</td>
<td>&lt;150</td>
</tr>
<tr>
<td>07</td>
<td>42</td>
<td>&lt;1</td>
<td>Single</td>
<td>&lt;20K</td>
<td>Unemployed</td>
<td>Undergraduate</td>
<td>Less active</td>
<td>≥150</td>
</tr>
<tr>
<td>08</td>
<td>35</td>
<td>&lt;1</td>
<td>Single</td>
<td>20-29K</td>
<td>Unemployed</td>
<td>Graduate</td>
<td>Less active</td>
<td>&lt;150</td>
</tr>
<tr>
<td>09</td>
<td>44</td>
<td>1.5</td>
<td>Married</td>
<td>20-29K</td>
<td>Unemployed</td>
<td>Undergraduate</td>
<td>Less active</td>
<td>≥150</td>
</tr>
<tr>
<td>10</td>
<td>35</td>
<td>2</td>
<td>Married</td>
<td>70-79K</td>
<td>Unemployed</td>
<td>Undergraduate</td>
<td>Same</td>
<td>&lt;150</td>
</tr>
</tbody>
</table>

### 3.2.4 Interviews

To explore participants’ opinions, behaviours, feelings and perspectives about their physical activity experiences, I developed a semi-structured in-depth interview guide based on a socio-ecological framing of physical activity. Open-ended questions were used to encourage a range of responses, as well as probes and clarifying questions to stimulate further discussion. The initial questions were designed to get a better understanding of the participants’ overall impression of physical activity, their current and previous experiences with physical activity, and to explore the similarities and differences in physical activity practices between their home country and Canada. For example, participants were asked: *In your mind, what counts as physical activity? What were your physical activity practices in your home country? and What are your current physical activity practices?* Subsequent questions focused on the facilitators and barriers to participation in routine physical activity practices with probes designed to capture individual, social, and environmental influences: *What makes it difficult for you to be physically active? What makes it possible for you to be physically active?* Participants were also asked to
provide suggestions and advice to physical activity programmers regarding the design and promotion of physical activity programs specific to immigrant women. For example, the women were asked: *How would you like to receive information about physical activity? If you were asked to give advice to physical activity programmers who design programs for immigrant women, what would you tell them?* (See Appendix F)

Prior to commencing each interview, I read and explained the letter of information (See Appendix G), and obtained signed consent (See Appendix H). Participants were asked to complete a demographic profile (See Appendix B). Interviews were conducted in English (n=2) or Farsi (n=8) based on the interviewee’s preference and interviews lasted on average 45 minutes. At the end of the interview session participants received a 5$ Starbucks gift card as a token of appreciation for their participation. My cultural and linguistic competence and professional experiences constructively influenced the comfort and openness of the interviewees. All interviews were audiotaped with permission of the respondent and transcribed verbatim by me. In order to enhance the richness of the data, I used methodological triangulation, keeping brief observational field notes during and after the interview sessions. I translated to English all Farsi transcripts (n=8) to facilitate the analysis. Consent forms and participants’ contact information were stored separately from data collected. An alphanumeric code was assigned to each participant to protect the participants’ identity. As a member of the Persian community, I ascertained cultural relevance of the research materials by ensuring that the questions would not ask for information that might be perceived as inappropriate or offensive in the Persian culture; this strategy aimed to further enhance the validity of the findings. The data collection occurred between October and December 2014, after the study was granted ethics clearance by the General Research Ethics Board of Queen’s University.
3.3 Data Analysis

In interpretive description, data collection and analysis occur concurrently, each informing the other during the research process. In this study, analysis engaged rigorous, interpretive, cross-comparisons in the context of emerging thematic synthesis (Braun & Clarke, 2006; Hewitt-Taylor, 2001; Thorne et al., 1997). Using an inductive approach, two fundamental techniques of qualitative analysis, immersion and crystallization were used throughout the analysis (Borkan, 1999). Immersion involves the researcher’s complete engagement in the data, allowing her to become sensitive to the tone, range, mood, and content of the findings during the analysis; crystallization is the progression and ultimate clarification of important common themes described by participants (Borkan, 1999). Thematic analysis phases were followed as described by Braun and Clark (Braun & Clarke, 2006), considering the modifications suggested by Thorne (Thorne, 2008). As suggested by Thorne (2008, p.145), a sequential process of open coding and axial coding was conducted. However, in contrast to the method introduced by Braun and Clarke (2006), which instructs the coder to initially code verbatim bit by bit, in interpretive description Thorne suggests not to be derailed by excessive precision in early coding (Thorne, 2008, P. 145). Therefore, I assigned a broad-base code to each collection of data bits that shared underlying intents and initially organized these based on the interview guide topics. Table 2 presents the detailed steps of thematic analysis that were followed.

Table 2 Phases of applied Thematic Analysis (Braun & Clarke, 2006; Thorne, 2008)

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description of the process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Familiarizing yourself with your data: (Immersion)</td>
<td>Transcribed and translated the data, read and re-read the data (Immersion in transcribes and field</td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
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</table>
| 2.         | **Grouping the similar data pieces and sorting them into patterns:**  
             **(Crystallization)**                                                                 |
|            | Similar ideas were collated and group signifiers were assigned to them. Inductive analysis of the data pieces were performed by examining them according to the whole data set to recognize similarities and differences between cases. The evolving process of pattern recognition and continuous reorganization of the data groups was started at this stage. A “quotable quotes” file was generated. Creation of analytic memos started at this phase. |
| 3.         | **Defining relationships between the data pieces and groups**               |
|            | A thematic summary was produced.                                            |
| 4.         | **Refining and naming themes**                                             |
|            | Ongoing analysis continued to refine the theme labels and the overall story of the enquiry by generating clear definitions and names for each. Triangulation with existing literature and with colleagues who have expertise in qualitative analysis started at this phase to contemplate various angles of vision. |
| 5.         | **Conceptualizing the findings**                                            |
|            | A higher level of abstraction was performed at this stage. The initial descriptive claims were moved |
6. Producing the report

Producing the report toward conceptualized interpretations. Creating a thematic scheme assisted in visualizing the conceptualization process. A final examination of the selected extracts was performed, the final products were related back to the research question and literature, and a scholarly report of the analysis was produced.

A qualitative software management system - NVivo 11 for Mac- supported data sorting and presentation for analysis. I initially completed the analysis independently and a second expert coder, with extensive academic and professional expertise in qualitative research, collaborated in the data analysis process. The second coder had the standpoints of life experience as a Canadian ethnic minority coupled with professional experience as a health researcher.

The immersion commenced as soon as I conducted the first interview. By listening to the recorded interview tapes and reviewing the field notes, I started the early-stage analysis focusing on big-picture questions such as ‘What is happening here?’ and ‘What am I learning about the physical activity experiences of these Persian-Canadian women?’ (Thorne, 2008). After conducting all 10 interviews, I moved to the transcribing translation phase and further immersed myself in the data by reading and rereading the transcript and field notes closely before coding and creating linkages (Lincoln & Guba, 1985). I created analytic memos where relevant, and the apparent initial thematic similarities were pointed out by means of flags, highlighted data bits, or memos. During this phase I started creating a “quotable quotes” file in order to ensure that these would be considered for presentation in the final report as appropriate (Thorne, 2008). This helped me gain profound knowledge of each case from which relevant common themes were
drawn later (Thorne et al., 1997). In addition, keeping a self-reflexive journal enhanced self-awareness of my analytic interpretations and decision-making thoughts, ultimately boosting the credibility of the findings (Thorne, 2008).

Next, after all interviews had been translated and transcribed, the second coder and I, both of us health researchers with a migrant background, separately conducted an initial coding of the data. During this phase, we each read the transcripts and field notes on our own, noting similar ideas and grouping them into broad categories based on the interview guide such as “Barriers to physical activity”, and “Facilitators to physical activity”. Later on, the data bits were coded inductively based on a more in-depth consideration of ideas generated at the immersion stage; we asked ourselves “what does this mean in the context of the evolving inquiry?” At this phase, each data bit was further examined according to its meaning in the context of phenomenon under study (physical activity in Persian new immigrant women), and by shifting attention sequentially from individual cases to the whole data set, to recognise the similarities and differences between cases. At this stage, the process of collating the similar data bits as well as organizing and reorganising them into various groupings was performed continuously. The evolving process of pattern recognition and identifying the relationships between various groupings started at this stage and continued until the final conceptualisation.

At the next analysis phase, I met with the second coder to compare the coded material and to agree on initial codes. Thereafter, we separated again and inductively collated the coded data into potential sub-themes and themes, each on our own. We then met a second time following this step, in order to compare and refine the generated themes. After initially agreeing on the generated themes, I undertook a rigorous analytic iterative process of reviewing the initial thematic map. The purpose of performing this step was to test and challenge the preliminary
interpretations and to make sense of any links between groupings in order to refine the thematic map into a coherent final product. To clarify, at this phase, the initial descriptive claims were moved toward conceptualized interpretations that could clarify the phenomenon under investigation in a new and meaningful manner (Thorne, 2008; Thorne et al., 1997). As theme saturation was achieved and no new emerging themes were coming forward, I did not conduct any further interviews (Guest et al., 2006).

3.4 Rigour

A number of measures were taken to enhance the rigour of the study. The credibility, transferability, dependability, and confirmability of the research findings were verified throughout the various steps of the research process (Krefting, 1991; Lincoln & Guba, 1985). Credibility, which refers to the degree to which the study findings represent the multiple realities of the phenomenon under study as revealed by the informants (Lincoln & Guba, 1985), was ascertained by verifying the extent to which the findings “present such accurate descriptions or interpretation of human experience that people who also share that experience would immediately recognize the descriptions” (Krefting, 1991). In this study, credibility was fostered through my “prolonged engagement” with the phenomenon under study and my own familiarity with the contextual setting of the researched phenomenon (Lincoln & Guba, 1985). As a member of the Persian-Canadian community who is fluent in Farsi and who has first-hand experiences as a skilled immigrant to Canada, and with my professional experience in health care and community health in both countries, I was likely very relatable to the participants, which enabled me to establish enhanced rapport with them. I also used interview techniques including reframing, repetition, and/or expansion of the interview questions, where appropriate, to gain more accurate and in-depth information relevant to the inquiry (May, 1991). Finally, credibility
was developed through my use of a reflexive journal, which allowed me to note any probable biases and preconceptions that could influence my interpretation of the data during data analysis procedures (Ruby, 1980).

According to Guba (1981) transferability refers to the applicability of research findings into contexts outside of the study situation, which can be determined by the degree of similarity or goodness of fit between the two contexts. By adopting a purposive maximum variation sampling strategy, I ensured the transferability of the findings, which involved choosing a balanced sample in terms of the participants’ physical activity levels, total household income, employment status, and years living in Canada. In addition to that, a detailed description of the demographic findings has also been provided to facilitate further contextual comparison, where applicable.

The dependability of a research relates to the consistency of its findings (Guba, 1981). To promote dependability in the current study, I conducted a code-recode procedure during the analysis phase of the study. This means that all random segments of the data were re-coded a few weeks after the initial coding in order to compare the consistency of the generated codes. In addition, I tracked all decisions by writing analytic memos in order to maintain consistency of the coding throughout the analytic procedure. Moreover, the peer-examining strategy was adopted to enhance dependability and reduce individual bias, in two ways: Firstly, a second researcher coded for themes using the same analytical process (Braun & Clarke, 2006). Secondly, I discussed the research process and analytic decisions and findings such as the thematic categories developed out of the data, with my supervisor and colleagues who had experience with qualitative methods (Krefting, 1991; Lincoln & Guba, 1985). This strategy served the dual purpose of enhancing both the credibility and dependability of the research.
findings (Krefting, 1991).

According to Guba (1981), confirmability refers to the interpretational neutrality of the findings, which can be ascertained by reducing the researcher’s personal biases in the process of data analysis. Two techniques of data triangulation and reflexivity were used to achieve this aim. Data triangulation was fostered through the field-notes I prepared during and after each interview in order to record informants’ observations and reactions; this helped to preserve the completeness of participants’ stories. Data triangulation was also achieved by consulting the existing body of knowledge in the literature. This helped to provide the broader perspective in which I could interpret the primary explanatory findings (Thorne et al., 1997). Finally, preparing the reflexive analytic journal allowed me to maintain awareness of my own probable biases and preconceptions that could influence the interpretations of the data during the data analysis procedure (Ruby, 1980).
3.5 References


Chapter 4

Results

This chapter presents the themes that have emerged from the data collected and analyzed in this study. A descriptive depiction of the role, meaning and involvement of physical activity among Persian immigrant women in Canada is presented to provide context and understanding of these individuals’ lived experience. Subsequently, the facilitators and barriers of engagement in physical activity are further conceptualized under five major categories according to the emerging themes and supporting evidence.

4.1 Portrait of Physical Activity Among New Persian-Canadian Women

In response to the interview question, “In your mind what counts as physical activity?” almost all of the women perceived their daily commute as physical activity. However, only half of the women defined physical activity as deliberate exercising only, while the other half considered that all daily living activities, including household chores and work related physical activity, could be counted as physical activity. The women reported enjoying many different types of physical activity. Flexibility and stretching exercises such as Yoga and Pilates were some of the most popular activities; P.04 (mid-fifties, married, 2 children) stated:

Every morning after I wake up I do stretching exercises and these types of exercises are like a tranquilizer for my body...for me 20 minutes of stretching exercises will have
effects on my muscles and this, plus an hour of walking, are enough to keep my body organs healthy…[Also] I am very much interested in Yoga.

Additionally, low impact aerobic dance-like exercises such as Zumba and folkloric dances, moderate intensity walking and jogging, particularly in parks and nature, including uphill-downhill walking, swimming and Aqua Fit exercises, as well as formal sports including Badminton, Ping Pong, and Tennis were also mentioned as popular and preferred activities.

After receiving an explanation of the Canadian Physical Activity Guidelines (Canadian Society for Exercise Physiology [CSEP], 2012), the majority of the research participants reported that engagement in 150 minutes of moderate to vigorous physical activity during the week is achievable and realistic. However, some had concerns regarding the strengthening component of the guidelines and noted barriers to performing the strengthening activities twice a week as recommended in the Canadian Physical Activity Guidelines (CSEP, 2012). For example, P.08 (mid-thirties, single, no children) states:

*Regarding increasing the heart rate... we can achieve it simply just by running. Ok? Although it’s not possible to run in very cold weather and not everyone has the stamina to do it. You need to have access to certain supplies to do it. But regarding the strengthening training and muscle training, you need to have access to certain equipment to be able to perform that. At least in a place that I currently live, there are not such facilities near me.*

Most women in the study expressed that their participation in recreational physical activity and organised exercise programs had dramatically declined upon arrival in Canada.

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1 Brackets indicate words added by the researcher in order to provide context or clarification
Notably, it was recounted in the interviews that many of these women had an organised exercise routine imbedded in their daily lives while living in their home country. To illustrate that P.03 (late forties, married, 2 children) stated: “We had regular, mountain and hill climbing and nature walking programs with a group of our friends. Also, I used to go to gym classes on an on and off basis, but not regularly.”

P.07 (early forties, single, no children) expressed:

*Before, I used to go to aerobic classes and sometimes, Pilates. I had a treadmill at home and used to run on the treadmill for about 50 min for at least 5 days a week besides going to aerobic and Pilates classes. But now I just run on a treadmill…it was one hour aerobic and 30 minutes Pilates. Both were offered at the gym.*

With this in mind, almost all of the women in this study uttered their dissatisfaction regarding their current level of participation in exercise, sport, and recreational physical activities. Current involvement in physical activity for most was walking for the purpose of commuting or exercise, as well as using the residential building gym facilities to exercise when such amenities were available in their place of living.

### 4.2 Barriers and Facilitators of Engagement in Physical Activity

The barriers and facilitators of engagement in physical activity were nested within five emerging themes: 1) Perceptions about physical activity, 2) New physical environment and social structure, 3) Cultural heritage values, 4) Settlement and acculturation factors, and 5) Physical activity program features. Each theme is described below and associated barriers and facilitators are discussed. This section explains the key influential factors that can either facilitate
or impede engagement in recreational physical activity practices among the population under study.

4.2.1. **Perceptions about Physical Activity.** Positive perceptions about the benefits of physical activity were described as first-hand motivation to initiate or maintain an active lifestyle among this group of middle age Persian-Canadian women. Besides the conventional benefits mentioned by the women such as: gaining a better body shape, better fitness level, as well as physical and mental health benefits; exercise and physical activity were discussed as a means of coping with acculturation and settlement stresses, and were also valued as a way of social connection for new immigrant women. P.09 (mid forties, married, no children) states that physical activity has helped her to cope with the psychological stresses of immigration such as being away from her family:

“I regained my walking routine to help me stop my stresses and worries. For this I started walking for a very long distances to help me control my negative thoughts of being away from my family.”

On the other hand, women discussed their unwillingness to perform intense physical activity and sports because of their perceptions around not having adequate stamina to perform such activities or also because they are not used to do intense exercises in their lives. P.06 (mid forties, married, 1 child) communicated: “I haven’t done very intense exercises in my life and I don’t have information to talk about them.” Also P.09 said, “It depends on our abilities and strengths. I like all types of exercises but I can’t do intensive exercises. I think I am not capable of doing it.”

4.2.2. **New Physical Environment and Social Structure.** A recurring theme from the findings was that new immigrants step into a new environment and social structure that might be
far different from their country of origin. Aspects of this theme revealed both positive and negative impacts on the physical activity behaviour of these women.

Barriers to maintaining an active lifestyle stemmed from instrumental, psychosocial, and informational challenges that the women faced upon arriving to an unknown context. Although many of these challenges were experienced as barriers by the women participating in this study, sometimes the same challenges were seen as facilitating physical activity.

**Instrumental.** For some women, not having access to a private car was perceived as an opportunity to increase their daily walking commute. For example P.03 stated:

*I had a car there [in Iran] and mostly I used my private car to commute...but here, not having a car has been in my favour in this regard and because of that I do more walking and therefore I’ve become more active. It has been good for me in this regard.*

Navigating an unfamiliar territory to access various organizational services, being unaccustomed to the extreme climate conditions in Canada, as well as transportation challenges, were raised by the women in this study as three ongoing instrumental challenges. For many interviewed women, unfamiliarity with the new environment was the foremost impediment to accessing physical activity resources and opportunities. To demonstrate this, P.09 voiced:

*I didn’t know many things about the new place [...] I was not sure where I should start [...] where should I go for walking? [...] From which organization or centre should I seek services? What are the available facilities? Therefore, it was very difficult...*

Some women highlighted the transportation difficulties they faced after arriving to Canada, mainly due to lack of access to a private vehicle because of restrictions or a delay in obtaining their Canadian driver’s licence, as P.07 stated:
I believe one of those factors is living close to the exercise opportunities. Because I don’t drive currently and, as a newcomer it will take a while for me to be able to have access to a personal car, it would be very beneficial to live closer to such facilities that you can go to by walking. For instance, the closest gym to my apartment is a 45 min walk. If I walk there, I won’t have energy to exercise anymore,

Transportation challenges for newcomers were especially salient during the severe weather conditions in wintertime, when not having access to a gym nearby could deter attempts to be physically active. P.05 (mid-fifties, married, no children) stated:

Many people live in houses or some other types of buildings that they can’t have access to the gym in their buildings, so where should they exercise in wintertime? Of course there are some places outside that they can go, but it might be far…as newcomers we might not have access to a personal vehicle…[or]…living close to these facilities…we still don’t know how to move around the city…[it takes some time for us to acquire] our Canadian driver licence…

Some of the women who had access to a gym facility at their place of living indicated that they used it regularly to achieve their weekly exercise goals; as P.04 said: “My building has a gym and pool, which I use and I don’t need to go to the community centres to use their gyms or exercise programs”.

In comparison to what these women experienced in their home country, particular aspects of the new physical environment and related policies appeared to have enabling impacts on their efforts to incorporate an active lifestyle into their new living arrangements. In Canada, presence of less air pollution, abundant natural parks and green areas with walking paths within the urban areas, more leisure-time physical activity infrastructures were mentioned as facilitators to physical
activity. Coming from populated urban areas with heavy traffic and air pollution, such as the city of Tehran, these women have found that the more pleasant, less condensed urban structure and green nature of Canada favours enhanced outdoor recreational activity involvement. To explain this, P.06 said:

*I like to go walking here because everywhere is clean. The weather is clean. The environment is good and safe and there are nice sceneries. Everything is good for walking. All the streets, both major streets and the smaller ones.*

Also P.08 expressed her viewpoints and experiences regarding the difference in built environment between the two countries, and how it could affect performing outdoor activities such as biking and running:

*In terms of having outdoor activities, here [Canada] is better. In Iran, it was not easy for women to bike in the streets. Also it was not possible to walk or run everywhere in the city. Here is much better in this regard [both] in terms of the layout of the streets and [traffic]…here it is more convenient to walk in the streets, as the motor vehicles do not interfere with pedestrians.*

Moreover, the presence of more physical activity infrastructures such as parks and exercise facilities in the Canadian built environment were underlined as positive qualities that influenced the women in this study in their attempts to have an active lifestyle after immigration.

**Psychosocial.** The transition to a new milieu also proved to impact social aspects of the participants’ lives. For women in this study, leaving their country of origin has been equal to leaving behind a considerable portion of their personal history and life achievements, and starting over, gaining familiarity with the structure of the new social setting. Abandoning their
established social network, such as family and friends, required them to establish new social connections in the new society. Meanwhile, participants highlighted the lack of support from close family and friends, including lack of help with childcare, to be a new obstacle to incorporating physical activity in their daily routine schedule. In regards to the instant loss of support from close family and how it impedes participation in physical activity for this group of newcomer women, P.10 (mid-thirties, married, 1 child) articulated:

*I used to play tennis before [immigrating to Canada] when I had the opportunity to leave my child with my mom and she could take care of her. I used to play tennis as much as I could... Being alone here and not having support from family I can say is an obstacle... In terms of support I had all my families there and I could leave my daughter with them without any worries.*

In addition, when the women entered into the new societal structure, they suddenly lost their previous social status, which they either had inherited from their family or had earned via their professional and educational attainments. They thus had to devote time to re-establishing their socioeconomic status by proving their abilities and demonstrating their prior achievements, in addition to acquiring new qualifications. The gap in status that prevails until the women become integrated into the new social structure has some immediate consequences on the participants’ lifestyle including participation in recreational physical activities. The instant loss of social networks including friends and immediate changes in social status and economic condition are highlighted in P.03’s verbatim:

*As I said, I had outdoor activities such as nature path walking with my friends in Iran... I didn’t have the financial limitations in my home country... Here I am an immigrant, but in my country of birth and in my city I had a high social credit and everyone knew me.*
had a very strong social credit ... Especially when we first came to Canada, we didn’t know anybody. It was so very difficult ... we had to navigate through everything on our own and discover them ourselves... Especially when people with high education or high socioeconomic status in their home country first enter Canada, they will lose what they had suddenly... they suddenly lose their previous profession, source of income, social level, social credit, and social support.

Equally important, the women’s loneliness, lack of support and unfamiliarity with the new environment make them more cautious in their everyday life encounters. Some women expressed that due to fear of not having anyone to take care of them if they get injured and also because of the delay it may impose in their attempts to integrate into the new society, they may avoid any extra activity with the risk of physical injuries such as risks associated with exercise and sports. This individual level impediment to participate in routine exercise and recreational activity is reflected in the following excerpt from P.08’s interview:

When a person comes to a completely new environment, just thoughts about not exposing one’s self to harm make him/her more conservative. Well it will affect all of the person’s activities. For example, when I first came to Canada, I was even worried about simple walking as it was winter and I was worried to fall down and break my bones, because I was lonely and I didn’t have any family or friends to take care of me.... You don’t want to risk the consequences and prefer to stay on the safe side as much as possible.”

Likewise, related to not having a social network in the new environment, presence or absence of a physical activity partner was mentioned as a factor with the potential to either enable or hinder the physical activity behaviour of women in this study. Women, who could find someone to be active with, found it easier to navigate physical activity opportunities and to
engage in the behaviour. However, loneliness was expressed as a preventing factor to getting out and being active. To illustrate both points, P.09 explains:

*I was lonely and it was tough for me to go out without anyone else accompanying me...*

*[Eventually]* I found a friend in the English classes and we started to go out together and became familiar with our surrounding environment gradually. *We could help each other figure out where to go to get different information and where to go for walking or shopping and be less scared to step out.***

On the other hand, the new social environment and related policies was thought to play an enabling role in the efforts of women in this study to integrate outdoor activities into their lifestyle. In Canada, more active lifestyle societal norms, better physical and psychological societal safety, as well as more individual and societal freedom for women were raised as facilitators to physical activity in the new environment. The more active lifestyle societal norms present in Canadian culture motivated this group of immigrant women to perform more outdoor activities. To illustrate this P.01 stated:

*Here the lifestyle, the social media encourage you to be more active. At your work place you can find a lot of information that encourages you to be more active in order to be fit and healthy.”* (P.01, mid-forties, divorced, 1 child)

Additionally P.07 explained how she perceived Canada as offering a physically active environment and how this encouraged her to be more physically active:

*I think more than 70 percent of people here exercise regularly. This is very helpful as the environment and surroundings can have a huge impact. When you see other people are doing physical activity, you are attracted to do physical activity yourself spontaneously.*
You feel that you are doing a positive thing. It’s like swimming downstream [i.e., acting in accordance with other people].

Women in this study also emphasized the presence of safer outdoor conditions in facilitating outdoor physical activity participation. Presence of more safety in the physical and social environment in Canada, in terms of the lower risk of physical assault and harassment as well as fewer traffic accident threats, increased their willingness to engage in more outdoor activities than compared to their previous home country. The following quote by P.03 exemplifies how women perceive having higher safety and freedom in Canada and how this can have a constructive impact on their outdoor physical activity engagement:

[In Canada] there are high levels of freedom and safety that won’t cause any limitation for people to be physically active in outdoors... There are more individual and social freedoms for women in Canada, which is very helpful for having more physical activity.

Also, P.04 said: “I have less stress here in terms of safety and the time of the day that I do my walking... I don’t need to return home sooner, before it gets too dark.”

Moreover, the relaxing experience of having freedom to choose their level of cover and outfit without being forced to follow certain rules (i.e. the mandatory hijab rule for women in public places in Iran) emerged as a positive influence on their willingness and efforts to get active outdoors. In this regard, P.04 stated: “As you know yourself, we had to have different covering [compared to in Canada] while walking outdoors and [this was stressful]”

Another example of the limiting rules women in this study experienced in Iran is the sex segregation rules that prohibit women’s participation in physical activity alongside their family at public facilities and in programs. Some women expressed that the absence of such restraining
rules in Canada makes it more convenient for them to participate in exercise facilities and different programs, as this enables them to spend time with family while exercising. The following quote illustrates the voice of these women relating to the rules:

P.06: “One problem for us in Iran was that men and women could not go together to the gym. If we wanted to go to the gym with our family it was not possible for us. As I don’t drive and we only have one car it is more convenient for us to go together at the same time...here, before I started working, I used to go swimming with my husband...If we find some time we can exercise together.”

Informational. Another challenge for newcomers to Canada is the lack of familiarity with the organizational systems, information and processes that allow individuals to navigate and thrive in society. Lack of awareness about the recreational programs, resources and outreach system and lack of comprehensive targeted information distribution were commonly mentioned as barriers to physical activity. Lack of thorough knowledge regarding the existing physical activity and recreational opportunities at an individual level as well as information-transfer considerations at interpersonal, and policy levels, were themes that strongly emerged out of the interviews. A majority of the interviewees did not have clear information regarding the local physical activity facilities, recreational programs, and associated fees. As P.08 explained:

Since I came to Canada, I spent lots of time to study for the professional exams, which I need to write to be able to work in Canada. I didn’t dedicate much time each day to take care of my personal activities and myself. However the main reason for that might be due to not having enough information regarding the existing physical activity facilities and opportunities that I could have access to. My perception about not having easy access to
exercise facilities might be due to not having enough information related to that... I don’t know which facilities to go to for exercise. Or at least which facilities are cleaner.

By the same token, most of the women confirmed not having been informed about existing opportunities as well as organizational incentives and fee subsidy aids in their region such as: City of Toronto Welcome Policy, City of Vaughan RecAssist, and Town of Richmond Hill Fee Assistant programs that have been anticipated to address the cost of participation and access for newcomers to Canada and low-income families. Of those women who had received some information related to exercise and recreational facilities and local community centres found it somewhat challenging to locate the information and to navigate through the system to find program schedules, registration instructions, even sometimes to understand the types of programs offered. Language was often cited as a barrier, as related by P.05:

For instance, there is one community centre, […], which is close to our home. I know they have exercise areas and some dance and exercise classes that you can register for and that they are not very expensive. These resources are good, but our problem is that we don’t know English well and we can’t easily find information about their programs.

Along the same lines, women expressed their ideas regarding existing informational gaps and provided suggestions about how to improve the information system targeted to the newcomer population, so as to enable them access to physical activity opportunities. In response to the interview question “Where and how would you like to receive information about physical activity?”, participants consistently voiced the desire to receive information through immigrant settlement services, English or French language classes, libraries, their children’s schools, local community service providers, including family medical clinics, as well as Iranian-Canadian community media such as Persian magazines, Farsi TV Channels, and popular group pages and
websites. The three latter information sources appeared to be the prime sources and social structures that this group of newcomers accessed to navigate their settlement journey. Other suggestions to help new immigrants, which emerged from the transcripts are as follows: provide access to physical activity workshops about local physical activity and recreation opportunities; share guidelines as well as other related information held by specialists in the field; disseminate relevant, reliable flyers and brochures in person, via their children, by mail, or email; promote credible websites and provide instructions about how to navigate those websites. Almost all of the participants mentioned the importance of having access to such information in their native language (Farsi) until they are able to learn enough English to be able to confidently navigate and comprehend information in English or French.

4.2.3. Cultural Heritage Values. Certain cultural and normative beliefs and behaviours among this group of middle-aged, new Persian-Canadian women were found to hinder, facilitate, or have a dual effect on the physical activity behaviour of these women. The traditional self-sacrificing role of women as caregivers to family, and in particular to the children, emerged as a factor influencing the integration of physical activity within the women’s routine, daily activities. This barrier to engaging in leisure-time physical activity and exercise programs was particularly evident in women who had younger children in their household. The following excerpt from the interview discussion with P.02 (early forties, married, 2 children), highlights how she prioritizes her daily life in favour of her children:

*Kids are a priority for me and I can’t leave them alone and go for exercise [laugh]. Yea and maybe in Iran I could […] get support from friends or family...here I am busy with many things and settlement of the kids… I see many adult programs [scheduled for] the [late] afternoon... It’s the time that we are busy with kids...for example one of them that I
was interested in was at 7:30 pm – that’s the time for my kids to be ready for sleep. I need to prepare and serve dinner to them and help them with their homework and help them to improve their English and read some storybooks to them...I also do volunteer work at their school a couple of days a week... I try to exercise [while doing the house chores] and [do some] walking when I go to pick up or drop off my children.

Equally important, family and child oriented values was raised as another factor that can determine Persian women’s life decisions, including lifestyle choices. As P.03 states: “In our family, my husband is very diligent in terms of exercise and physical activity. He is the best motivator for me and for everyone else in the family”, and P.10 says: “Honestly the most reliable source of healthy tips and such information [for me is] my mom. [She] has great experiences and [knowledge] and I prefer to ask my questions to her”. Furthermore, Persian parents honour information conveyed to them through their children, which illustrates the strong influence of children on their parents in all domains, including engagement in physical activity. P.02:

*Every day my kids bring some papers. You know [...] kids can transfer many of the ideas and programs that the community have, to their families, and this is a good way. Lots of important information has been transferred to us through our kids and we highly pay attention to them.*

Another subtheme emerging through the interview discussions was Iranian’s collectivist values, which appeared to shape the physical activity habits of women interviewed in this study. The collectivist values manifested through the emphasized family relations and shared responsibility for one another in both the nuclear and extended family. As P10 explained, the responsibility she perceives as mother and wife in a nuclear family hinders self-consideration in favour of dedicating leisure time to family time:
I prefer to stay home when [my husband] is at home - my daughter needs to see both of her parents together at least a few hours a day. If I go out to exercise at 7, after I am back I would not have energy to engage in any family conversation or doing anything else. …However, for sure, families have different opinions and some people leave their child in after-school programs, but I won’t, because I think if they grow up out of household they won’t get the good upbringing.

4.2.4. Settlement and Acculturation Factors. The challenges faced by these new immigrant women in the course of settlement and acculturation as well as the accomplishments achieved throughout the process, acted as barriers and facilitators, respectively, to incorporating physical activity in their daily life in Canada. Time, effort and cost required to have professional competencies recognized acted as a barrier to leisure-time physical activity. The cumbersome process of professional licensing to work at an equivalent-level profession in Canada and lower family income leave little time and money for physical activity. As explained by P.03, after her husband returned to Iran in order to be able to work as a surgeon (which he could not do in Canada), she was left with more responsibility and less money:

So he [her husband] decided to go back to Iran and continue to practice medicine there and only come for visits once or twice a year. He sends us money but after sanctions and because of the noticeable changes in exchange rates for Iran’s currency to Canadian dollar, what he sends us is not enough to cover our household expenses. So I need to take care of everything by myself. … I need to work as well as taking care of everything else... I am working in ... a very difficult position and I need to do lots of physical tasks. Doing this type of work as well as household responsibilities and participating in some English and settlement classes won’t leave any free time and energy for me to exercise.
For P.06, physical activity became less of a priority in the face of other competing life demands:

_I can remember, at the beginning [after arriving in Canada] my husband and I were sometimes exercising at parks. But after awhile, as we had to write different exams and take different courses etc., we had to dedicate more time to such things. This made us forget about exercise and think about some other tasks._

Another scenario raised was the underemployment situation, which means that despite their education and experiences, the women were required to work in physically demanding jobs that leave no time and stamina for them to engage in recreational physical activities. P.06 stated:

_Most of the available jobs here are very tough to do, considering that we cannot work based on our specialities and educations and it may take years for us to become certified to be able to work in the area of our expertise and education. Meanwhile, we are compelled to work in such difficult jobs. By difficult I mean physically demanding. [Currently] I have lots of activities and I am always in a standing position ... [but] I believe I am causing some harm to my body by working in a cold condition also by lifting heavy stuff... When I am working I can hardly tolerate to stand on my feet, so how might I be able to take an additional 20 minutes of physical activity outside or at the gym? [After work] I only look for a place to sit_

Another important element in the process of settlement and acculturation, knowledge of the English language, appeared in the interview discussions to impact the physical activity of the women. P.05, who reported having a long and strong history of an active lifestyle in Iran and current compliance with Canadian physical activity recommendations, expressed:
I myself started to go to college two years ago, and because my English level was not as advanced as it should be, I had a truly rough time. Not knowing English was bothering me a lot. I was under a huge pressure and that made me sick...eventually I had a panic attack. I lost my self-confidence and I was not happy anymore. I lost my sense of sociability and I didn’t like to go anywhere... although I was very interested in physical activity and exercise, it was very difficult for me to overcome this situation. I have not got back to my normal me yet ... this is immigration and it takes a while for immigrants to be settled and get used to the new environment...Because of these difficulties many people prefer to stay at home and they are not able to exercise.

In addition to the challenges mentioned above, all of the aforementioned struggles of stepping into a new milieu after entering Canada can lead to perceptions of life instability, as well as overwhelming psychological stress. P.09 related:

A long while after I came to Canada, I decided to continue to exercise [as I used to do in Iran]... I started to do walking and daily exercises on my own. Unfortunately, I stopped again after a while because my mind was busy and I was worried of not having jobs and some other thoughts like the negative thoughts of being away from my family while my mom was sick in my home country and she really needed me...[due to these stressors] I stopped doing any type of activity completely.

Progress in the process of settlement and acculturation were considered to positively impact physical activity among these women. Improvements in knowledge of the English language and accessing the settlement resources provisioned for newcomers, emerged as facilitators to physical activity. Participants stated that engaging in settlement programs such as different
workshops and classes helped them to gradually start to build a social network, and to gain familiarity with the new socio-physical environment. In regards to this P.09 stated:

*I started to take English classes at the welcome centre and do some volunteer work there as well. It made me busy and I started walking as the means of my daily commute, which helped me to change my mood. I also started to do some exercises on my own... I found a friend in the English classes and we started to go out together and became familiar with our surrounding environment, gradually. We could help each other to figure out where to go to get different information and where to go for walking or shopping and be less scared to step out.*

Also, as P.05 explained, enhanced proficiency in English would assist newcomers to achieve a better settlement outcome and facilitate access to the available resources, including physical activity opportunities. P.05: “*It will take some time until our English improves and we become settled and quite familiar with the new environment. [Learning the English language] will help us to get to know different existing physical activity and exercise programs and classes.*”

Moreover, the opportunity to be successfully employed according to the level of education and previous professional experience was interpreted to enable physical activity participation. Women who were satisfied with their employment status reported having routine physical activity practices incorporated in their daily life schedule. To exemplify that, P.01 a registered nurse in Iran who has been also working as a registered nurse in Canada stated:

*I try to walk every other day at least 30 minutes and sometimes running. Also I try to do about 30 minutes of aerobic exercises at home before bedtime. But about the other*
activities in my current job as a nurse I try to be active, more active. I don’t want to sit in the chair – yea – I have to be active.

Also P.04 who reported a high household income and owns an aesthethician clinic in Toronto, expressed her daily physical activity routine as follows:

Every morning I do stretching [flexibility] exercises for 10 to 20 minutes; these types of exercises are like a tranquilizer for my body.... I also have some work related activities such as going up and down the stairs and others. Besides, I try to have an hour of walking as well.

Moreover, some interviewed women predicted that upon successful employment they would be able to dedicate more time to scheduled physical activity programs due to an improved socioeconomic situation and reduced related stresses. As P.09 said “I think if I find a job it will help me to have more physical activity. Because it helps me to free my mind from the related stresses and I would be able to plan for regular physical activity.” Also, P.07 stated “If I had a good job, everything would be OK for me and I would have no problem engaging in exercise programs and sports.”

4.2.5. Physical Activity Program Features. When asked about which features of physical activity programs were important to them, women mentioned: Activity type, excitement value, quality, capacity, schedule, and accessibility of program. They also mentioned that activity programs that offer subsidies and incentives, onsite childcare, access through schools and settlement services, Farsi-speaking instructors, and family-friendly opportunities could encourage their involvement in physical activity. (P.03) related, In terms of accessibility, there are some community centres in our neighbourhood, but they don’t have variety of programs and classes. So this a limitation in the community centres. Another issue raised was around the
limited capacity and difficult registration process for some of the popular programs. For instance P.10 stated, “We decided to register our family to the subsidized family skiing program...and we realized that we would have to stay in line starting the night before of the registration date, therefore we changed our mind...” Also, P.01 said, “the problem is they are so busy ...they’re always so full and sold out”.

Interviewees highlighted the need for more physical activity incentives and subsidies, explicitly accessible to newcomers to Canada.

As I don’t work currently, I have financial limitations and therefore the costs of different [exercise] programs are important for me. For newcomers, if they provide exercise classes that are free or have little cost, I think many of the newcomers will participate. Because I think the most important challenge of newcomers is a financial restriction since they don’t have work. (P.07)

In addition to reduced costs, the women mentioned that familiar, accessible venues could encourage physical activity involvement in immigrant women. As an example, P.07 stated,

As a trivial suggestion, I think it could be very helpful if welcome centres could offer some exercise classes. I think it is very positive for us [newcomers]. I think if I could take some classes here [at the welcome centre], right before or after my English classes, I would definitely do that.

P.07 also mentioned that having a Farsi speaking instructor could be a potential facilitator of physical activity: “Having access to Farsi speaking physical activity specialists in welcome centres for instance, who would be able to consult with us and train us regarding the exercise opportunities and resources, would benefit us a lot.” P.05 said, “I go to meditation sessions that
Women who had school-age children mentioned that the opportunity for simultaneous adult exercise and recreational programs for school age children as well as childcare for younger children would likely help them be more active. P.02, a medical doctor from Iran who has two children, expressed,

My kids are not old enough and I can’t leave them alone and need to spend my time with them. I don’t know what I can do about it... if there were some programs that we could take our children with us and they could participate or there was a daycare or something like that, that could help us to keep our children in a safe and good way.

Also, P.10 stated:

I can’t leave [my daughter] alone at home and I don’t have anyone to take care of her for me if I want to go to exercise classes. Also, I think I can’t take her with me to such classes as usually children are not allowed.

4.3 Schematic Visualization of the Conceptualized Themes

Mapping of the themes and sub-themes according to the socio-ecological model demonstrates that immigrant women’s physical activity is influenced by individual, sociocultural, and environmental factors, and institutional and national policies (Figure 1). The emerged themes are colour coded in the schematic diagram. As illustrated, the main five themes are comprised of sub-themes, which were categorized as either a barrier or facilitator, to physical activity or as having a dual effect on physical activity among the studied women. The top arrow indicates that
the sub-themes situated in the right section of the socio-ecological sphere are barriers to physical activity, while the left side sub-themes have facilitator effects on physical activity among the study population. The sub-themes situated in the middle section of the sphere are conceptualised as influencing the physical activity of the women by facilitating, inhibiting, or both facilitating and impeding, physical activity.
Figure 1
Barriers and facilitators of physical activity in new immigrant Persian women in Canada

- Appearance/fitness benefits
- Health benefits
- Stress coping benefits
- Access to gym nearby
- Presence of abundant natural parks and green areas with walking paths
- Presence of more PA infrastructure
- Social connection benefits
- Presence of active lifestyle societal norms
- Having PA partner
- Family oriented values
- Collectivist values
- Cumbersome process of professional licensing
- Instant changes in SES
- PA is not a priority
- Socioeconomic and acculturation stresses
- Perceived low self-efficacy to intense PA
- Loss of support from family and friends
- Presence of a new extreme climate condition
- Self-sacrificing role of woman as family caregiver
- Type of PA programs through schools
- Excitement capacity
- Quality PA programs through community services
- Avoiding harms associated with PA
- Presence of individual and social freedom for women
- Presence of better social security
- Unfamiliarity with the new territory
- Knowledge of English language
- Awareness of PA resources
- Family-friendly programs
- Farsi speaking instructors
- PA subsidies & incentives
- PA programs are culturally appropriate
- Comprehensive, targeted PA information distribution & outreach
- Engagement in targeted resources for newcomers
- Individual, sociocultural and environmental factors
- Perceptions about PA
- New physical environment and social structure
- Settlement and acculturation
- Cultural heritage values
- Factors

Policy and Institutional
Facilitators/Barriers

Social, cultural and environmental
Facilitators/Barriers
Figure 2 further illustrates how some of the conceptualized subthemes may be either in favour of engaging in physical activity among the new immigrant women or conversely, impede their participation in such activities (Figure 2). As demonstrated, presence or absence of these factors can determine the direction of movement on a physical activity wheel, and therefore trigger their facilitating or impeding effects.

**Figure 2** Dual barrier/facilitator influences on physical activity of Persian new immigrant women in Canada

The schematic conceptualization of sub-themes as shown in figures 1 and 2 indicate that the individual, sociocultural, environmental and policy levels influences each contribute to the physical activity behaviour of new immigrant women.
4.4 References

Chapter 5

Discussion

5.1 General Discussion

Findings from the current study show that Persian new immigrant women’s engagement in physical activity after immigration is influenced by factors across the individual, sociocultural, environmental, institutional, and policy levels. The facilitators and barriers of physical activity among the studied population can be situated within five overarching categories, 1) Perceptions about physical activity, 2) New physical environment and social structure, 3) Cultural heritage values, 4) Settlement and immigration factors, and 5) Physical activity program features.

The current investigation revealed that for Persian women, heritage cultural norms and values play an important role in determining physical activity practices. The impact of the new social and physical environments in Canada appears significant. Despite the challenges the newcomer Persian women face to find a place in the new society, some aspects of the new physical and social environments seem to also facilitate engagement in an active lifestyle after immigration. Importantly, lack of awareness about existing physical activity opportunities in the new setting and about physical activity guidelines seems to be an important impediment to engaging in physical activity and recreational opportunities among these women. This lack of awareness might be due to an inadequate distribution of comprehensive physical activity information targeted to new Persian immigrants. Most importantly, language needs of Persian newcomers often may not be considered in provisioning health promotion and physical activity services.

A priority for Persian newcomer women appeared to be optimizing the chance of successful settlement in Canada for the whole family, especially the children; the women’s
personal needs and desires appeared to be secondary in importance. This suggests that physical activity promotion should be approached differently in Persian new immigrant women in Canada by building on what truly motivates them (i.e., family concerns), rather than by focussing on the promise of individual benefits.

The culturally-based practices and traditions of the Persian community can provide opportunities for physical activity. Despite an abundance of evidence about cultural norms in ethnic minorities acting as barriers to physical activity (Babakus & Thompson, 2012; Caperchione, Kolt, & Mummery, 2009; Dave et al., 2015; Im & Choe, 2004; Vahabi & Damba, 2015), findings from this study demonstrate that for Persian immigrants to Canada, heritage cultural values and norms can have a positive effect on physical activity behaviour. For example, the heritage Persian cultural value of appreciation for nature, beauty, and art were mentioned by the women in this study as inspiring them to engage in outdoor activities, particularly in the presence of scenic natural and physical environments with appropriate infrastructures. What appeared to be especially salient to the Persian women in this study was the stark contrast between the environments of their country of origin and the host country. The existing green and pleasant structures in Canada encouraged them to appreciate the opportunity to partake in outdoor physical activity. This is consistent with evidence showing that Persian women living in crowded cities in Iran prefer to have healthy recreational activities in nature, parks, and green spaces available in the less crowded suburban areas of Iran (Baheiraei et al., 2011).

Cultural collectivist valuing of family also seemed to positively influence physical activity involvement in the women in this study. The women reported that their children bringing home information on physical activity and opportunities for all family members to be active together represented sources of encouragement for physical activity. This is consistent with previously reported evidence showing that in Persian culture, parents honour
information conveyed to them through their children (McGoldrick, Giordano, & Garcia-Preto, 2005). Another manifestation of this collectivist tendency was the women’s stated interest in adhering to mainstream societal norms of the new country. The more active lifestyle societal norms present in Canadian culture appeared to motivate Persian-Canadian women to perform more outdoor activities. This is similar to findings from an Australian study showing that the general opinion of the host society towards exercise motivated Iranians living in Australia to be more physically active (Delavari, Sønderlund, Mellor, Mohebbi, & Swinburn, 2015). Tapping into these values might represent a promising way in which to motivate the Persian community to engage in physical activity opportunities.

Beliefs and attitudes toward physical activity have been shown to be associated with physical activity practices among women in ethnic minority subgroups (Babakus & Thompson, 2012; Dave et al., 2015; Evenson, Sarmiento, & Ayala, 2004; Im & Choe, 2004). Findings from the current study revealed that positive perceptions about the physical and mental health benefits of physical activity act as first-hand motivation to initiate or maintain an active lifestyle for these Persian women. More importantly, beliefs regarding the importance of physical activity as an advantageous resource to cope with acculturation and settlement stresses, coupled with perceptions about the social aspects of exercise programs, also appeared to be substantial reasons for the women’s willingness to participate in exercise programs soon after immigration. Recognizing the benefits of physical activity have been facilitators to physical activity among other ethnic groups immigrating to North American countries (Eyler et al., 1998; Im & Choe, 2004). Understanding prevailing beliefs and attitudes towards physical activity in different population subgroups in a multicultural society could be useful for designing health promotion programs to engage newcomers to incorporate more physical activity in their busy lives while settling in the new home country (Taylor et al., 2008).
Previous lived norms and experiences regarding physical activity determine current preferences regarding physical activity. Traditionally, in Persian norms, there are two terms for categorizing physical activity namely “varzesh” and “narmesh”. The first term depicts higher impact exercises and sports, whereas the second term indicates flexibility and stretching exercises such as yoga moves without the meditation and spiritual components (Amirtash, 2008). The latter type, which is popular among Iranian women, also emerged in the current study as a preferred type of daily exercise in past, present, and future practices.

Given that previous experiences with physical activity and exercise have been an enabler for physical activity among other ethnic minority groups (Eyler et al., 1998) and that tailored physical activity programs have been shown to increase the likelihood of participation among targeted ethnic subgroups (Dave et al., 2015; Vahabi & Damba, 2015), understanding the physical activity preferences of newcomer populations could be valuable to inform the design of physical activity programs tailored to the Persian community.

In the current study, newcomer women’s physical activity was further influenced by their transition from their society of origin to the host society. The moment newcomers arrive in the country, they face challenges to find a place in the new society (Penninx, 2003). These changes and challenges encompass physical necessities such as finding shelter and transportation, adjusting to a changed climate, as well as contending with political, linguistic, religious, economic, and sociocultural differences and acculturation stresses (Berry, Kim, Mindeh, & Mok, 1987; Kim, 1995; Penninx, 2003). These challenges may constitute barriers to maintaining or changing health behaviours (Statistics Canada, 2010; Hyman & Guruge, 2002). The current study findings corroborate the research literature in this area; unfamiliarity with the new environment, organizational services (Taylor et al., 2008), and transportation system (Eyler et al., 1998), as well as being unaccustomed to new extreme climate conditions (Babakus & Thompson, 2012; Eyler et al., 1998; Im et al., 2015; Taylor et al., 2008), were
identified as instrumental challenges for newcomer women and their families to access and utilize physical activity opportunities. In regards to transportation, the shortage of public transit in suburban areas of the Greater Toronto Area (GTA), where many immigrants live, make the area highly car-dependent (Mowat et al., 2014). However, many recent immigrants do not have access to a personal vehicle to meet their transportation needs soon after they arrive in Canada and therefore they rely on the public transit system to navigate the city (Lo et al., 2011). In the GTA, the average commute time was 82 minutes in 2006 and this will increase to 109 minutes by 2031, due to a lack of infrastructure (Mowat et al., 2014). Thus, lack of access to various services nearby as well as unfamiliarity with the public transit service system, deter immigrants efforts to access various services, including physical activity resources, in the new society.

Another challenge for newcomers is the lack of access to information regarding available physical activity resources in the community. Communication difficulties due to language barriers have been shown to be a barrier to physical activity in other immigrant subgroups in North American countries (Babakus & Thompson, 2012; Dave et al., 2015; Eyler et al., 1998; Im et al., 2015; Taylor et al., 2008). Almost all of the women in this study mentioned that not knowing enough about the trustworthiness of information sources, nor about the physical activity opportunities, including subsidised programs offered by their municipality kept them from being physically active. This lack of knowledge seemingly puts the burden of low physical activity on the individuals themselves. The interviews revealed that there are gaps in the distribution of comprehensive information targeted to new immigrants. These findings are consistent with evidence from previous research showing that a lack of familiarity with the organizational systems and services can be a substantial impeding factor to accessing affordable physical activity and recreational programs available in the community (Taylor et al., 2008). It is critical to provide accurate information to women
about physical activity offerings in order to correct misconceptions. For instance, women in our study believed that lower cost programs offered through community centres have lower quality in terms of instructor proficiency, program quality or facility cleanliness. Therefore, ascertaining that lower cost does not compromise program quality would likely increase trust among the immigrant community.

Findings from the current study demonstrate that the transition to a new milieu impacts social and economic aspects of the newcomers’ lives. For the educated and skilled newcomer women in our study, abandoning the enviable social status they enjoyed in their homeland had immediate consequences on their life and health behaviours, as has been documented in previous research (Hyman & Guruge, 2002; Statistics Canada, 2011). The difficult process of professional evaluation to attain the licensing requirements to work at an equivalent professional level in Canada resulted in unemployment or underemployment for the highly educated professional newcomer families in our study. The plunge in socioeconomic status the women experienced often manifested as stress, leading to a diminished quality of life for them and their families. As Basran and Li (1998) and Suto (2009) explained, the difficult process of professional recognition and the paradox of not having Canadian work experience can lead to downward occupational mobility, regardless of credentials, education and work experience which translates into a drop in socioeconomic status and an overwhelming sense of life instability and psychological stresses (Bennett, Scornaiencki, Brzozowski, Denis, & Magalhaes, 2012; J. W. Berry et al., 1987). Thus, taken together, all of the aforementioned struggles, competing life demands and systematic impediments encountered upon entering Canada serve to make physical activity a low priority for the highly educated new immigrant women and their families. This is not surprising as it is well documented in the mainstream literature that stress, time constraints, fatigue, and lower socioeconomic status negatively influence leisure time physical activity
participation (Bauman et al., 2012; Sallis & Owen, 1998; Trost, Owen, Bauman, Sallis, & Brown, 2002).

Contrastingly, not all newcomer experiences have negative impacts on physical activity. For the newcomer Persian women, particular aspects of the new physical and social environments and related policies appeared to facilitate engagement in an active lifestyle after immigration. Findings from the current study revealed that, in comparison with what women experienced in populated urban areas of Iran characterised by heavy traffic and air pollution (Baheiraei et al., 2011) the less condensed urban structure in Canada and higher air quality standards have encouraged women to be active in the outdoors. Moreover, compared to Iranian social security issues related to harassment and existing gender-segregation policies (Arab-Moghaddam, Henderson, & Sheikholeslami, 2007), better safety, both in terms of physical risks and street harassment, better societal freedoms and social values for women, such as the freedom to choose their own level of body covering, as well as better gender equality practices, facilitated physical activity involvement for the women in this study. This aligns well with evidence from other studies, which have shown that having a safe, convenient, and accessible physical environment can increase participation in physical activity among ethnic minority women (Eyler et al., 1998; Kriska & Rexrod, 1998).

However, despite experiencing a better safety situation in Canada as compared to Iran, there remained some safety concerns such as fear of surroundings after dark and fear of crime, that could impede physical activity as evidenced in the literature (Babakus & Thompson, 2012; Eyler et al., 1998; Im et al., 2015; Taylor et al., 2008).

Over time, it appears that triumph in settlement efforts and success in integrating into Canadian society can have facilitating effects on the adoption of active lifestyle practices among newcomer women. Partaking in settlement resources provisioned for newcomers emerged as a facilitator to physical activity participation. Considering that settlement

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resources are windows to the Canadian society for new immigrants, these resources help women to initiate construction of a new social network, as well as to gain primary knowledge and skills required to become familiar with the new society. In addition to that, the current findings revealed that for immigrants, success in employment according to level of education and professional experiences noticeably improved the chance of having routine physical activity practices incorporated into the daily life schedule.

The present study shows that the new immigrant experience, health practices, the healthy immigrant effect and health are intertwined in a complex web of reciprocal influence. This is congruent with the literature showing that higher acculturation potential, such as being younger upon arriving to the new country, being proficient in the official language of the host country, having better inter-cultural and intra-cultural relations, increases the chance of having better employment, which can facilitate better access to healthcare and health promotion services for new immigrants (Gushulak, Pottie, Roberts, Torres, & DesMeules, 2011; Lara, Gamboa, Kahramanian, Morales, & Hayes Bautista, 2005; Marsiglia, Booth, Baldwin, & Ayers, 2013). Thus, these individual, social, and policy level influences conflate to impact, directly and indirectly, the health behaviours of new immigrant women and their families.

Although more time spent in the host country appears to advance the process of acculturation and settlement for many people, it is important to recognize that the number of years lived in the host county does not necessarily translate into higher levels of integration for the immigrant population (Dossa, 2002). Thus, to maximize the effectiveness of health promotion programs in the multicultural society of Canada, it is essential to create inclusive, intercultural policies (Frisby, 2011). It is crucial for institutional policy makers and health promotion and physical activity programmers to respect Canada’s multiculturalism act and to create policies and design programs that are welcoming to all of the Canadian population.
including newcomers (Frisby, 2011).

5.2 Recommendations

Based on the current study findings and participant suggestions, a set of recommendations to address barriers and to leverage opportunities for developing efficient physical activity programs for Persian immigrant women is provided below. Many of these recommendations may be further explored and extended to benefit the entire new immigrant population in Canada.

5.2.1 Recommendations for Physical Activity Programmers

5.2.1.1 Exercise and Recreational Program Elements

• Develop partnerships with trusted and recognized institutions already in the community, especially institutions that are the first-line contact for Persian new immigrants and are recognised by the community, to disseminate physical activity information and resources. Instances of such institutions include welcome centres and immigrants’ services, civic libraries, schools, and family healthcare teams.

• Involve people who can change perceptions from within the Persian community including family, especially children, physical activity specialists, and family healthcare teams.

• Provide opportunities to access instructions in Farsi such as hiring Farsi speaking instructors or recruiting volunteers to shadow newcomers.

• Consider heritage sociocultural values and preferences regarding physical activity.

5.2.1.2 Informational and Promotional Recommendations

• Motivate parents through children and family.

• Motivate newcomers to utilize exercise as a tool to cope with immigration stresses.
and highlight the benefits of being physically active a potential solution to some of their problems.

- Emphasize that participating in group physical activity programs can be beneficial for forming new social connections and can facilitate integration into multicultural Canadian society.
- Provide a pool of volunteer physical activity buddies through familiar organizations for newcomers to enhance opportunities to find a physical activity partner.

- Utilize the cultural aspects of the Persian community, which facilitate physical activity, and empower them by appealing to their sense of cultural pride.
- Provide translated program booklets, videos, pamphlets about available physical activity resources through the institutions and organizations known to Persian newcomer communities including immigrant settlement services, English language classes, libraries, schools, Persian-Canadian community organizations, and local family health teams.
- Provide information on physical activity benefits and related opportunities in Farsi newspapers, magazines, popular Persian-Canadian group pages and websites.
- Introduce new immigrants to websites with trusted, accurate information about health, physical activity and relevant services, incentives, and programs.

5.2.2 Policy Recommendations

- Establish partnerships between organizations involved in physical activity and newcomer settlement organizations including regional public health agencies, city recreation and physical activity departments, community recreational physical activity providers, immigrant settlement service providers, and regional school boards, and libraries.
• Create an integrated information website that links the various organizations’ websites on topics that are essential for the settlement of the newcomers such as housing, transportation, health and wellbeing, physical activity and recreational opportunities.

• Consider multi-cultural and multi-lingual needs of newcomers.

• Consider the integration status of immigrants as inclusion criteria for incentive and fee reduction programs.

5.3 Strengths

The current study boasts several strengths. First, the sample focussed on one specific group of immigrants in terms of immigration category and cultural heritage by limiting the sample to the economic immigrants who constitute the highest portion of the yearly national immigrant uptake by 63.4% (Government of Canada, 2015), and who represent the most important resource for population and economic growth of the country (Gu & Wong, 2010). Limiting the sample to one cultural heritage group allowed for a comprehensive exploration of the influence of Persian culture on physical activity behaviour.

The qualitative design of the study guided by interpretive description methodology and the utilisation of in-depth interview discussions enabled us to understand and interpret the complex phenomena of physical activity behaviour within the complicated context of immigration and cultural influences. The socio-ecological approach to the interviews further allowed for a multilayered investigation into the phenomenon under study. Also, inviting participants to project their own recommendations about ways to address the barriers and facilitators to physical activity involvement allowed us to outline an extensive list of recommendations tailored to this specific population of new immigrant Iranian women. In addition, the strategies applied to enhance the rigour of the study (i.e., credibility, transferability, dependability, and confirmability, Krefting, 1991; Lincoln & Guba, 1985),
also enhanced the strength of the study. Finally, this is the first study that we are aware of about the physical activity behaviour of Persian new immigrant women in Canada.

**5.4 Limitations**

Despite its many strengths, this study is not without limitations. Despite the 18-64 year eligibility age range for this study, recruiting women from the economic class of immigrants reduced the likelihood of recruiting younger women, thereby narrowing the applicability of our results to this specific age and immigrant class of women. Service providers, relevant organization representatives, and Persian-Canadian community leaders were not interviewed; only the perspectives of the women were collected. Including additional perspectives would likely have provided a richer understanding of the phenomenon. Furthermore, considering the cultural value of family, inclusion of other family members such as spouses could have offered more scrutiny of the effects of family dynamics on the physical activity involvement of Persian women new to Canada.

**5.5 Practical Implications**

Findings from this study further our understanding of the immigrant health decline phenomenon by considering low levels of physical activity as one of its underlying causes. Also, this study provides an in-depth understanding of physical activity practices among Canadian new immigrant women including physical activity preferences, impediments, and enablers. Interestingly, our findings reveal existing systemic gaps impeding newcomers from incorporating physical activity in their life after immigration. The most noticeable shortcoming emerged as the gap in communicating physical activity information to newcomers. Therefore, the recommendations generated from this finding call for the design
and implementation of better communication strategies (e.g., better advertisements and educational materials) about physical activity interventions and programs tailored to this particular population’s needs. Moreover, these recommendations provide suggestions to enhance outreach strategies to the new immigrant Persian population. Suggestions for potential partnerships to link diverse groups and individuals in more effective ways can be utilized to benefit the entire new immigrant population of Canada.

5.6 Research Implications

The current study suggests the need for producing more qualitative and quantitative research on physical activity behaviour of Canada’s new generation of immigrants. Future research should consider more refined categories of time since immigration. Past and present research typically defines new immigrants as those who have been living in Canada for up to 10 years. Lumping together immigrants who have been in the country for only a few years with those who have been in Canada for 10 years might mask true “newcomer effects” on physical activity behaviour. Additionally, cultural preferences and norms regarding physical activity practices revealed in this study need to be included in national physical activity surveillance questionnaires. As revealed by the current findings, Persian cultural values and norms were important to the physical activity behaviour of the women in this study, which suggests that future research on ethnic minorities needs to avoid lumping different ethnocultural groups together and avoid generalizations in order to better understand the influence of distinct cultures on behaviour. Findings from this study highlighting that the physical activity behaviour of Persian women is influenced by multilayered factors including immigration, integration and culture, warrant examining the issue from the viewpoints of service providers, related organizations’ representatives, and community leaders.
5.7 Conclusion

The interplay of factors related to cultural heritage, a new sociocultural environment, settlement and acculturation, perceptions about physical activity, and features of physical activity programs constitute a web of influences on the physical activity behaviour of Persian new immigrant women. Ecological mapping of these influences across the individual, sociocultural, environmental, institutional, and policy levels, highlights the importance of promoting physical activity from a diversity of perspectives and of communicating those opportunities to the newcomer population in Canada. Recommendations generated from the study findings call for practical actions to address barriers to physical activity, for the provision of relevant physical activity opportunities, and for better communication and outreach strategies to engage the new immigrant Persian population in Canada. Many of these recommendations may be further explored and extended to benefit the entire Canadian new immigrant population.
5.8 References


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Appendix A: Screening Questionnaire

Phone Version

Participant Identification Code: __________

1) Do you understand English or Farsi?
   • No (not eligible) – Thank the person and say goodbye
   • Yes (continue)

2) Are you born in Iran
   • No (not eligible) – Thank the person and say goodbye
   • Yes (continue)

3) How old are you? ____________ (Must be 18-64 to be eligible)

4) Since when (month/year) have you been living in Canada? ____________ (must have been living in Canada for at least 3 months, but not before July 2009 to be eligible)

5) Are you a permanent resident in any *Economic category?
   • No (not eligible) – Thank the person and say goodbye
   • Yes (continue)

*Economic categories are consist of: skill worker class, business class, provincial and territorial nominees, and live-in caregivers.

6) Do you have any physical or mental conditions that prevent you from being physically active?
   • Yes (not eligible) – Thank the person and say goodbye
   • No (continue)

   ❖ Confirm participant eligibility

If you are willing to proceed, please provide your contact information that the researcher “Elham Ameli-Mojjarad “can contact you at.

Phone: __________  preferred time of contact: __________
Email: __________  Preferred method of contact: ________

Email Version

The following questions indicate whether you meet the inclusion criteria to participate in this
study. Please choose the answer that best applies to you.

1) Can you communicate in English or Farsi?
   • No (You are not eligible)
   • Yes (You are eligible)

2) Are you born in Iran
   • No (You are not eligible)
   • Yes (You are eligible)

3) How old are you? _____________ (If you are between 18-64 years old you are eligible)

4) Did you arrive in Canada between July 2009 and April 2014?
   • No (You are not eligible)
   • Yes (You are eligible)

5) Are you a permanent resident in any *Economic category?
   • No (You are not eligible)
   • Yes (You are eligible)

*Economic categories are consist of: skill worker class, business class, provincial and territorial nominees, and live-in caregivers

6) Do you have any physical or mental conditions that prevent you from being physically active?
   • Yes (You are not eligible)
   • No (You are eligible)

   ✤ If you are eligible based on your answers to all of the above questions and you are willing to proceed, please contact Elham Ameli-Mojarad by email: 12mea2@queensu.ca or phone: 613.533.6000 ext. 74699
Appendix B: Demographic Questionnaire

Title: New Immigrant Women's Engagement in Physical Activity

<table>
<thead>
<tr>
<th>Date of interview: ________________</th>
<th>Participant Identification Code: ________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month and year of birth: __<strong><strong>/</strong></strong></td>
<td>Country of origin: _____________________________</td>
</tr>
<tr>
<td>Immigration Category:</td>
<td></td>
</tr>
<tr>
<td>□ Skilled worker class Business class Provincial and territorial nominee Live-in care giver</td>
<td></td>
</tr>
<tr>
<td>Years since immigration to Canada: ____________________</td>
<td></td>
</tr>
<tr>
<td>Number of family/friends in Canada upon arrival: ________________</td>
<td></td>
</tr>
<tr>
<td>Designated city to live upon arrival in Canada: ________________</td>
<td></td>
</tr>
</tbody>
</table>

1) How do you rate your Physical health:
   Poor    Fair    Good    Very good    Excellent

2) How do you rate your mental health:
   Poor    Fair    Good    Very good    Excellent

2) How do you rate your physical activity level and practices now compared to the last year before you immigrated to Canada?
   Much more active
   Slightly more active
   The same level of activity
   Slightly less active
   Much less active

3) How many minutes per day are you physically active to a level that raises your heart rate or causes rapid breathing? ________________

How many days per week are you physically active to a level that raises your heart rate or causes rapid breathing? ________________

Multiply minutes/day x days/week = ________________

< 150 mins/week
≥ 150 mins/week

4) Are you:
   Single    Divorced    Separated    Married    Living with common low partner    Widowed

5) Do you have children living in the same home as you?    Yes    No
If yes, number of children: _________________
The total number of people living in the household: ________________

6) What is the estimate of your total household income or available fund (before taxes) in the past twelve months?
   - less than $20,000/year
   - $20,000 to $29,999/year
   - $30,000 to $39,999/year
   - $40,000 to $49,999/year
   - $50,000 to $59,999/year
   - $60,000 to $69,999/year
   - $70,000 to $79,999/year
   - over 80,000/year

7a) What is your current working status?
   - retired
   - working part time
   - working full time
   - unemployed
   - looking after the home and not working outside of the home
   Other, specify: ________________

7b) What sort of work do you do or did you do before retirement: ________________

8) What is your highest level of education obtained?
   - less than high school
   - high school
   - college or less
   - college degree/certificate or professional certification
   - undergraduate university degree
   - graduate university degree
Appendix C: Ethics Approval

July 24, 2014

Ms. Elham Ameli Mojarad
Master’s Student
School of Kinesiology and Health Studies
Queen’s University
28 Division Street.
Kingston, ON, K7L 3N6

GREB Ref #: GPHE-173-14; Romeo # 6013035
Title: "GPHE-173-14 Immigrant Women’s Engagement in Physical Activity"

Dear Ms. Ameli Mojarad:

The General Research Ethics Board (GREB), by means of a delegated board review, has cleared your proposal entitled "GPHE-173-14 Immigrant Women’s Engagement in Physical Activity" for ethical compliance with the Tri-Council Guidelines (TCPS) and Queen’s ethics policies. In accordance with the Tri-Council Guidelines (article D.1.6) and Senate Terms of Reference (article G), your project has been cleared for one year. At the end of each year, the GREB will ask if your project has been completed and if not, what changes have occurred or will occur in the next year.

You are reminded of your obligation to advise the GREB, with a copy to your unit REB, of any adverse event(s) that occur during this one year period (access this form at https://eservices.queensu.ca/romeo_researcher and click Events - GREB Adverse Event Report). An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes to the level of risk, applicant characteristics, and implementation of new procedures. To make an amendment, access the application at https://eservices.queensu.ca/romeo_researcher and click Events - GREB Amendment to Approved Study Form. These changes will automatically be sent to the Ethics Coordinator, Gail Irving, at the Office of Research Services or irvingg@queensu.ca for further review and clearance by the GREB or GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

Joan Stevenson, Ph.D.
Chair
General Research Ethics Board

c:  Dr. Lucie Levesque, Faculty Supervisor
    Dr. Brendon Gurd, Chair, Unit REB
Appendix D: Recruitment Poster

Title: New Immigrant Women's Engagement in Physical Activity

Immigration & Physical activity
Are you a woman between 18-64 years of age?
Have you recently immigrated to Canada (3month to 5 years)?
Are you born in Iran?
We are interested in understanding what new immigrant women experience when they attempt to be physically active after moving to Canada.

- Participation requires one-hour interview session
- The interview will take place at a convenient location (i.e. at the organization’s location) depending on participant’s preference.
- At the interview session, you will be given a letter of information and asked to sign a consent form. Before starting the interview, you will be asked to answer a short questionnaire.

This study is carried out by Dr. Lucie Lévesque and Elham Ameli-Mojarad (MSc candidate). For more information please contact: Elham Mojarad by e-mail at 12mea2@queensu.ca or phone at: 6479957020
Appendix E: Recruitment script

Phone Version

[To the potential participant]:

Hello my name is ___________, I'm calling from ___________________(name of community organization) in regards to a study about physical activity in immigrant women. A graduate student from Queen’s School of Kinesiology and Health Studies is conducting this study. The student, Ms. Elham Ameli-Mojarad is interested in understanding what immigrant women experience when they attempt to be physically active after moving to Canada. Ms. Elham Ameli-Mojarad will be conducting interviews on this topic. Are you interested in hearing more?

➢ If NO: Thank you for your time. We value your involvement with our organization and your response will in no way affect the services you receive here. Goodbye.

If YES: This study is about the practices and experiences of immigrant women with regards to physical activity. About 10-15 women will be interviewed in all. The aim is to better understand the challenges and successes you might have experienced in trying to be physically active. You would be asked to participate in an interview about physical activity, which would take about one hour. Before starting the interview, you will be asked to fill out a short questionnaire. The interview would take place here (at the organization’s location), depending on your preference. You would be given a letter or information and asked to sign a consent form. Information from all of the interviews will be analysed and included in a Master’s thesis report. Your name would not be used and your identity would remain confidential. Might you be interested in being interviewed?

➢ If NO: Thank you for your time. We value your involvement with our organization and your response will in no way affect the services you receive here. Goodbye.

If YES: Ask Screening Questions (see Appendix B).

Email Version

[To the potential participant]:

If YES: Ask Screening Questions (see Appendix B).
Dear ____________

I'm sending this email to you from___________(name of community organization) in regards to a study about physical activity in new immigrant women. A graduate student from Queen’s School of Kinesiology and Health Studies is conducting this study. The student, Ms. Elham Ameli-Mojarad is interested in understanding what new immigrant women experience when they attempt to be physically active after moving to Canada. Ms. Elham Ameli-Mojarad will be conducting interviews on this topic. Below is a brief description regarding this study:

This study is about the practices and experiences of immigrant women with regards to physical activity. About 10-15 women will be interviewed in all. The aim is to better understand the challenges and successes you might have experienced in trying to be physically active. You would be asked to participate in an interview about physical activity, which would take about one hour. Before starting the interview, you will be asked to fill out a short questionnaire. The interview would take place here (at the organization’s location), depending on your preference. You would be given a letter or information and asked to sign a consent form. Information from all of the interviews would be analysed and included in a Master’s thesis report. Your name would not be used and your identity would remain confidential. Might you be interested in being interviewed?

If you are interested, please read the attached screening questionnaire to find out if you are eligible to participate in this study. If you are eligible, please contact Elham Ameli-Mojarad by email: 12mea2@queensu.ca or phone: 6479957020 in order to set up an interview time and location.

Thank you for your time. We value your involvement with our organization and your response will in no way affect the services you receive here.

Regards,

(Name and Contact info)
Appendix F: Interview Guide

Title: New Immigrant Women's Engagement in Physical Activity

Welcome: The purpose of this interview is to talk about physical activity practices, experiences and challenges of recent immigrant women in Canada after their immigration in comparison to before immigration. This information can help to inform the development of more effective physical activity programs, specifically for new immigrant women. There are no right or wrong answers. Although it would be nice to hear your thoughts regarding each of the questions, you have the right to not answer if you do not want to.

In addition to recording our conversation (only for participants who have agreed to be recorded), I might take some notes to help me later when I look at the information in more depth. Does that sound ok? Do you have any questions before we start?

1. **When thinking about physical activity what comes to mind?**

   [Probes]
   - What counts as physical activity?
   - What do you like about physical activity?
   - What do you dislike about physical activity?

2. **Describe your current involvement in physical activity and how satisfied are you with it,**

   [Probes]
   - What type(s) of activity (ies)? How often? How long? At what intensity? How it is organized?
   - You mentioned being satisfied/dissatisfied with this level of involvement, can you tell me more about this?

3. **The Canadian PA guidelines suggest that:**

   Adults aged 18-64 years should accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week and at least 2 days per week of strengthening activities.

   **How achievable or realistic does this sound for you?**

   [Probes]
   - Explain more
4. How does your current involvement in physical activity compare to what you used to do, before immigration?

[Probes]
- How it is similar or different?
- Type
- Level of physical activity done in past (any physical activity:
- Duration sport / exercise / others)

5. What makes it difficult for you to be physically active?

[Probes]
- Individual factors
- Social and community factors
- Institutional/Organizational factors

6. How are these factors different or similar from when you where living in your home country?

7. What makes it possible for you to be physically active?

[Probes]
- Individual factors
- Social and community factors
- Institutional/Organizational factors

8. Where, in your community would you like to receive information about physical activity (benefits, opportunities, etc)?

[Probes]
- Where do you spend your time?
- Where do you get information about healthy lifestyles?
- Where do you currently look for PA programs?
- Other ideas

9. From whom in your community would you like to receive information about physical activity (benefits, opportunities, etc)?

[Probes]
- What person(s) or what organization(s) is/are a credible source of information?
• Who motivates you?
• Other ideas

10. If you were asked to give advice to physical activity programmers, who were designing a program for immigrant women, what would you tell them?

[Probes]
• What types of PA
• Where
• Other ideas

11. Is there anything else you would like to add?
Appendix G: Letter of Information

Title: New Immigrant Women’s Engagement in Physical Activity

This research study is being conducted by Elham Ameli-Mojarad, a graduate student working with Dr. Lucie Lévesque in the School of Kinesiology and Health Studies at Queen’s University in Kingston, Ontario, Canada. This study has been granted clearance according to the recommended principles of Canadian ethics guidelines and Queen’s policies.

This study is about the physical activity practices and experiences of immigrant women. The aim is to better understand the challenges and successes you might have experienced in trying to be physically active. This information can be helpful in the development of more effective physical activity programs, specifically for immigrant women.

You are invited to participate in an interview about physical activity, which will take about one hour of your time. If you agree, the interview will be audiotaped. The researcher will listen to the recording and type it down in order to make it easier to analyze the information. You will also be asked to fill out a questionnaire. The researcher will listen to the all of the participants’ recordings to analyze the information. Recordings and written copies of the interview will be kept in a locked filing cabinet at Queen’s University and accessible only to Elham Ameli-Mojarad, her supervisor Dr. Lucie Lévesque and Dr. Lévesque’s research assistant.

Your interview transcript will be assigned a code and your name will not be disclosed to anyone including Dr. Lucie Lévesque’s research assistant. The main researcher (Elham Ameli-Mojarad) and Dr. Lévesque are the only persons who will have access to the participant name list. Your information, recorded on paper, electronically, and on audio-tape, will be saved on computer password-protected files on an external drive and stored in a locked safe in Dr. Lévesque’s laboratory. The researcher will maintain confidentiality to the extent possible. All of your data will be destroyed 10 years from now.

There are no known risks associated with your participation in this study. Participation is completely voluntary. You are not obliged to answer any questions that you choose not to and you can end the interview by leaving at any time. If you choose to leave, the services you receive at ________________ (name of contact organization), will not be affected. You are free to withdraw at any time for whatever reason without penalty.

The data will be used in my master’s thesis and will be published in professional journals or presented at scientific conferences, but any such presentations will be of general
findings and your confidentiality will be maintained at all times. Your name will never be used. Should you be interested, you are entitled to a copy of the findings. No compensation is provided for this study.

Any questions about study participation may be directed to Elham Ameli-Mojarad at 12mea2@queensu.ca or 613.533.6000 ext. 74699 or to Dr. Lucie Lévesque at levesquu@queensu.ca or 613.533.600 ext. 78164. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at chair.GREB@queensu.ca or 613-533-6081.

Thank you again for your time and consideration,

Dr. Lucie Lévesque
Associate Professor

Elham Ameli-Mojarad
Master of Science Candidate
Appendix H: Consent Form

Title: New Immigrant Women's Engagement in Physical Activity

I have read the letter of information. I understand that I am participating in an interview about my experience with participation in physical activity. I am aware of the purposes and the procedures of the study and I have been informed that the interview will take about an hour and that no compensation will be provided. I fully understand that my participation in this study is voluntary and I may withdraw at any time for any reason without any associated penalty. I am aware that my answers will not be available to anyone other than the researchers involved in this study, and that my answers will be kept locked away and safe at Queen’s University. I understand that I may have a full description of the study results if I ask for it. I understand that the researchers plan to publish the findings of the study and my name will never be used in the reporting of the results.

I understand that every effort will be made to maintain the confidentiality of the data now and in the future. The data collected for this study will not be used for any purpose outside of research. I understand that the data being collected today may be reanalyzed in the future to answer related questions about this research area. Confidentiality will be maintained at all times.

I have had the opportunity to ask questions which have been answered to my satisfaction. I am voluntarily signing this consent form. I understand that I may retain a copy of this consent form for my records.

This study has been granted clearance according to the recommended principles of Canadian ethics guidelines, and Queen's policies.

If at any time I have further questions, I can contact Elham Ameli Mojarad by email at 12mea2@queensu.ca or by phone at 613-533-6000 ext. 74699

Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at 613-533-6081 or Chair.GREB@queensu.ca

By signing this consent form, I am indicating that:

I agree to be interviewed Yes    No    I agree to be audio-recorded Yes    No

___________________  ____________________
Signature of Participant          Date