Physical Activity in First Generation South Asian women living in Canada: Barriers and Facilitators to Participation

Kiruthika Rathanaswami

Kinesiology and Physical Education

McGill University, Montreal

July 2014

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Master of Arts in the department of Kinesiology and Physical Education in the Faculty of Education

Abstract

Regular participation in physical activity (PA) reduces the risks of developing cardiovascular disease (CVD), diabetes, colon cancer, breast cancer, osteoporosis, hypertension and stroke. Unfortunately, many Canadians are not meeting the recommended PA guidelines in place. One group of individuals who are reported the least active are South Asians and in particular South Asian women. The South Asian population has been slowly increasing in Canada and today they represent the largest visible minority group. A high population of South Asians and their low levels of PA now brings a concern for the health of this population. When South Asian women immigrate to a foreign country they face numerous barriers that restrict their participation in society. They face some of these barriers for PA as well. The aim of this study was to understand the PA experiences of South Asian women's Centre employees and their clients in regards to barriers and facilitators to participation in PA. This was examined using an interpretive description approach where similarities and differences between South Asian women's Centre employees and new immigrants were explored. Eight South Asian women employees (Mean age = 45.57 years) working at a South Asian women's Centre in Canada participated in a focus group, individual and follow- up interviews to better understand their PA experiences. South Asian women reported family responsibilities as the primary barrier to PA. Other barriers included: cultural (upbringing), environmental (location of activity, lack of female only facilities, cost, weather, lack of social support, instruction/activity, language), and intrapersonal (lack of motivation, time, priorities). The main differences found between South Asian women's Centre employees and their clients concerned time, language and their partners. For this population of women, programs need to be affordable, close to home, female only and allow their own choice of clothing. The results suggest the importance for those working with South Asian Women to take into consideration the many factors (intrapersonal, interpersonal, organizational, community and public policy) that may inhibit or facilitate PA behaviour change in this population.

Keywords: physical activity, south Asian, women, barriers, facilitators, immigrant

Résumé

L'activité physique (AP) régulière réduit les risques des maladies cardiovasculaires, du diabète, du cancer du colon et du sein, de l'ostéoporose, de l'hypertension et des accidents vasculaire-cérébrales (AVC). Malheureusement, bien des canadiens ne font pas suffisamment d'AP, selon les recommandations canadiennes. Au Canada, la population des individus de l'Asie du sud est en croissance depuis de nombreuses années et aujourd'hui représente la plus grande minorité visible. Cette population, particulièrement les femmes, est parmi la moins physiquement active. Compte tenu de la grandeur de cette population au Canada, leur faible niveau d'AP représente un enjeu de santé important. Lorsque des femmes de l'Asie du sud arrivent au Canada, elles font face à de nombreuses barrières limitant leur intégration à la société. Ceci est autant vrai pour leur pratique de l'AP. L'objetif de cette étude est de comprendre les expériences d'AP des employées et des clientes de Centre communautaire des femmes Sud-Asiatiques ainsi que les facteurs qui facilitent et limitent leur pratique de l'AP. Une description interprétative a été utilisée pour analyser les différences et similarités parmi les employées d'un centre pour femmes de l'Asie du sud et les nouvelles immigrants. Afin de mieux comprendre leurs expériences, huit employées (âge moyenne = 45.57 ans) qui travaillent dans un Centre communautaire des femmes Sud-Asiatiques au Canada ont pris part à un groupe de discussion, ainsi qu'à des entrevues individuels et des suivis. Ces femmes ont reporté que les barrières familiales étaient les plus contraignantes dans leur pratique de l'AP. D'autres barrières incluent: des barrières culturelles (éducation), environnementales (lieu de l'activité, manque de centres pour femmes seulement, coût, météo, manque de soutien social, instruction/activité, langue), et intrapersonnelles (manque de motivation, temps, priorités). Les différences majeures entre les employées du Centre et leurs clientes étaient leur rapport à la langue, au temps et à leurs conjoints. Pour cette population de femmes, les programmes ont donc besoin d'être abordables, près de leur lieux de résidence, exclusivement réservés aux femmes et permettant le choix de vêtements. Pour ceux qui travaillent avec des femmes de l'Asie du sud, les résultats soulignent l'importance de prendre en considération plusieurs facteurs (intrapersonnels, interpersonnels, organisationnels, communautaires et politiques) qui peuvent soit faciliter ou restaindre la pratique de l'AP.

Mots clés: activité physique, l'Asie du sud, femmes, barrières, facteurs facilitants, immigrant

Acknowledgments

I would like to sincerely thank the following people who contributed to the completion of my thesis:

- My Supervisor Dr. Enrique Garcia, who gave me the opportunity to pursue my passion and interests in academia. You have always encouraged and supported my decisions and I sincerely appreciate the endless feedback and guidance you have given me throughout these years. Your kind heart and sincerity have always been admiring.
- Dr. Paula Bush, thank you for the constant support, feedback and experience you provided for my thesis.
- My parents, thank you for the unconditional love and support for everything I do in my life.
- Janahan and Vidya thank you very much for being a huge factor in me pursing my Masters. Your helpfulness and support is greatly appreciated.
- Reesha, Urvashi, Lindsay, Dani, Enrico, AC, and Leila thank you for your friendships, talks and encouragement during my time in Montreal.
- To the 8 wonderful women who volunteered for my study, thank you for your time and sharing your experiences with me.

Table of Contents

Tables

Figures

Introduction

Regular participation in physical activity (PA) has been shown to have numerous health benefits, and leads to better quality of life for Canadians (Public Health Agency of Canada, 2011). According to the World Health Organization and the Canadian Physical Activity Guidelines, "To achieve health benefits, adults aged 18 and older should accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more" (WHO, 2014). Though the benefits of regular PA are constantly reported, only 15% of Canadian adults meet these requirements (Public Health Agency of Canada, 2011). Women compared to men report even lower levels with only 14% of Canadian women meeting the recommended guidelines. A bigger concern now is the Canadian immigrant population. The immigrant population in Canada has increased enormously and in 2006 saw the highest foreign-born population in 75 years (Statistics Canada, 2007). Of this immigrant population, South Asians are the largest visible minority group in Canada, and women, in particular are the least active compared to all ethnicity groups (Bryan, Tremblay, Pérez, Ardern, & Katzmarzyk, 2006). South Asians also have a higher risk for the development of cardiovascular diseases (CVD) and diabetes because of predisposing factors related to their ethnicity (Barnett et al., 2006; Deedwania, 2013; Gholap, Davies, Patel, Sattar, & Khunti, 2011). Numerous studies have reported reduced risk for the development of CVD, diabetes, cancer and osteoporosis associated with PA participation (Nocon et al., 2008; Warburton, Nicol, & Bredin, 2006).

Research has shown that South Asian women have a harder time adjusting between their Canadian culture and their South Asian culture in terms of values, norms and responsibilities (Babakus & Thompson, 2012). During the initial stages of settlement, South Asian women reported difficulties in adapting to a new environment because of weather (Ahmad et al., 2005;

Martins & Reid, 2007; Samuel, 2009), family responsibilities (George & Ramkissoon, 1998; Martins & Reid, 2007), financial instability (Ahmad et al., 2005; Martins & Reid, 2007), loneliness (Abouguendia & Noels, 2001; George & Ramkissoon, 1998; Martins & Reid, 2007) and lack of English proficiency (Ahmad et al., 2005; George & Ramkissoon, 1998). Many of these barriers re-appeared when examining South Asian women and PA participation as well. South Asian women may be influenced by a number of factors that can inhibit or facilitate their participation in PA. A closer look at these factors is important to determine the reasons for their reported low levels of PA. Behaviour change is influenced by an inter-relationship that exists between the environment and the individual (Glanz, Rimer, & Viswanath, 2008). Factors that may contribute to behaviour change need to be examined at levels of intrapersonal, interpersonal, organizational and community and public policy (Glanz et al., 2008).

The purpose of this study was to understand the PA experiences of first generation South Asian women employees working at a South Asian Centre in Canada and their perceptions of their clients in regards to barriers and facilitators to participation. The study used an interpretive description methodology where group and individual perceptions were analyzed for similarities and differences.

This is the first study to understand South Asian women and their PA experiences through recruiting participants directly from a Centre catered only to South Asian women. Thus, this study will advance current research on South Asian women and PA and help understand some important factors previously not reported that may contribute to their low levels of PA. In addition, this study will shed light into factors that may help PA program designers to better address the specific needs of South Asian Women.

Overview of thesis

Chapter one consists of a literature review organized into two sections. The first section addresses the following topics: Immigration to Canada, South Asians and Diseases, South Asian and PA, PA (definition and benefits), PA South Asian women participate in, and Initial Settlement Experiences of South Asian women. The second section is organized according to the Ecological Model of Behaviour Change that consists of cultural, environmental and intrapersonal factors that act as barriers and facilitators to PA participation. Chapter two explains the methodology of the study, and is divided into the following sections: study participants, procedures, data collection, interview guide, and data analysis. Chapter three presents the results of the study, which, for illustration purposes, include numerous relevant participant quotes. The results are discussed in Chapter four, which also outlines implications of the study, strengths and weaknesses, and future directions.

CHAPTER 1

Review of Literature

Immigration to Canada

Europeans were among the first immigrants to arrive in Canada during the 17th century (Warren, 2012). Since then the growth of Canada's population has been increased by immigrants from various countries and today is known as a "Cultural mosaic" of many ethnicities, cultures and languages (Warren, 2012). In the 1901 Canadian census, a record of 25 different ethnic groups were reported. This number increased to over 200 different ethnicities by 2006. In 1871, 84% of the foreign-born immigrants were born in the UK compared to only 15% in 2009 (Warren, 2012). The removal of discriminatory actions within Canada's immigration policies in the 1960s and 1970s allowed the arrival of non-European immigrants, especially Asian-born immigrants (Warren, 2012). According to Statistics Canada (2001) immigrants are defined as "People who are, or have been, landed immigrants in Canada. A landed immigrant is a person who has been granted the right to live in Canada permanently by immigration authorities. Some immigrants have resided in Canada for a number of years, while others have arrived recently. Most immigrants are born outside Canada, but a small number were born in Canada." Those who are born outside of Canada are referred to as first generation immigrants whereas second generation are those born in Canada and "had at least one parent born outside of Canada."(Statistics Canada, 2014)

In 2006, Canada reported the highest foreign-born population in 75 years with 1 in 5 (19.8%) of total population born outside Canada (Statistics Canada, 2012). New immigrants primarily reside in the three largest cities of Canada: Toronto, Montreal and Vancouver (Statistics Canada, 2012). The significant decrease in European immigrants has drastically

changed the demographics of the Canadian population (Statistics Canada, 2013a). In the 2011 Canadian census, 19.1% of the total population identified themselves as a visible minority (This is a 3-fold increase from the 2006 census) (Statistics Canada, 2013b). A visible minority has been defined by Statistics Canada (2001) as "Persons who are non-Caucasian in race or non-white in color and who do not report being Aboriginal. In Canada the following groups are considered visible minorities: Chinese, South Asian, Black, Filipino, Latin American, Southeast Asian, Arab, West Asian, Korean and Japanese."

The published article by Statistics Canada (2005) "Population projections of visible minority groups, Canada, provinces and regions: 2001-2017" predicts five scenarios based on recent population numbers of visible minorities for the period of 2001-2017. According to the plausible scenarios predicted in the article, by 2017 between 6,313,000 and 8,530,000 persons will be a visible minority, an increase of 56% to 111% from 2001 (Statistics Canada, 2005). Over the past decades visible minorities have increased steadily from a population of 1.1 million in 1981 to 1.6 million in 1986 to 2.5 million in 1991 and 3.2 million in 1996. Canada's immigrant population has been estimated between 6,988,000 to 9,349,000 in 2017, an increase of 24% to 65% from 2001. In 2001, 70% of the visible minority population was born outside of Canada. This population of visible minorities born outside of Canada is expected to continue to increase and numbers are expected to be above two thirds by 2017. Another plausible scenario presented is that South Asians and Chinese will be the largest visible minority groups in 2017. In 2011 South Asians were the largest visible minority group and they are predicted to remain the same in 2017. The provinces of Ontario, Quebec and British Columbia will continue to have the highest number of visible minorities in 2017.

One of the biggest problems now facing immigrants are the high levels of physical inactivity (Bryan et al., 2006). South Asians, and in particular women, are reported to have the lowest levels of PA. There is also an increased risk for South Asians to develop CVD and diabetes because of predisposing factors in their ethnicity (Barnett et al., 2006; Deedwania, 2013; Gholap et al., 2011). Numerous studies have confirmed the positive correlations between PA and health status among individuals. Regular participation in PA reduces the risks of developing diseases such as CVD, diabetes, colon cancer, breast cancer, osteoporosis, hypertension and stroke (Gregg, Gerzoff, Caspersen, Williamson, & Narayan, 2003; Nocon et al., 2008; O'Donovan et al., 2010; Stovitz, 2012; Warburton et al., 2006; Williamson, Vinicor, & Bowman, 2004). The following sections will examine the current literature on South Asians and diseases.

South Asians and Diseases

South Asians in comparison to other ethnicities have higher rates of developing CVD as well as type II diabetes leading to early mortality (Deedwania, 2013; Gholap et al., 2011; Lau, 2010; Yates et al., 2010). Anand et al. (2000) found South Asians living in Canada for more than five years have higher prevalence of CVD compared to European and Chinese groups living in Canada for the same length of time. South Asians were found to have greater risk of CVD even after the researchers expanded the definition of CVD to include salient myocardial infarction detected by the electrocardiogram. A risk factor associated with CVD is diabetes, which high rates were also reported among South Asians in this study. According to World Health Organization (WHO), in 2004 an estimated 3.4 million deaths occurred as a result of high fasting blood sugar (WHO, 2013a). The WHO (2013a) estimates that by 2030, diabetes will be the 7th leading cause of death. A pilot study conducted earlier by Anand and Yusuf (1997) using a variety of measurements such as health questionnaires, anthropometry, psychosocial,

nutritional assessments, blood samples, and ultrasonographics found prevalence of impaired glucose tolerance at 34.5% in South Asian Canadians compared to only 9.5% in European Canadians. In addition, the total cholesterol to high-density lipoprotein levels in South Asians were at higher elevated rates in comparison to Europeans (Anand & Yusuf, 1997). Similar findings in the UK confirmed South Asian immigrants to have higher prevalence of type II diabetes and CVD compared to the indigenous population (Barnett et al., 2006). Though there is no definite answer to why the ethnic background of South Asians predisposes them to these diseases, research has provided some explanations.

Tillin et al. (2013) examined the ethnic differences in type II diabetes in the SABRE community comprising of Asian Indians, African Caribbean and Europeans living in the United Kingdom using competing risk regressions. The participants (Europeans $N = 2197$, Indian Asians $N = 1355$, African Caribbean $N = 650$) without diabetes at baseline had measurements in fasting and postglucose bloods, anthropometry and lifestyle questionnaires. A 20 year follow up was conducted on the participants starting at age range 40-69 to age range of 60-89. The study showed from baseline to follow-up, 33% of Indian Asian participants developed diabetes compared to 30% of Africans Caribbean and 14% of European participants. Indian Asians were found to be more centrally obese (i.e., to have more abdominal fat) even though they had lower levels of Body Mass Index (BMI) at baseline. In particular when measuring central obesity, Indian Asian women were 2.4cm greater than Indian men. Results from this study indicate fasting and post load glucose did not differ from baseline for Indian Asians but they were found to have a high fasting insulin, increased insulin resistance and higher calculated b-cell function than Europeans.

Deedwania (2013) and Barnett et al. (2006) explain further why South Asians are more predisposed to CVD and diabetes mellitus compared to other ethnic groups. High levels of insulin resistance found in visceral adipose tissue may put South Asians at a higher risk for the development of CVD or diabetes (Barnett et al., 2006; Deedwania, 2013). Visceral adipose tissue acts like an endocrine organ releasing various hormones and inflammatory mediators that directly increase insulin resistance and cardiovascular risk (Deedwania, 2013). Differences between the groups in Tillin et al. (2013) may have resulted because of the pathogenesis of diabetes mellitus varying and the increase of insulin resistance found in South Asians (Barnett et al., 2006; Deedwania, 2013).

These findings were also reaffirmed by Gholap et al. (2011) who suggested the increased risk of type II diabetes and CVD in South Asians may have something to do with the early stages of development where the thrifty genotype favored visceral fat stores for energy reserve during periods of food abundance when food crisis or survival needs had to be met. The change today from rural communities to urban towns (Barnett et al., 2006; Gholap et al., 2011; Lau, 2010), more availability of food, high calorie diets, and lack of PA has made the "thrifty genotype" as a disadvantage for South Asians who primarily lived traditional farming lifestyles (Gholap et al., 2011). The "thrifty genotype" hypothesis states under-nourishment in the intrauterine tends to cause a nutritional thrift and increased foetal pancreatic beta cell growth (Gholap et al., 2011). During the post natal period these individuals have increased growth in height and weight because of rich food and lack of PA which ultimately disturbs the glucose metabolism and favors fat stores. The Developmental Origins of Health and Disease (DOHaD) Model and WHO "Life course" model state that during development, the intrauterine environment programs individuals to have similar intra-natal and post-natal environments and when there is a difference it leads to

disease (Gholap et al., 2011). Therefore increased risk of development of chronic diseases like CHD, stroke, diabetes, and hypertension occurs because of the imbalance of nutrients in the uterus during infancy (Gholap et al., 2011).

South Asians and Diet

Research by Farooqi, Nagra, Edgar, and Khunti (2000) and Kalra, Srinivasan, Ivey, and Greenlund (2004) found South Asians identified diet as the primary cause of CVD. It was reported that South Asians in both studies knew the characteristics of a healthy diet but did not maintain one. Kalra et al. (2004) conducted focus groups to gather information on the perceptions of CVD risk within the Asian Indian community and to identify opportunities to design health promotion interventions. Most of the participants had prior knowledge of what CVD was and potential risk factors and diet mediators. Some mentioned they were unaware of where to go for additional information if needed. For many Indians their traditional menus consisted of high fat foods which were difficult to change. It was also expressed that South Asians attend many cultural, social, and religious gatherings where food indulgence occurs in high amounts. In the Indian culture a host generally feels satisfied and happy when a guest eats a lot. It was also noted that stress could be a factor for CVD. Some of the stressors reported by participants were hectic work days, children, joint families and acculturation.

Anand and Yusuf (1997) found similar results for South Asians having higher weekly intake of high-fat dairy products, salt, and fried food in comparison to the European population. But the data also revealed South Asians being more depressed, higher job stress and lower levels of general well-being compared to European Canadians (Anand & Yusuf, 1997). Lip, Luscombe, McCarry, Malik, and Beevers (1996) reported that even when using public health campaigns or media to increase awareness for CVD, South Asians were the least likely to benefit

from such campaigns in regards to diet modifications compared to Whites and Afro-Caribbeans. According to the researchers, this was perhaps due to the lack of cultural relevance of the campaigns for South Asians. It is also possible that since most of the campaigns were conducted in English, South Asians had more difficulty understanding the messages.

South Asian women discussed disseminating information regarding CVD in, for example places of worship where large Indian populations gather. These places can be an excellent location to hold meetings, workshops or have physicians come in and speak to the community about CVD (Kalra et al., 2004).

Though the above studies report South Asians to have higher levels of CVD and diabetes compared to the general population, a big contributing factor is their low levels of PA (Gregg et al., 2003; Nocon et al., 2008; O'Donovan et al., 2010; Stovitz, 2012; Warburton et al., 2006; Williamson et al., 2004).

South Asians and Physical Activity

In Canada, only 15 % of Canadian adults (Public Health Agency of Canada, 2011) meet the recommended requirements of 150 minutes of moderate to vigorous intensity aerobic PA per week in bouts of 10 minutes or more (Tremblay et al., 2011). Women compared to men reported even lower levels with only 14% of Canadian women meeting the recommended guidelines (Public Health Agency of Canada, 2011)

Physical inactivity has become a big concern amongst the immigrant population in Canada. Bryan et al. (2006) studied the relationship between ethnicity and level of self-reported PA among Canadians. They used the cross-sectional and self-reported Canadian Community Health Survey which collects information on the health of Canadians every two years. It includes all Canadians over the age of 12 in all provinces and territories excluding reserves of

First Nations peoples, Canadian Force bases, institutions (prisons, hospitals, universities), and in some remote areas. The survey reaches approximately 98% of Canadians over the age of 12. The findings show both South Asian women and men combined to have the lowest prevalence of moderate PA compared to other groups such as East/Southeast Asian, West Asian/Arab, Black, Latin American, White, North American Aboriginal, and others. In particular, South Asian women reported the lowest levels of PA. At the time of publication, this study was the first to report PA prevalence for specific ethnic groups in Canada using population-based estimates. The results were similar to the literature review by Fischbacher, Hunt, and Alexander (2004) in the UK who also found South Asians to have the lowest levels of PA compared to the general UK population. Though Bryan et al. (2006) conducted a nation-wide study, there are some limitations that must be accounted for. Individuals self-reported their physical activities, and questionnaires did not include culturally diverse activities, work-related and household chores.

South Asian women are leading the nation with the lowest levels of PA. It has been found that it is not only in their native countries, but also South Asian women immigrated to various parts of the world such as UK, Canada and USA, that are all found to have low levels compared to other ethnic groups. The low levels of PA lead to increased risk of developing various diseases early on and thus reducing the longevity for this population. The following paragraphs will summarize PA and the health benefits it can produce as well as benefits reported by South Asian women and some activities they participate in.

Physical Activity

Definition: physical activity and exercise. It is imperative to begin with definitions of "physical activity" and "exercise" to allow for common understanding of the terms. PA has be defined as "any bodily movement produced by skeletal muscles that results in energy

expenditure" (Caspersen, Powell & Christenson, 1985, p. 126). In contrast, exercise is a "subset of physical activity that is planned, structured and repetitive and has a final or intermediate objective the improvement or maintenance of physical fitness" (Caspersen et al., 1985, p. 182) .

One measure used for assessing total PA and sedentary behaviour (time spent sitting) is the International Physical Activity Questionnaire (IPAQ). This instrument is the standardized approach to date used for measuring PA across nations. There are two versions of the IPAQ (short- 9 items and long- 31 items). The IPAQ assesses the following domains of PA: Leisure time PA, domestic and gardening (yard activities), work-related PA, and transport-related PA. In the short version of the IPAQ the activities that are assessed are walking, moderate-intensity and vigorous-intensity activities. In the long version of the IPAQ further details regarding the specific type of activity chosen within each of the domains is assessed. The data is then reported as Metabolic Equivalent of Tasks (METS) which weighs each activity by its energy requirements. According Byrne, Hills, Hunter, Weinsier, and Schutz (2005) "METS is a widely used physiological concept that represents a simple procedure for expressing energy cost of physical activities as multiples of resting metabolic rate (RMR)" (p. 1112). Jette, Sidney, and Blümchen (1990) defined METS as "The resting metabolic rate, that is, the amount of oxygen consumed at rest, sitting in a chair, approximately 3.5ml O_2 /kg/min" (p. 555). From these measurements three cut point values of low, moderate and high were developed to identify PA levels of populations. The "High" includes at least three days of vigorous-intensity activity of at least 1500 METS-minutes/week or can be a combination of walking, moderate-intensity or vigorous activities that achieve a minimum of at least 3000 METS-minutes/week on seven or more days. The "Moderate" category encompasses those that engage in half an hour of at least moderate-intensity PA on most days. This is where the individual engages in PA of at least 600

METS-minutes/week. The "low" category is someone that does not meet the requirements of the prior two (Interational Physical Activity Questionnaire, 2005).

The WHO (WHO, 2013b) has identified physical inactivity as the fourth leading risk factor for global mortality. An estimated 31% of adults over the age of 15 were insufficiently inactive in 2008 (men 28% and women 34%) (WHO, 2013b). The South Asian Region was shown with the lowest percentages (15% men and 19% women) of PA Women in all WHO regions reported lower levels of PA compared to men (WHO, 2013b).

Nocon et al. (2008) conducted a systematic review and meta-analysis to investigate the association of PA with cardiovascular and all-cause mortality. A search in MEDLINE resulted in 33 studies with a total of 883,372 participants spanning from 1992-1997, with follow-up period of 4-20 years. The range of benefits associated with PA varied among participants but most studies in the review reported a significant reduction in overall mortality. Most studies were targeted towards the middle-aged population with an equal number of men and women. Of the 33 studies included, 9 assessed PA using a fitness test while the other 24 used patient questionnaires. The analysis found a range from 11-81% in risk reductions of cardiovascular mortality in association with PA. This resulted in 26 studies that were found with statistically significant risk reductions and 5 non-significant in the meta-analysis. An overall pooled risk reduction effect of 35% was found for cardiovascular mortality. Similar findings existed between PA and all-cause mortality. The risk reductions for all-cause mortality ranged from 2-61% resulting in 33 out of 35 statistically significant studies. The total pooled risk reduction was found to be 33% for all-cause mortality. Studies using fitness tests for assessment compared to self-reported or objective measures found the largest reductions in both all-cause mortality (41% vs. 29%) and cardiovascular mortality (57 vs. 30%). When the method of assessment (self-

reported vs. objectively) was stratified, the data revealed increased risk reductions for women in comparison to men. Though an overall risk reduction is seen in both CVD and all-cause, it must be taken into account that the instruments used to assess PA may have greatly varied from study to study. Also most commonly used were regression models that had been adjusted for important risk factors such as diabetes and hypertension which are associated with physical inactivity. When only age was adjusted, an increased risk reduction was seen for cardiovascular mortality, from 35% to 47 % and for all-cause mortality, from 33 to 41%.

Warburton et al. (2006) conducted a narrative review of literature exploring the role of physical inactivity in the development of chronic disease and premature death. The review provides a vast number of studies illustrating how increased levels of PA and fitness can reduce the risk of death from any cause and CVD. Patients diagnosed with CVD have been told for some time now by their doctors or physicians that they should refrain from any form of PA. To the contrary, many studies in this review highlighted the benefits of regular PA to ease or reverse the prognosis. The majority of studies in secondary prevention have been randomized control trials (RCT) compared to the primary prevention studies. The review described the results of Taylor et al. (2004) systematic review and meta-analysis of 48 clinical trials yielding significant reductions in incidence of premature death from any cause and CVD of patients who participated in cardiac rehabilitation. The health status of patients with CVD improved with low intensity exercise training (Taylor et al., 2004). The risk of type II diabetes was found to decrease among high risk people with aerobic and resistance exercises. The results of a review published by Williamson et al. (2004) using RCTs found diet and exercise to reduce incidence rates of 40-60% for high risk individuals. Secondary health care prevention was also found effective for managing diabetes. Warburton et al. (2006) included a study by Gregg et al. (2003) who

concluded that walking for at least 2 hours a week was associated with reduced incidence of premature death of 34-53% among CVD and diabetic patients. A significant correlation was found for those whose walking led to moderate increases in heart rate and breathing. Warburton et al. (2006) review has evidently identified some important benefits of PA for longevity and re-affirmed the reduced risks of many diseases such as CVD, type II diabetes, and cancer associated with PA participation.

Physical activity benefits reported by South Asian women. Regular participation in PA has numerous health benefits, such as: weight control; reduced risk for CVD, type II diabetes, metabolic syndrome, and some cancers: strengthening of bones and muscles; improvement in mental health and mood; increased ability to perform daily activities; and life expectancy (Centers for Disease Control and Prevention, 2011).

According to the review published by Allender, Cowburn, and Foster (2006) most adults take part in physical activities for weight management, enjoyment, social interaction and social support from one another. The primary reason to take part in PA among adults was to learn some new skills, increase-self-esteem, improve fitness, develop new social circles and take time for themselves from a busy day of responsibilities. Men with a physical disability were found to use PA as a way to reaffirm their status in society and gain confidence and competiveness. Men reported through PA they were able to meet other men who had gone through similar experiences, which allowed them to form social supports. For older populations, PA slows the aging process and allows many to stay fit and active to play with grandchildren (Allender et al., 2006).

The situation is no different for South Asian immigrant women. Studies conducted in the UK by Jepson et al. (2012) and Sriskantharajah and Kai (2007) found these women express

similar benefits of PA including social support (Jepson et al., 2012; Sriskantharajah & Kai, 2007), weight loss (Jepson et al., 2012; Sriskantharajah & Kai, 2007) and increased self-esteem (Jepson et al., 2012). The women in Jepson et al. (2012) study mentioned social opportunities that PA provided as the most important benefit whereas women in Sriskantharajah and Kai (2007) said maintenance of their weight was most important because they felt body image and physical appearance was constantly spoken about in society. The main benefit for South Asian women over 60 years of age was increased mobility and independence (Sriskantharajah & Kai, 2007). Kalra et al. (2004) found older South Asian women living in California reported benefits such as relief of body stiffness, aches, pain and increased blood flow in body muscles from active participation. For women working outside the home, PA was found to reduce their levels of stress. Those that took part in walking mentioned a sense of relaxation and freshness from getting outdoors and enjoying the scenery as well the social benefits of interacting with other women (Kalra et al., 2004).

Recreational activities can act as acculturation opportunities for migrant communities during settlement in a new country. Immigrants can use sports as a vehicle to meet other people, make friends and learn about the current culture of the society. The previously stated literature on South Asian women and immigration found that lack of social support after immigrating to Canada caused high levels of depression (Abouguendia & Noels, 2001; Ahmad et al., 2005; Martins & Reid, 2007; Samuel, 2009). Physical activities could provide these women the opportunity to meet new people and build a social circle of friends. For example, among migrants in Australia, those who placed their cultural identity as less important for the interaction with Australians were able to use recreational sports as a way to assimilate with the Australian culture (Lee & Funk, 2011). A segregated Aerobics class in Norway which was part of a special

sport project for Muslim minority women to be included in sport resulted in benefits beyond just sport (Walseth & Fasting, 2004). The women who attended the class acquired a network of acquaintances that some of the women actually got jobs through in the future. This specific project involving women to participate in sport directed them to other aspects of society. Another outcome of this project was the removal of stereotypes held of women and their capabilities in society, specifically within the minority population. Participation in sports and being a good athlete challenges the stereotype held of Asian girls and their general passive behaviour of playing the role of a victim in the patriarchal culture. This project brought forth how values in sport can be transferred into society as well (Walseth & Fasting, 2004).

Shia women in Jiwani and Rail (2010) constructed PA as moving, fitness, going to gym and working out. There were only a few that associated PA with sport or being athletic. The participants went further to explain in detail the body sensations such as feeling good, increased self-confidence and feeling healthy in combination with PA. In a manner similar to previous studies, some women associated PA for the purposes of purely losing weight to achieve an ideal body size. One woman mentioned she was known as the "fat kid" throughout elementary and high school and once she began university, gym membership was part of her tuition fees so she felt she should take advantage of it. Another participant who wanted to work as a health professional in the future commented on the increased rates of obesity in the population today and the importance of PA to help fight that.

Physical activities South Asian women participate in. Walseth and Fasting's (2004) literature review on research published between 1990-2004 in Western Europe outlines the sports in which minority women participate and the way they are organized. There were differences in studies as to the way PA participation was measured, from general PA to more organized sports

clubs. Studies from the Netherlands indicate a difference between majority and minority women in organizational forms of sport participation. Minority women reported greater participation in commercial fitness clubs while majority women participated more in organized sport clubs. This study also reaffirmed Asian minority women's participation in dancing. Though differences reported between minority and majority women were quite small it is important to examine the type of dancing each group engages in. Minority women might take part in dancing more at home or parties with other women as a way of preserving their cultural identity while majority women dance in organized settings or at discos. This is similar to Walseth (2006) who found Muslim women aged 16-25 in Norway enjoyed unorganized sport activities such as dance and street basketball during their leisure time. Ethnic minority girls in the Netherlands were also found to be more involved in fitness, swimming, basketball, self-defense, soccer and tennis. In contrast, majority women participate in dance, equestrian sport, and hockey (Elling, De Knop, & Knoppers, 2001). The review of Walseth and Fasting (2004) found that minority women participated in a more diverse range of sports compared to majority women who, generally, participated in only one. Swimming was one activity in which minority women indicated they would like to participate in, but results showed low levels of participation because of the limited availability of female only pools. Studies in this literature review also examined the existence of ethnic minority clubs and how some minority women left majority clubs to be a part of minority ones because of better understanding and comfort in their own cultural groups.

Dogra, Meisner, and Ardern (2010) investigated the variation in mode of PA by ethnicity and time since immigration through a cross-sectional analysis using three cycles of the Canadian Community Health Survey (CCHS) from 2000-2005 with a total of 400,055 participants. The researchers found ethnic minorities as the least likely to engage in endurance activities,

recreation activities such as gardening or dancing and sports compared to Whites. The results also revealed that non-white ethnic groups had the greater number of individuals in the inactive category, with recent immigrants being the most inactive. Whites and non-immigrants reported higher participation in recreational activities compared to ethnic minorities and immigrants resulting in the greatest variation for this form of PA. In regards to conventional exercises such as home based exercises and weight training, established immigrants engaged in them more often than recent arrivals when compared to non-immigrants. South Asians reported lower levels in active commute when compared to Blacks, Latin Americans, and Aboriginals.

Minority women in Eyler et al. (1998) viewed PA as something that needed to be done outside the home. Many of them did a lot of walking and household work but when interviewed, would mention that they do not take part in physical activities. Several women believed that exercising in addition to household work had greater mental health benefits. Dancing is one activity that women repeatedly mentioned as enjoyable and that they would dance in groups at cultural centres or individually in homes by putting on music (Eyler et al., 1998).

Jepson et al. (2012) found South Asian women in all focus groups mentioned activities such as exercise classes, going to the gym, and being a part of team sports such as netball as current activities they were participating it. Two activities that were often brought up that the women engaged in or would like to were swimming and walking. Walking was seen as one form of PA that may be easily included in their busy lives.

Choudhry (1998) used an ethnographic research method to analyze health promoting practices of immigrant women from India and the importance of culture in their behaviour. The findings illustrated five themes: value of being healthy, lifestyle behaviours, relationships, spiritual well-being, traditional health practices and barriers to health promotion. An active

lifestyle was seen as important for good health by all of the women. Most of these women were at home most of the time and their activities involved taking care of children and extended family. Until the researcher introduced the word "exercise" it was not used in conversation by the women in the study. After it was brought up, women compared the different environments of Canada and India in terms of exercise. In India exercise was seen apart of their daily lives which was not a pre-consciously planned effort but rather a part of their daily routines. Many women expressed how they walked from place to place, such as from their house to school or their relatives' homes. The women did not participate in any formal exercise groups or at health clubs although they did bring up the popularity these were now receiving, especially among affluent people in India. The word "sport" was never associated with health and was more of an activity that younger people participated in during physical education at school or professionally as seen on TV. There was however a small number of the women who spoke about engaging in activities like swimming, badminton, tennis and even playing golf with their husbands at times. Almost all women mentioned taking rest during the day by either taking a nap or lying down, but none spoke about activities such as yoga, meditation or recreation for relaxation benefits.

Hence, a strong predisposition to CVD and diabetes in the ethnic background of South Asians along with reported low levels of PA, places South Asian women at high health concern. Though South Asian women have the lowest levels of PA, the above studies indicate the social and health benefits these women gain while taking part in physical activities. It is important to further investigate the factors that may facilitate or inhibit their participation in the first place. According to ecological models of health behavior (Glanz et al., 2008) an individual's behavior may be influenced by factors at the intrapersonal, interpersonal, organizational, community and public policy levels. There is a constant interaction between the environment and the person for

behaviour change to occur. This model can be applied to South Asian women and PA because it suggests factors within a person as well as in his/her environment that facilitate or hinder participation in PA. To begin with, it is important to examine the initial settlement experiences faced by South Asian women arriving in a new country, because some of these challenges are similarly met in PA participation as well.

The following section of this literature review is divided into 2 main themes: South Asian women and initial settlement challenges, and the Ecological Model of Health Behavior, to explore the barriers and facilitators to PA participation for South Asian women.

Initial Settlement Experiences of South Asian women

South Asians are currently the largest immigrant and visible minority population in Canada (Statistics Canada, 2013a). Their origins trace back to countries such as India, Pakistan, Bangladesh, Sri Lanka, Nepal, and Bhutan (Jepson et al., 2012; Kurian, 1991; Vahabi, Beanlands, Sidani, & Fredericks, 2012). Several studies have explored the experiences of South Asian women in regards to settlement, service providers and overall health.

George and Ramkissoon (1998) sought to understand the lived experiences of forty seven South Asian immigrant women living in Scarborough, Ontario. His study found 35% of the women immigrated to Canada because of political persecution, followed by 31% to join their husbands, 31% to provide a better future for their children, or 16% for economic reasons. From the moment South Asian women arrive in Canada, they face varying degrees of acute and chronic difficulties. Often conflicts arose with family members, members of their own ethnic group, and members of outside ethnic groups. The initial stages of arrival involved searching for housing, employment, school for their children, obtaining health care, and orientating with geographic surroundings, community, and health services (George & Ramkissoon, 1998).

South Asian women hold various cultural and traditional values and norms that may not always fit within Canadian society. Studies by Abouguendia and Noels (2001), Ahmad et al. (2005), Choudhry (1998), George and Ramkissoon (1998), Kurian (1991), and Martins and Reid (2007) all found that South Asian women exposed to a new society begin to feel isolated and alone because they lack support from extended family, relatives, close neighbours, and friends. Some verbally shared symptoms included stress, depression, and loneliness after coming to Canada (Ahmad et al., 2005). A common mental illness reported by numerous researchers among this population of women was depression (Abouguendia & Noels, 2001; Ahmad et al., 2005; Martins & Reid, 2007; Samuel, 2009). Women who immigrated from India had never previously experienced depression, since they were always surrounded by family members and relatives (Ahmad et al., 2005). The limited social gatherings in Canada seem to increase the risk of mental health issues in South Asian women (Ahmad et al., 2005). The increased loneliness often made women feel more sick than if they had gotten sick in India. Women constantly referred to their life in Canada as very hectic and busy with insufficient time often to complete even daily activities resulting in feelings of a mechanistic lifestyle that affected their well-being and health (Ahmad et al., 2005). Some noticed that in general, even Canadian children had psychological disorders which was not as common for Indian children back home (Ahmad et al., 2005). On the other hand, because of busy work environments, South Asian men reported to have easily become accustomed to the new transitions (George & Ramkissoon, 1998).

Martins and Reid (2007) studied the adjustments to a new environment and the engagement in daily occupation of twelve recently arrived South Asian immigrants to Toronto. Using a grounded theory approach, the researcher found that fitting in and coping with a new society was largely influenced by women's personal and emotional factors. The ability to

preserve old cultural norms while adapting to new ones helped women in coping in a new country.

Samuel (2009) found that for some South Asian women the adoption of foreign values by their family members, especially their children, made them feel insecure and doubt their own capabilities (Samuel, 2009). As children began to grow up, women started to develop feelings of inferiority and hopelessness. They felt they could not physically and emotionally be there for their child's needs, which led to increased turmoil at home. Another significant difficulty for South Asian women was adapting to the winter months (Ahmad et al., 2005; Martins & Reid, 2007; Samuel, 2009). The transition from hot to severe cold climates resulted in increased body pains and aches for the women (Ahmad et al., 2005). Some women communicated that being younger and educated was easier for lifestyle change, carrying out daily activities and having better physical and emotional health (Martins & Reid, 2007).

The occupational roles as a homemaker, caregiver and housewife in studies by George and Ramkissoon (1998) and Martins and Reid (2007) show how South Asian women are expected to selflessly devote themselves to their families, leaving no time for personal pursuits or leisure. Some South Asian women face a double standard responsibility of providing financial support as well as performing domestic duties (George & Ramkissoon, 1998). The South Asian culture is patriarchal where a large gender divide exists of men doing little or no domestic work. George and Ramkissoon (1998) and Martins and Reid (2007) reported that working outside the home was a new concept for many South Asian women. The women in these two studies came from upper class families and after immigration were required to find jobs to financially support their families (George & Ramkissoon, 1998; Martins & Reid, 2007).

Though numerous studies reported negative consequences of immigration for South Asian women (Ahmad et al., 2005; George & Ramkissoon, 1998; Martins & Reid, 2007; Samuel, 2009), Martins and Reid (2007) found a positive effect as well for women living in Canada. The access to education for all and the freedom to go to College at any age were seen as huge benefits of immigration. The environment also provided women easy access to local community centres with information on services in parenting classes, language classes, social groups etc. One factor that may have helped the South Asian women in Martins and Reid (2007) was that, although they had lived in Canada only between 1- 5 years, they all had the ability to read and write English well enough to be interviewed for the study. This could have resulted in easier access to services compared to the women in Ahmad et al. (2005) and George and Ramkissoon (1998), who faced a lot of challenges with language and finance when accessing health service providers in Canada. The studies that did address barriers faced by South Asian women linguistically, financially and culturally concluded that this ethnic group is in underuse of social and health services (Ahmad et al., 2005; George & Ramkissoon, 1998). In addition, living in Canada provided women in Martins and Reid (2007) with opportunities to build relationships with various other ethnicities, which was seen for women as a way to share and learn from one another.

Ahmad et al. (2005) and Martins and Reid (2007) described the future goals and concerns women in their study had towards uncertainties with employment (Ahmad et al., 2005), growing children and housing (Martins & Reid, 2007). Their annual income was barely sufficient, causing a lot of added stress for the women. Some had obtained high degrees from their native countries but could not find work with them in Canada, resulting in them taking up additional courses. Research by George and Ramkissoon (1998) and Samuel (2009) proposed similar

results and illustrated difficulties South Asian women meet in finding jobs in their area of expertise and the increased number of women compromising with lower paying jobs. Samuel (2009) also found South Asian women in the work environment experienced some sort of discrimination leading them to feel more precarious. These women found it hard to cope or know how to behave when faced with discrimination since it had never happened to them before.

The strategies South Asian women came up with to reduce their mental health problems were to increase socialization opportunities, use of preventative health practices and their self-awareness (Ahmad et al., 2005). South Asian women in Samuel (2009) tried to cope with varying situations by sharing their problems with family and friends. The majority stated that professional counselling or therapy was not sought out because a general consensus was held that mainstream counsellors would not understand their problems.

South Asian women experience numerous difficulties during the initial stages of settlement in a new country. The above studies reported barriers related to service providers, language, employment, climate and their own families when trying to adjust in a foreign environment. Some of these barriers are common to PA as well and will be further explored in the following sections on the barriers and facilitators to participation.

Ecological Model of Behavior Change

PA can be influenced by many factors that either enhance or act as a barrier for individuals to participate. Though the research above has confirmed South Asian women to have one of the lowest levels of PA, it is important to look further at the underlying causes of why this may be. Using the Ecological Model of Health Behavior (Glanz et al., 2008) may help determine some of these factors pertaining to South Asian women's participation in PA. Ecological models of health behaviour propose four main principles:

1. There are multiple influences on specific health behaviours, including factors at the intrapersonal, interpersonal, organizational, community and public policy levels.
2. Influences on behaviours interact across these different levels.
3. Ecological models should be behavior-specific, identifying the most relevant potential influences at each level.
4. Multi-level interventions should be most effective in changing behaviour.
(Glanz et al., 2008, p. 466)

Environments, policies, social norms, social support, individual motivation, and education, independently and in combination, are important for behavior change. In biological science the word "ecology" means interrelations between environments and organisms. The individual's physical and socio-cultural surroundings or environment lie at the heart of the ecological model. One of the many advantages of this model compared to other behavioral models and theories is the integral inclusion of the broader community, organizations, and policies in the environmental levels of behaviour influence. Most other models put a strong emphasis on individual characteristics and skills neglecting the environmental impact on behaviour (Glanz et al., 2008). Though other models such as the Health Belief Model, or Social Cognitive Theory, have led to effective interventions, limitations have been noted, such as small to moderate effect sizes for many types of PA, modest recruitment rates to programs, poor adherence to PA programs, and unreasonable expectations that successful PA programs, with small numbers of people, will produce population wide results (Sallis et al., 2006). Just providing South Asian women with physical activities in the community will not necessarily mean they will make use of these resources. The central foundation of ecological models is the

combination of both individual-level and environmental/policy interventions for achievement of behaviour change (Sallis et al., 2006).

In the PA domain, Sallis et al. (2006) proposed an Ecological Model of Four Domains of Active living (See Figure 1) that includes the interaction between the person and the environment with the combination of several domains of active living to represent behaviour change. The four active living domains are: active recreation, household activities, occupational activities and active transport. The behaviour settings are related to access and characteristics of where PA primarily occurs. There is a link between each active living domain and a key behavior setting. The outer layer of the model represents the policy environment. This layer has the potential to influence active living through strategies such as programs, incentives and the built environment. The interpersonal environment includes social and cultural environmental variables that cut cross many levels of the model. For example under "intrapersonal", factors are included such as demographics, biological, psychological, and family situation. In the active living domain behaviours that may influence a person include modelling and social supports. The setting in which the behaviour occurs may then be further influenced by safety, crime, programs, norms, culture and social capital. Advocacy by individuals and organizations is included in the policy environment. The natural environment pertains to weather, topography, and open space, but is not restricted to any one specific behaviour setting. The information environment can be seen in almost every behaviour setting. Some examples of where information can be found are health care settings, program components of mass media, advertisements, and sports related information. Using Sallis and colleagues' (2006) Ecological Model of Four Domains of Active living, South Asian women's barriers and facilitators to PA will be examined below.

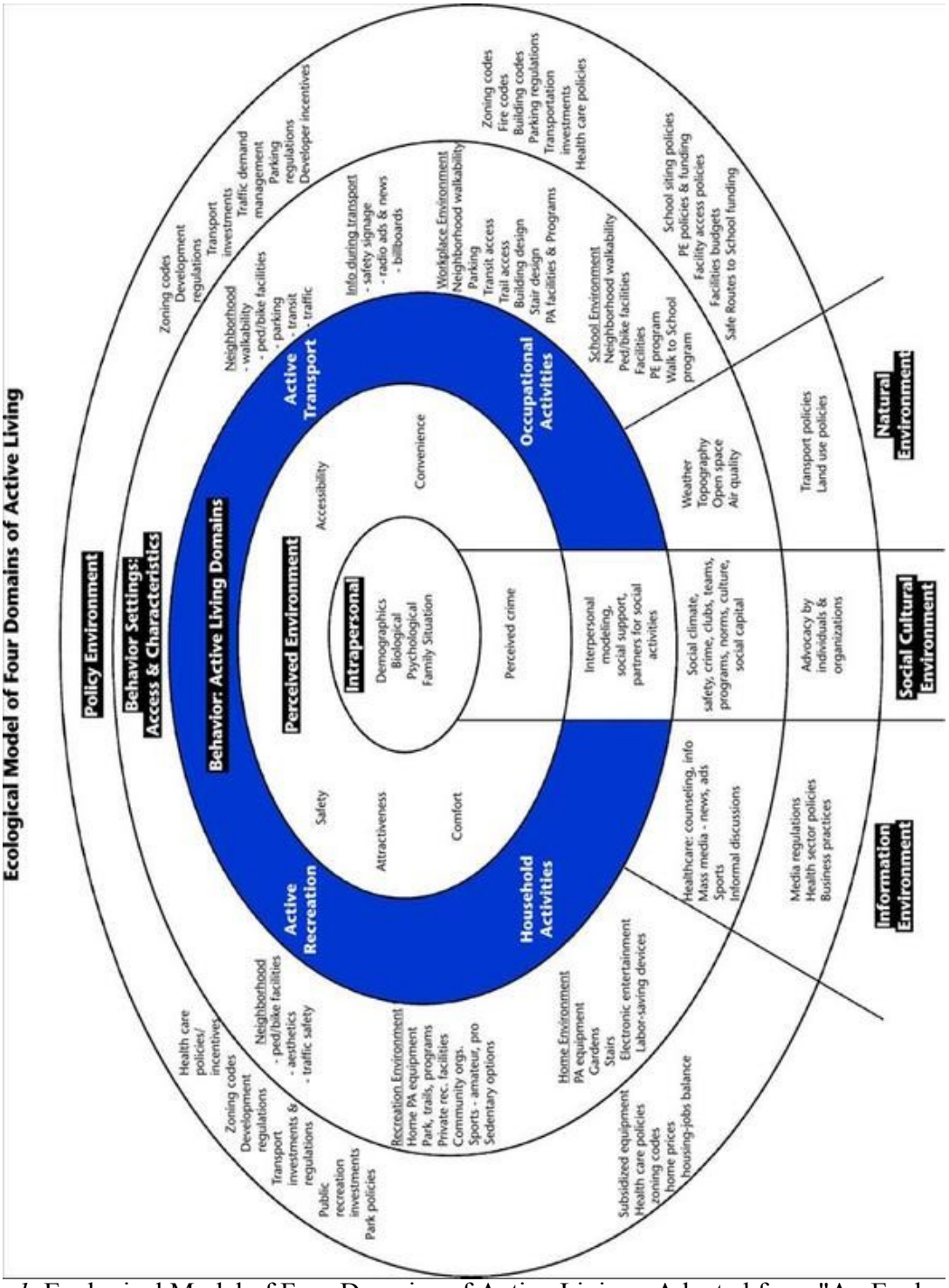

Figure 1. Ecological Model of Four Domains of Active Living. Adapted from "An Ecological Approach to Creating Active Living Communities," by Sallis et al., 2006, *Annu. Rev. Public Health*, *27*, p. 301. Copyright 2006 by the Annual Reviews.

Barriers to Physical Activity

Cultural barriers.

Childcare/looking after family. In this particular group of immigrants, cultural barriers are found to be the biggest restricting factor for participation in PA. Almost all studies (Babakus & Thompson, 2012; Caperchione, Kolt, & Mummery, 2009; Eyler et al., 1998; Jiwani & Rail, 2010; Johnson, 2000; Nanayakkara, 2012; Snape & Binks, 2008; Vahabi et al., 2012; Walseth, 2006; Walseth & Fasting, 2004) pertaining to this group of women reported restrictions for PA because of cultural reasons. In the South Asian culture, women are seen as the primary caregivers of the family (Caperchione et al., 2009; Eyler et al., 1998; Johnson, 2000; Lawton, Ahmad, Hanna, Douglas, & Hallowell, 2006; Nanayakkara, 2012; Snape & Binks, 2008; Vahabi et al., 2012). They hold huge responsibility for childcare needs, attending to extended family members, and household work (domestic chores). All of their time spent in this role leaves little space for PA or personal satisfaction. South Asian British Muslim women in Snape and Binks (2008) mentioned that PA participation was seen as neglecting family responsibilities because they would have to leave the house for a period of time which meant they were a "bad" housewife or mother. This was similar to findings in Sriskantharajah and Kai (2007) and a systematic mixed methods review by Babakus and Thompson (2012) where activities are considered "selfish" if they extend past daily house chores. If their doctor had told them to exercise more, instead of buying all the milk on one day they would go the next day to at least get some exercise. In their culture and tradition "Western exercise" was not heard of and no other relatives took part is such activities (Sriskantharajah & Kai, 2007). The homemaker and caregiver roles they held contributed to their PA because they kept them active and standing the

whole day. Some of the women came from upbringings which had not exposed them to outdoor socialization, therefore participating in sports was seen as very foreign (Lawton et al., 2006).

Walseth (2006) has shown how collective identity of one's culture can affect PA participation. One participant indicated she did not participate in PA and did what her parents told her to do. She felt fine listening to them and not questioning their beliefs in regards to PA. Her values and norms were largely influenced and maintained by her collective identity. In contrast, another women questioned her identity by going against the commands placed by her parents on female Pakistani women, which resulted in her involvement in sports (Walseth, 2006).

Religion. Another common cultural barrier amongst some South Asian women is religion (Babakus & Thompson, 2012; Caperchione et al., 2009; Jiwani & Rail, 2010; Johnson, 2000; Nanayakkara, 2012; Walseth & Fasting, 2004). Caperchione et al.'s (2009) review of literature on 57 publications of barriers, enablers and experiences in PA found that certain Muslim communities have religious practices and traditions that require cultural sensitivity because of the direct implication it has on their PA behaviours. During the time of Ramadan, Muslim women usually take part in prayers which results in stopping all other activities. As well during Ramadan many women fast from morning till sundown which makes it difficult to participate in activities without proper food and energy. Also highlighted in the review was how some women view health, illness, and death as not in their hands, but in the hands of Allah or God, and PA did not help improve anything. In another study of ten Shia Muslim women living Canada, (Jiwani & Rail, 2010) religion was placed at greater importance in comparison to PA. For most people, religion would not be seen as an issue or dilemma in regards to their own participation in PA. But for Shia Muslims they face situations of confrontation when trying to participate in PA outside their Shia Muslim communities. For these women religion came first

and sport, like anything else in their life, came after that. One Shia Muslim, for example, stated that if she had to stay home because she wore the Hijab (head scarf) she would, because the view she had of her religion was that it provided a good afterlife and with PA she would benefit nothing (Jiwani & Rail, 2010).

Own ethnicity. Often times members of their own ethnic community act as barriers to women's PA participation (Lawton et al., 2006; Snape & Binks, 2008; Walseth, 2006). Walseth (2006) found through analysis of life-history interviews of twenty one young immigrant Muslim women living in Norway that these women were constantly ridiculed, gossiped about, and harassed (often boys of the same ethnic group would make remarks) by their own ethnic group. One women was bullied by Pakistani boys because she behaved "Too Norwegian." She played football, worn jeans and had friends outside of her ethnic community, which the boys thought was not what a Pakistani girl should be. Another woman told how she had gone swimming with a few of her friends and a man who she did not know from her own ethnic community "Approached her and asked her if she was a whore because she was dressed in a swimming suit among other men" (Walseth, p. 87). This situation led the woman to immediately quit swimming. Another woman described how she became the subject of gossip among her same ethnic neighbours because she played on a sports team. She often came home late from training or spent a lot of time travelling which caused gossip to circulate (Walseth, 2006). One of the female participants mothers said that spending too much time with people from other backgrounds was not seen suitable for a young women of Pakistan descent (Walseth, 2006). The close proximity of one's own community often made it a challenge for women to go against their collective identity without disapproval (Walseth, 2006). These findings echo the experiences of some South Asian women in Lawton et al. (2006), who also expressed that members of their

same community came to participate in PA just to "gossip and bitch behind each others' backs" (p. 48). A British South Asian women residing in Blackburn, Britain, stated that though she had permission to go to the gym, it was definitely noticed by other women in her community (Snape & Binks, 2008). Some women in this community preferred going to the gym when members of their extended family were not living in Blackburn (Snape & Binks, 2008).

Environmental barriers.

Lack of female only facilities. The most common environmental barrier experienced by South Asian women was lack of single sex facilities for them to attend (Babakus & Thompson, 2012; Farooqi et al., 2000; Hayes et al., 2002; Horne & Tierney, 2012; Jiwani & Rail, 2010; Johnson, 2000; Lawton et al., 2006; Sriskantharajah & Kai, 2007; Walseth & Fasting, 2004). Studies conducted both in the UK and Canada have provided strong evidence that how PA is structured in society may be a barrier in their culture (Jiwani & Rail, 2010; Walseth & Fasting, 2004). Many women appear to have a keen interest to increase their PA levels but are often faced with a lack of culturally sensitive facilities. Women with type II diabetes in the Lawton et al. (2006) study were told by their health professionals to go swimming or to the gym but they could not follow through with these recommendations because in their culture exposing the body to the opposite sex was not allowed. This was also reported by Johnson (2000) of British South Asians who irrespective of gender were opposed to mixed sex facilities. The lack of female only facilities has led some women to be self-dependent and meet at someone's house to play games or do yoga (Jiwani & Rail, 2010). A review conducted by Allender et al. (2006) of twenty four qualitative studies to understand sport and PA among children and adults found that adults exposed to unfamiliar environments such as gyms and exercise classes feel anxious and lack

confidence. They felt that not knowing the gym culture acted as a barrier when wanting to participate.

Health promotion/instruction. Many of the current programs offered are not properly targeted to South Asian community needs (Johnson, 2000; Lawton et al., 2006; Snape & Binks, 2008; Sriskantharajah & Kai, 2007). They fail to address the cultural sensitivity of this population and their ways of life. Those that are in the health promotion field need to have a greater understanding of the "social history of ethnic minorities including their culture, changing circumstances and politics" (Johnson, 2000, p. 52 as cited by Bhopal & White, 1993). Some women felt that the lack of coaches or instructors of Asian descent limit their PA opportunities. This was also voiced by women with type II diabetes who wanted group PA organized by their own community because they would understand their ways (Lawton et al., 2006). As well, activities scheduled at fixed times often made it difficult for women to attend because of other priorities (Lawton et al., 2006). One women brought up how the set induction was too short for her to be able to use the machines confidently (Snape & Binks, 2008). Sriskantharajah and Kai (2007) used an exploratory qualitative method to find the influences and attitudes toward PA of fifteen South Asian Women aged 26-70 living with CVD and/or non-insulin dependent diabetes in the UK. They found that health professionals did not provide sufficient guidance about suitable activities these women should participate in to be more active. The women expressed how often times they were told by doctors to "Do more exercise" but were not provided with detail or specific exercises to do. They felt it would be helpful to be given proper direction about the types of exercises and what they should participate in. After diagnosis, these women expressed increased concerns of vulnerability. Thus it is important to help re-build their confidence through appropriate physical activities (Sriskantharajah & Kai, 2007)

Lack of social support. The primary social barrier acting in the way of participating in PA for South Asian women was the lack of social support (Caperchione et al., 2009; Eyler et al., 1998; Horne & Tierney, 2012; Johnson, 2000; Walseth & Fasting, 2004). Many of the women did not have friends to participate in PA with, especially when they were also new to the county and didn't know anyone. PA together as a family was rare, since men often had weekend commitments at work or spent time at religious centres as a family took up their day (Jepson et al., 2012). For women in the Shia Muslim community, though PA practices did exist within their community it was primarily used as a socializing opportunity (Jiwani & Rail, 2010). It was where young boys and girls would look at each other and a time for mothers to look for potential husbands for their daughters. It was more of a get together than a place for health promotion or PA per se to occur.

Role models. Allender et al. (2006) review reported the need of realistic role models to promote PA in adults. This was particularly found in studies with participants of South Asian descent who expressed the lack of members in their own community to relate to, in a mostly white dominant culture. This was also found in adults 50 years and over who did not have anyone their age for advice and feedback and felt that most of the exercise prescriptions were targeted at the younger population.

Weather. A majority of studies reported weather as a restricting factor for South Asian women to participate in PA (Caperchione et al., 2009; Choudhry, 1998; Eyler et al., 1998; Johnson, 2000; Lawton et al., 2006; Vahabi et al., 2012). Most South Asian women who have immigrated to places such as Canada or Europe came from warmer places. The winter months and cold climate make it difficult for many to even venture out let alone take part in physical activities. The women fear falling or getting injured because of snowfall and breathing

difficulties in the cold (Caperchione et al., 2009). These findings are consistent with studies (Ahmad et al., 2005; Martins & Reid, 2007) which reported South Asian women trying to settle in a new country and how cold climate caused difficulties with adjustment.

Safety. Safety was a concern brought up by many South Asian women in regards to PA (Allender et al., 2006; Babakus & Thompson, 2012; Caperchione et al., 2009; Eyler et al., 1998; Lawton et al., 2006). In Eyler et al. (1998) minority women in rural areas mentioned the lack of walking areas such as trails or malls. In both rural and urban areas fear caused by their surroundings made exercising detrimental for them. Some of the women in the study lived in bad areas or had previously been robbed, which made it hard for them to venture out especially when it became dark or at night (Eyler et al., 1998). This was also an issue for women in Lawton et al. (2006), who even prior to having diabetes rarely went beyond their corner shops because of the unfamiliarity with their neighbourhoods. The issue of safety made some women feel vulnerable when leaving their homes.

Cost. Cost of membership to attend the local gym or programs was seen as a barrier (Allender et al., 2006; Babakus & Thompson, 2012; Eyler et al., 1998; Johnson, 2000; Vahabi et al., 2012). Using focus groups with minority women aged 40 and up, Eyler et al. (1998) found that attending commercial gyms or fitness centres had high cost for memberships and classes which made most women hesitant to attend. Other women who had children said they rather use that money on them (Vahabi et al., 2012) or provide income for the household. Unemployment also made it difficult to do recreational activities for some women (Johnson, 2000).

Clothing. Dress code was voiced through some studies as a form of barrier to PA participation (Johnson, 2000; Snape & Binks, 2008; Walseth, 2006). Walseth (2006) found a referee prohibited one Muslim woman from wearing her headscarf during a handball match. The

woman now does not play handball anymore but she is still keeps active and fit. Another woman in the same study who also wore a headscarf said she regularly exercised at a fitness club and did not find any problems. The South Asian women in Snape and Binks (2008) mentioned they would like to go swimming if they were able to be fully clothed instead of wearing a swimming suit.

Language. The lack of English proficiency has been cited as a common barrier experienced for South Asian women (Babakus & Thompson, 2012; Choudhry, 1998; Eyler et al., 1998; Johnson, 2000). Language difficulties cause many women not to attend formal exercise classes led by instructors. Not knowing the language made many women not exercise alone because they were not able to call for help if something happened (Sriskantharajah & Kai, 2007).

Other. Some other environmental barriers reported by South Asian women are transportation (Caperchione et al., 2009; Eyler et al., 2002), childcare services (Caperchione et al., 2009), presence of security cameras in gyms (Snape & Binks, 2008) and the lack of physical activities found within their own communities (Walseth, 2006).

Intrapersonal barriers. The number one personal reason given by most women was the lack of motivation to be physically active (Eyler et al., 1998; Johnson, 2000; Vahabi et al., 2012). Some women felt they were not motivated enough and were too lazy (Eyler et al., 1998; Vahabi et al., 2012) though they knew very well they should be doing PA. The lack of time (Babakus & Thompson, 2012; Kalra et al., 2004) was another huge barrier for women who were the primary caregiver for the family. Their duties and responsibilities at home consumed most of their day, leaving little time for PA (Eyler et al., 1998; Johnson, 2000; Lawton et al., 2006; Vahabi et al., 2012). A common barrier reported among older South Asian women was the lack of confidence (Eyler et al., 1998; Snape & Binks, 2008) leading them to feeling embarrassed or afraid of going

to the gym because they did not know what they should be doing (Snape & Binks, 2008). Most women had limited knowledge of overall health benefits associated with PA and tended to think of it as more for just weight loss (Eyler et al., 1998; Vahabi et al., 2012). Many of the women had opposed perceptions of health and PA. The sensation of sweating or increased heart rate during exercise was seen as abnormal and related to illness thus something to avoid (Caperchione et al., 2009; Lawton et al., 2006). The fear of injury or falling when participating in PA made many frightened and hesitate to even begin (Caperchione et al., 2009; Hilton et al., 2001; Lawton et al., 2006). South Asian women diagnosed with diabetes and/or heart disease experience physical symptoms such as chest pains, breathlessness, dizziness, drowsiness, body pains and fatigue when doing housework or walking (Sriskantharajah & Kai, 2007). These symptoms would often occur during daily housework or walking, leading them to immediately stop any form of PA. Many expressed a maximum threshold limit which they did not exceed when doing PA. In the back of their minds the women always were afraid of going beyond their limit and this caused many to lack confidence in exercise (Sriskantharajah & Kai, 2007). The inability to swim caused some to fear drowning and having no one to help them when they were in the water (Snape & Binks, 2008). Some other barriers noted are: not being sporty, age, previous injury, poor health and being too fat (Eyler et al., 1998).

Facilitators to Physical Activity

Cultural facilitators. Vahabi et al. (2012) found South Asian women to enjoy dancing because it was socially acceptable and a good way to burn calories. Dancing was found as a significant way of being physically active in this group of women (Allender et al., 2006; Jepson et al., 2012; Walseth & Fasting, 2004). There are differences found among the South Asian community in regards to dancing and if it is an acceptable activity or not. For some, their

particular religion did not allow dancing while for others it was a part of their religion (Jepson et al., 2012). Dance was a form of PA that was culturally acceptable and could be used to promote lifelong PA as well reduce the risks of CVD. According to the Public Health Agency of Canada, dancing, particularly culturally specific dancing, should be used as a strategy to encourage PA among ethnic minorities (Vahabi et al., 2012). Jain and Brown (2001) found that dance can be used as an effective way to promote health and well-being because it possesses cultural meaning as well as traditional roots for diverse populations.

Religion. Though religion (Caperchione et al., 2009; Jiwani & Rail, 2010; Johnson, 2000; Nanayakkara, 2012; Walseth & Fasting, 2004) was reported as a huge barrier for some South Asian women, it was also found to be a strong facilitator for others. Some Muslim women mentioned their interpretation of the modern Islam text as supportive of involvement in activities for health benefits. Women can take on many roles as mothers, athletes and working women (Walseth, 2006). There was an equality presented between sexes in this new modern view. One participant said if someone brought up PA as going against her religion she would use Islam to defend herself because she had studied it thoroughly enough and had the knowledge to provide concrete facts about its benefits. It was also noted that some were not knowledgeable enough to know that PA was indeed related to Islam. This was illustrated in a study by Snape and Binks (2008), where older Milan women exercised because of the health benefits approved by the Islamic culture.

When PA was associated with health rather than with sport it had increased approval within South Asian Muslim communities. This connotation put the focus on participation rather than performance and eliminated the masculinity or competition associated with PA. Snape and Binks (2008) found that South Asian Muslim women living in the Blackburn community viewed

exercising as an activity with sexual connotations because it was seen to make one more attractive. But if the activity took place within a health regime and not as sport for fun or for body image it removed these barriers for the women. The use of vocabulary such as “club” was to be avoided because it associated the activity as "sociable" or "leisure". Aerobics class taught to music was preferred to "Dance" because dance in this particular religion was associated with female body performed to impress male spectators. This was contrary to what was found in studies by Jepson et al. (2012), Vahabi et al., (2012) and Walseth and Fasting (2004) where dance was a culturally accepted form to improve PA levels. The younger the South Asian Muslim women, the more free they were to take part in activities like swimming. At a young age, those activities were not linked to sexuality and were done for the mere purpose of leisure just like the European girls. But post puberty, issues such as sexual safety are brought forth making many discontinue PA and causing more difficulties to maintain an active lifestyle (Snape & Binks, 2008).

Environmental facilitators. Religious places are an environment where promotion of health and PA benefits can take place (Jepson et al., 2012; Kalra et al., 2004). Since South Asians spend a lot of time in religious places they can provide an important context to disseminate and/or encourage PA. The availability of separate men’s and women’s gym would be beneficial for this population as well (Jiwani & Rail, 2010; Johnson, 2000; Lawton et al., 2006; Snape & Binks, 2008; Sriskantharajah & Kai, 2007). To have a women's only facility can encourage more South Asian women to feel comfortable and at ease when participating in PA without the gaze of other men. Also allowing women to wear clothes they are comfortable in and/or their traditional clothes could eliminate uneasy feelings about being too revealing (Snape & Binks, 2008). The development of programs that are closer to the areas where South Asian

women reside would decrease safety concerns when traveling out alone (Caperchione et al., 2009).

Social. The biggest facilitator to PA participation for South Asian women was social interaction with others (Allender et al., 2006; Eyler et al., 1998; Jepson et al., 2012; Sriskantharajah & Kai, 2007; Vahabi et al., 2012; Walseth & Fasting, 2004). Almost all women preferred taking part in exercise activities with others and in a group format. Some felt doing the activity as a group (Vahabi et al., 2012) made the activity more enjoyable because of support from others (Eyler et al., 1998). This was reflected in women's adherence as many continued the program and looked forward to the next class (Jepson et al., 2012).

Role models. Role models within their own communities were seen as facilitators to PA because South Asian women had someone to look up to (Allender et al., 2006; Jepson et al., 2012). South Asian women indicated that having someone in their own community take part in a marathon made them admire them and also want to take part. Jepson et al. (2012) noted the lack of South Asian women participating in sport and PA for these women to have as role models.

Instruction/activity. Female instructors leading women only classes was suggested by women in Vahabi et al. (2012) because male instructors made women feel shy or embarrassed to participate (Vahabi et al., 2012). In addition, providing childcare services, especially to women who were primary caregivers, would increase PA participation. This will allow women with younger children to attend fitness classes or workout in the gym while children are being looked after. In regards to interventions, programs with a health focus appear to be more successful for engagement of this population of women than sport oriented programs (Caperchione et al., 2009). It is also important to engage women in the initial stages of program development (Snape & Binks, 2008). Training staff of and women working at the community centres by community

consultants will provide increased knowledge and awareness when dealing with ethnic groups. It is important for staff at the location to reflect the community target of interest. The employment of staff of South Asian descent will be of great benefit because users will feel their participation is more socially acceptable and language barriers could be removed (Snape & Binks, 2008).

Culturally sensitive health professionals need to be hired who "Acknowledge cultural diversity and place the individual at the centre of program development in the attempt to respond to their specific needs and deliver a program that encourages participation and respects the culture of participants" (Caperchione, 2009, p. 173). Likewise, program materials need to be culturally specific and professionals need to provide tools, DVDs, nutrition and PA information. Organizations should also provide interpreters to teach material in native languages. Programs that are designed for those from the same background help others share similar experiences of immigration (Caperchione et al., 2009).

According to Pearce (1999) health promotion professionals need to know three things to facilitate PA in ethnic populations. They need to have personal awareness of diversity issues, know the different cultures, and know what makes up a culture. An understanding of different aspects of culture such as religion, gender, adulthood, youth, etc. would be beneficial. Language can become a crucial factor when working with diverse populations. Often words like "Physical activity" or "Health" and "Leisure" have different meanings for various groups. Lastly, time and investment need to be put into the clientele group which the promoters and or leaders are working with. It takes time to understand and grow with a group of individuals, especially to understand and be sensitive to their cultural needs and wants.

Intrapersonal facilitators. Motivation and self-image are important personal facilitators for maintenance of PA (Babakus & Thompson, 2012; Eyler et al., 1998; Johnson, 2000; Vahabi

et al., 2012). Motivation can stem from intrinsic factors for the sole reason of the activity itself or extrinsic factors such as relaxation, health benefits, rewards etc. (Kilpatrick, Hebert, & Jacobsen, 2002).

Conclusion

To conclude, the above literature review examined studies involving South Asian women and their high prevalence rates of CVD and diabetes, low levels of PA, settlement difficulties in a new country, and barriers and facilitators to PA participation. To date, most studies examining PA and South Asians have recruited participants through local community centres, via snowball techniques. This study will examine current South Asian women employees of a South Asian Women's Centre in Canada and their barriers and facilitators to PA participation as well as their perception of their South Asian women clients' needs and wants. There has not been a study conducted to date investigating South Asian women's Centre employees who are in direct communication with the South Asian population and specifically South Asian women.

CHAPTER 2

Methods

The methodology of this study followed that of Thorne, Kirkham, and MacDonald-Emes (1997) interpretive description (ID) to understand the PA experiences of South Asian women. ID was developed as a non-categorical qualitative research approach borrowing from areas of sociology, anthropology and ethnography. It was used by nurse researchers who felt traditional qualitative methods were too strict and did not allow for the necessary knowledge development to occur (Thorne et al., 1997). ID aims for knowledge generation within the context of applied health disciplines using a constructivist and naturalistic orientation to inquiry (Hunt, 2009). The knowledge generated was applied by nurses in clinical environments to help with clinical

reasoning. In contrast to other approaches, the analytic framework in ID is located in the pre-existing literature therefore enabling a strong relationship with the current work of others in the field (Thorne et al., 1997). The qualitative research design is built from the initial analysis of pre-existing knowledge (Thorne et al., 1997). ID examines both shared group experiences as well as subjective perceptions of each individual (Hunt, 2009). This approach has begun to shift nursing knowledge in the direction of individual cases whereas traditional science aligns more with shared components (Thorne et al., 1997).

The products of ID benefit clinicians with assessments, planning, and interventional strategies (Thorne, Kirkham, & O'Flynn-Magee, 2008). Thorne et al. (2008) describe ID as a "tentative truth claim" about the commonalities of a clinical phenomenon. This approach was seen as most appropriate for this study because the objective was to understand the PA experiences of South Asian women's Centre employees as well as their perspectives on the needs and wants of their clientele at a South Asian women's Centre in Canada. An understanding of common experiences shared by South Asian women pertaining to PA barriers and facilitators as well as specific experiences to each individual and their clientele was sought after in this study. ID provides examination of themes and patterns similar among the group of participants as well as accounting for individual differences between participants (Hunt, 2009). The primary objective of ID is generating knowledge to help clinical practice (Thorne et al., 1997) which is similar to this study's aim of providing knowledge to those involved with planning, program development and interventions regarding PA and health for South Asian women. The study questions were derived from thorough critical analysis of pre-existing knowledge which directed the researcher to the gaps in the literature for the need to understand PA experiences of South

Asian women's Centre employees and the perceptions of their clients at a South Asian women's Centre in Canada.

Participants

The participants in this study included eight English speaking South Asian women employees (Mean age = 45.57 years) at a South Asian Women's Centre in Canada. At the time of the study there were 11 full and part time employees and 1 intern working at the Centre. Marshall (1996) indicates that there is no one appropriate sample size for qualitative research but one that can adequately answer the research questions is deemed best. Half of the participants were born in Sri Lanka (n = 4), and the remaining in Pakistan (n = 2) or Bangladesh (n = 2). On average the participants had lived in Canada for about fifteen years (*range = 5 - 22* years) with 50% living in Canada for over fifteen years. The participants' employment years ranged from six months to fourteen years and included three full time employees, four part-time employees and one intern. The position titles held by the women at the Centre were: Centre Manager, Community Worker, Project Coordinator, Bookkeeper and Intern. Some physical activities the women currently participate in or have participated in while living in Canada include: going to the gym (Fitness Centre), walking, household work, yoga, Zumba, dancing, biking machine, Wii machine, running outside, treadmill and swimming. The participants were purposively selected based on the inclusion criteria that included: Women, South Asian origin and born outside of Canada. Table 1 presents a summary of demographic characteristics and PA experiences of the study participants.

Table 1

Demographic Characteristics and Physical Activity Experiences of Study Participants

Participant	1	2	3	4	5	6	7	8
Position at Centre	Community worker for less than a year, part-time	Community worker for 2 years, part-time	Bookkeeper for 5 years	14 years, full time, started as an intern for 1 year, then community worker for 11 years	Community worker for 7 years, part-time	Project coordinator for 8 years, part-time	Community worker for 13 years, full time	Intern for 6 months
Age	50	55	37	52	44	39	N/A	42
Country of birth	Sri Lanka	Sri Lanka	Sri Lanka	Pakistan	Bangladesh	Pakistan	Bangladesh	Sri Lanka
Languages spoken	Tamil, English	Tamil, English	Tamil, English, French, Sinhala	Urdu, Punjabi, Hindi, English, French	English, French, Bengali	English, Urdu, Punjabi, French	English, Bengali	Tamil, English
Fluent in Spoken English	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fluent in Written English	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of years living in Canada	22	16	14+	16	17	12	N/A	5
Do you currently take part in any PA?	Yes	Yes. Household work and a little bit of walking.	N/A	Walking and household work. Tries her best to walk	Walking. 5 to 6 times a week (about 45 minutes).	None. Two years ago, she joined a gym and went for 3-4 times	N/A	Household work and sometimes walking.

				as much as she can (instead of taking bus, she walks from metro to Centre)		every week, for two years.		
Did you take part in any PA back in your native country	No	No	N/A	Dancing is her interest that she does whenever she listens to her favourite music. Back home she used to walk at least 1 hour or 3km everyday regularly.	No	Yoga	N/A	Cycling & walking

Notes: N/A = Information not available/Did not answer.

Procedure

Upon approval from the McGill Research Ethics Board and the Centre itself, participants were recruited through study flyers (see Appendix A) and word of mouth through the Centre Coordinator. Those who were interested were requested to pick up an envelope from the Centre coordinator which included a short demographic/PA questionnaire (see Appendix B) and study consent form. The demographic/PA questionnaire asked the participants to identify their age, country of birth, languages spoken, fluency in English, number of years living in Canada, current PA participation, and any activities taken part in their native countries. The study consent form (see Appendix C) outlined in detail the study objectives, procedures, data collection process and dissemination of results. Participants were asked to fill out the brief questionnaire and consent form and return the signed and sealed envelopes back to the front desk of the Centre. The researcher was in regular contact via email and telephone with the Centre Coordinator during the recruitment process. The recruitment process took a period of two to three weeks. The PI was also asked to come to the Centre to meet with some of the potential participants to explain the study details in person. A total of 10 envelopes were returned to the Centre (nine employees and one client). With the help of the Centre Coordinator a convenient date was chosen for the focus group to be held with the nine women's Centre employees. A total of five women's Centre employees took part in the focus group. Three women's Centre employees were unable to attend the focus group date due to work commitments or personal reasons. They agreed to be individually interviewed at a later date. One participant from the focus group agreed to take part in an individual follow up in-depth interview. The individual and follow up in-depth interviews took place 1-2 weeks after the focus group.

Data Collection:

Data were collected through semi-structured focus group, individual and in-depth follow-up interviews. Initially, 10 South Asian women (nine employees and one client) agreed to take part in this study. Of the nine women's Centre employees who agreed to participate in the study, five were able to attend the focus group scheduled in the last week of November 2013 at the Centre's meeting room.

Focus groups are an appropriate way to collect data through collective discussion when dealing with minority groups (Kitzinger, 1994). The researcher (Kitzinger, 1994) wanted the participants to explore and discuss issues using their own words so that a more natural and spontaneous interaction would ensue creating a relaxed and friendly atmosphere (Kitzinger, 1995). This form of everyday communication essentially taps into the lives and experiences of participants in a way that other methods may not be able to do. This method is often effective in cross-cultural research or work with ethnic minorities because interpersonal communication can represent and highlight cultural norms and values (Kitzinger, 1995).

Focus groups allow both for group norms as well as variations within participants in a group to be established. This has potential to enhance the data for research because two perspectives can be achieved using one method. Focus groups can also offer an opportunity for participants who are generally shyer or reserved to speak up because other participants may lead the discussion. A more interactive style of discussion can follow when participants are able to feed off each others' comments and continue the discussion beyond the stage expected to usually end. Since all the participants were sampled from the same Centre it made it easier for the women to open up and express their similarities and differences.

It is not always the case that all topics will yield similar reactions among group members because no group will ever be entirely homogenous (Kitzinger, 1994). Differences of opinion are just as important to the research as similarities. Differences within a group can allow for further exploration and encourage participants to discuss why such diversities may exist. This usually leads to participants identifying aspects of their personal experiences to justify reasons or re-thinking their own viewpoints. The commonalities as well as individual differences that may arise within the group are exactly what ID methodology tries to achieve. If data collection was only conducted through individual interviews, researchers may have had to theorize why differences were found among participants. Focus groups allow participants to discuss and debate among each other to come up with reasons. In focus groups the researcher can observe not only how one participant justifies their opinion but also the way they do in association with others and their view points. In questionnaires and interviews researchers must assume that participants are giving the right answer for the right reason but focus groups encourage participants to explain their reasons as to why they may agree or disagree with the topic being discussed. Assumptions held by the researcher about particular topics can be limited through the way participants explain their meanings and stories. The nature of the focus group allows data to be developed more organically because participants reflect off each others' ideas, and ideas and thoughts are generated within the group. ID primarily seeks to achieve a naturalistic process of data inquiry (Hunt, 2009). The researcher acts more of a facilitator posing questions and lets the discussion progress through the participants.

The main disadvantage of focus groups is that some participants may refrain from speaking or expressing opinions about sensitive topics because of the presence of other participants, and the issues of anonymity are unavoidable because of the group format

(Kitzinger, 1994). Although no strong consensus exits, Greenbaum (1988) suggested that focus group sizes most appropriate are either four to six or ten to twelve (as cited in Winship & Repper, 2007). The size is strongly dependent on the group of participants under study and the intent of the study (Winship & Repper, 2007).

Data were also collected data via three semi-structured individual interviews and one follow-up in-depth interview. Since these interviews were conducted one to two weeks after the focus group the interviewer had time to process the information gathered in the focus group and modify any questions to further explore with the individual participants. One participant agreed to take part in a follow-up interview. DiCicco-Bloom and Crabtree (2006) found in-depth interviews allow the researcher to delve specifically into the responses from their interaction in the focus group and listen to their further explanations from their perspective that a group format may prevent.

Interview Guide:

The interview guide (see Appendix D) was developed by the researcher, the researcher's supervisor and a PhD student who all had extensive knowledge in qualitative research. It was decided that the focus group will be divided into two parts. The first part examined the PA experiences along with barriers and facilitators for participation. The second half was pertaining to the Centre and its clientele and their needs and wants. Five women participated in a semi-structured focus group which lasted 81 minutes with a 10 minute break between the first and the second half of the focus group. Since the participants already knew each other quite well, the rapport between the participants with regards to respect and trust did not need to be established before the start of the focus group (DiCicco-Bloom & Crabtree, 2006). The participants were aware of the intent of the study because the researcher had gone to the Centre prior to the date of

the focus group to provide information about the study. The research allowed for as much of a natural conversation as possible and let the participants' responses lead the discussion.

According to Spradley (2003, cited in DiCicco-Bloom & Crabtree, 2006) there are four stages in developing rapport between interviewer and interviewee. These stages guided the focus group process. The first stage is the initial apprehension phase where interviewees may feel uncertainty because they are in a new environment and do not know exactly what will occur. It is then important to begin with general or broad questions regarding the study which are non-threatening and ease the commencement of the focus group. Based on Spradley's (2003) recommendation, the focus group began with the researcher asking the question: "What physical activities do you currently participate in or have participated in the past?" The second half of the focus group began with the general question: "What does this particular organization do and who are your clientele?"

The exploration stage is when the interviewee starts to engage in an in-depth description of the issues put forth (Spradley, 2003). Almost all participants in the initial discussion brought forth barriers to their participation in PA. This was further elaborated by each participant identifying the types of barriers they are faced with. This naturally led the discussion to "What would make it easier for you to participate in PA?" and "What is your motivation?" The first half of the focus group wrapped up with the question, "Are there any specific programs or things you would like to see in terms of organizational supports for PA like some specific programs that you would like to participate in but it's not offered?"

The second half of the focus group began with the initial question pertaining to the organization and their clients. This discussion naturally lent itself to the question, "Maybe we

can look then at some of the programs that you offer. Is there currently anything right now that specifically addresses health or physical activity for immigrants?"

Next is the co-cooperation stage where a certain comfort level has been established and participants are able to openly speak by agreeing or disagreeing with one another and feel satisfied in expressing what they want in the discussion (Spradley, 2003). Here participants started to feed off each other and agreed to certain barriers already expressed as well as bringing forth their own. More free discussion began with the researcher sitting back and only intervening when the discussion seemed to fade down. At this stage, the interviewer was able to probe deeper into certain points and the participants were in a comfortable position to correct or acknowledge the meanings created.

The final stage in Spradley (2003) four stage model of establishing rapport is called participation (Spradley, 2003). This is where the rapport between interviewee and interviewer reflects the role of the interviewee guiding and teaching the interviewer. This was established quite early on in the focus group as participants themselves began with elaborative explanations from the initial question itself. Thus, the interviewees were in control and the interviewer was in the learner role attentively listening.

The semi-structured individual interviews were held with 3 participants that were unable to attend the focus group. These lasted between 16 and 20 minutes. This followed a similar structure as the focus group with first establishing rapport with the participant. The interview participants were asked questions regarding the main similarities and differences that emerged in the focus group to find out if they agreed or disagreed with those issues. Questions such as: "Everyone in the focus group agreed that lack of female only facilities was an issue; do you agree or disagree with what they had said? This method provided an opportunity to validate the

responses provided in the focus group. One participant took part in a follow-up interview that lasted 17 minutes. Since the rapport was already established during the focus group it was easier to delve further into some issues brought forth by this participant in the focus group that needed further clarification. Questions such as: You mentioned you like going to class based activities rather than going to the gym; what could be done to maybe make it easier for you? What kinds of clienteles do you primarily deal with and what types of issues are they bringing forth? The focus group, individual and follow-up interviews were concluded by asking the participants if they had anything further to clarify or add. The focus group and individual interviews were audio-taped and transcribed verbatim.

Data Analysis

Before the onset of the study, the researcher documented pre-assumptions regarding the research questions and changes that occurred as the study evolved from the initial conception. This is important so the researcher can take into account any biases that may influence the findings of the research (Thorne et al., 1997). Using the interpretive description approach, questions such as, "What is happening here?" and "What am I learning about this?"(Thorne et al., 1997) were explored following the focus group data. Initial reflections from the focus group data were noted before transcribing. The focus group data transcription began before the start of the individual and follow-up interviews so information developed at this early stage could be incorporated in the ongoing data collection (Hunt, 2009). The researcher shared some of the findings gathered from the focus group data with the participants in the individual interviews to invite them to share their agreements or disagreements. Once data was all collected and transcribed, the researcher immersed into the data by listening to the audio tapes and reading and re-reading the transcripts before beginning any sort of coding or attempting to make linkages

(Hunt, 2009) The coding was divided into four steps to identify patterns in the data and draw categories of relationships. The first part began by examining physical activities the participants and their clients took part in, and the Centre's services. Next, the barriers and facilitators for PA were coded for the focus group and then for the individual interviews. Third, the barriers and facilitators were further grouped into: cultural, environmental and interpersonal. Finally, similarities and differences within South Asian women's Centre employees and between South Asian women's Centre employees and their clients regarding PA were coded. All analyses were color coded to facilitate the grouping of information. After each data analysis session, a synopsis was written to provide the researcher with an account representing her understanding of the data.

Trustworthiness

Qualitative researchers look to establish validity in their research by employing specific techniques to increase trustworthiness that minimizes the degree of inappropriate interpretations and assumptions. According to Creswell and Miller (2000), procedures chosen to increase confidence in the research findings are governed by two perspectives: the lens researchers choose to validate their studies and the researchers' paradigmatic assumptions. The second perspective is explored in more detail below since the techniques to increase confidence in the research findings used in this study were governed by this perspective. In qualitative research, the lenses chosen are determined by the researcher, the participants in the study, and individuals external to the study. The researcher determines the period of involvement in the field until data saturation has occurred. Participants can enhance the findings by actively being involved during the data analysis to confirm if the themes identified accurately represent them. The last lens is individuals who are not directly associated with the researcher or the study. For example,

reviewers external to the study may provide critical feedback to question the researcher's assumptions and increase the credibility of the findings (Creswell & Miller, 2000).

The second perspective is paradigmatic assumptions or worldviews (Guba & Lincoln, 1994). Guba and Lincoln (1994) identified three paradigmatic assumptions that can reflect the choice of procedure as: postpositivist, constructivist, and critical.

The postpositivist approach emerged in the 1970s in social science and holds strong for rigorous methods and systematic forms of inquiry. The constructivist approach to inquiry relies on pluralistic, interpretive and open-ended perspectives. Lincoln and Guba (1985) proposed four criteria based on the constructivist approach that included: credibility, transferability, dependability and confirmability (as cited in Crewell & Miller, 2000). The final paradigmatic assumption is the critical perspective. In this approach the researchers need to disclose any assumptions they bring to the data set. Our assumptions can be influenced by historical events, politics, culture, economics, ethnic and gender biases. From the above three perspectives Creswell and Miller (2000) identified a list of procedures to increase confidence in the research. Some of these procedures, used in this study, are examined below.

Triangulation is where the researcher examines multiple sources of information for convergence validity purposes (Creswell & Miller, 2000; Shenton, 2004). This study utilized two types of triangulation: across data sources and methods. Holding both a focus group and individual interviews helped to confirm some of the findings since information discussed in the focus group was re-stated by participants who took part in individual interviews without the presence of others. The study employed three forms of data generation which included: focus group, individual interviews and follow-up interviews. This contributed to the credibility of the findings. Another procedure used in this study was member checking (Creswell & Miller, 2000;

Shenton, 2004). This is where the researcher takes back the data to the participants to confirm the information given (Lincoln & Guba, 1985, as cited in Crewell & Miller, 2000). This was established in this study by taking the data generated in the focus group to the participants in the individual interviews and follow-up interview to examine if they agreed or disagreed with the researcher's emerging interpretations. Another procedure used in this study is thick, rich descriptions (Creswell & Miller, 2000). The context in which the research took place and the characteristics of the participants have been described in detail (Table 1). Numerous quotes that best describe the participants' perceptions and feelings are presented as well for readers to truly understand their experiences. The last procedure used in this study was peer debriefing. This took the form of a person with scholarly experience in this field of research, and qualitative research, who acted as a support from the onset of the study in meetings and discussions and provided the researcher with feedback and critical reflections (Creswell & Miller, 2000).

CHAPTER 3

Results

Activities Women Participate in/ did in the past

All eight participants began by stating some of the physical activities they currently participate in or have in the past. The activities the participants participated in most were going to the gym, walking and dance. The gym was one form of PA that at least four of the women had tried to attend or are currently attending after moving to Canada. For example one participant said, "I started enrolling in the gym 4 years back, I think. 4 years back I used to go 3-4 times a week, like 45 minutes, [and] do aerobic kind of things." Another participant mentioned, "I have been going to the gym for last 3 years."

Walking was a form of PA that the participants engaged in as a way of transport from one place to another. Since all participants in this study were working women, they seemed to incorporate walking as much as they can daily, especially to and from work. One person said, " 4-5 times a week I walk around, 45 minutes to an hour . . . I walk lots. I [walk] from train to metro." Another mentioned, "I try to do walking as much as I can . . . I try to walk from my home to the train station." One participant felt that walking was something she could do in, "Any part of the world . . . without any distraction." Other participants chose to walk when dropping and picking up their children from school or used it as an alternative form by taking the stairs instead of the elevator in buildings.

Dance was found as an enjoyable activity that a few participants took part in. One participant explained, "I love dancing from my childhood." After moving to Canada she was told by her doctor to just put on music and dance freely at home as a way to be physically active. As this participant put it, " . . . she suggested me can you dance? I [said]I love dancing . . . She said put music [and] dance at home, do any crazy movement but dance. So . . . I have started doing [it]." Another participant used the Wii machine as an alternative way to get physically active at home. She shared, "I realized I can do dancing kind of things with Wii machine . . . with my kids . . . they do the moves with the things, but I don't have to do exactly the things, I just follow." The participant explained that this form of PA was found to be especially useful when Zumba classes are not always affordable for everyone.

Three women shared their active childhood involvement in girls clubs, school relay, marathon, and outdoor activities: One of them, for example, said:

> When I was young I [was] very interested in outdoor activities [such as] bicycle . . . climbing the trees . . . I was very sportive. I loved playing outside. Badminton [and] table tennis, they were my favorites.

In contrast, one participant stated, "During my middle school [and] high school if teacher asks me do some sports or something I felt very shy and [I] go hide you know. I was so shy to run." This experience had a great impact on her after she moved to Canada because it made it difficult for her to engage or stay committed to any sort of PA.

Though many of the women spoke about activities they had participated in or are currently involved in, a lot of their experiences were met with barriers that led them to have to stop the activity or had them not even start in the first place. The barriers and facilitators identified in the data were further grouped into: Cultural, Environmental, and Intrapersonal.

Cultural

Family responsibilities. The primary cultural barrier for PA participation for all the participants but two was family responsibilities. Most of the women have care giving and household responsibilities such as cooking, cleaning and taking care of children. They carry the sole responsibility of their families on their shoulders with no help at home. The follow quotes clearly capture the women's roles:

> I have no help at home if I leave a sink full of dishes and go to gym or do exercise for 20 minutes this means by sleeping bedtime is delayed 20 minutes.

> Walking was one . . . thing I used to do a lot and coming here my routine was changed a lot because then back home I had help at home, people were working for me, and then I have to work the same work here so my routine really changed.

> Because I have a small son, he is four and half years old because I am engaged with him . . . household work, cooking or doing cleaning and you know I prepare them for school and put them in bed so I am engaged.

Similarly their clients also hold family responsibilities which often restrict participation in PA. It was difficult for them to attend sessions organized by the centre because, "They have children to take care of" and "when her kids [are] young she is back and forth in the school . . . Morning she is putting her child in school and bringing them home for lunch then taking them school."

Two participants explained that having "Help for doing household work" would be easier for them to go take part in activities outside. One participant said that in her native country she," Had help at home, people were working for [her]" which made it easier for her to participate in PA.

Cultural background. One woman brought up the cultural restriction on certain physical activities as girls grew up and became young women. When she was young it was acceptable for her to participate in outdoor activities such as biking and playing in the trees. But these she could no more do after she became older because in her culture women were restricted from certain activities. This was illustrated by the quote: "But later on it restricted to only walking because when I grew up in my culture they say young ladies don't ride the

bike because of the situation outside." Though she described her childhood as very active, in her young adulthood years it became restricted to only one form of PA which was walking.

Another woman mentioned during the individual interview the absence of PA in her upbringing. This made it harder for her to continue now since she hadn't been accustomed to it. She explained, "I really don't know, it doesn't continue, like, you know, it's maybe because that we are not used to it during our childhood."

A cultural barrier that many South Asian women are faced with is the strong sense of guilt they feel when they are doing something for themselves that doesn't benefit the entire family. Taking part in PA can be seen as something for the benefit of oneself rather than the family. One woman stated:

> When . . . [name of person] was saying . . . going to gym is a waste, it is not a waste but as women we think if we are doing something just for our sakes and no one else is benefitting it's a waste for us. If we are doing it for the child, no it's for the good of the entire family.

This was strongly echoed for the perception their clients as well. New immigrants firstly devote everything to their families before attending to their own needs. Their clients attend activities organized by the Centre only after the needs of their family members are met. Their family needs are always put first before the women can come out to do something for themselves. The following description explains how their clients devote everything to the family first:

> Some women take maybe a year to come out and try to do something for [themselves] because they always put their families, their husbands or whoever at home first before they attend to their needs to improve themselves. And all my workers here, my

> colleagues can tell you that this is what they have seen in women. They don't want to do things for themselves first, they want to sacrifice everything to bring better life for their family so they stay home because [their] husband is going out she is the one taking care if she has kids household everything, and she sacrifices everything to have a good family, quality life for her children.

Clothing. Five women mentioned how clothing acted as a physical restriction for certain physical activities they enjoy. One such activity enjoyed by many South Asian women is swimming. Many participants were unable to participate in swimming because of the swimming suit they are required to wear. One woman said, "I like swimming. Again, that's the problem [the] swimsuit." Another woman also agreed that she loves to go swimming, "but because of [the] dress I am not able [to]." Two women explained further the importance of clothing for South Asian women. One woman even tried to negotiate wearing alternative clothing while she swam but was refused at the swimming pool by the staff. She also expressed that clothing was something she could never change about herself. The situation is elaborated in the following account:

> I never joined any gym or anything because of the dress. I can't wear those dresses you wear to gym. I even tried to go to a swimming but they said: 'no you have to wear swimming costume.' I say 'no please let me wear at least a pyjama' but they said no. This is something that I always have. It's not that I don't like the dresses, I [just] feel I can [never] change my dress. I don't know it never came to me. I asked, 'while I am sitting here why can't I be in the pool?' They say you have to wear swimming costume. I said, 'ok I will wear let's say this and no pyjama.' I even tried to show them a picture of

> a western lady who is wearing kind of pyjama, they said ‘no we don't allow that.’ I don't know for what reason.

She also shared an experience of her taking her driving test which further reflected the strong association of her clothing to who she was:

> [While] I was learning to do my driving test, the instructor . . . told me [two or three times] ‘why don't you take this thing [off].’ I said ‘do you want me to drive or park the car? If you want me to park the car I will take [off] my dupatta[1] . . . If I have to drive, I have to wear my dupatta.’

Some women feel shy because of the clothing they have to wear when taking part in PA. Two women commented on how certain clothing is not comfortable for them to wear for PA. One person said, "I am not comfortable wearing swim suit but I have worn it, but not in public or in a swimming pool . . . where people are there [but] in an open beach [yes] . . . I try to cover as much as possible." Another stated how even, "If [they are] pyjama bottom[s] and a t-shirt it's just not comfortable." The comfort of clothing is important for these women to be able to move and engage in activities.

One participant shared that one of the main successes of the PA program being offered by another organization that many of their clients attended was that they were able to wear, "their salwar kameez[2] and nobody minds." South Asian women at this program are seen "In their own attire [and] they are not forced to wear something else." Another participant shared that the gym she attends has no dress restriction. People are able to attend "With veil, full sleeve tight shirt or [even] sweat pants. If I go in jeans I can do it [too]."

---

[1] A length of material worn arranged in two folds over the chest and thrown back around the shoulders, typically with a salwar kameez, by women from South Asia.
[2] A type of suit, worn especially by Asian women, with loose trousers and a long shirt.

Environmental

Location. The location where the PA is taking place creates a barrier for many South Asian women. Three participants expressed that the gym they are going to or the closest one to them is too far from where they reside. They find it difficult to attend PA programs when they are far away from their neighbourhood. One women shared, "Then I moved to . . . another location. My house is further than where I used to go . . . It is not possible for me to enroll anymore." Another woman agreed with this and stated, "Particularly for me also [the] same situation . . . gym is not near my home [and] I don't have a car of my own." Four women also brought up location as barrier for their clients. The area where the South Asian centre is located presents great difficulties to the women's centre employees when they attempt to organize any PA or health sessions because it raises the question of the Centre being too far for their clients to attend. The following quotes exemplify this:

> One excuse is this is far. If it's in our area we could . . . Your centre is very far away otherwise we could do it.

> Yah too far for them . . . they have to take metro and bus so it's very hard for them to come here.

> Oh Didi[3] this is very far away . . . We are not in the area where South Asians are near.

Six participants were in agreement that when the location of the PA was closer to their home it makes it easier for them to attend. One participant explained the gym she is going to is not in her area but because she travels to that location often for her childrens' classes it doesn't seem far:

[3] Sister

> It's far from my residential area like from where I live but I go to that area quite often so it means my kids go to the class there, so weekends they go to the class in that area so I just drop them so . . . I don't feel like it's far, but really it's far like 25, 30 minutes drive.

One participant felt that if a PA program was offered at the Centre she would definitely attend because "We [the workers] are here that time so we can do it."

Four participants agreed that if a PA program is offered "Near their home . . . where they live and "if they can walk, they will come for sure." Their clients, prefer to walk. "They come fast and go fast."

Cost. Five women agreed about the high cost of classes and gym membership. They found the prices to be very expensive and not affordable for everyone. One person shared, "The gym is really expensive even I think I can squeeze time but I can't . . . produce more money . . . so I said I cannot afford gym, it's very expensive." Even some of the classes such as Zumba or aerobics too expensive for her to attend, though she showed a keen interest to participate. Two participants spoke in agreement with this participant:

> I think I agree with you. Money wise, the place where I live the gyms are really expensive, the membership is expensive. You have to pay a lump sum big amount and then every month you have to pay.

> Particularly for me also the same situation, money is one thing . . . gym I found expensive because I have to spend everything here and there. I [am]left with very little so I don't want to waste money.

Four participants expressed the issue of cost for their clients as well. One cost that was brought up by three of the women's Centre employees was the price of bus tickets. One participant in her follow-up interview explained though, "Centre cannot afford that much . . . once in a while yes we do try to provide free tickets." Free tickets cannot be provided always so it does make it more difficult for their clients to attend sessions at the Centre. One of the women spoke about the difficulty of trying to afford appropriate clothing such as, "Gym clothes, special swimming suit [and] bus tickets" when some clients are in poverty and aren't' financially stable.

Four participants expressed the need for activities to be cheap and affordable for them to attend. One participant said if it is cheap she knows she, "Can take out time" and "Leave [a] sink full of dishes." For some sessions, "once in a while" the Centre has been able to offer free bus tickets, "or with less price," for new immigrants to attend.

Another participant shared that the program that is currently taking place where most of their clients live is free or just has "small membership fees" that most South Asian women are able to afford.

Weather. Some participants expressed the difficulties they faced during the winter months to be physically active. One women stated, "Now winter came it's difficult . . . winter time you cannot do bike outside." Two women agreed weather was a barrier for their clients as well. One participant described, "How they are integrating in this situation the person who brought up in 30 to 40 degrees plus they are here in 30 to 40 degrees minus."

During the summer months participants were able to engage in more PA because of the warmer temperature and the longer days. One participant said, "I walk around 45 to an hour in the summer time." Another one said, "Summers . . . I try because summer you have longer days and you can manage. One participant in the individual interview shared how the summer months

made it convenient for her to leave her children at the park while she exercised in the gym nearby:

> In summer in even weekdays, I take my kids to the park and then I use that time because when they are playing in the park because it's just in front of a park the gym where I go so.

Facilities for women. The lack of female only facilities was mentioned by two women in the study. They felt female only facilities need to be implemented throughout the building and not just for a certain activity. For example one woman shared, "If it's an open swimming pool, [with] only women who are using the facility but [here and there] there are men then it's no use." Another woman said, "Even if they have a time slot, let's say for women, it has glass walls so men [and] everybody can see, oh my god."

The need for female only facilities was echoed by a few participants who stated it was important for South Asian women to be in environments with only women to be comfortable when doing an activity. One participant stated that the gym she goes to:

> It's a women's only gym so that's a positive, which encourages me. I can work in a gym with men around me, but I don't think I will be comfortable. I am very happy with the women's only.

Another participant shared the same thoughts that, "Maybe I might feel a bit more comfortable if it is only women." Many new immigrant attend services offered by the Centre because their "Husband or family will let them [since] it's a women's Centre, there is only women."

The necessity to have women only swimming areas for women to go and learn was echoed by one participant:

> Women's only swimming areas where women can go and learn . . . I believe a majority of South Asian women do not know how to swim. Very recently in my country they have started having the concept of swimming pools in schools. So now the new generation is learning at school level . . . I was growing up although I went to a private school through and through . . . there was none for girls where they had swimming pools. And all boys schools, the private schools, they had swimming pools. My brothers knew, my father knew, my husband knows, but women of my generation didn't get a chance to learn unless they had their own swimming pools. I know of only one girl who had a swimming pool. So it was not in fashion at that time to have swimming pools for women. Now, they have clubs where women can go. I would love to learn but I am too shy to learn in front of all the kids. I don't [want to learn] with my kids and I don't want to learn in front of other men and make fun of myself. I don't have that level of confidence I guess. Swimming is something that is really fun. I find if I get a chance where there is a woman instructor and where only women are there I would love to go and learn [to]swim and eventually maybe I will be brave enough to go out and swim with doesn't matter who.

Another explanation for the "lack of complete exercises" has to do with how the built environment is. Many South Asian women live in spaces that are not presenting opportunities to be physically active. One participant explained:

> I know just our lifestyles are completely different from what we had. At home you just walk around the garden . . . gardening flowers, watering them, those are exercises. Here, living in an apartment [only] this much of kitchen, you just stand there [to] cut [and] cook you know . . . So that's one reason for lack of complete exercises.

Instruction/activity. The type, the structure and availability of activities act as barriers for some South Asian women. For instance, for some women, gym schedules are not suitable:

> It was closed on Sundays, it was opened on Saturday 3 hours, closed on Sundays and evenings; also most evenings it closed at 7:00, so it didn't suit me that well. I am very happy with the women's only one, but then again, it's open at 6 in the morning and I leave for work at six thirty, so it doesn't suit me. You need to take shower after, and it closes at 7:00. I come back home around 7:00 . . . Maybe at 9:00 I am available, but the gym is closed and evenings [sic] don't suit me.

Also having a program just once a week doesn't seem to be beneficial for many of the clients because they forget what they have done by the time they do it again. One participant said, "Once a week they always say it doesn't help . . . And to be honest, it doesn't help. You forget the next week, even 'Oh I have to go on Tuesdays.'

The structure of activities affects participation as well. One participant mentioned, "If I don't have structure I can't follow . . . walking bores me." Another participant felt the contrary and said, "I cannot follow a dance routine . . . I can't do that structured dancing . . . When you have to do a structured kind of thing it makes you feel pressured, you have to follow something."

Two participants agreed that having a proper structured program is important for them when taking part in physical activities. One of them explained how she does take part in other unstructured activities such as the Wii machine with her kids, "But if it's structured, it will be more helpful because [if it is inconsistent schedule] . . . here and there [it is hard] I can't do exercise when I [have just] eat[en] I have to . . . [wait] at least one and a half hours." For another participant, she enjoys non-structured dancing and doing whatever movements she feels to the

music. She explained that, "I can't do that structured dancing no . . . no, they tried to do something here I can't follow because my brain doesn't work when you have to do a structured kind of a thing."

Finally, for some South Asian women, if they haven't heard of the activity before or are not familiar, they are less likely to attend. One participant described how some of her clients have said, "What is Zumba? We don't know, we never heard about that, so we don't want to go."

Another important factor for increased adherence in PA programs are the instructors. It is beneficial for South Asian women to have women instructors lead the activities. One participant stated, "If I get a chance where there is a woman instructor and where only women are there I would love to go and learn and swim." The instructor's personality and their capabilities and knowledge in the activity help some women continue with the PA program. For example one participant mentioned how, "Those people who are especially the teachers like who [are] doing the moves . . . it's amazing like the way they do like head to toe, they can shake all the parts of the body . . . [the]teacher is so nice and gentle."

Current programs being offered. The biggest benefit for their clients has been the program that is currently running in an area where many new immigrant South Asian women reside. One participant explained in detail the advantage of this PA program versus the sessions that the Centre had tried to organize in the past. It was found that this program was:

> Offered by [another] . . . community organization: It's a gym, there is a proper instructor, we aren't instructors, we just do physical exercise and everybody follows us. But she's a proper trained instructor in a gym . . . It's simple gym activity, no machines, nothing, just an instructor and everyone follows . . . Its everyday program, 5 times a week, 4 or 5 times

> a week . . . All these women who didn't come to our program are going to this class . . . It's been more than 6 months.

Since all the women live in the area it is very convenient for them to walk to the program. A similar attempt was tried by the South Asian Centre staff who had rented a room in the same neighbourhood and tried incorporating an exercise or nutrition class after the English class that they were conducting. One participant provided an example of this:

> They could walk, the time was perfect, we were already giving them English class, so right after the class was this exercise time. So that the idea was if they had breakfast just before coming, two hours of the English class will help to digest and then we can do exercise and go home.

The participants also brought forth the idea of possibly collaborating with the YMCA to offer programs for the South Asian population. One participant shared, "YMCA has really good programs and it would be possible to . . . collaborate . . . that would be ideal . . .YMCA has many programs for women and children and families, that would be an ideal situation."

Another participant mentioned the need for a PA program or psychologist for their SA clients who come with diverse issues and problems. These resources would provide them motivation to overcome their barriers and participate in society. The following illustrated her view on this:

> I think we are dealing with different cases like isolated women or depressed or victims of violence. Those they . . . desperately need something like physical activity and psychologist. But we don't have perfectly one at the centre. If we had one maybe it would be helpful for them, especially to motivate them.

Social support/partner attitude. Social support, especially by family members, had an enormous impact on their PA participation or adherence to a program. One participant explained how her husband doesn't always encourage her in physical activities, but instead gives her unhealthy food she should not be eating. She shared:

> My husband . . . helps me but he doesn't encourage me in these things . . . So even if he know[s] I am diabetic he may bring ice-cream to please me. 'Oh, you know, you'll be happy, that's why I brought.' And then I get tempted, it's here, I have to take it.

The participants shared that for many new South Asian immigrant women their husbands play a vital role in decision making and what is viewed to the women as important or not. Most of the clients do what their husbands tell them to do. The participants mentioned how South Asian husbands most often do not consider PA important for their wives. The participants explained further that husbands want their wives to learn the basic necessities of living in a new country. For example, groceries shopping, speaking with school teachers, and going to the doctor. The participants expressed that attendance would often be high at the beginning of the Centre's self-defense, PA or nutrition sessions, but then fall drastically towards the end of a session. The participants felt that these activities are important for new immigrant women and their health, but the clients' husbands did not agree. This is indicated by one participant's quote below:

> They say my husband said: 'Don't need it why do you need the self defense? Why do you have to learn this and that?' This is the biggest thing . . . they want them to learn things that will help things that will help them in return. The husband [wants them to] go and learn to do groceries, go and learn to talk to the school teacher, and learn to go to the doctors so he doesn't have to.

Another issue brought forth by the participants was when their clients did take part in some of the PA offered at the Centre, their husbands started to tell them they would not look nice if they lose weight. Though most of their clients had health issues and were already overweight to begin with, it makes the husband viewed in society that he may not be feeding his wife properly. This is explained in one participant's account of what her client said to her:

> Oh, my husband says if you lost weight you won't look nice. So I could see people were overweight already, they were talking about being breathless and they were talking about climbing up and down the stairs and finding it difficult . . . So they were saying we know this is because we are overweight or even obese according to the medical terms. And then when they started exercising with us . . . many women not talking about one or two but ,majority of [the] groups said [their] . . . looks are [being] affected because [in] South Asian standards if you're too thin you're too poor. But it is a South Asian thing that if a women is thin which means the husband says "ah its bad on me, it means I am not feeding you properly." And husband got [a] . . . chance to, share this thoughts and said, 'yah it's not that great, your face is looking thinner and it's not looking that nice anyways.'

Another issue that arose from the above discussion was that a husband starts to feel threatened when a women starts making decisions on her own of what is good for her or not. Two participants emphasized this:

> You are right, I never thought about this in this angle, but yes our men unfortunately tend to be very controlling and it is a threat when the women makes a decision on her own, it is a threat because what if she is making a decision it's a small thing, but tomorrow maybe she makes a bigger one which impacts me, so it's definitely possible . . . Because

> they brought this husband's factor in this was new for me, brand new, before that going out taking a class my husband doesn't allow, I get it, I get it. But [my] husband doesn't allow losing weight, which you really need.
>
> There is a thing behind that . . . This is psychology, that men sees a women starting to pay attention to herself, taking care of herself, they get kind of a threat. They want to control, they want to control. Now it means she is going to chose things on her own, she is going to do things on her own.

One participant expressed her concern with issues such as domestic violence that new immigrants are faced with once they arrive to Canada. SA women are not prepared to deal with what lies ahead and the Centre through their services try to help women overcome these issues. One participant stated how, "For some ladies . . . I have found a couple of ladies, as soon as they come to their husbands the husbands sponsor them and as soon as they come they face violence, that's there also."

Five women agreed that having someone else to go with or doing activities in a group increased their PA participation. Three women mentioned that having a friend or partner motivated them to want to go even if they were not in the mood:

> I would love that, to go with a friend to, you know, as a motivation if I am not in a mood my friend say 'aww let's go . . . leave the bed come out.' I find them doing this I have seen women coming to the gym and one of them says 'I just came because of you, I didn't want to come today . . . 'It's a good incentive, it's a good motivation for our women.

Two women explained that doing activities in groups is an advantage because you get to interact with other people and it doesn't actually feel like you are doing physical movements:

> I felt like human interaction is more necessary for us, like for reflection, I mean for relaxing, and getting more like presence in your mind, in the state of machine, yes, social connections, networking, and those things I think I felt like it's far better than machine.

> Feel that you're doing something like so when I do the dance because there are group of people and then so I don't feel.

On the other hand, another woman expressed how she was so scared of going with a group of people because "They're so fast and I am just watching their steps, like how they are doing." For this participant, going in a group made it more difficult because it was hard for her to match the other participants in the group.

The social benefit was also seen among their clients. Most of the new immigrants that are attending the exercise class in their neighbourhood or the one that was offered by the Centre were greatly motivated because of the presence of others:

> Maybe, they, that's why maybe they enjoy the gym so much because they get to get out of the house, they get to meet with their friends, and go in a group, their always in a group.

> We convinced them kind of and they were in the big group and everybody motivated each other, 'yes let's do it, let's do'.

Language. One major difference between the South Asian women's Centre employees and their clients was language barriers. Four participants agreed that new South Asian immigrant women are immediately faced with language barriers upon arrival. One person put it, "Usually women stay at home because of the language thing." PA programs offered in the participant's native language will help women attend and be able to follow and understand.

One participant from the individual interview suggested that activities should be, "In their own language . . . so that's going to be easy for them to follow them, also they feel like home, like you know when South Asian together they feel like." As well a lot of cultural communities organize sports events for their members and many women participate in that because it is by their own community and they are comfortable. One participant said, "I have a couple of clients they are really active they even participate in the sport meets organized by our community people."

Daycare. Two women agreed that having a daycare at the facility where the program was would make it easier for women with young children. One participant mentioned that the reason she could attend the gym was, "It had a daycare which was important for me at that time because I was bringing kids and couldn't leave them alone at home, so that was positive." One participant quoted that for their clients, "if there is a gym with a daycare maybe the mothers can easily [participate]."

In somewhat related manner one participant brought up the idea of having activities for children at the same place as where she would attend. This way, it would engage the children in something that is active while she was participating as well. She expressed how, "If there are any special activities for my kids [at] the same place. I don't like childcare because [they are in] school [and] daycare."

Other issues. Some other environmental barriers that their clients face as new immigrants in this society are racism, poverty, isolation and pressure. One of the participants in the follow-up interview discussed what new immigrants deal with on a daily basis:

> You see, if you see the circle, if I put you in the middle in the center point as an immigrant woman . . . if I put an immigrant woman in the center, see her pressure, racism

> is there, poverty is there, isolation is there, missing is there, immigration purposes [are] there. So how much pressure they are taking . . . We can say something they are this, we can level them easily but we are not in their shoes, how they are coping, trying to cope with the situation.

Intrapersonal

Time. All eight participants agreed that time was a huge barrier for PA. All of the participants are working women and find it hard to take part in PA simply because they don't have time. The examples below illustrate this:

> I don't have time because day time I come to the work. Evening and weekends my husband goes to work . . . so I don't have time. I like but I don't have time.

> So I have no time to do any other work . . . but doctor also said that you have to do some exercise. Before, like four years before, I did exercise but after that I stop because I have no time to do it.

> I am working and it's difficult to find time.

All the women in the focus group agreed that because they also work on weekends sometimes, it makes it even more difficult to participate in PA. One participant shared, "Weekend most of the time our centre we have . . . meeting here and there so I couldn't manage." When the participants started to discuss working on weekends all participants in the focus group re-stated how for the next couple of weeks, every weekend they had to come in. They mentioned that this was not the case with their clients who actually did have a lot of time compared to them. Their clients are mainly housewives who are at home and do seem to have a lot of time

especially during the hours when their kids and husbands are gone to school and work. One person shared her point of view on this:

> But this is a story of only a few South Asian women. Our clients, the majority, I would say, is not working women. They [are] stay at home moms. Their reality is different than ours, they are at home. They want to go out, they like to go out . . . For them going out is a fun activity. When I ask them why don't you do grocery shopping once a week like me and . . .save . . . time . . . they say, 'oh but we find good deals every day . . . that's fun and we met other women and we go in groups that's fun for us.'

The only time that was not suitable for some of their clients was when there were workshops being offered by the Centre between twelve and two in the afternoon. Many clients were attending English classes from ten to twelve and would leave immediately because they had to go bring lunch to their children at school:

> We have the classes, the English classes, we go there at 9 o clock, the English class starts at 10 to 12 and 12 to 2 . . . take the workshop these kind of workshops, nutrition, health care, so that time some people don't stay, they have to give the food for the children for the schools, so they go.

Shyness. South Asian women also feel shy when taking part in physical activities. One women expressed how she, "Would like to learn" swimming but she is "Too shy to learn in front of all the kids." Some South Asian women may feel shy to do exercise or dance in the presence of other men. One participant stated:

> It's nice to have a family thing but if you have a group with three, four families this women maybe shy to dance or exercise in front of another man. With the husband [it] is ok, so I don't think any people would like to do exercises in front of other men.

Lack of motivation. Three women quoted lack of motivation as a barrier to get physically active. One participant felt her lack of motivation perhaps is due to not having a certain reason to want to look better or her attitude. Her lack of motivation is described in the following quotation:

> With that maybe I am lacking some motivation that is what I think. Maybe it's like there is no particular reason for me to get better or look better, maybe it could be. One day a social worker was talking to me and I said, from nowhere I said, what's the point of doing.

Another participant shared that even though being a member or paying a membership fees forces her to go, it is not something she wants to do. She further explained though she wants to lose weight and be fit, that reason alone doesn't give her enough motivation to go and participate. She explained sometimes de-stressing comes from watching a movie rather than going to the gym. She often feels too tired which makes her more stressed because she has paid membership and is not using it:

> I also find myself not motivated to do, I have other priorities, when I want to de-stress. I would rather sit in front of the TV, watch a movie, because I hardly see TV or movies. So once every 15 days when I really want to de-stress, for me it's a time to choose, gym, two hours of sweat, coming and taking a shower which I really don't want or sitting in front of the TV, watch a movie have popcorn and then go to bed. So obviously again prioritizing for us, we are too tired, de-stressing doesn't mean going to the gym, it adds to the stress sometimes. I haven't done gym, I have paid, I better go and do it, that's something else. I find myself not motivated enough yet to start it so it has to come from within also.

One participant shared the opposite experience and said how taking part in yoga actually made her less stressed, especially when she couldn't sleep at night:

> I was in yoga also and it's not that I did a course, I read a book and it inspired me so much that I started doing yoga on my own and I really felt good when I do yoga. I sometimes am stressed out now also so I use that relaxing, deep relaxing exercise on my own, even sometimes if I can't sleep I do that and it helps

Another participant expressed her only lack of motivation came from not changing her dress for swimming. She stated, "Swimming pool . . . is free, I don't need to pay, [my] only . . . motivation is [to] change my dress, that's all."

Similarly their clients are also lacking motivation to get active. They seem to be very much interested at the start of the session but as weeks go by they discontinue. One participant stated, "At the beginning everybody is interested, let me try and then they will, ‘oh it's paining here it's . . . this [and that]’ they lose interest, maybe, or I don't know." Another added, "I think it's lack the motivation, lack of motivation and excuse . . . to come out . . . [for] 15-20 minutes, how much you lose, we don't lose that much. It will be ideal if I do 15 minute exercise [and] I will lose one, two pounds."

For most women health was the primary reason they wanted to be physically active. Five participants shared their views of being healthy and well especially during their old age. The women expressed that it was important for them to be able to take care of themselves and be independent when they got older. To illustrate this, one participant said:

> For me, my motivation is my health and old age . . . I always think I have to take care of myself, I have to . . . [be] in a situation where at least in my old age I am not

> dependent on them . . . be able to take care of myself to do things [on] my own in my old age . . . I will never like to dependent on small, small things on others.

Another participant shared the exact same thoughts through these quotes:

> I couldn't agree more, I always think of old age . . . I always think that I have to be strong, I don't want to be burden to my family or to anybody. Specifically, again moving here I learnt so many things that you are on your own when you are sick, no one is, I know husband is there but the way I want, I know they can't do like that so I have to be strong . . . I learnt that . . . if you are physically fit you can do things, [and] . . . when you're unfit [you can't]. One thing that exercise no matter what [exercise] gym or other kind of thing we have to do because as we are aging, exercise . . . [can]get rid of a few sickness[es] like regular common cold [and]other things also. You cannot avoid totally but you can delay or you can [at] least be [able] to fight it. You will be in . . . good health you know.

Both these participants illustrate the importance of being physically active for South Asian women, especially women that left their native countries and are living away from extended family. They need to be active and well to be able to take care of oneself and their families without dependence on anyone.

On the contrary, another participant stated that, "Health is not that big motivation for . . . [her] right now." Her main motive was to lose weight and look good. She explained further in the following account:

> For me, my biggest motivation is my looks. I know if I lose another 30 pounds I will look, I don't know, five years younger and that's my biggest motivation . . . When I look

> in the mirror I don't find myself pretty enough, I look in the mirror and I say. 'Ah look at that weight, if I lose it I will look better to myself [not to] nobody else.'

This participant was one of the younger women in the study and her motives reflected the way she felt about her body and her outer appearance.

One participant explained that the change to want to do something for her well-being had to come from within herself. She felt at her age everything is so set that it is hard to change and think differently:

> I think things I have to change in myself to take time out. Sometimes I become lazy, because I am tired [of] my mental work, when I am at the centre I am doing, I have so many things that are going on, even when I go home the moment I enter home the things I have to do at home, they will start coming to me. This is [why] I have to bring change in myself. But somehow it has become a habit so deep down, it's there, that I have to do this. I have to do this, and I just forget myself. But at my age everything is so fit into my system and to break that I need to have that kind of courage to break.

Priorities. Three women suggested that being physically active was not a priority for them and their focus was on other things. One participant said she liked to, "update . . . [her] knowledge and qualifications more than physical." Another participant was seen juggling between gym or sleep and the later took precedence for her:

> So you come back from gym maybe at 10 and the things that you have left you have to do it, so maybe it will be 12 midnight before you go to bed, so in the end for women like me it comes to choose between gym exercise or losing sleep.

PA is also not seen as a priority for many of their South Asian clients. When new immigrants come to the Centre they seldom bring forth health concerns unless they are going through a severe condition:

> When new immigrants come . . . physical health is not a priority unless they are going through extreme bad health conditions, it's never a priority. So nobody thinks 'oh I need to be physically active.' We have never come across any family putting it up there.

> And again maybe they don't feel necessary as . . . physical activity for some people it's a long term thing, long term goal they don't see, unless the problem is there, you know, unless you are diabetic, 'ok I have to walk,' unless you have some blood pressure kind of thing 'ok walking is good.' So physical activity is really not . . . the priority, not even if you count one to ten I think it's not there . . . They think it's . . . not that useful as I am saying it is not . . . their priority. Like the women now that are stick[ing] in the things they feel that there is a need, so they are going.

New immigrant. During the individual interview, one participant shared her initial experiences during the process of integrating into society which posed difficulties in finding resources about activities she could participate in:

> Because I am a like I am a new immigrant, that time because I didn't know I couldn't get the resources like where to go . . . So because it was a time that I learn about Canada, like that time, I just started integrating in the society.

In summary, participants described both barriers and facilitators that affect their participation in PA. Family responsibilities were the biggest cultural factor for restricting PA in the study participants. Participants were also inhibited by lack of PA in childhood as well as

their own choice of clothing to participate in. Environmental barriers participants faced in this study included: location of PA facilities and programs being too far, high cost of programs, weather, and lack of female only facilities. Intrapersonal barriers participants reported included: lack of time, feeling shy in certain activities, lack of motivation, and having other priorities. Some facilitators mentioned by the participants were: having help at home with family responsibilities, being able to wear clothing of their own choice during an activity, location of PA facilities and programs being close to their homes, affordable programs, female only facilities and activities, having someone to participate with, daycare options at PA location, and increased motivation because of perceived health benefits. These barriers and facilitators applied both to South Asian women's centre employees and their clients.

Differences between South Asian women's Centre employees and their clients were identified too. They key difference between the women's Centre employees and their clients was that when the latter first arrive to Canada being physically active or becoming healthy is not their priority. Often times, their husbands do not see the need for women to take part in PA, though many of these women may have health issues such as being overweight or obese. For new immigrant women, their husbands control a lot of their decisions during the initial years of settlement. For South Asian working women their biggest intrapersonal factor was time. They do not have enough time especially after a long working day which sometimes extends to weekends as well. On the other hand, new immigrants, as reported by the study participants, do have a lot of time, especially in the morning hours, to engage in PA.

CHAPTER 4

Discussion

The purpose of this study was to gain an understanding of the PA experiences of first generation South Asian women's Centre employees and their perception of their clients in regards to barriers and facilitators to participation in PA. Similarities as well as differences between individual participants and between South Asian women's Centre employees and their clients were found. Though other approaches have been utilized to explore this area of research, this current study used an interpretive perspective where the findings are linked back to the current knowledge in the area of South Asian women and PA. Results from this study corroborate those from previous studies, but at the same time, indicate several unique and important issues that have not been previously reported.

Cultural Factors

South Asian women, regardless of whether they are new immigrants or have been living outside their home country for numerous years, reported family responsibilities as the biggest restricting cultural factor when wanting to participate in PA. This is consistent with findings from earlier research as well (Babakus & Thompson, 2012; Caperchione et al., 2009; Eyler et al., 1998; Jiwani & Rail, 2010; Johnson, 2000; Nanayakkara, 2012; Snape & Binks, 2008; Vahabi et al., 2012; Walseth, 2006; Walseth & Fasting, 2004). George (1998) and Martin and Reid (2007) also reported family responsibilities as a barrier for South Asian women during the initial stages of adaptation in Canada. For South Asian women, childcare and household responsibilities represent huge barriers to engage in other activities. In South Asian culture, PA is often viewed as women taking care of themselves rather than the family (Babakus & Thompson, 2012; Snape & Binks, 2008). In this study, this was especially a factor for new immigrant South Asian

women who found it difficult to attend programs because they are first meant to sacrifice for the betterment of their family and the lives of their children before their own.

South Asian women in this study who bear the dual responsibility of work outside of the home and inside need help at home so they can take time for themselves in other activities. Participants shared that it would be easier for them to attend PA programs if they had help at home.

The participants in this study along with many other South Asian women have not been brought up in households that have exposed them to PA or sport from a young age (Lawton et al., 2006). One participant expressed that despite her health issues, and consequent need to be physically active, she found it hard to regularly engage or continue doing activities because she had not done so in her childhood. This may be indicative of the importance of introducing active lifestyles early on for South Asian girls so they can carry the habit of lifelong PA into adulthood.

Many studies have also reported religion (Babakus & Thompson, 2012; Caperchione et al., 2009; Jiwani & Rail, 2010; Johnson, 2000; Nanayakkara, 2012; Walseth & Fasting, 2004) as a common cultural barrier for South Asian women. However the current study did not find religion as a barrier to PA. This difference may be due to the circumstance that most participants in previous studies were from Muslim religious backgrounds whereas this was not necessarily the case for women's Centre employees in the current study. One participant did mention the restriction her culture placed on some physical activities once women grew up, but religion was not brought up as a major factor.

Some studies found that members of participants' own ethnic group acted as barriers to PA (Lawton et al., 2006; Snape & Binks, 2008; Walseth, 2006). The participants in this study reported the opposite, mentioning how new South Asian immigrant women are generally seen

together in a group and enjoy each others' company when taking part in daily activities including PA (e.g., exercise classes and community sport events organized by ethnic groups). Thus, the results reveal that for some individuals, participating with other individuals from the same ethnic groups can be a positive influence. In some previous studies, women who tried to go against their cultural collective identity and participated with others outside of their ethnic community were gossiped about or ridiculed more compared to the women in this study who participated together as a collective group in PA. Therefore, women in this study had positive experiences participating with other South Asian women.

South Asian women are often inhibited by the clothing required for certain activities which is not always appropriate or comfortable for them. One woman in this study explained the importance of her clothing to who she was as an individual which she would never be able to change. This was also re-affirmed by women in Snape and Binks (2008) who felt that they prefer to wear clothing that is comfortable and which represents who they are. One activity found enjoyable and high in interest for participants in this study and women in Snape and Binks (2008) was swimming. Most South Asian women in the current study really wanted to participate in swimming but could not because they were not comfortable wearing the swimming suit. One woman mentioned how she even tried to compromise by showing alternative clothing but was refused at the pool for safety reasons. She was not exactly sure what the safety issues were but was told she had to wear the swimming suit. This revealed that though some South Asian women have an interest, they cannot pursue it unless an alternative clothing option is given where they feel comfortable wearing what they want. The women's Centre employees explained that their clients attend the current PA program that is offered by another Centre in their traditional clothes and no one tells them to change. They mentioned that they can wear

what they feel comfortable in and are not forced to change to an attire that is out of their comfort zone. This is another factor for the success of the program offered by the other organization, where many of their clients still continue to attend even after six months. Thus, this study indicates that similar to past studies of South Asian women, family responsibilities are the biggest restricting factor for regular participation in PA. However religion, found in past studies as a cultural barrier was not reported by participants in the current study. Also, the results from this study reveal that for some individuals, participating with one's own ethnic group can be a positive influence, contrary to some findings from previous literature that found it to inhibit PA. As well clothing inhibits many South Asian women who may actually be interested but cannot participate because the clothing used for certain activities is not comfortable for them.

Environmental Factors

Participants identified many environment barriers that have been previously reported in the literature, such as lack of female only facilities (Babakus & Thompson, 2012; Farooqi et al., 2000; Hayes et al., 2002; Horne & Tierney, 2012; Jiwani & Rail, 2010; Johnson, 2000; Lawton et al., 2006; Sriskantharajah & Kai, 2007; Walseth & Fasting, 2004), cost (Allender et al., 2006; Babakus & Thompson, 2012; Eyler et al., 1998; Johnson, 2000; Vahabi et al., 2012), weather (Caperchione, 2009; Choudhry, 1998; Eyler et al., 1998; Johnson, 2000; Lawton et al., 2006; Vahabi et al., 2012), lack of social support (Caperchione, 2009; Eyler et al., 1998; Horne M, 2012; Johnson, 2000; Walseth & Fasting, 2004, instruction/activity (Johnson, 2000; Lawton et al., 2006; Snape & Binks, 2008; Sriskantharajah & Kai, 2007) and language (Babakus & Thompson, 2012; Choudhry, 1998; Eyler et al., 1998; Johnson, 2000).

An important environmental issue that emerged in this study and has not been previously reported is the location of PA facilities and programs. The location of the PA became a barrier

for both South Asian women's Centre employees and for new immigrants. This has not been reported in the previous literature except for Walseth (2006) who reported a lack of PA opportunities within ethnic communities. Though there is a South Asian women's Centre already established that offers services to new immigrant women, it was perceived to be too far from the area where the majority of South Asian women reside. The participants felt that they would be interested in participating in an activity that was offered at the Centre if it was during working hours since they would already be working at the location. As one participant said, they would be more inclined to regularly attend a PA program if it is in the area they reside and they can walk to. The participants explained the success for the current program many new South Asian immigrant women attend is because it is walking distance from their clients' home to the program location. These new immigrant women are able to go and participate and return home quickly to continue with other responsibilities. These findings reveal that even though there is a Centre catering for just South Asian women, unless it is closer to where South Asian women reside they will find it difficult to attend. Those in program development or instruction catering to South Asian women need to take into consideration the location of where the target population resides and the distance to where the activity will be held.

The lack of female only facilities inhibits the level of participation for many South Asian women. Both South Asian women in this study and in previous research concurred that these women highly benefit from female only facilities to increase the likelihood of participating in PA (Jiwani & Rail, 2010; Johnson, 2000; Lawton et al., 2006; Snape & Binks, 2008; Sriskantharajah & Kai, 2007).

One unique circumstance that was mentioned by participants in this study was that just having female only classes is not enough when the facility the class is taking place in is open to

everyone. Even when women have an interest to participate in an activity, the facility they are attending may not meet their needs. One participant shared the liking many South Asian women had towards swimming but there were not any current programs that catered for women only to learn swimming. She felt that if there was an opportunity for a women's only class in a female only facility it would definitely motivate her to attend and many other women as well. Another participant mentioned a swimming class for females only but it was in a facility where there were glass walls and men could watch. Building designs need to be more culturally sensitive especially to target this population of women. The implementation of a class that is for females only but in a facility that is open to both genders does not meet the needs of South Asian women, as one participant explained. Building developers and architects should meet with South Asian women prior to constructing a building in areas where South Asians reside or buildings meant for the use of the South Asian community to understand what these women need and how these needs can be met. The discussion needs to start right from the onset since these are barriers even before women engage in the activity.

Another reason for the lack of exercise found in this study had to do with the immediate living environment of South Asian women. Many women do not live in environments that provide the space to be physically active. Their living spaces are very small. They have to do everything in one area and don't have the opportunity to move around. Back home, in contrast, many would have walked around the garden, watering plants. Here, however, they are restricted to usually living in a small apartment.

The timings (Lawton et al., 2006) of certain activities were not always suitable for all South Asian women, especially those that are employed. One woman in this study found it

difficult to attend the gym because the timings were not suitable to her schedule since she is working full time and has family responsibilities.

Previous literature found the lack of support (Caperchione et al., 2009; Eyler et al., 1998; Horne & Tierney, 2012; Johnson, 2000; Walseth & Fasting, 2004) as a barrier mainly because women did not have friends to participate with or their husbands were often working during the weekends. Data from this study indicate the huge impact husbands have on new immigrant women and their decisions. The participants explained how many husbands of their clients did not see the necessity of their wives engaging in PA, therefore most new immigrants would stop attending the programs offered by the Centre. Husbands want their wives to learn about daily living in Canada. For example they find it important for the women to know how to interact with various people in society such as their child's school teacher or doctor. Those that did participate for some time in the programs offered by the Centre mentioned that their husbands felt they will not look nice if they lose weight. One participant explained that in the South Asian culture, women who are portrayed as thin or weak often represent to the public that their husbands are not feeding them properly. An image is therefore created on the husbands that they are not able to take care of their family. This has not been previously reported in the literature examining South Asian women and PA and adds a new dimension to this area of research. Another important finding that emerged from the participants' accounts was that in South Asian culture men start to feel threatened if women make decisions on their own without consulting with their husbands. They feel if a woman makes a decision today, tomorrow and the day after, she will start choosing what is good for her. This causes the husband to slowly lose control of their wives. This perception was not matched for the South Asian women's Centre employees, who were, reportedly, quite independent in their decisions. Thus, the data suggests that the lack

of PA for South Asians and especially new South Asian immigrant women has multiple layers and is more intricate than it may seem to some.

Most participants agreed that when there was a partner or friend to go with, it made it easier for them to attend even when they were not feeling motivated. Group activities are beneficial for South Asian women because they get to interact with other women and motivate each other to do better. The participants shared that their clients enjoyed doing activities in a group because they get to meet their friends and get out of the house. Previous studies have also confirmed the benefits the social environment can provide for increased participation (Allender et al., 2006; Eyler et al., 1998; Jepson et al., 2012; Sriskantharajah & Kai, 2007; Vahabi et al., 2012; Walseth & Fasting, 2004).

The weather has been reported in previous literature as a barrier when women immigrate to a new country because most women have left warm and hot environments and come to countries with long winters and cold temperatures which makes it difficult to adjust. (Ahmad et al., 2005; Martins & Reid, 2007; Samuel, 2009). Researchers have also found weather to be a restricting factor for South Asian women when participating in PA as well (Caperchione et al., 2009; Choudhry, 1998; Eyler et al., 1998; Johnson, 2000; Lawton et al., 2006; Vahabi et al., 2012). Most participants in this study mentioned the difficulties they had during the winter months to engage in PA. South Asian women need time to adapt to these drastic weather changes which may decrease their involvement in PA. The summer months were seen as a huge advantage for some participants because they were able to spend longer hours in PA such as walking outdoors or having the convenience of leaving children at the park while they worked out in a gym nearby.

The cost of classes and gym membership need to be more affordable for women in public or private facilities. The participants expressed that they are not expecting free classes but a reasonable fee is what they need. The Centre often times provided free bus tickets for their clients to come for sessions, which was found to be very positive. Even the PA program that many of their clients are currently attending only has a small membership fee which new immigrants can afford.

For women that have young children, providing daycare options at the facility where they are going would help them (Vahabi et al., 2012). One participant mentioned that the reason she even was able to attend the gym was because it had a daycare. Previous literature has also demonstrated the importance of childcare services at facilities and gyms for all various cultural background women with young children (Devine, Bove, & Olson, 2000; Richter, Wilcox, M.L., Henderson, & Ainsworth, 2002; Sanderson, Littleton, & Pulley, 2002). Women have expressed the main reason they cannot attend a gym or a exercise class is that the facility does not provide the services women need because of the prominent role they take as caregiver (Elnakib, 2013; Guerin, Diiriye, Corrigan, & Guerin, 2003). Since South Asian women have primarily responsibility for child care needs, facilities, ideally, should provide daycare services to make it easier for them.

Language barriers have been reported in studies examining new immigrant women arriving in Canada and the difficulties they face when trying to use service providers (Ahmad et al., 2005; George & Ramkissoon, 1998). The women in this study explained how language often makes many of their clients stay at home because they lack English skills to attend programs offered to the public. Since all of the participants in this study have been living in Canada for an

average of fifteen years, they currently did not face language barriers but they brought forth the issue for new immigrants.

One participant felt that instruction of activity should be offered in the native language of the women to help them easily follow. This would be especially useful for new immigrants who lack English proficiency and need time to develop their skills. The participant explained further that when an activity is conducted in their own language women feel more at home and surrounded by their culture. Research by Pearce (1999) and Caperchione et al. (2009) outlined the importance of health promoters and leaders working with diverse populations to first understand the cultural sensitivities of the group.

The way the PA programs are structured encouraged some women to participate. Two participants shared that having a structured program with an instructor telling them what to do was helpful. One of them said that she does take part in unstructured activities like walking and playing the Wii with her children but structure is always better because it is at a specific time and she can plan her day. For example, she mentioned that her kids will often ask her to play Wii with them at times where she may have just eaten food and is full. Another participant disagreed and mentioned she prefers unstructured activities. She said she is unable to follow instructions and just enjoys dancing to music freely. Providing a variety of options that are unstructured and structured will allow individuals to make their own choice of which they would like to attend.

Another important facilitator for participants in this study and for women in Vahabi et al. (2012) was to have women instructors lead the classes. South Asian women prefer female instructors because they are freely able to express themselves and feel comfortable and not shy or reserved to participate because of a male instructor's presence. Participants in this study also

stated the instructor's personality as a factor for continuing in programs. Instructors that were friendly and highly skilled were very much liked by participants.

Another idea brought forth by one participant was to have a PA program offered to children at the same place and time as a program for South Asian women. This participant felt that since her children were already going to school and daycare for the whole day she would not want to put them again into daycare while she was participating. Instead she said if there was an organized PA for her children then they could also participate while she was as well. This could be a good opportunity for South Asian children to get exposed to an active lifestyles at a young age. Also this suggestion could provide children with their mothers as role models for them to engage in healthy habits. Previous studies have shown that having someone to look up to as a role model made it easier for South Asian women to participate (Allender et al., 2006; Jepson et al., 2012).

One important difference between the women's Centre employees and their clients was the vast number of other societal issues new immigrants are faced with daily, such as racism, poverty (Martins & Reid, 2007), isolation (Abouguendia, 2001; Ahmad et al., 2005; Choudhry, 1998; George, 1998; Kurian, 1991; Martins & Reid, 2007) and pressure. New South Asian immigrant women can be a sensitive population to cater programs to because they are in a situation where they have to deal with many obstacles especially in the initial years in Canada. These factors need to be taken into consideration for immigrant women to successfully participate in programs.

Thus, the current study identified similar environmental barriers as in previous research such as lack of female only facilities (Babakus & Thompson, 2012; Farooqi et al., 2000; Hayes et al., 2002; Horne & Tierney, 2012; Jiwani & Rail, 2010; Johnson, 2000; Lawton et al., 2006;

Sriskantharajah & Kai, 2007; Walseth & Fasting, 2004), clothing (Johnson, 2000; Snape & Binks, 2008; Walseth, 2006), weather (Caperchione, 2009; Choudhry, 1998; Eyler et al., 1998; Johnson, 2000; Lawton et al., 2006; Vahabi et al., 2012), cost (Allender et al., 2006; Babakus & Thompson, 2012; Eyler et al., 1998; Johnson, 2000; Vahabi et al., 2012), language (Babakus & Thompson, 2012; Choudhry, 1998; Eyler et al., 1998; Johnson, 2000), timing of activity (Lawton et al., 2006), and broader societal issues faced by new immigrants (Abouguendia & Noels, 2001; Ahmad et al., 2005; Choudhry, 1998; Kurian, 1991). One unique finding that emerged in this study was the importance of the location where the PA is taking place. Almost all participants expressed how important it was for them to attend programs that were close to where they reside. Though previous literature has reported on the lack of female only facilities (Babakus & Thompson, 2012; Farooqi et al., 2000; Hayes et al., 2002; Horne & Tierney, 2012; Jiwani & Rail, 2010; Johnson, 2000; Lawton et al., 2006; Sriskantharajah & Kai, 2007; Walseth & Fasting, 2004), this study found that just having female only classes in an environment open to everyone is not beneficial for some South Asian women. This study also found the restriction the immediate living spaces have on South Asian women to engage in PA, which was not reported earlier. Another barrier that was not found in previous research was the significant role husbands play in the lives of new immigrant South Asian women. This study reveals that husbands affect the decisions new immigrant women make about taking part in PA.

Environmental facilitators that were similar to previous studies included female instructors (Vahabi et al., 2012), daycare options (Vahabi et al., 2012), and group PA (Allender et al., 2006; Eyler et al., 1998; Jepson et al., 2012; Sriskantharajah & Kai, 2007; Vahabi et al., 2012; Walseth & Fasting, 2004). Other facilitators found in the current study that could help South Asian women engage more regularly in PA included organized PA programs for children

at the same location and time as the activity for the women, variable instruction types (structured/unstructured), and implementing PA programs and opportunities in the native language of South Asian women.

Intrapersonal Factors

The intrapersonal barriers identified in the data which were similar to previous literature included lack of motivation (Eyler et al., 1998; Johnson, 2000; Vahabi et al., 2012) and time (Babakus & Thompson, 2012; Kalra et al., 2004).

Many South Asian women lack the motivation to begin any form of PA. Two participants shared different reasons to their lack of motivation. One participant expressed that she absolutely had no reason to feel or look better so she did not feel like participating. Another participant stated that her lack of motivation came from the clothing required for swimming. This participant explained that she was not motivated enough to be able to change her clothing to participate in swimming. New immigrants were also found to lack motivation for PA. Many of them began the activities offered by the Centre but as the program continued participation rates dropped because they either lost interest or were not motivated enough to continue.

Personal health was a reason many participants reported for engaging in PA. Five participants explained how they wanted to be healthy and independent in their old age. They felt that living away from their native countries increased their motivation for PA so they can be strong and well enough to take care of themselves if they got sick. They strongly expressed the importance of being independent and not putting any burden on their family in their old age. Another participant who was younger felt that her biggest motivation was her looks. She did not like the way she looked and if she lost weight she would feel good about herself. Similarly, self-image has been found as a motivating factor for some women to become physically active

(Babakus & Thompson, 2012; Eyler et al., 1998; Johnson, 2000; Vahabi et al., 2012). Previous literature has also reported on extrinsic factors for motivation such as health benefits to increase PA (Allender et al., 2006; Ingledew, Markland, & Medley, 1998; Warburton et al., 2006). Since many of the women in the current study reported health as the biggest motivational factor for participation in PA, interventions and programs should incorporate educational sessions to increase awareness of the health benefits associated with PA when targeting programs for this population of women.

Time was the biggest barrier of PA for all eight participants. The participants were all working women and were even required to work some weekends. This made it difficult for all of them to find time to engage in PA. Though previous literature presented lack of time as a barrier because of family responsibilities in the home (Eyler et al., 1998; Johnson, 2000; Lawton et al., 2006; Vahabi et al., 2012) this study showed how lack of time may be an issue because of employment outside of the home. The participants mentioned that their clients differed from them in regards to this because most of their clients were primarily housewives. They seem to have lots of free time to engage in PA, especially during hours their children and husbands were at school and work. These findings are important for those implementing programs for this population because so far most research has shown that many South Asian women do not have enough time during the day. These data suggested that some South Asian women have time to engage in PA, especially those at home, and organizations promoting PA could take advantage of the time these women seem to have available to plan appropriate PA programs for them. For some South Asian women PA is not a priority in their lives, which restricts them from participating altogether because their priorities are elsewhere. Other priorities such as sleep and academic growth were placed higher than being physically active for some participants. When

new immigrants come to the Centre for help they never bring forth health as a priority to the women's Centre employees. Their first priority is getting accustomed to Canadian culture, understanding how services work and so forth. It may be more of a long term goal for some but most clients have never expressed anything regarding their health, unless they have a severe health issue. These findings were unique to the current study. Centres and organizations working with South Asian women could slowly start discussing small PA goals with new immigrants when they come to use the servicers. Since the particular Centre where the study took place officially only caters to South Asian women for the first five years of living in Canada, the Centre's mandate may also affect why there is not a concrete PA program in place.

Participants spoke of a current program that is running successfully in the neighbourhood where many South Asian women live. The participants shared that this program was run by another organization with a proper instructor that leads simple movements to music that everyone can follow. It is held four to five times a week at a location that is walking distance for their clients. They are able to wear their traditional clothes and it is at a time that is convenient for these women to attend before going home for family and household responsibilities. It is open for all women but a majority of the women that currently attend are of South Asian ethnicity. Many of the participants expressed how if a program like this was offered to them that was for women only, at a time and place that suited their schedule, they would definitely attend. Another suggestion was the possibility of collaborating with the YMCA. The participants mentioned how the YMCA had some great programs catering to women, children and families. Possible collaborations between the YMCA and the South Asian centre could be beneficial. The literature has shown that using participatory action research (PAR) can be an ideal approach to foster a cooperative and engaging way for the promotion of health and PA initiatives to be

informed by community members, researchers, and people who contribute in every stage of the process (Macaulay et al., 1999; Minkler, 2000; Potvin, M., McComber, Delormier, & Macaulay, 2003). It is driven by community priorities and not those outside. This method could be used in a subsequent study to see how the YMCA and the South Asian Centre could collaborate to offer programs that will meet the needs of South Asian women. Since there is an organization like the YMCA that offers a variety of programs and there is also a organization that caters to only South Asian women, developing a partnership, starting from the current study results, could be beneficial.

A while back the Centre had also rented a room in the area where these South Asian women reside and was offering them an exercise class right after an English class they were offering. It was good for a while but then as weeks went by no one attended the PA class. Many left right after the English class to pick up children from school for lunch. They also tried combining walking groups with learning English. These have all worked well in the beginning but participation rates drop as the programs continue. This is consistent with the literature, which indicates that women's adherence to exercise programs is low compared to men and they tend to drop out after some time (Allen & Morey, 2010, Kelly & Kelly 2013). As well many of these sessions were not offered often enough so people tend to forget or a proper routine was never established compared to the current one running that is four to five times a week. The following description by one participant revealed an ideal situation providing that the appropriate resources were in place:

> I would rent a room [for] 5 days a week which is open between let's say 10 and 2 because this time I know is the best for women, it’s women's only and there is a trained instructor to help them and go according to their needs. For example, if a woman is very

> big in size she cannot start with aerobics right away, so take her slowly and meeting individual needs in that sense which we couldn't do in our programs, and it's more than 2 times a week. We were giving only once a week so motivation was low . . . the ideal would be something easy, cheap, accessible and available 4-5 times a day. That's a max.

Strengths and Weaknesses

This study took the form of an interpretive description, therefore limiting other approaches that may have also been appropriate to examine the questions. The results pertain to only one geographical region of Canada and cannot be transferred for every place South women reside. It is however important to note the many commonalities that were found with previous literature on South Asian women and PA. The realities of new immigrants reported by the participants may not always be completely accurate; therefore further work with new immigrant South Asian women is needed to clarify accounts.

The study involved eight out of the eleven potential South Asian women's Centre employees currently working at the Centre where the study was conducted. Therefore the sample is largely representative of the Centre given the potential participants. This study was novel because it is the first study to examine South Asian women and their PA experiences at a Centre that caters only for South Asian women and their needs. Data were collected through focus group, individual and follow-up interviews. This added credibility to the information gathered as well as the opportunity to cross-check the participants' accounts.

Further Directions

Research examining new immigrant South Asian women at the Centre, or similar Centres, can clarify the accounts presented by the participants on their views of their clients. Further research on South Asian women could focus on second generation immigrants in Canada

to observe any similarities and differences between foreign born and Canadian born South Asian women in regards to barriers and facilitators to PA participation. Also, ongoing research at other South Asian centres in Canada, or similar organizations, can help determine the evolving needs for this population of women to become active.

Conclusion

South Asian women are currently the biggest visible minority group in Canada and are predicted to continue to be in the years to come. As a population, South Asians have greater predisposing factors for developing diabetes and CVD and are now reported with the lowest levels of PA compared to all ethnicities. Most South Asian women have left their homeland and immigrated to another country to provide better lives for their families and children. On arrival they are faced with numerous difficulties with language, weather, and access to service providers. Many of these barriers are also found during PA participation for South Asian women. To understand the reasons why such low levels of PA exist in this population, an analysis of how behaviour change occurs was undertaken in this study. For South Asian women to engage in PA, both the environment and the individual interact for either restricting or inhibiting their involvement. Those working in environments to promote healthy and active lifestyles for South Asian women need to consider all levels of the Ecological Model of Health when trying to develop programs for South Asian women to become more physically active. This study provides evidence that numerous factors within the individual, outside the immediate individual and in the broader environment all affect the participation of South Asian women. These women are restricted by many factors at all levels when wanting to engage in PA. New South Asian immigrant women are the most affected because they first have to overcome the barriers of settlement in a new country before they can even engage in an activity. Therefore, if

resources can be provided for these women during this time to incorporate PA and other healthy habits in their daily lifestyle, these women many have increased chances of continuing with these practices later on in life too. This population of women are also inhibited by culturally specific factors such as family responsibilities and sacrificing to the family before other activities. Thus, the current study reveals that the problem of low levels of PA in South Asian women has to be examined with sensitivity and using a multi-dimensional ecological framework to understand the reasons.

References

Abouguendia, M., & Noels, K.A. (2001). General and acculturation-related daily hassles and psychological adjustment in first- and second-generation South Asian immigrants to Canada. *International Journal of Psychology, 36*(3), 163-173.

Ahmad, F., Shik, A., Vanza, R., Cheung, A.M., George, U., & Stewart, D.E. (2005). Voices of South Asian women: immigration and mental health. *Women & health, 40*(4), 113-130.

Allender, S., Cowburn, G., & Foster, C. (2006). Understanding participation in sport and physical activity among children and adults: a review of qualitative studies. *Health education research, 21*(6), 826-835.

Anand, S.S., & Yusuf, S. (1997). Risk factors for cardiovascular disease in Canadians of South Asian and European origin: a pilot study of the Study of Heart Assessment and Risk in Ethnic Groups (SHARE). *Clinical and investigative medicine. Médecine clinique et experimentale, 20*(4), 204-210.

Anand, S.S., Yusuf, S., Vuksan, V., Devanesen, S., Teo, K.K., Montague, P.A., . . . Gerstein, H. (2000). Differences in risk factors, atherosclerosis, and cardiovascular disease between ethnic groups in Canada: the Study of Health Assessment and Risk in Ethnic groups (SHARE). *The lancet, 356*(9226), 279-284.

Babakus, W.S., & Thompson, J.L. (2012). Physical activity among South Asian women: a systematic, mixed-methods review. *Int J Behav Nutr Phys Act, 9*, 150.

Barnett, A.H., Dixon, A.N., Bellary, S., Hanif, M.W., O'Hare, J.P., Raymond, N.T., & Kumar, S. (2006). Type 2 diabetes and cardiovascular risk in the UK south Asian community. *Diabetologia, 49*(10), 2234-2246.

Bryan, S.N., Tremblay, M.S., Pérez, C.E., Ardern, C.I., & Katzmarzyk, P.T. (2006). Physical

activity and ethnicity: evidence from the Canadian Community Health Survey. *Canadian journal of public health. Revue canadienne de sante publique, 97*(4), 271-276.

Byrne, N.M., Hills, A.P., Hunter, G.R., Weinsier, R.L., & Schutz, Y. (2005). Metabolic equivalent: one size does not fit all. *Journal of Applied physiology, 99*(3), 1112-1119.

Caperchione, C., Kolt, G.S., & Mummery, W. (2009). Physical Activity in Culturally and Linguistically Diverse Migrant Groups to Western Society: A Review of Barriers, Enablers and Experiences. *Sports Medicine, 39*(3), 167-177.

Caspersen, C.J., Powell, K.E., & Christenson, G.M. (1985). Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public health reports, 100*(2), 126.

Centers for Disease Control and Prevention. (2011). Physical Activity and Health. Retrieved September 14, from http://www.cdc.gov/physicalactivity/everyone/health/index.html

Choudhry, U.K. (1998). Health promotion among immigrant women from India living in Canada. *Journal of Nursing Scholarship, 30*(3), 269-274.

Creswell, J.W. , & Miller, D.L. (2000). Determining Validity in Qualitative Inquiry. *Theory Into Practice, 39*(3), 124-130.

Deedwania, P. (2013). Diabetes, Cardiovascular Disease, and Ethnicity. *Journal of the American College of Cardiology, 61*(17), 1787-1789.

Devine, C.M. , Bove, C.F. , & Olson, C.M. (2000). Continuity and change in womens weight orientations and lifestyle practices through pregnancy and the postpartum period: the influence of life course trajectories and transitional events. *Social Science & Medicine Social Science & Medicine, 50*(4), 567-582.

DiCicco-Bloom, B., & Crabtree, B.F. (2006). The qualitative research interview. *Medical*

education, 40(4), 314-321.

Dogra, S., Meisner, B.A., & Ardern, C.I. (2010). Variation in mode of physical activity by ethnicity and time since immigration: a cross-sectional analysis. *Int J Behav Nutr Phys Act, 7*(1), 75.

Elling, A., De Knop, P., & Knoppers, A. (2001). The integrating and differentiating significance of sport. *Values and Norms in Sport: Critical Reflections on the Position and Meanings of Sport in Society*, 73.

Elnakib, S. (2013). *Knowledge, attitudes, and beliefs of muslim women towards physical activity.* Paper presented at the 141st APHA Annual Meeting and Exposition (November 2-November 6, 2013).

Eyler, A.A., Baker, E., Cromer, L., King, A.C., Brownson, R.C., & Donatelle, R.J. (1998). Physical activity and minority women: a qualitative study. *Health Education & Behavior, 25*(5), 640-652.

Eyler, A.A., Vest, J.R., Sanderson, B., Wilbur, J., Matson-Koffman, D., Evenson, K.R., . . . Young, D.R. (2002). Environmental, policy, and cultural factors related to physical activity in a diverse sample of women: the Women's Cardiovascular Health Network Project–introduction and methodology. *Women & health, 36*(2), 1-15.

Farooqi, A., Nagra, D., Edgar, T., & Khunti, K. (2000). Attitudes to lifestyle risk factors for coronary heart disease amongst South Asians in Leicester: a focus group study. *Family practice, 17*(4), 293-297.

Fischbacher, C.M., Hunt, S., & Alexander, L. (2004). How physically active are South Asians in the United Kingdom? A literature review. *Journal of Public Health, 26*(3), 250-258.

George, U., & Ramkissoon, S. (1998). Race, Gender, and Class: Interlocking Oppressions in the

Lives of South Asian Women in Canada. *Affilia., 13*(1), 102.

Gholap, N., Davies, M., Patel, K., Sattar, N., & Khunti, K. (2011). Type 2 diabetes and cardiovascular disease in South Asians. *Primary Care Diabetes, 5*(1), 45-56.

Glanz, K., Rimer, B.K., & Viswanath, K. (2008). *Health behavior and health education: theory, research, and practice*: John Wiley & Sons.

Gregg, E.W., Gerzoff, R.B., Caspersen, C.J., Williamson, D.F., & Narayan, K.M. (2003). Relationship of walking to mortality among US adults with diabetes. *Archives of Internal Medicine, 163*(12), 1440.

Guba, E.G., & Lincoln, Y.S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research, 2*, 163-194.

Guerin, P.D., Diiriye, R.O., Corrigan, C., & Guerin, B. (2003). Physical Activity Programs for Refugee Somali Women: Working Out in a New Country. *Women and Health, 38*(1), 83-99.

Hayes, L., White, M., Unwin, N., Bhopal, R., Fischbacher, C., Harland, J., & Alberti, K.G.M.M. (2002). Patterns of physical activity and relationship with risk markers for cardiovascular disease and diabetes in Indian, Pakistani, Bangladeshi and European adults in a UK population. *Journal of Public Health, 24*(3), 170-178.

Hilton, B.A., Grewal, S., Popatia, N., Bottorff, J.L., Johnson, J L. , Clarke, H. , . . . Sumel, P. (2001). The desi ways: traditional health practices of South Asian women in Canada. *Health care for women international, 22*(6), 553-567.

Horne, M., & Tierney, S. (2012). What are the barriers and facilitators to exercise and physical activity uptake and adherence among South Asian older adults: a systematic review of qualitative studies. *Preventive medicine, 55*(4), 276-284.

Hunt, M.R. (2009). Strengths and challenges in the use of interpretive description: reflections arising from a study of the moral experience of health professionals in humanitarian work. *Qualitative health research, 19*(9), 1284-1292.

Ingledew, D.K., Markland, D. , & Medley, A.R. (1998). Exercise Motives and Stages of Change. *Journal of Health Psychology, 3*(4), 477-489.

Interational Physical Activity Questionnaire. (2005). Guidelines for Data Processing and Analysis of the International Physical Activity Questionnaire (IPAQ). http://www.ipaq.ki.se/scoring.pdf

Jain, S., & Brown, D.R. (2001). Cultural dance: An opportunity to encourage physical activity and health in communities. *Journal of Health Education, 32*(4), 216-222.

Jepson, R., Harris, F.M., Bowes, A., Robertson, R., Avan, G., & Sheikh, A. (2012). Physical activity in South Asians: an in-depth qualitative study to explore motivations and facilitators. *PloS one, 7*(10).

Jette, M., Sidney, K., & Blümchen, G. (1990). Metabolic equivalents (METS) in exercise testing, exercise prescription, and evaluation of functional capacity. *Clinical cardiology, 13*(8), 555-565.

Jiwani, N., & Rail, G. (2010). Islam, Hijab and young Shia Muslim Canadian women's discursive constructions of physical activity. *Sociology of Sport Journal, 27*(3), 251-267.

Johnson, M.R.D. (2000). Perceptions of barriers to healthy physical activity among Asian communities. *Sport, Education and Society, 5*(1), 51-70.

Kalra, P., Srinivasan, S., Ivey, S., & Greenlund, K. (2004). Knowledge and practice: the risk of cardiovascular disease among Asian Indians. Results from focus groups conducted in Asian Indian communities in Northern California. *Ethnicity & disease, 14*(4), 497-504.

Kilpatrick, M., Hebert, E., & Jacobsen, D. (2002). Physical Activity Motivation: A Practitioner's Guide to Self-Determination Theory. *Journal of Physical Education, Recreation & Dance, 73*(4), 36-41.

Kitzinger, J. (1994). The methodology of focus groups: the importance of interaction between research participants. *Sociology of health & illness, 16*(1), 103-121.

Kitzinger, J. (1995). Qualitative research. Introducing focus groups. *BMJ (Clinical research ed.), 311*(7000), 299-302.

Kurian, G. (1991). South Asians in Canada. *International Migration, 29*(3), 421-433.

Lau, D.C.W. (2010). Excess prevalence and mortality rates of diabetes and cardiovascular disease among South Asians: A call to action. *Can. J. Diabetes Canadian Journal of Diabetes, 34*(2), 102-104.

Lawton, J., Ahmad, N., Hanna, L., Douglas, M., & Hallowell, N. (2006). 'I can't do any serious exercise': barriers to physical activity amongst people of Pakistani and Indian origin with Type 2 diabetes. *Health Education Research, 21*(1), 43-54.

Lee, Young-Sook, & Funk, D.C. (2011). Recreational sport participation and migrants' acculturation. *Managing Leisure, 16*(1), 1-16.

Lip, G.Y.H., Luscombe, C., McCarry, M., Malik, I., & Beevers, G. (1996). Ethnic differences in public health awareness, health perceptions and physical exercise: implications for heart disease prevention. *Ethnicity & health, 1*(1), 47-53.

Macaulay, A.C., Commanda, L.E., Freeman, W.L., Gibson, N., McCabe, M.L., Robbins, C.M., & Twohig, P.L. (1999). Participatory research maximises community and lay involvement. *BMJ: British Medical Journal, 319*(7212), 774.

Marshall, M.N. (1996). Sampling for qualitative research. *Family practice, 13*(6), 522-525.

Martins, V., & Reid, D. (2007). New-immigrant women in urban Canada: insights into occupation and sociocultural context. *Occupational therapy international, 14*(4), 203-220.

Minkler, M. (2000). Assessment/evaluation. Using participatory action research to build healthy communities. *Public Health Reports, 115*(2), 191-198.

Nanayakkara, S. (2012). Crossing Boundaries and Changing Identities: Empowering South Asian Women through Sport and Physical Activities. *The International Journal of the History of Sport, 29*(13), 1885-1906.

Nocon, M., Hiemann, T., Müller-Riemenschneider, F., Thalau, F., Roll, S., & Willich, S.N. (2008). Association of physical activity with all-cause and cardiovascular mortality: a systematic review and meta-analysis. *European Journal of Cardiovascular Prevention & Rehabilitation, 15*(3), 239-246.

O'Donovan, G., Blazevich, A.J., Boreham, C., Cooper, A.R., Crank, H., Ekelund, U., . . . Gill, J.M.R. (2010). The ABC of Physical Activity for Health: a consensus statement from the British Association of Sport and Exercise Sciences. *Journal of sports sciences, 28*(6), 573-591.

Pearce, K.D. (1999). Race, ethnicity, and physical activity. *Journal of Physical Education, Recreation & Dance, 70*(1), 25-28.

Potvin, L., M., Cargo, McComber, A.M. , Delormier, T. , & Macaulay, A.C. (2003). Implementing participatory intervention and research in communities: lessons from the Kahnawake Schools Diabetes Prevention Project in Canada. *SOCIAL SCIENCE AND MEDICINE, 56*(6), 1295-1305.

Public Health Agency of Canada. (2011). Physical Activity. Retrieved June 11, from

http://www.phac-aspc.gc.ca/cphorsphc-respcacsp/2011/cphorsphc-respcacsp-06-eng.php

Richter, D.L., Wilcox, S., M.L., Greaney, Henderson, K., & Ainsworth, B.E. (2002). Environmental, Policy, and Cultural Factors Related to Physical Activity in African American Women. *Women and Health, 36*(2), 89-107.

Sallis, J.F., Cervero, R.B., Ascher, W., Henderson, K.A., Kraft, K.M., & Kerr, J. (2006). An ecological approach to creating active living communities. *Annu. Rev. Public Health, 27*, 297-322.

Samuel, E. (2009). Acculturative stress: South Asian immigrant women's experiences in Canada's Atlantic Provinces. *J. Immigr. Refugee Stud. Journal of Immigrant and Refugee Studies, 7*(1), 16-34.

Sanderson, B., Littleton, M., & Pulley, L. (2002). Environmental, Policy, and Cultural Factors Related to Physical Activity Among Rural, African American Women. *Women and Health, 36*(2), 73-88.

Shenton, A.K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63-75.

Snape, R., & Binks, P. (2008). Re-thinking sport: physical activity and healthy living in British south Asian Muslim communities. *Managing Leisure, 13*(1), 23-35.

Spradley, J. (2003). Asking descriptive questions. *Qualitative approaches to criminal justice; perspectives from the field*.

Sriskantharajah, J., & Kai, J. (2007). Promoting physical activity among South Asian women with coronary heart disease and diabetes: what might help? *Family Practice, 24*(1), 71-76.

Statistics Canada. (2001). *Immigration: Immigrant Population*. Retrieved September 15, n.d,

from http://www.statcan.gc.ca/c1996-r1996/definitions-eng.html

Statistics Canada. (2005). Population projections of visible minority groups, Canada, provinces and regions.

Statistics Canada. (2007). Immigration in Canada: A Protrait of the Foreign-born Population, 2006 Census. http://www12.statcan.ca/census-recensement/2006/as-sa/97-557/pdf/97-557-XIE2006001.pdf

Statistics Canada. (2012). *Canada at Glance 2012* Retrieved July 10, n.d, from http://www.statcan.gc.ca/pub/12-581-x/2012000/pop-eng.htm#t01

Statistics Canada. (2013a). Facts and Figures 2012- Immigration overview: Permanent and temporary residents. Retrieved September 15, from http://www.cic.gc.ca/english/resources/statistics/facts2012/permanent/10.asp

Statistics Canada. (2013b). Immigration and Ethnocultural Diversity in Canada. Retrieved June 13, n.d, from http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-010-x/99-010-x2011001-eng.cfm#a4

Statistics Canada. (2014). Generation status: Canadian-born children of immigrants. Retrieved April 5th, 2014, from http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-010-x/99-010-x2011003_2-eng.cfm

Stovitz, S.D. (2012). Contributions of fitness and physical activity to reducing mortality. *Clinical journal of sport medicine : official journal of the Canadian Academy of Sport Medicine, 22*(4), 380-381.

Taylor, R.S., Brown, A., Ebrahim, S., Jolliffe, J., Noorani, H., Rees, K., . . . Oldridge, N. (2004).

Exercise-based rehabilitation for patients with coronary heart disease: systematic review and meta-analysis of randomized controlled trials. *The American journal of medicine, 116*(10), 682-692.

Thorne, S., Kirkham, S.R., & MacDonald-Emes, J. (1997). Interpretive description: a noncategorical qualitative alternative for developing nursing knowledge. *Research in nursing & health, 20*(2), 169-177.

Thorne, S., Kirkham, S.R., & O'Flynn-Magee, K. (2008). The analytic challenge in interpretive description. *International journal of qualitative methods, 3*(1), 1-11.

Tillin, T., Hughes, A.D., Godsland, I.F., Whincup, P., Forouhi, N.G., Welsh, P., . . . Chaturvedi, N. (2013). Insulin Resistance and Truncal Obesity as Important Determinants of the Greater Incidence of Diabetes in Indian Asians and African Caribbeans Compared With Europeans The Southall And Brent REvisited (SABRE) cohort. *Diabetes care, 36*(2), 383-393.

Tremblay, M.S., Warburton, D.E.R., Janssen, I., Paterson, D.H., Latimer, A.E., Rhodes, R.E., . . . Zehr, L. (2011). New Canadian physical activity guidelines. *Applied Physiology, Nutrition, and Metabolism, 36*(1), 36-46.

Vahabi, M., Beanlands, H., Sidani, S., & Fredericks, S. (2012). South Asian Women's Beliefs About Physical Activity and Dancing as a Form of Exercise. *J. Immigr. Refugee Stud. Journal of Immigrant and Refugee Studies, 10*(2), 139-161.

Walseth, K. (2006). Young Muslim women and sport: The impact of identity work. *Leisure studies, 25*(1), 75-94.

Walseth, K., & Fasting, K. (2004). Sport as a means of integrating minority women. *Sport in Society, 7*(1), 109-129.

Warburton, D.E.R., Nicol, C.W., & Bredin, S.S.D. (2006). Health benefits of physical activity: the evidence. *Canadian medical association journal, 174*(6), 801-809.

Warren, E.K. (2012). Population *The Canadian Encyclopedia*.

WHO. (2013a). Diabetes. Retrieved October 16, from http://www.who.int/mediacentre/factsheets/fs312/en/

WHO. (2013b). Physical Activty. Retrieved September 10, from http://www.who.int/topics/physical_activity/en/

WHO. (2014). Physical Activity. Retrieved Feburary, 2014, from http://www.who.int/topics/physical_activity/en/

Williamson, D.F., Vinicor, F., & Bowman, B.A. (2004). Primary prevention of type 2 diabetes mellitus by lifestyle intervention: implications for health policy. *Annals of internal medicine, 140*(11), 951.

Winship, G., & Repper, J. (2007). Focus Group Research. *Group Analysis, 40*(1), 125-139.

Yates, T. , Davies, M.J., Gray, L.J. , Webb, D. , Henson, J. , Gill, J.M.R. , . . . Khunti, K. (2010). Levels of physical activity and relationship with markers of diabetes and cardiovascular disease risk in 5474 white European and South Asian adults screened for type 2 diabetes. *Preventive Medicine, 51*(3-4), 290-294.

Appendices
Appendix A

McGill

Department of Kinesiology and Physical Education

Would you like to share your physical activity experiences with us?

We are looking for **SOUTH ASIAN WOMEN** Volunteers aged **18-45** years to take part in a study to help us better understand the **physical activity** (Running, swimming, dancing, etc.) experiences of First Generation South Asian Women living in Montreal.

I would like to invite **South Asian women** for a group conversation (approximately 60-90 minutes) to share their experiences about physical activity. After which a invitation to a individual discussion will occur (approximately 45 minutes).

There will be light snacks and refreshments after the group discussion.

The research will be conducted at the
SOUTH ASIAN WOMEN'S COMMUNITY CENTRE

Interested WOMEN who wish to participate in this study, can pick up an envelope from Ramani Balendra (Centre Coordinator) with the Participant Consent form, as well as a short Questionnaire to be completed. Please return the SIGNED forms SEALED inside the envelope and bring it back to the front desk at the Centre.

If you have any questions regarding the study please contact:

Principal Investigator:
Kiruthika Rathanaswami
Master's Candidate, Physical and Health Education Pedagogy
Department of Kinesiology & Physical Education
McGill University, Montreal, Quebec
514-992-7920
kiruthika.rathanaswami@mail.mcgill.ca

Faculty Supervisor:
Dr. Enrique Garcia Bengoechea
enrique.garcia@mcgill.ca
(514) 398-4184 Ext 0541
This study has been reviewed by, and received ethics clearance through University of McGill Research Ethics Committee.

Appendix B

McGill

Demographic/Physical activity Questionnaire

Physical Activity Experiences of First Generation South Asian Women Living in Montreal
(working title)

You have provided consent to participate in a research study conducted by Kiruthika Rathanaswami, under the supervision of Dr. Enrique Garcia Bengoechea of the University of McGill in the Department of Kinesiology and Physical Education. The purpose of this research study is to better understand the physical activity (Running, swimming, dancing, walking, household work etc.) experiences of first generation South Asian Women living in Montreal. We also want to understand the facilitators and barriers to physical activity experienced by First Generation South Asian women.

Participant Name:

_____

Age:

_____

Telephone/email address

_____

Country of Birth:

_____

Languages spoken:

_____

Fluent in spoken English YES ☐ NO ☐

Fluent in Written English YES ☐ NO ☐

Number of Years living in Canada

Do you currently take part in any physical activities (Running, dancing, swimming, basketball, aerobics, walking, household work etc)?

If yes please elaborate on specific activities. How many years (if played on a team, different levels attained (recreational, regional, national, international) or hours a week you participate in them.

Did you take part in any physical activities (Dancing, swimming, running etc.) back in your native country? If so which activities?

If you have any questions please contact:

Principal Investigator:
Kiruthika Rathanaswami
Master's Candidate, Physical and Health Education Pedagogy
Department of Kinesiology & Physical Education
McGill University, Montreal, Quebec
514-992-7920
kiruthika.rathanaswami@mail.mcgill.ca

Appendix C

McGill

Participant Consent Form

Research Title: Physical Activity Experiences of First Generation South Asian Women Living in Montreal
Principal Investigator: Kiruthika Rathanaswami
Faculty Supervisor: Dr. Enrique Garcia Bengoechea
McGill University, Montreal, Quebec
Department of Kinesiology and Physical Education

October 21st, 2013

Dear Participant:

Hi my name is Kiruthika Rathanaswami and I am University student at McGill University. The subject I study at University is topics on physical activity/sport (Running, swimming, dance, basketball etc) and health education. I want to understand more about physical activity experiences of first generation South Asian Women like yourself living in Montreal.

I would also like to ask a few questions about why you do or do not participate in physical activity (Running, walking, dancing, swimming etc) and what makes it easier or harder for you to participate in them.

If you are interested in sharing your experiences with me I will need you to fill out a short questionnaire with basic questions regarding your age, number of years in Canada and your current physical activity (Swimming, dancing, running etc.) participation. After this I would like to invite you to a group conversation with other South Asian Women (6-8 participants). The group conversation should last approximately 60-90 minutes and will be held at the South Asian Women's Community Centre at a time that works best for. The group conversation will be audio recorded so it is easier for me to have a record of what you spoken about

After the group conversation I may ask if you are interested in talking to me in an individual discussion. This individual discussion will just be between you and me. The discussion will occur roughly 1 month after the group conversation. This individual discussion should last approximately 45 minutes to 1 hour and will also take place at the South Asian Women's Community Centre at a time that works best for you. The individual interview will also be audio recorded so it is easy for me to remember what you said.

You do not have to participate in this study if you do not want to. It is completely up to you. You also do not have to answer a question if you do not want to and may leave the study at any time. I will be recording what you say with an audio recorder to help me when I am trying to write my paper. Therefore audio recording is a required part of the study and anyone who does not agree to being audio-recorded will not be able to participate. Since you will be in a group

with other women, the information you provide may not be private. But I will make sure that everyone understands how a group conversation works and ask each person to respect the other. You will also be asked to keep the information shared in the conversation within the room and not speak about it outside as much as possible. The results collected will be used towards the completion of a Master's thesis at McGill University. It will also be presented to the South Asian Women's Community Centre and in academic presentations and publications. Your real name will not appear in writing and fake names will be used instead. All participant names will be replaced with false names and no one will be able to find out what you said. The information you give me will be stored in a locked cabin at McGill University and only my Faculty supervisor Dr. Enrique Gracia and I will have access to them.

You will be provided some light snacks and refreshments after the of the group conversation for your time and cooperation.

You choosing to participate or not choosing to participate will have no effect on your current position at the SAWCC.

This study has been reviewed by, and received ethics clearance through a University of McGill Research Ethics Committee. If you have any questions or concerns regarding your rights or welfare as a participant in this research study, please contact the McGill Ethics Officer at 514-398-6193 or deanna.collin@mcgill.ca

If you want to ask me any questions or have a concern please contact me.
I have read the above information and

❑ **I agree** to participate in the **group conversation (YES)**

❑ **I do not agree** to participate in the **group conversation (NO)**

❑ **I agree** to participate in the **individual discussion (YES)**

❑ **I do not agree** to participate in the **individual discussion (NO)**

_____ _____

Participant's Signature Date

Kiruthika Rathanaswami
Master's Candidate
Physical and Health Education Pedagogy
Dept. of Kinesiology & Phys. Education
McGill University, Montreal, Quebec
kiruthika.rathanaswami@mail.mcgill.ca

Enrique Garcia, Ph.D.
Graduate Program in Pedagogy
Dept. of Kinesiology & Phys. Education
McGill University, Montreal, Quebec
enrique.garcia@mcgill.ca

Please put this form, along with the Questionnaire in the envelope provided and SEAL it and return it to the Front Desk at the South Asian Women's Community Centre.
PLEASE KEEP ONE COPY OF THIS for yourself.

Appendix D

Interview Guide

Sample Focus Group Questions

1) Why do you take part in physical activities?
2)What are some aspects you enjoy about physical activity?
- What are some things that make it easier for you to get involved in physical activity?

3) Are there skills you have learnt through participation in physical activity?
4) Is there anything you don't like about physical activities?
- If yes why don't you like that?

5) Is there anything stopping you from wanting to participate in physical activities?
- If yes, please provide barriers to participation.
- How could these barriers potential be overcome? What would you need to happen for barriers to be removed?

6) Whom do you participate physical activities with? Alone, Family, Friends etc.?
- Is there a reason certain activities you participate with certain people?

7) Are their differences between physical activities here in Canada and your native place?
- If yes, what are the differences?
- If no, which physical activities are these that are similar?
- Is there any activities you would like to see more of in Montreal?

8) What would you like to see change in the programs you are currently participating in?
9) What are the needs of the clients? What should be offered to them? Barriers/facilitators? Perceptions? Likes/dislikes