

**Exploring Constraints to Sport Participation Among Immigrant Adolescent Girls who
reside in the Greater Toronto Area**

by

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The above committee determined that the thesis is acceptable in form and content and that a satisfactory knowledge of the field covered by the thesis was demonstrated by the candidate during an oral examination. A signed copy of the Certificate of Approval is available from the School of Graduate and Postdoctoral Studies.

ABSTRACT

Rates of sport participation decrease during adolescence, particularly among girls. Although research has documented this decline, it tends to largely ignore diverse samples such as immigrants. This study explored constraints to sport participation among immigrant adolescent girls who reside in the GTA using a mixed-methods design. Guided by Newell's theory of constraints, secondary analysis consisting of bivariate and multivariate analyses was conducted on survey responses from 90 participants to examine significant constraints to sport participation and compare results with their non-immigrant counterparts. Results were further explored through semi-structured interviews with seven participants, which were guided through an interpretive phenomenological approach. The information gathered highlighted constraints to sport participation faced among this sample which may aid in informing future programs related to sport participation. Importantly, findings are relevant for knowledge mobilization efforts that aim to increase rates of sport participation among girls.

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STATEMENT OF CONTRIBUTIONS

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication. I have used standard referencing practices to acknowledge ideas, research techniques, or other materials that belong to others. Furthermore, I hereby certify that I am the sole source of the creative works and/or inventive knowledge described in this thesis.

DEDICATION

I dedicate this dissertation to my parents – None of this would be possible without your prayers and support.

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Chapter One: Introduction

1.1 Background Information

Participation in sport influences many aspects of one's life including their health, social networks, and overall quality of living. A sport is defined as a form of physical activity that involves two or more individuals engaged for the purpose of competition and requires formal rules, strategies, and specialized neuromuscular skills (Canadian Heritage, 2013). Among Canadians, popular sports include hockey, golf, soccer, swimming, basketball, baseball and volleyball (Statistics Canada, 2011).

1.1.1 Benefits of sport participation

The importance of participating in sports is demonstrated by research showing that regular sport participation is linked to numerous health and social benefits (Berger, O'Reilly, Parent, Séguin, & Hernandez, 2008; Eime, Young, Harvey, Charity, & Payne, 2013). When examining physical health benefits, regular sport participation is associated with reducing the risk of various chronic diseases such cardiovascular disease, obesity, osteoporosis and diabetes (Eime et al., 2013; Slater & Tiggemann, 2011). Furthermore, in regards to psychological wellbeing, individuals who participate in sports score higher on scales for happiness, have greater mental health, and demonstrate a better quality of life than their non-participant counterparts (Pharr & Lough, 2014; Somerset & Hoare, 2018). Sport participation is also linked to various positive developmental indicators, including positive self-esteem and self-concept, emotional regulation, goal attainment, and academic performance (Holt, Kingsley, Tink, & Scherer, 2011; Slater & Tiggemann, 2011). Additionally, sport participation is shown to facilitate the development of a range of skills such as cooperation, self-discipline, leadership and sportsmanship (Slater & Tiggemann, 2011). Despite the various benefits associated with sport

participation, Canadians have demonstrated low levels of physical activity and sport participation among the general population, especially among adolescents (Berger et al., 2008; Eime et al., 2013).

1.1.2 Rates of sport participation among adolescents

Adolescence, which is the stage in a person's life from puberty to 19 years of age, is recognized as a critical time period where physical, social and psychological changes occur in an individual (Public Health Agency of Canada, 2010). This period is often described as a difficult and stressful period of transition, where many lifestyle behaviours develop (Casey, Eime, Payne, & Harvey, 2009; Pharr & Lough, 2014). In regards to sport participation, adolescents who participate in sports are more inclined to adopt healthier behaviours such as developing healthier eating habits, being more physically active as adults and having improved overall psychological health (Eime et al., 2013; Pharr & Lough, 2014). Furthermore, adolescents who participate in sports regularly are less likely to dropout from school, use marijuana or cocaine and they have lower rates of suicidal behaviour (Taliaferro, Rienzo, & Donovan, 2010). Despite this knowledge, there is concern regarding the rates of sport participation among Canadian adolescents, specifically among female adolescents, as many girls transition away from sport and physical activity during this time period (Berger et al., 2008; Yungblut, Schinke, & McGannon, 2012).

1.1.3 Constraints to sport participation among female adolescents

Research has indicated a sharp decline in female adolescent sport participation; where females participate in sports at lower rates than their male counterparts and tend to withdraw from participation at earlier ages (Biddle, Whitehead, O'Donovan, & Nevill, 2016; Casper, Bocarro, Kanters, & Floyd, 2016; Craggs, Corder, Van Sluijs, & Griffin, 2011; Eime et al., 2009,

2016; Slater & Tiggemann, 2011; Wetton, Radley, Jones, & Pearce, 2013). Withdrawal from sports at earlier ages among many Canadian females may be a result of gender stereotypes, limited access to sport programs for females, or low emphasis on female athlete role models (CAAWS, 2009). These explanatory factors or constraints may contribute to girls turning away from sports and not gaining the various benefits associated with participation.

Constraints to sport participation are restrictions that prevent an individual from participating in a sport but that can be negotiated or overcome. Major constraints to sport participation among adolescents include cost, time, and location (Eime et al., 2014; Holt et al., 2011; Somerset & Hoare, 2018). Additionally, during adolescence, many individuals' priorities change where they may have other activities related to work, school, and leisure that reduce their time for sports (Eime, Payne, Casey, & Harvey, 2010). Although various constraints among adolescents are known, there are certain barriers that are likely specific to female adolescents, which significantly impact females and can limit their sport participation.

Previous research has indicated that there are constraints to sport participation that affect female adolescents disproportionately and in turn lower their levels of sport participation (Slater & Tiggemann, 2011). Examples of these constraints include reports of girls having greater body image concerns, less support from family and friends, and feeling greater societal expectations or pressure to fit a certain female image (Slater & Tiggemann, 2011; Yungblut et al., 2012). Although research has examined constraints to sport participation among female adolescents, their samples are often limited to certain populations. Within the literature examined, many studies have used homogenous samples with minimal diversity in relation to participants' characteristics, such as ethnic background or socioeconomic status (Slater & Tiggemann, 2011; Yungblut et al., 2012). This has resulted in limited representation of certain groups such as

minorities or immigrants. It is likely that minority groups may also face unique constraints to sport participation, however there has been minimal investigation into these groups within sport research and barriers among this group are not well understood.

1.1.4 Gaps in literature

In Canada, immigrant youth have lower rates of physical activity compared to their Canadian born peers (Kukaswadia, Pickett, & Janssen, 2014). According to Statistics Canada (2010), an immigrant is defined as an individual who is residing in Canada and was born outside of Canada. Currently, Canada has one of the highest rates of immigration in the world, where individuals who immigrated to Canada account for approximately 21.9% of Canada's population (Canadian Paediatric Society, 2018; Statistics Canada, 2017b). As Canada's population continues to become more diverse with increased immigration, there is a need to examine differences in sport participation levels especially among adolescents from immigrant families (Kimbrow & Kaul, 2016). Within Canada, the Greater Toronto Area (GTA), which consists of Toronto, Durham, Halton, Peel, and York, is one of the most populous metropolitan areas in the country and has one of the largest shares of foreign born individuals (Lo et al., 2011; Statistics Canada, 2017). In particular, Toronto and the surrounding regions remain one of the main destinations for individuals who immigrate to Canada, where approximately 46% of Toronto's population consists of individuals born outside of the country (Statistics Canada, 2017b). Thus, when examining constraints to sport participation among immigrant populations, it is critical to focus on regions such as the GTA, which represent a significant portion of individuals who have immigrated to Canada.

Although individuals who have immigrated to the GTA may face challenges in sport participation similar to those born in Canada, there may be certain characteristics that pose

unique challenges to this specific group such as not having enough time due to adapting to life in a new country, not having friends, or not feeling welcome or comfortable (Cragg, Costas-Bradstreet, Arkell, & Lofstrom, 2016). Additionally, challenges such as limited language proficiency, demanding work schedules, and contextual factors such as neighborhood safety and availability of recreational facilities compromise access to sport among immigrant families (Ross, Francis, BeLue, & Viruell-Fuentes, 2016).

Although research has explored some constraints to sport participation among individuals who immigrated, there is a lack of information on immigrant adolescent girls. This is concerning as immigrant females demonstrate lower rates of sport participation compared to males (Canadian Heritage, 2013; Walseth, 2008). At the same time, given that certain areas in Canada such as the GTA consist of a large immigrant population, studies should focus on adolescents who come from immigrant families in order to address the unique constraints they face regarding participating in sports. This in turn may aid in reducing discrimination that may be experienced by these groups and prevent any exclusion from the many health and social benefits related to sport. To address this gap, the aim of this research is to examine constraints to sport participation among immigrant adolescent girls who reside in the GTA.

While exploring constraints to sport participation, it is important to clearly identify the population. Previous studies regarding constraints to sport participation among female adolescents referred to participants as females or girls (Biddle et al., 2016; Eime et al., 2016, 2014, 2013; Wetton et al., 2013; Yungblut et al., 2012) However, the term female refers to the biological characteristics of the individual, whereas the term girl refers to a socially constructed role (Canadian Institutes of Health Research, 2019). For the purpose of this research, the term girl will be used when referring to participants as it relates to the socially constructed role and

allows possible constraints associated with gender norms to be addressed. Thus, this study will involve exploring constraints to sport participation among immigrant adolescent girls who reside in the GTA.

1.2 Research Objectives

The primary research question for this study is:

“What constraints are associated with decreased sport participation among immigrant adolescent girls who reside in the Greater Toronto Area?”

The research objectives for this study include the following:

1. To identify individual, environmental, and task constraints to sport participation among immigrant adolescent girls who reside in the Greater Toronto Area (GTA).
2. To determine the most significant constraints that are negatively associated with sport participation among immigrant adolescent girls who reside in the Greater Toronto Area (GTA).
3. To compare the most significant constraints to sport participation between immigrant and non-immigrant adolescent girls who reside in the Greater Toronto Area (GTA).
4. To gain an in depth understanding of the experiences of immigrant adolescent girls in relation to constraints to sport participation they face in the Greater Toronto Area (GTA).

1.3 Rationale

In Canada, youth aged 12 – 17 years old are recommended to have 60 minutes of moderate to vigorous physical activity each day (CSEP, 2018). However, only 6% of Canadian girls between 12 to 17 years old meet these recommendations (Statistics Canada, 2017a). One approach to increase physical activity among girls is to promote sport participation. Among Canadians, participating in sports is described as a way to relax, maintain good health, and make

new friends (Statistics Canada, 2011). Despite this knowledge, female adolescents have demonstrated lower rates of sport participation compared to others, resulting in a need to increase sport participation among this cohort (Berger et al., 2008).

Although constraints and challenges to sport participation among girls have been explored, there has been little attention regarding immigrant adolescent girls. Examining constraints to sport participation among immigrant adolescent girls may have numerous benefits both at an individual and societal level. Specifically for immigrant adolescent girls, participating in sports can facilitate an easier transition for adapting to a new country and its culture. In particular, sport participation can provide opportunity to make friends, build support networks in their new country, and practice their English (Social Planning Toronto, 2016). In regards to sport organizations, exploring constraints to sport participation among immigrant adolescent girls can aid in developing strategies to mitigate those constraints and promote sport participation. As a result, it can increase membership and cultural richness of sport organizations, which can also improve social inclusion within these associations (Sawrikar & Muir, 2010).

On a larger scale, preventing the decline in sport participation rates is important since physical inactivity, sedentary behaviours and obesity rates remain high among Canadian youth in which 94% of Canadian girls do not meet the physical activity guidelines (Public Health Agency of Canada, 2016). Thus, sport participation among immigrant adolescent girls is also important on a larger scale as it can aid in reducing physical inactivity and obesity rates in Canada and also provide numerous health benefits, such as reduction in chronic diseases, greater mental health and better quality of life (Pharr & Lough, 2014; Somerset & Hoare, 2018). In regards to social support, sport participation may help in forming and facilitating new relationships especially for individuals who may not know many people when they first arrive or immigrate to Canada.

In addition to providing benefits both to the individual and society, this study will also aid in contributing information regarding constraints related to sport participation among different groups. Many studies have focused on examining causes of the decline in sport participation among adolescents, however there is limited research regarding constraints faced by girls from diverse backgrounds, specifically within the immigrant population. The importance of conducting research among immigrant populations is demonstrated through the changing demographics within Canada, where there has been an increase in immigration within the last several years (Statistics Canada, 2017b). Thus, in order to be more representative of the groups that form Canada's population, it is important for health research to conduct studies within various cohorts such as immigrants. As a result, by conducting this study, information will be collected in relation to sport participation among female adolescents who have immigrated, which will provide a better understanding of the declining rates of sport participation among this cohort.

In sum, by examining and exploring constraints to sport participation among immigrant adolescent girls, knowledge can be developed and then potentially utilized to develop better interventions to mitigate sport constraints and promote inclusive sporting environments in Canada. Specifically in the GTA, where individuals who have immigrated make up a large portion of the population, it is important to ensure that every person can benefit from the ample rewards of sport participation and recreation (Social Planning Toronto, 2016). This research may serve as a stepping-stone for future interventions, as it could contribute to providing recommendations on how to improve rates of sport participation among young girls, especially from immigrant families. This may, in turn, provide health and social benefits for this cohort and increase overall sport participation rates within this population.

1.4 Overview of Thesis

This chapter (Chapter one) provided background information related to the study including sport participation and its importance during adolescence, rates of sport participation among girls, and the gap related to limited information regarding immigrant adolescent girls. This chapter also includes the rationale for this study and its primary research objectives.

Chapter two includes a comprehensive literature review. This chapter consists of investigating studies related to constraints to sport participation among immigrant adolescents using Newell's theory of constraints as a framework. The mixed methods approach conducted for this study is also discussed in chapter two.

Chapter three presents Study 1, in which the quantitative methods conducted to meet research objectives 1, 2 and, 3 are described. This chapter includes the results from the secondary analysis of the survey responses found through univariate, bivariate and multivariate analyses. Chapter three is written in manuscript format for future publications. However, it is presented in a format that is acceptable for graduate dissertation.

Chapter four presents Study 2 of this research, in which the findings of the secondary analysis are further explored through information gathered from semi-structured interviews. The interviews are conducted through an interpretive phenomenological approach and are analyzed using a thematic analysis in order to meet objective 4. Chapter four is also written in manuscript format and is presented in a format that is acceptable for graduate dissertation.

Chapter five provides a general discussion of the entire study including both Study 1 and Study 2. The chapter provides strengths and limitations of this research and also includes a conclusion and recommendations for future research.

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Chapter Two: Review of the Literature

2.1 Background

Sport participation for young women and girls is low despite its association with various physical and social benefits (Berger et al., 2008; Yungblut et al., 2012). During adolescence, which is a key time period in determining future participation in sports, sport participation for girls is shown to drop by 22% (CAAWS, 2016). Additionally, once females reach adulthood, only 16% of Canadian females participate in sports compared to 33% of their males counterparts (Canadian Heritage, 2013)

When comparing sport participation levels between males and females, there is clear evidence of gender differences in sport participation, where attrition rates are higher among girls compared to boys (Slater & Tiggemann, 2010). When exploring this gender disparity further, research suggests that gender expectations create an additional barrier for girls to take up sport, as participating in sports for girls is considered uncool or unpopular during adolescence (Slater & Tiggemann, 2010). This may be a result of social norms that emphasize the importance of femininity and relate sport participation more with males compared to females. At the same time, female roles in society change with age from daughter, mother, to caregiver, etc., which has been linked to a decline in their interest in sport (CAAWS, 2014). As a result, the societal expectations and roles of girls often do not encourage them to participate in sport. Therefore, it is clear that adolescent girls may face specific gender-based challenges or constraints when attempting to participate in sports.

Among adolescent girls, many individual constraints have been suggested to limit sport participation including intrapersonal factors such as perceived skill, competence, and self-esteem (Eime et al., 2014; Yungblut et al., 2012). In particular, girls who perceive that they have low

motor skills in a sport tend to lack confidence or result in being self-conscious about their lack of ability, which affects their overall sport participation (Eime et al., 2010; Wetton et al., 2013). At the same time, many girls are known to have more body image concerns during adolescence compared to boys, which may contribute to the higher rates of withdrawal from sports within the female adolescent population (Slater & Tiggemann, 2011; Yungblut et al., 2012). Many female adolescents expressed wanting to preserve a feminine image and impress others, which was difficult to maintain while being physically active (Yungblut et al., 2012).

In addition to personal characteristics, support from both family and friends has a large role in sport participation among female adolescents. For example, family support appears to be a major factor in sport participation in which actions such as encouragement for playing the sport, assisting with transportation, and teaching their children the skills required for the sport, determined their participation in a sport (Eime et al., 2010, 2014). Unfortunately, many female adolescents expressed lack of family support during adolescence, where they felt that they received less encouragement compared to males which contributed to their decline in sport participation (Eime et al., 2016, 2014). In addition to lack of parental support, not having encouragement from peers or friends also has an impact on sport participation among adolescent girls. For many young females, having friends who share similar interests or who are present with them during the sport influenced their choice to participate in a sport, as their friends were perceived as a source of support especially during competitions (Eime et al., 2010; Yungblut et al., 2012). Additionally, having the support from friends prevented judgment from others and created a sense of comfort (Yungblut et al., 2012). Thus, it is evident that having strong support from either one's family or friends plays a large role in participating in sports for adolescent girls, in which many girls need that encouragement from their surroundings to consider

participating in sports.

Lastly, the opportunities in sport for females are very different from what is available to males, which in turn discourages many girls from participating in sports as they get older (CAAWS, 2016). Females face various challenges that limit their future in sport such as negative perceptions of females in sports, lack of media coverage of females in sport, and lack of opportunities for females in leadership roles (CAAWS, 2016; Walseth & Strandbu, 2014). These challenges may cause many females to be discouraged from participating in sports since they do not see a future for themselves in this field. In regards to opportunities available in the Canadian sports field, the majority of Athletic Directors and Presidents of sporting organizations are men, with only 16% of these positions occupied by women (CAAWS, 2016). This results in many young females turning away from sports at an early age since they may perceive that they do not have the same opportunities or encouragement compared to their male counterparts (CAAWS, 2016).

Overall, given the various constraints to sport participation among adolescent girls, it is clear that girls face various challenges when attempting to participate in sports. Although many constraints have been identified, it is important to further explore different groups within this population and understand what constraints they experience. In particular, girls who immigrated to Canada may face specific constraints that limit their sport participation and are not typically studied or considered. It is known that complex barriers prevent sport participation for many newcomer girls including challenges such as cost, lack of support from family, and friends and lack of confidence (CAAWS, 2014). At the same time, many girls from different diverse backgrounds face additional challenges such as lack of familiarity of the sport or program, lack of knowledge regarding the programs available, and experiences of discrimination, that may

prevent them from attempting to participate in sports (CAAWS, 2014). However, more knowledge is required to understand the challenges girls who immigrated to Canada face when participating in sports in order to encourage and facilitate their participation. To address this gap, a literature review was undertaken to understand the types of constraints faced among adolescents girls who are immigrants.

2.2 Framework

This literature review aims to investigate studies on constraints to sport participation among female adolescents within the immigrant population. Through this review, constraints to sport participation were gathered and categorized according to Newell's model of constraints. Newell's model of constraints is a model that describes how individual, environmental, and task constraints can interact and affect one's motor development and performance (Newell, 1986). In regard to sport participation, Newell's model aids in describing how different categories of constraints, such as individual, environmental or task constraints may interact to limit sport participation among immigrant adolescents. Individual constraints are related to an individual's structural and functional characteristic such as height, ethnic background, age etc. Environmental constraints relate to the constraints that surround an individual such as social support, location or cultural norms. Lastly, task constraints relate to the skills that are involved in a specific task such having the strength or ability to do a certain sport. Thus, the constraints found within the literature are examined through Newell's model to determine what type of constraints are present among immigrant adolescents.

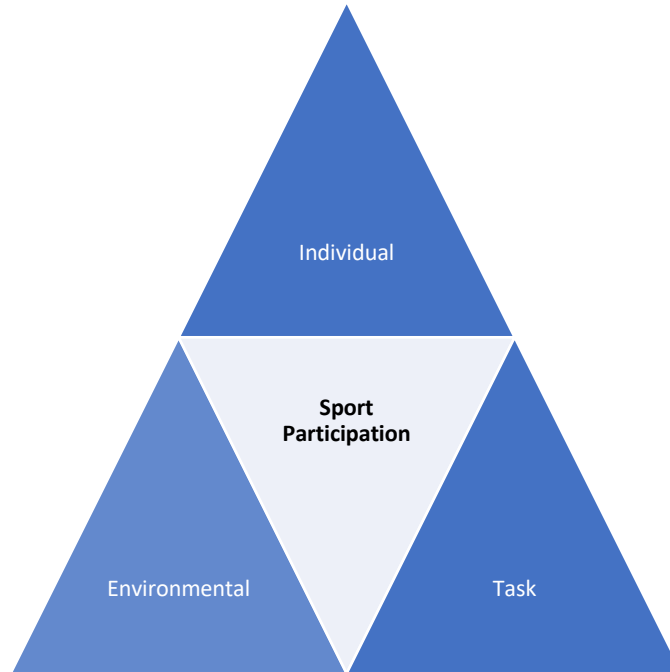


Figure 1 Newell's Model of Constraints

2.3 Search Strategy

When examining studies that explored constraints to sport participation among adolescent girls who immigrated to Canada, limited research was found. As a result, studies that included both male and female immigrant adolescents were selected, which aided in highlighting the differences in constraints faced between the two groups. At the same time, studies conducted in developed nations other than Canada such as the United States and Australia were also included. For this review, four databases were searched between May 2018 and December 2018: Medline, Scholarly Portal Journals, SportsDiscuss and CINAHL. These databases were chosen as they are commonly used and provide relevant information related to this research topic. The searches were limited to studies that were written in English in order to ensure a clear understanding of the subject matter. The studies were screened through their title and abstracts. The following search terms were used (barrier* OR constraint* OR challenge*) AND (Sport participation* or

sport*) AND (adolescent * OR teenager*) AND (immigrant* OR migrant* OR minorities) AND (female* OR girl*)

2.4 Findings

Through this review, eight studies were examined based on abstract and title screening; three of the studies were conducted in Canada and five studies took place in other developed countries such as the United States, Australia, and Norway. Many of the studies recruited both male and female adolescents; only two out of the eight studies focused specifically on female adolescents. Qualitative methods were the most common source of data collection; all of the studies selected utilized either focus group discussions or interviews. Additionally, many studies focused on physical activity or organized activity in general, which included sport participation within its definition. Additional information on the studies regarding sport participation among immigrant adolescents is included in Table 1.

Table 1 Summary of Literature on Sport Participation among Immigrant Adolescents

Study	Research objective	Sample Size	Location	Methods	Constraints
Taylor T & Doherty A (2005)	To explore the perceived benefits and challenges of sport, recreation and physical education participation of culturally diverse adolescent girls and boys who are recent arrivals to Canada	87(Aged 14-21) Male: 43 Female: 44	Ontario, Canada Recruitment through schools	Mixed methods Questionnaire and Focus groups	<ul style="list-style-type: none"> - Too much school work (I) - Not enough free time (I) - Language difficulties (I) - Unfamiliarity with activities (I) - Other commitments (expected to be home) (I) - Feelings of exclusion (I) - Cost (E) - Cultural challenges (segregated classes) (E) - Gender (I) - Support from friends/ teachers (E)
Thul & LaVoi (2011)	To explore the experiences and beliefs about physical activity of East African adolescent female participants and suggestions for promoting active living	19 female adolescents (Ages 12-18)	U.S Recruitment through schools in urban cities	Qualitative study Semi structured interviews (n=2) and focus groups (n=5)	<ul style="list-style-type: none"> - Time (I) - Perceived competence (T) - Responsibilities (I) - Culturally sensitive coaches (E) - Lack of interest (I) - Gender stereotypes (I) - Parental support and beliefs (E) - Peer support (E) - Community space/ resources (E) - Culture – privacy and modesty (E)
Shea J & Beausoleil N (2012)	Explore how immigrant youth deconstruct notions of health and fitness	15 (Aged 12-17) Male: 5 Female: 10	Newfoundland, Canada Schools & Community Organizations	Qualitative study Focus groups	<ul style="list-style-type: none"> - High costs (E) - Unsupportive school environments (E) - Inadequate neighborhoods (E) - Lack of transportation (E) - Bad weather (E) - Limited time (I) - Gender (I) - Excessive weight/ fear of embarrassment (I)
Simpkins & Delgado (2013)	To describe the mechanisms by which macro factors (SES, ethnicity, culture and immigration) may be related to Mexican origin adolescents	44 7 th grade Male: 20 Female: 24 *50 parents and 18 activity	Southwest U.S Recruitment through middle schools	Qualitative study 6 adolescent Focus groups (17 focus	<ul style="list-style-type: none"> - Cost (E) - Neighborhood safety (E) - Transportation (E) - Youth chores and work (I) - Experiences of discrimination (I) - Language gaps (I)

	participation in organized after school activities	leaders also participated		groups in total with adults)	<ul style="list-style-type: none"> - Parents familiarity with activity (E) - Culture (E) ; includes gender roles, familial time and religiosity
Walseth& Strandbu (2014)	To explore the role of culture and religiosity in the sporting lives of Norwegian – Pakistani girls	8 young females (17-24 years old)	Norway	Qualitative study Interviews	<ul style="list-style-type: none"> - Cultural ideals (E) - Religion (E) - Parental restrictions (E)
Pang, Macdonald & Hay (2015)	To examine Chinese migrant youth people's lifestyles and physical activity experiences in relation to the values and cultural investments of their families in Australia	12 young people (Ages 10-15 years old) Male:2 Female: 10	Australia Recruitment through schools	Qualitative study Interviews (6)	<ul style="list-style-type: none"> - Academic commitments (I) - Parental Influence/ Values (E) - Parental concern for child safety - Tradition/ culture (E) - Lack of interest (I) - Cost (E)
Wielend et al(2015)	To address the barriers and facilitators to physical activity among adults and adolescents from heterogeneous immigrant and refugee groups in Minnesota through a community based participatory research approach	127 participants (Both adolescents and adults) Adults: 54 Adolescents: 73 (Age 12-17)	Rochester, Minnesota, U.S	Qualitative study Focus groups(n=16)	<ul style="list-style-type: none"> - Lack of time (I) - Excessive workload (I) - Transportation (E) Weather (E) - Illness (I) - Lack of space/resources (E) Lack of motivation/ interest (I) - High costs (E) - Gender (I) - Language proficiency (I) - Familiarity/ Lack of knowledge (I)
Social Planning Toronto (2016)	To determine the barriers, facilitators and effective outreach methods for newcomer youth accessing recreation in Toronto	60 (Aged 13-19) Male: 38 Female: 22	Toronto , Canada Organizations	Qualitative study Focus Groups	<ul style="list-style-type: none"> - Cost and financial considerations (E) - Not enough time/ home responsibilities (I) - Distance to programs (E) - Lack of accessible transportation (E) - Lack of funding/space (E) - Pace of activity and competitiveness (T) - Belonging (E) - Inaccessible information (E) - Unmanageable registration process (E) - Linguistic barriers - Priority for academic achievement (I)

Note:

I = Individual constraints that relate to the structural or functional characteristic of an individual

E= Environmental constraint that relate to the surroundings of the individual

T= Task constraints that relate to the skills required for the task

2.4.1 Summary of the Literature

When exploring research regarding constraints to sport participation among immigrant adolescents, many studies focused on populations from specific ethnic backgrounds. For example, a study conducted by Simpkins & Delgado (2013) described how factors such as socioeconomic status (SES), culture, ethnicity and immigration relate to adolescents' of Mexican- origin activity participation. The study conducted focus groups to collect information from Mexican adolescents living in the United States (Simpkins, Price, Starbuck, Delgado, & Quach, 2012). The sample consisted of 44 Mexican-origin, 7th grade adolescents, which included 20 males and 24 females along with 50 parents of the adolescents and 18 activity leaders (Simpkins et al., 2012). Results of the study indicated that family socioeconomic status including parents work and financial resources may be related to adolescents' participation (Simpkins et al., 2012). Additionally, cultural values and practices, experiences of ethnic discrimination, along with parents' familiarity with the activities also influenced participation (Simpkins et al., 2012).

Another study conducted by Pang, Macdonald & Hay (2015) examined young Chinese migrants' lifestyles and physical activity experiences in relation to the values and cultural investments of their families in Australia. The study utilized interviews to gather information from 12 participants between the ages of 10-15 years old, in which 10 females and 2 males participated (Pang, Macdonald, & Hay, 2015). The findings concluded that Chinese cultural norms and traditional notions of gender influenced young Chinese migrants' lifestyle choices and experiences with physical activity (Pang et al., 2015).

When examining constraints among immigrant adolescents from various ethnic groups, a study led by Wieland et al (2015) addressed barriers and facilitators to physical activity among adults and adolescents from immigrant and refugee groups in Minnesota. A community-based

participatory research approach was employed, where data was collected using focus groups from 127 participants, 54 of whom were adults and 73 were adolescents from various ethnic groups including Cambodia, Mexico, Somalia and Sudan (Wieland et al., 2013). The results of the study found many similarities in perceived barriers and facilitators to physical activity between heterogeneous immigrant and refugee groups of different ages; lack of familiarity and comfort were shown to be the most significant barriers (Wieland et al., 2013).

Within the review conducted, two studies examined constraints to sport participation specifically among immigrant female adolescents. A study led by Thul & Lavoie (2011) explored the experiences and beliefs about physical activity of adolescent females who migrated from East Africa, along with suggestions for promoting active living. A phenomenological research design was implemented in which semi structured interviews were held with 19 adolescent girls from East Africa aged between 12 to 18 years old (Thul & Lavoie, 2011). The study discovered that although many participants desired to be more physically active, several personal, social, environmental and cultural barriers were present that limited participation (Thul & Lavoie, 2011).

Another study led by Walseth & Strandbu (2014) explored the role of culture and religion in the sporting lives of Norwegian- Pakistani girls. The study conducted interviews with 8 female participants between the ages of 17-27 years old who lived in Norway (Walseth & Strandbu, 2014). Results suggested that cultural ideals have a large influence on sport participation by limiting many participants' involvement in sport (Walseth & Strandbu, 2014).

A search of the Canadian literature retrieved two Ontario-based studies and a Newfoundland-based study. All the identified studies recruited both male and female adolescents; no single study focused specifically on female adolescents. Additionally, all three studies included participants who were newcomers or recent arrivals to Canada.

A study conducted by Taylor & Doherty (2005), explored the perceived benefits and challenges of sport, recreation and physical education participation of culturally diverse adolescents who were recent arrivals to Canada (Taylor & Doherty, 2005). The study used a mixed methods approach where both a questionnaire and focus groups were administered to 87 participants consisting of 43 males and 44 females, of which 40 participants contributed in focus groups (Taylor & Doherty, 2005). The participants were ESL students recruited from three public schools located in Ontario, Canada (Taylor & Doherty, 2005). The questionnaire was used to retrieve background information on the participants along with information on acculturation, perceived discrimination, perceived benefits, and overall participation in sport and recreation (Taylor & Doherty, 2005). Focus group interviews were held to further explore the experiences of the participants in relation to participation in sport and recreation, directing questions related to perceived benefits and challenges in participation (Taylor & Doherty, 2005). In terms of perceived challenges, many participants reported constraints such as cost and time limitations, language difficulties, feelings of exclusion and unfamiliarity with activities, limited their participation. Results also emphasized the gender differences within these challenges in which feelings of exclusion were found to be more common among girls compared to boys (Taylor & Doherty, 2005).

A study led by Shea & Beausoleil (2012) involved examining barriers to health and fitness attainment discussed by immigrant youth. The study involved collecting data through focus groups and individual journaling from 15 individuals consisting of 5 males and 10 females between the ages of 12-17, who have immigrated to Newfoundland, Canada (Shea & Beausoleil, 2012) . Results focused on two main themes: barriers in health and barriers in fitness; constraints

to adopting a healthy lifestyle included financial limitations, lack of time and unsupportive environments (Shea & Beausoleil, 2012).

A study led by Social Planning Toronto (2016) involved examining barriers, facilitators, and effective outreach methods for newcomer youth accessing recreation in Toronto by conducting focus group discussions (Social Planning Toronto, 2016). The study involved 60 participants consisting of 38 males and 22 females, between the ages of 13-19, along with 50 newcomer parents who were recruited through local community agencies. In regards to the constraints found in this study, cost and financial considerations were a main challenge in participation, where the cost of equipment and uniforms was found to be too expensive (Social Planning Toronto, 2016). Other factors included lack of time, limited English proficiency, lack of skills, issues with belonging, and difficulty finding information (Social Planning Toronto, 2016). Based on the results found, the study recommended that future research should focus on specific groups such as female adolescents or youth who came from different ethnic communities in order to understand the distinct experiences of specific groups (Social Planning Toronto, 2016).

2.4.2 Constraints Identified by Category

2.4.2.1 Individual Constraints

Individual constraints are structural or functional factors that are based on individual physical or mental characteristics such as one's biological makeup or personality traits (Price et al., 2002). In terms of sport participation, individual constraints were consistently found within the literature which limited sport participation for many immigrant adolescents. Common individual constraints included having responsibilities and expectations, having feelings of

discomfort and unfamiliarity, and being female (Shea & Beausoleil, 2012; Simpkins et al., 2012; Taylor & Doherty, 2005; Thul & Lavoie, 2011; Wieland et al., 2013).

Responsibilities

Within the studies examined, many participants highlighted challenges they faced in sport participation where along with cost and time limitations, having other responsibilities limited many individuals from participating in sport (Simpkins et al., 2012; Taylor & Doherty, 2005; Thul & Lavoie, 2011). Common responsibilities included school work, part time jobs, chores and family obligations which prevented them from participating in sports (Simpkins et al., 2012; Taylor & Doherty, 2005; Thul & Lavoie, 2011). At the same time, the study led by Taylor & Doherty (2005) reported that work and family commitments were more significant challenges for the female participants compared to males. Similarly, a study led by Wieland et al. (2015) explained how female participants had less flexible schedules to be physically active compared to males due to their obligations at home. As a result, due to having various responsibilities, many immigrant adolescents did not have the time to prioritize sports.

Feelings of Discomfort

In addition to having various responsibilities, feelings of discomfort and unfamiliarity were other commonly reported individual constraints (Simpkins et al., 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005). The study conducted by Wieland et al (2015) described this lack of familiarity and comfort among immigrant adolescents as a result of fearing sociolinguistic isolation and embarrassment (Wieland et al., 2013). Especially when moving to a new country, many individuals may feel uncomfortable participating in sports if they are unfamiliar with the language or sport itself (Simpkins et al., 2012; Taylor & Doherty, 2005; Wieland et al., 2013). At the same time, while trying to adapt to a new country some individuals

may face discrimination or negative experiences that can lead to feelings of discomfort and in turn prevent them from participating in sports (Simpkins et al., 2012; Taylor & Doherty, 2005).

Sex and Gender

Lastly, the role of sex and gender was also recognized as a barrier many female participants expressed discomfort or lack of interest in participating in physical activities such as sports (Shea & Beausoleil, 2012). The study led by Taylor & Doherty (2005) highlighted how although both sexes faced similar challenges in regards to sport participation, females were found to take these challenges more personally which resulted in them limiting their participation or abandon it entirely. In regards to gender stereotypes, the study conducted by Thul and Lavoie (2011) explained how many girls believed that boys saw girls as weak and incapable of being physically active especially in team sports (Thul & Lavoie, 2011). This negative perception of being a girl resulted in many females limiting their sport participation. Thus, as mentioned above, it is clear that there is a gender disparity in sport participation, with girls facing more challenges when trying to participate in sports.

2.4.2.2 Environmental Constraints

Environmental constraints are physical or social factors in the environment that can constrain or influence participation (Price et al., 2002). Common environmental constraints include costs of the activity, neighborhood safety and available transportation (Simpkins et al., 2012). Within this literature review, the main environmental constraints found among immigrant adolescents included parental support and beliefs, cultural influences and access to community space and resources (Pang et al., 2015; Simpkins et al., 2012; Thul & Lavoie, 2011; Walseth & Strandbu, 2014).

Culture

Culture was shown to have a large impact on participation among immigrant adolescents, which specifically related to family values, gendered roles and religiosity (Simpkins et al., 2012). For example, the study led by Simpkins et al (2012) highlighted the value of family and religion; participants described that if they had to choose between attending a religious activity or participating in sport, they had to give up the sport. Similarly, the results of the study led by Pang et al (2015) indicated that many Chinese families valued academic or musical pursuits, which influenced how much time their children had for leisure activities such as sports (Pang et al., 2015). According to their cultural norms, spending more time on academic or musical pursuits was perceived as a way to progress up the “social ladder “ and establish a promising future compared to other pursuits such as physical activity and sport (Pang et al., 2015).

Culture was also shown to have an influence on gendered roles. Some participants’ parents or communities did not see the need for girls to participate in sports and regarded sport participation as not feminine (Simpkins et al., 2012; Walseth & Strandbu, 2014). Specifically, Pang et al (2015) emphasized the cultural norm within traditional Chinese culture of maintaining a whiter body; whiter or fairer skin was associated with the wealthy or higher social classes (Pang et al., 2015). As a result, this belief prevented participation in outdoor activities and sports especially among girls compared to boys, as it was related to the concept of beauty (Pang et al., 2015)

Additionally, both cultural and religious ideals affected the type of activity selected; many females expressed feeling shy or having problems with male audiences, which in turn restricted their participation in sports (Walseth & Strandbu, 2014). These concerns were also highlighted in other studies in which certain female participants discussed how they felt

discomfort or did not enjoy participating in activities where male participants were present (Shea & Beausoleil, 2012; Thul & Lavoie, 2011). This was a result of many females wanting to maintain privacy and modesty, which was a part of their cultural and religious ideals (Shea & Beausoleil, 2012; Thul & Lavoie, 2011)

Support from Family

As mentioned above, support from family and friends influences many girls' sport participation. Within the literature examined, similar themes were found where parental support affected many immigrant adolescents' participation in sport (Pang et al., 2015; Simpkins et al., 2012; Walseth & Strandbu, 2014). For example, parents' familiarity with the activity affected adolescents' participation; a lack of knowledge regarding the activity could prevent participation (Simpkins et al., 2012). At the same time, cultural ideals valued by the family such as wanting to maintain a sense of modesty, ultimately influenced their children's choices in sport participation (Walseth & Strandbu, 2014). Additionally, Pang et al. (2015) found that many parents expressed a concern for safety because they did not have enough time to supervise their children during activities due to long working hours (Pang et al., 2015). Importantly, this concern for safety was greater for females compared to males, and the study described that male participants seemed to have more freedom and lived more active lifestyles compared to female participants (Pang et al., 2015). Thus, parental beliefs and knowledge related to sports were reported as a challenge for many immigrant adolescents when participating in sports.

Physical Environments

Many environmental constraints found in the literature were related to the individuals' physical surroundings such as transportation, weather and lack of resources and space (Shea & Beausoleil, 2012; Simpkins et al., 2012; Social Planning Toronto, 2016; Thul & Lavoie, 2011;

Wieland et al., 2013). Weather was particularly emphasized as a challenge, where several individuals came from countries with warm weather and were not used to the Canadian weather (Shea & Beausoleil, 2012). At the same time, unsupportive environments was also noted as a constraint to sport participation, and many individuals did not have access to the facilities and lacked the transportation to consider other areas (Shea & Beausoleil, 2012; Simpkins et al., 2012; Social Planning Toronto, 2016). This may be a result of also moving to a new country and not being aware of the facilities and resources available to them or not having access to any of those areas. Overall, it is clear that the environment plays a key role in sport participation for many immigrant adolescents.

2.4.2.3 Task Constraints

Task constraints include the goals, rules, and equipment required to perform the specific task (Price et al., 2002). Within the literature, reported task constraints were often related to the skills involved in a sport; some individuals felt that they did not have the necessary skills to play the sport (Social Planning Toronto, 2016). A study led by Thul and Lavoie (2011) found perceived competence as a task constraint ; some participants described not having the knowledge or skills to join an activity or sport, which limited their participation (Thul & Lavoie, 2011). Particularly for immigrant adolescents who are new to the country, certain sports may be a new concept to them, and they may not be familiar with the rules or skills required to participate in the sport. Thus, task constraints described may be largely a result of immigrating to a new country in which popular and accessible sports may be different.

2.5 Addressing Gaps in Current Literature

Overall, the studies reported a number of individual, environmental and task constraints to sport participation among immigrant adolescents. Many of the previous constraints reported in

literature that focuses on sport participation among adolescent girls include lack of time, energy or family support along with environmental constraints such as cost, access to transportation and facilities were consistent with the findings in this review (Biddle et al., 2016; Eime et al., 2014; Yungblut et al., 2012). However, a reoccurring theme that specifically relates to the immigrant population, was the influence of culture in relation to sport participation. In particular, individual and environmental constraints such as unfamiliarity with the activity and language, parental beliefs and having other responsibilities were all related to culture (Pang et al., 2015; Shea & Beausoleil, 2012; Simpkins et al., 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005; Thul & Lavoie, 2011; Walseth & Strandbu, 2014; Wieland et al., 2013). Additionally, cultural notions such as the importance of a girl's beauty or the role of a girl in the household contributed to gender stereotypes, which were also a significant factor in sport participation among immigrant female adolescents (Pang et al., 2015; Thul & Lavoie, 2011; Walseth & Strandbu, 2014).

Although this review presented information on immigrant girls, the findings are specific to certain ethnic groups such as immigrants from East Africa or Pakistan and may not relate to adolescents currently residing in Canada (Thul & Lavoie, 2011; Walseth & Strandbu, 2014). Likewise, while there is information on constraints to sport participation faced by adolescents who immigrated to Canada; there is limited research on constraints faced by immigrant girls specifically. Through this review, it is clear that among immigrant adolescents, certain constraints to sport participation have a greater influence on immigrant girls compared to boys (Pang et al., 2015; Shea & Beausoleil, 2012; Simpkins et al., 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005; Thul & Lavoie, 2011; Walseth & Strandbu, 2014; Wieland et al., 2013). To address these existing gaps in the literature, the current study aimed to examine

constraints to sport participation among a diverse sample of immigrant adolescent girls.

2.5.1 Using Pragmatism to Explore Constraints to Sport Participation

For this study a pragmatic worldview was used, which involves focusing on the research problem and using different approaches or methods to gain knowledge of the problem (Creswell, 2014). Pragmatism does not focus on any one specific system of philosophy; researchers who adopt this paradigm typically draw from both quantitative and qualitative assumptions in order to provide the best understanding of their research problem (Creswell, 2014). A pragmatic view was used as it allowed for different forms of data collection to understand which constraints were negatively associated with sport participation among immigrant adolescent girls.

2.5.2 Explanatory Sequential Mixed Methods Approach

Through the use of a pragmatic worldview, an explanatory sequential mixed methods approach was employed. This approach consists of two phases in which the researcher first uses quantitative methods to collect data, analyze the results and then explain the findings further through qualitative research (Creswell, 2014). This approach aligned with the pragmatic view of this study as it incorporates different forms of data collection in order to address the research problem (Creswell, 2014).

The first phase described as Study 1 involved quantitative research in which a secondary analysis of a dataset was conducted. Through the analysis, constraints to sport participation among immigrant adolescent girls were determined to meet objectives 1,2, and 3 which involved determining the most significant constraints to sport participation and comparing them with the constraints among girls who did not immigrate. Additional information regarding the methods and participants involved in the secondary analysis is presented in Chapter 3. The second phase described as Study 2, involved qualitative research to meet objective 4, which involved gaining a

deeper understanding of the experiences of immigrant adolescent girls in relation to constraints to sport participation they face in the GTA. In particular, semi-structured interviews were held and were analyzed using a thematic analysis. Additional information regarding the methods and participants is presented in chapter 4.

This mixed methods approach is similar to the study conducted by Taylor and Doherty (2005) in which they used a questionnaire and focus groups to gather information on perceived benefits and challenges regarding sport and recreation among immigrant adolescents in Ontario. However, the study focused on immigrant adolescents who recently arrived in Canada within the last ten years and did not specifically examine constraints among immigrant girls. As a result, this study will aid in gaining knowledge on constraints to sport participation among immigrant girls and provide a better understanding of their experiences.

Given the change in Canada's demographics, it is important to explore challenges to sport participation experienced by different groups in order to be more representative of the country's population. Thus, the information gathered in this study will provide a deeper understanding of the constraints faced by immigrant girls which will help inform future research and program development. This in turn will help provide better programs to address the constraints found in this study and improve sport participation among this cohort. Therefore, the findings of this study will aid in the process of increasing sport participation among adolescents in Canada which will also allow them to gain the benefits related to participating in sports and encourage them to be more physically active.

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Chapter Three: Examining Constraints to Sport Participation among Immigrant Adolescent Girls who reside in the Greater Toronto Area

3.1 Introduction

Adolescence is defined as the stage from puberty to 19 years of age in which several physical, social and psychological changes occur (Public Health Agency of Canada, 2010). This period is often described as a stressful transition, when many lifestyle behaviours related to diet, sleep and physical activity are altered and form the basis for behaviour development in an individual (Casey et al., 2009; Fought, Gleddie, Storey, Davison, & Veugelers, 2017; Pharr & Lough, 2014). In regards to being physically active, adolescents who participate in sports are more inclined to adopt healthier behaviours in adulthood, such as developing healthier eating habits, being more physically active, and having improved overall psychological health (Eime et al., 2013; Pharr & Lough, 2014). In particular, sport participation in adolescence is associated with various health benefits including greater overall health, improved psychological wellbeing, and better quality of life (Canadian Heritage, 2013; Eime et al., 2014; Pharr & Lough, 2014; Slater & Tiggemann, 2011; Somerset & Hoare, 2018). Sport participation refers to involvement in an activity that includes two or more individuals engaged for the purpose of competition (Canadian Heritage, 2013).

Despite the numerous advantages related to adolescent sport participation, there is concern regarding the rates of sport participation among Canadian female adolescents, as many girls transition away from sport and physical activity during this time period (Berger et al., 2008; Yungblut et al., 2012). As a result, potential explanatory inhibitory factors or constraints to sport participation have been explored and identified among female adolescents. Common constraints to sport participation include lack of time, energy or family support, low perceived competence

and self-efficacy, and importance for life priorities and responsibilities (Biddle et al., 2016; Eime et al., 2014; Yungblut et al., 2012). Although research has examined constraints to sport participation among female adolescents, studies have used homogenous samples with minimal diversity in relation to participants' characteristics (Slater & Tiggemann, 2011; Yungblut et al., 2012). This has resulted in limited representation of certain groups such as minorities or immigrants within sport research.

According to Statistics Canada (2010), an immigrant is defined as an individual who is residing in Canada and was born outside of Canada. As Canada's population continues to become more diverse with increased immigration, there is a need to examine differences in sport participation levels especially among adolescents from immigrant families (Kimbrow & Kaul, 2016). Within Canada, the Greater Toronto Area, which consists of Toronto, Durham, Halton, Peel, and York, has one of the largest shares of foreign born individuals where approximately 46% of Toronto's population consists of individuals born outside of the country (Lo et al., 2011; Statistics Canada, 2017). Thus, when examining constraints to sport participation among immigrant populations, it is critical to focus on regions such as the GTA, which represent a large portion of individuals who have immigrated to Canada.

Within the immigrant population, it is important to focus on adolescent girls, as rates of sport participation are lower among immigrant females compared to males (Canadian Heritage, 2013; Walseth, 2008). In regards to the Canadian population, despite research exploring constraints to sport participation among immigrant adolescents, there is limited literature specific to sport participation among girls (Pang et al., 2015; Simpkins et al., 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005; Thul & Lavoie, 2011; Walseth & Strandbu, 2014; Wieland et al., 2013). At the same time, literature suggests that there were differences in the challenges faced by

immigrant girls compared to boys, which needed to be explored in future studies (Social Planning Toronto, 2016; Taylor & Doherty, 2005). To address this gap, the aim of this research is to examine constraints to sport participation among immigrant adolescent girls who reside in the GTA. The research objectives for this study include the following:

1. To identify individual, environmental, and task constraints to sport participation among immigrant adolescent girls who reside in the Greater Toronto Area (GTA).
2. To determine the most significant constraints that are negatively associated with sport participation among immigrant adolescent girls who reside in the Greater Toronto Area (GTA).
3. To compare the most significant constraints to sport participation between immigrant and non-immigrant adolescent girls who reside in the Greater Toronto Area (GTA).

In meeting the study objectives, Newell's model of constraints is used to guide the identification of the significant constraints. The model illustrates how individual, environmental and task constraints can interact and affect one's motor development and performance (Newell, 1986). In regard to sport participation, Newell's model aids in identifying how different categories of constraints, such as individual, environmental or task constraints may affect sport participation among immigrant adolescents. Individual constraints are related to an individual's structural and functional characteristic such as height, ethnic background, age, etc.

Environmental constraints relate to the constraints that surround an individual such social support, location, or cultural norms. Lastly, task constraints relate to the skills that are involved in a specific task such as having the strength or ability to do a certain sport.

3.1.1 Background Study

A study led by Dr. Barakat et al. involved examining constraints to sport participation among ethnically diverse female adolescents in Ontario. The objectives of this study included examining and identifying interactions of individual, environmental and task constraints that negatively influence sport participation among ethnically diverse female adolescents. The study implemented a mixed methods design consisting of a survey and focus group discussions, where girls between the ages of 13-19 who reside in Ontario were recruited.

The survey administered was developed by a team of researchers and consists of questions related to constraints to sport participation among adolescent girls (Appendix A). The constraints included are based on the categories mentioned in Newell's model in which various individual constraints such as commitments and self-perceptions, task constraints such as skills required for a sport or the intensity of a sport, and environmental constraints such as access to facilities and transportation, were listed (Klicnik, 2019). Data referred to a total of 51 different categories of constraints, which consisted of 24 individual constraints, 23 environmental constraints, and 4 task constraints (Klicnik, 2019). Demographic data such as age, ethnic background, and year of immigration were also available.

For this study, a secondary analysis was performed on a subsample of the survey responses collected by Barakat et al. The survey responses were retrieved through a survey link on Google forms where participants were recruited from schools, youth organizations, and social media platforms in Ontario. Both approval from the school ethics board and permission from the principals or organization leaders were required to administer the survey. Parental consent was also received prior to administering the survey.

3.2 Methods

3.2.1 Ethical Considerations

This study was approved by the Ontario Tech University Ethics Committee. The survey administered by Barakat et al. was also approved and required all participants to give consent before completing the survey. Participants were informed that their responses to the survey may be used for future analyses.

3.2.2 Participants

In regards to this research, the subsample consisted of girls between 13 to 19 years old, who immigrated to Canada, and reside in the Greater Toronto Area. In terms of selection, the secondary analysis specifically focused on individuals who resided in the GTA. A total of 410 participants resided in the GTA in which 90 were identified as immigrants. Participants were selected based on their postal code and immigrant status. Based on the postal code provided, an additional variable was created called “GTA” in which those individuals who resided in either Toronto, Durham, Peel, Halton, or York region were included and those whose postal codes were outside of the GTA were excluded. Within the GTA sample, immigrant status was based on the participant’s response to the question “ In what country were you born?” ; responses that listed a country other than Canada were identified as ‘immigrants’, and those who were born in Canada were identified as ‘non-immigrants’.

3.2.3 Measurement Tools

3.2.3.1 Measure of Sport participation

Regular sport participation is the dependent variable for this study. Participants were required to respond to the following statement: “I participate in sports regularly (three times a week or more)”, by answering on a five-point scale, 1 rated as strongly disagree, and 5 rated as strongly agree. The variable was dichotomized and collapsed into the binary responses ‘agree’ or

‘disagree’, in which values 1 and 2 were categorized as ‘disagree’ and values 3, 4, and 5 were categorized as ‘agree’.

3.2.3.2 Measure of Constraints

Overall, 32 questions related to individual constraints, 37 questions related to environmental constraints and 8 questions related to task constraints were examined. The following 77 were constraints examined in the survey (Refer to Appendix B). BMI was not included although both height and weight information was gathered from each participant. This is due to the inconsistencies in the responses where it was unclear if some weights were entered in pounds versus kilograms. Similarly, questions related to type of transportation and time for transportation were both excluded from data analysis as they were specifically targeted towards those who participate in sports and were not measuring constraints. The survey also consisted of a section related to physical activity which was not examined, as the focus of this study was specifically on sport participation.

3.2.4 Data Analysis

For the secondary analysis of the dataset, only individuals who entered a postal code within the GTA were included in the secondary analysis. The dataset was analyzed and cleaned to confirm that only data from individuals between the ages of 13-19 was examined. These measures ensured that the participants met the inclusion criteria for the study. The dataset was also cleaned for any missing values and duplicate entries as follows: for every question that had a missing entry, -3 was entered. For survey versions that did not ask a certain question compared to the main survey, -6 was entered to show that the question was not posed to the participant. Lastly, if the survey response was unclear, -9 was entered.

Within SPSS, all categorical variables were collapsed into binary responses. Depending on the framing of the question, the scales were dichotomized into a yes or agree category versus a no or disagree category. If the scale was a 5-point scale ranging from Always, almost always, sometimes, rarely and never, the options “always”, “almost always” and “sometimes” were categorized as “yes” whereas “rarely” and “never” was categorized as “no”. For example, the statement “I enjoy sports” , the responses “always”, “almost always” and “sometimes” were collapsed into “agree” and “rarely” or “never” were entered into “disagree”. On the other hand, if the question asked “Are you currently employed, if so, how many hours per week do you work?”, all the responses that selected an option listing a number of hours were dichotomized as “yes” whereas the responses that were 0 hours were categorized as “no”.

Data analysis for this subsample included gathering descriptive information for each variable and determining an association between each independent variable and regular sport participation. In order to gain some information regarding each variable, univariate analysis was performed on each variable through frequency tables. For continuous variables such as age, information on mean and standard deviations was gathered.

Bivariate analyses were held to identify which individual, environmental and task constraints were associated with sport participation among immigrant girls. For categorical variables such as having time or having energy, Pearson chi-square tests were conducted. An independent t-test was conducted for the age variable since it was a continuous variable. A significant association between a variable and regular sport participation was determined as any p value less than 0.05 within the Pearson chi-square test or independent t-test.

Multivariate analyses were performed through binary logistic regression in which the most influential constraints to sport participation were determined among immigrant girls. All

variables that had a p-value of less than 0.1 in either the Pearson chi-square test or independent t-test were entered into the logistic regression model through a forward conditional model to identify up to five significant variables. The constraints found through logistic regression were compared between participants who immigrated and participants who did not immigrate, to meet the aim of this study. As a result, all three analyses were also performed among girls who were not classified as immigrants, in order to compare results.

3.3 Results

The current study involved 410 participants of which 90 identified as immigrants, and 320 were classified as non-immigrants. Sociodemographic information on immigrants (Table 2) and non-immigrants (Table 3) provide frequencies regarding age, race and country born. Results of the descriptive analysis for all examined individual (Table 4), environmental (Table 5) and task constraints (Table 6) are provided for both immigrants and non-immigrants.

Table 2 Sociodemographic Information on Immigrant Girls (n=90)

Variable	References	Frequencies (n)	Percent	Mean/SD
Age				16.3/1.45
Years since Immigration				8.25/4.973
GTA region	Toronto	37	41.1%	
	Durham	20	22.2%	
	York	17	18.9%	
	Peel	6	6.7%	
	Halton	10	11.1%	
Country born	British Isles	4	4.4%	
	Europe	9	10.0%	
	United States	9	10.0%	
	South America	4	4.4%	
	Africa	6	6.7%	
	Asia	56	62.2%	
	Oceania and others	2	2.2%	
Ethnicity	Black	5	5.7%	
	East Asian	13	14.8%	
	Latin American	1	1.1%	
	Middle Eastern	9	10.2%	
	South Asian	21	23.9%	
	South East Asian	14	15.9%	

Sport Participation	White	14	15.9%	
	Other	4	4.5%	
	Mixed	7	8.0%	
	Don't Participate	44	48.9%	
	Participate	46	51.1%	

Table 3 Sociodemographic Information on Non-immigrant Girls (n=320)

Variable	References	Frequencies (n)	Percent	Mean/SD
Age				16.05/1.259
GTA region	Toronto	111	34.7%	
	Durham	110	34.4%	
	York	56	17.5%	
	Peel	22	6.9%	
	Halton	21	6.6%	
Ethnicity	Black	12	3.8%	
	East Asian	33	10.9%	
	First Nations, Métis or Inuit	3	0.9%	
	Latin American	6	1.9%	
	Middle Eastern	9	2.8%	
	South Asian	38	11.9%	
	South East Asian	5	1.6%	
	White	158	49.5%	
	Other	19	6.0%	
	Mixed	36	11.3%	
Sport Participation	Don't Participate	112	35.1%	
	Participate	207	64.9%	

Table 4 Frequencies for Individual Constraints to Sport Participation

Variable	Reference	Frequencies for Immigrants	Frequencies Non-Immigrants
Race	Black	5.7	3.8
	East Asian	14.8	10.3
	First Nations, Métis, Inuit	0	.9
	Latin American	1.1	1.9
	Middle Eastern	10.2	2.8
	South Asian	23.9	11.9
	South East Asian	15.9	1.6
	White	15.9	49.5
	Other	4.5	6.0
	Mixed	8.0	11.3
Birth Order*	Only Child	7.1	5.6
	First Born	55.3	45.1
	Youngest	23.5	33.0

	Middle	14.1	16.3
Health Condition	No	61.4	61.3
	Yes	38.6	38.7
Assistive Aid	No	95.5	98.4
	Yes	4.5	1.6
Self-perceived Body Type	Not Average	17.6	21.3
	Average	82.4	78.7
Body Satisfaction	Not Satisfied	37.1	30.6
	Satisfied	62.9	69.4
Self-rated Overall Health	Not Good	26.4	17.3
	Good	73.6	82.7
Employment	Not Employed	71.8	64.3
	Employed	28.2	35.7
Babysitting duties	No	55.3	63.4
	Yes	44.7	36.6
Caregiver role	No	85.9	87.3
	Yes	14.1	12.7
Housekeeping duties*	No	21.2	24.2
	Yes	78.8	75.8
Other Responsibilities	No	44.4	50.2
	Yes	55.6	49.8
Negative Experience in relation to Sports	No	61.8	56.2
	Yes	38.2	43.8
Has Energy to Participate in Sports*	Disagree	8.1	8.5
	Agree	91.9	91.5
Has Time to Participate in Sports	Disagree	12.8	10.1
	Agree	87.2	89.9
Comfortable with Dress Code of Sport*	Disagree	6.0	5.1
	Agree	94.0	94.9
Enjoy Sports	Disagree	13.3	9.4
	Agree	86.7	90.6
Perceived Competence*	Disagree	16.7	11.3
	Agree	83.3	88.8
Confident	Disagree	21.1	20.6
	Agree	78.9	79.4
Belief: Sport makes Healthy Adults	Disagree	1.1	3.4
	Agree	98.9	96.6
Belief : Sport is Important	Disagree	3.3	6.0
	Agree	96.7	94.0
Belief: Sport is Fun	Disagree	6.7	5.3
	Agree	93.3	94.7
Sports help feel Positive	Disagree	6.7	8.8
	Agree	93.3	91.2
Sports feel Gross	Disagree	68.9	75.3
	Agree	31.1	24.7
Strive to excel in Sports	Disagree	14.4	8.4
	Agree	85.6	91.6
Sport Participation makes you Successful	Disagree	11.1	11.0
	Agree	88.9	89.0

Perceived Assertiveness*	Low	11.1	12.7
	High	88.9	87.3
Perceived Strength	Low	26.7	21.3
	High	73.3	78.7
Perceived Flexibility*	Low	21.3	25.0
	High	78.7	75.0
Perceived Energetic	Low	13.3	8.8
	High	86.7	91.2
Perceived Speed*	Low	21.1	19.8
	High	78.9	80.2

Note: * Statistically significant among immigrant adolescent girls (p<0.05)

Table 5 Frequencies for Environmental Constraints to Sport Participation

Variable	Reference	Frequencies for Immigrants	Frequencies Non-Immigrants
Children At Home	No children	7.9	6.0
	Children present	92.1	94.0
Children Under Five	No Children	83.1	96.0
	Yes Children	16.9	4.0
Parent1 High School Education	Did not Complete	4.9	3.5
	Completed HS	95.1	96.5
Parent 2 High School Education	Did not Complete	2.6	7.5
	Completed HS	97.4	92.5
Have Friends that Participate in Sports	Disagree	16.3	10.3
	Agree	83.7	89.7
Friends Encourage sport participation *	Disagree	32.5	28.6
	Agree	67.5	71.4
Friends Willing to Participate in Sports	Disagree	9.4	7.6
	Agree	90.6	92.4
Family Participate Regularly in Sports*	Disagree	36.6	25.3
	Agree	63.4	74.7
Family Supports Sport participation	Disagree	6.0	7.6
	Agree	63.4	92.4
Family can Afford Sport Participation	Disagree	14.1	8.0
	Agree	85.9	92.0
Opportunity at School for Sports	Disagree	21.3	11.6
	Agree	78.7	88.4
Opportunity outside of school for Sports*	Disagree	42.2	31.3
	Agree	57.8	68.8
Culture expects girls to participate in sport	Disagree	43.3	36.3
	Agree	56.7	63.7
Belief: Girls Should Participate	Disagree	1.1	0.9
	Agree	98.9	99.1
Belief: Certain Sports Not For Girls*	Disagree	80.0	89.7
	Agree	20.0	10.3
Belief: Sports helps develop strong adults	Disagree	3.3	1.9
	Agree	96.7	98.1

Sport Participation is Important in Society	Disagree	7.8	6.9
	Agree	92.2	93.1
People I know think Sport is Important	Disagree	14.6	10.3
	Agree	85.4	89.7
Outdoor Air Quality affects sport Participation*	Disagree	74.4	89.5
	Agree	25.6	10.5
Proud Where I Live	Disagree	9.1	6.7
	Agree	90.9	93.3
Green Space	Disagree	9.0	5.1
	Agree	91.0	94.9
Weather Promotes	Disagree	8.0	10.0
	Agree	92.0	90.0
Weather Prevents	Disagree	40.7	45.1
	Agree	59.3	54.9
Safe Neighborhood	Disagree	3.4	4.8
	Agree	96.6	95.2
Sidewalk Safe	Disagree	3.4	3.5
	Agree	96.6	96.5
Facilities have Options	Disagree	20.2	15.7
	Agree	79.8	84.3
Safe Transportation	Disagree	8.0	7.6
	Agree	92.0	92.4
Safe Places	Disagree	6.8	10.2
	Agree	93.2	89.8
Facilities offer Sports	Disagree	23.3	18.4
	Agree	76.7	81.6
Clean Facilities	Disagree	7.5	6.0
	Agree	92.5	94.0
Accessible Facilities	Disagree	11.9	7.6
	Agree	88.1	92.4
Not Overcrowded Facilities	Disagree	15.2	13.5
	Agree	84.8	86.5
Cold temperature affects sport participation	Disagree	23.9	28.3
	Agree	76.1	71.7
Hot temperature affects sport participation	Disagree	34.1	46.5
	Agree	65.9	53.5
Humidity affects sport participation	Disagree	35.2	48.7
	Agree	64.8	51.3
Rain affects sport participation	Disagree	31.8	32.7
	Agree	68.2	67.3
Snow affects sport participation	Disagree	23.9	29.3
	Agree	76.1	70.7

Note: * Statistically significant among immigrant adolescent girls ($p < 0.05$)

Table 6 Frequencies for Task Constraints to Sport Participation

Variable	Reference	Frequencies for Immigrants	Frequencies for Non-Immigrants
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Have Perseverance	Disagree	6.3	14.1
	Agree	93.7	85.9
	Likely	86.4	82.6
Participate in sports that are Recreational	Not Likely	10.2	9.3
	Likely	89.8	90.7
Participate in sports that are Physically Intense*	Not Likely	25.6	18.3
	Likely	74.4	81.7
Participate in sports that have Strict Rules	Not Likely	21.3	24.8
	Likely	78.7	75.2
Participate in sports that have both Girls and Boys	Not Likely	18.3	21.5
	Likely	81.7	78.5
Participate in sports that require Contact	Not Likely	21.8	19.5
	Likely	78.2	80.5
Participate in sports that have Long Duration*	Not Likely	23.8	17.1
	Likely	76.2	82.9

Note: * Statistically significant among immigrant adolescent girls ($p < 0.05$)

3.3.1 Bivariate Analysis among Immigrant Girls

This study involved identifying individual, environment and task constraints to sport participation among immigrant girls. A total of 77 variables related to constraints to sport participation were assessed through a bivariate analysis. Pearson chi-square tests were performed for all categorical variables, and independent t-tests for continuous variables. Results found 15 constraints to have a significant association with sport participation among immigrant female adolescents which consisted of eight individual constraints (Table 7), five environmental constraints (Table 8) and two task constraints (Table 9).

Statistically significant individual constraints included perceived speed ($p = 0.001$), birth order ($p = 0.003$), having energy ($p = 0.004$), comfort with dress code ($p = 0.017$), perceived flexibility ($p = 0.017$), housekeeping ($p = 0.039$), perceived assertiveness ($p = 0.047$) and perceived competence ($p = 0.049$). In regards to association, among girls who reported low perceived speed, 84.2% of participants did not regularly participate in sports compared to 15.8% of participants who regularly participated in sports. Similarly, among those who reported low perceived flexibility, 73.7% did not participate in sports regularly compared to 26.3% of participants who

did participate. Among those who reported low assertiveness, 80.0% were associated with not participating in sports regularly compared to 20.0% who did participate. Likewise, among girls who reported low competence, 73.3% did not regularly participate in sports whereas 26.7% did regularly participate. Additionally, all girls who reported not having energy (100%), and not being comfortable with the dress code (100%) did not participate in sports regularly. In regards to girls who identified as first born, 63.8% did not regularly participate in sports whereas 36.2% did participate regularly in sports. Lastly, among girls who reported having household duties, 55.2% did not regularly participate in sports whereas 44.8% did participate regularly in sports.

In regards to environmental constraints, variables such as air quality ($p=0.01$), family sport participation ($p=0.005$), having opportunities available outside of school ($p=0.006$), belief that certain sports are not for girls ($p=0.017$) and friends' encouragement ($p=0.019$), were all significant. Results showed that among girls who reported not having family members who regularly participate in sports, or not having encouragement from their friends, 66.7% did not participate in sports regularly whereas 33.3% of girls did participate regularly in sports. Additionally, among participants who disagreed that outdoor air quality affected their participation, 54.7% did not regularly participate in sports compared to 45.3% of girls who did participate regularly in sports. Likewise, among girls who disagreed that certain sports are not for girls, 55.6% did not participate regularly in sports in comparison to 44.4% of those who participated regularly. Lastly, among individuals who reported not having the opportunity to try sports outside of school, 65.8% did not participate in sports regularly compared to 34.2% who did participate regularly in sports.

In terms of task constraints, physical intensity of the sport ($p=0.001$) and long duration of the sport ($p=0.022$) were both significant among this sample. Among participants who were not

likely to participate in physically intense sports, 73.8% did not participate regularly compared to 21.7% who participated. Similarly, among participants who were less likely to participate in sports that had a long duration, 70.0% did not regularly participate in sports compared to 30.0% who did regularly participate in sports.

Table 7 Significant Individual Constraints for Immigrant Girls

Variable	Reference	Does not Participate in sports	Participates in sports	Chi-Square	P value
Perceived Speed*	Low	84.2%	15.8%	12.025	0.001
	High	39.4%	60.6%		
Birth Order*	Only Child	33.3%	66.7%	12.706	0.003
	First Born	63.8%	36.2%		
	Youngest	55.0%	45.0%		
	Middle	8.3%	91.7%		
Has Energy to Participate in sports*	Disagree	100%	0%	8.364	0.004
	Agree	43%	57%		
Comfortable with Dress code of sport*	Disagree	100%	0%	6.301	0.017
	Agree	42.3%	57.7%		
Perceived Flexibility	Low	73.7%	26.3%	5.681	0.017
	High	42.9%	57.1%		
Housekeeping Duties	No	27.8%	72.2%	4.276	0.039
	Yes	55.2%	44.8%		
Perceived Assertiveness*	Low	80%	20%	4.358	0.047
	High	45%	55%		
Perceived Competence *	Disagree	73.3%	26.7%	4.304	0.049
	Agree	44%	56%		

Note: * Fisher's Test P-value used for those constraints that had cell count less than 5

Table 8 Significant Environmental Constraints for Immigrant Girls

Variable	Reference	Does not Participate in sports	Participates in sports	Chi-Square	P value
Family Participates Regularly in Sports	Disagree	66.7%	33.3%	7.859	0.005
	Agree	34.6%	65.4%		
Has opportunities outside of School for sport	Disagree	65.8%	34.2%	7.518	0.006
	Agree	36.5%	63.5%		
Outdoor Air quality affects sport participation	Disagree	54.7%	45.3%	6.722	0.01
	Agree	22.7%	77.3%		

Belief that there are certain sports in which girls should NOT participate *	Disagree	55.6%	44.4%	6.403	0.017
	Agree	22.2%	77.8%		
Friends Encourage sport participation	Disagree	66.7%	33.3%	5.470	0.019
	Agree	39.3%	60.7%		

Note: * Fisher's Test P-value used for those constraints that had cell count less than 5

Table 9 Significant Task Constraints for Immigrant Girls

Variable	Reference	Does not Participate in sports	Participates in sports	Chi-Square	P value
Participate in Sport that is Physically Intense	Not Likely	78.3%	21.7%	10.667	0.001
	Likely	38.8%	61.2%		
Participate in Sport that has Long Duration	Not Likely	70%	30%	5.271	0.022
	Likely	40.6%	59.4%		

Note: * Fisher's Test P-value used for those constraints that had cell count less than 5

3.3.2 Bivariate Analysis among Non-Immigrant Girls

This study aimed to compare the most significant constraints to sport participation among immigrant adolescent girls with the constraints to sport participation found among adolescent non-immigrant girls. In regards to immigrant adolescent girls who did not immigrate, 43 variables were found significant through bivariate analysis which comprised of 20 individual constraints (Table 10), 17 environmental constraints (Table 11) and 6 task constraints (Table 12).

Individual constraints included race ($p=0.000$), self-reported overall health ($p=0.000$), having energy ($p=0.000$), having time ($p=0.000$), enjoying sports ($p=0.000$), perceived competence ($p=0.000$), confidence ($p=0.000$), feeling positive ($p=0.000$), strive to excel in sports ($p=0.000$), perceived body type ($p=0.001$) sports feel gross ($p=0.004$), and comfortable with dress code ($p=0.004$). In regards to individual beliefs, constraints included belief that sport is fun ($p=0.000$), belief that sport makes you successful ($p=0.000$) and belief sport is important ($p=0.002$). Additionally, perceived individual skills included perceived being energetic

($p=0.000$), perceived speed ($p=0.000$), perceived flexibility ($p=0.007$), perceived assertiveness ($p=0.014$) and perceived strength ($p=0.021$).

In terms of direction of association, among girls who perceived themselves as not being energetic, 82.1% did not participate regularly in sports compared to 17.9% who did regularly participate. Similar patterns were demonstrated with other perceived skills in which having low speed (68.3%), low flexibility (47.5%), low assertiveness (52.5%), and low strength (47.8%) were all related to low sport participation (Table 10). Furthermore, those who reported not having time; 71.9% did not participate in sports compared to 28.1% who did participate.

Likewise, among individuals who were not comfortable with the dress code of a sport, 68.8% did not participate in sports whereas 31.2% did participate regularly. Information on significant individual constraints is presented in Table 10 below.

Environmental constraints included having friends ($p=0.000$), culture ($p=0.001$), opportunity at school ($p=0.004$), family afford ($p=0.007$) parent high school education ($p=0.007$), opportunity outside of school ($p=0.012$), people think sport is important ($p=0.013$), society thinks sport is important ($p=0.016$), and family participates regularly ($p=0.021$). Furthermore, constraints related to the physical environment included facilities nearby ($p=0.002$), greenspace ($p=0.004$), safe places ($p=0.007$), clean facilities ($p=0.039$), and overcrowded facilities ($p=0.041$). Additionally, constraints related to weather included cold temperature ($p=0.016$), rain ($p=0.022$), hot temperature ($p=0.027$). In regards to association, among girls who did not have friends, 69.7% of them did not participate regularly in sports compared to 30.3% who did participate regularly. Likewise, among girls who reported not having green space, 68.8% did not participate regularly whereas 31.1% did participate. Furthermore, among girls who stated that the individuals around them did not think sport is

important, 54.5% did not participate regularly compared to 45.5% who did participate regularly.

Information regarding significant environment constraints is presented in Table 11 below.

Task constraints among this group included sports that have a long duration ($p=0.000$), sports that are physically intense ($p=0.000$), sports that are competitive ($p=0.000$), sports that have strict rules ($p=0.000$), sports that include both boys and girls ($p=0.025$) and sports that require contact ($p=0.039$). In particular, among girls who were less likely to participate in sports that are physically intense, 61.4% did not participate regularly in sports compared to 38.6% of those who did participate regularly. Similar associations are shown among girls who did not regularly participate in sports and who were less likely to participate in sports that were; competitive (67.3%), have long duration (61.1%), are physically intense (61.4%), that have strict rules (54.5%), that have both boys and girls (46.3%), and that required contact (46.8%) .

Table 10 Significant Individual Constraints for Non-Immigrant Girls

Variable	Reference	Does not Participate in sports	Participates in sports	Chi-square	P value
Race *	Black	58.3%	41.7%	36.211	0.000
	East Asian	45.5%	54.5%		
	First Nations, Métis or Inuit	66.7%	33.3%		
	Latin American	50%	50%		
	Middle Eastern	11.1%	88.9%		
	South Asian	68.4%	31.6%		
	South East Asian	60%	40%		
	White	26.1%	73.9%		
	Other	26.3%	73.7%		
	Mixed	25.0%	75.0%		
Self-rated Overall Health	Not Good	56.4%	43.6%	13.782	0.000
	Good	30.2%	69.8%		
Has Energy to Participate in Sports*	Disagree	85.2%	14.8%	32.646	0.000
	Agree	30.3%	69.7%		
Have Time to Participate in Sports	Disagree	71.9%	28.1%	22.019	0.000
	Agree	30.3%	69.7%		
Enjoy Sports	Disagree	83.3%	16.7%	33.609	0.000
	Agree	30.2%	69.8%		
Perceived Competence	Disagree	83.8%	16.7%	41.421	0.000

	Agree	29.0%	71.0%		
Confident	Disagree	76.9%	23.1%	62.646	0.000
	Agree	24.4%	75.6%		
Belief: Sport is Fun*	Disagree	82.4%	17.6%	17.487	0.000
	Agree	32.6%	67.4%		
Sports help feel positive *	Disagree	89.3%	10.7%	39.753	0.000
	Agree	29.8%	70.2%		
Strive to Excel in sports	Disagree	82.1%	17.9%	27.84	0.000
	Agree	30.8%	69.2%		
Belief: Sport participation makes you Successful	Disagree	80.0%	20.0%	34.989	0.000
	Agree	29.4%	70.6%		
Perceived Energetic	Low	82.1%	17.9%	29.803	0.000
	High	30.6%	69.4%		
Perceived Speed	Low	68.3%	31.7%	37.576	0.000
	High	27.1%	72.9%		
Perceived body type	Not Average	54.0%	46.0%	11.175	0.001
	Average	31.2%	68.8%		
Belief: Sport is Important	Disagree	68.4%	31.6%	9.763	0.002
	Agree	33.1%	66.9%		
Participate in sports feels gross	Disagree	30.7%	69.3%	8.392	0.004
	Agree	48.7%	51.3%		
Comfortable with Dress Code of Sport	Disagree	68.8%	31.2%	8.483	0.004
	Agree	33.1%	66.9%		
Perceived Flexibility	Low	47.5%	52.5%	7.195	0.007
	High	31.0%	69.0%		
Perceived Assertiveness	Low	52.5%	47.5%	6.061	0.014
	High	32.6%	67.4%		
Perceived Strength	Low	47.8%	52.2%	5.313	0.021
	High	32.0%	68.0%		

Note: * Fisher's Test P-value used for those constraints that had cell count less than 5

Table 11 Significant Environmental Constraints for Non-Immigrant Girls

Variable	Reference	Does not Participate in sports	Participates in sports	Chi-square	P value
Have Friends that Participate in Sports	Disagree	69.7%	30.3%	19.183	0.000
	Agree	31.2%	68.8%		
Culture expects girls to participate in sport	Disagree	47.0%	53.0%	11.045	0.001
	Agree	28.6%	71.4%		
Facilities near me offers Sports	Disagree	51.8%	48.2%	9.421	0.002
	Agree	30.2%	69.8%		
Opportunity at School for Sport	Disagree	56.8%	43.2%	8.416	0.004
	Agree	32.5%	67.5%		
Green Space	Disagree	68.8%	31.3%	8.488	0.004
	Agree	33.1%	66.9%		
Family Afford Sports	Disagree	60.0%	40.0%	7.365	0.007

	Agree	33.0%	67.0%		
Safe Places	Disagree	56.3%	43.8%	7.374	0.007
	Agree	32.4%	67.6%		
Parent 2 High school Education	Did not complete	61.9%	38.1%	7.224	0.007
	Completed	32.8%	67.2%		
Opportunity outside School for Sports	Disagree	45.0%	55.0%	6.254	0.012
	Agree	30.6%	69.4%		
People I know think sport is important.	Disagree	54.5%	45.5%	6.103	0.013
	Agree	32.9%	67.1%		
Sport Participation Important in Society	Disagree	59.1%	40.9%	5.841	0.016
	Agree	33.6%	66.4%		
Cold temperature affects sport participation	Disagree	24.4%	75.6%	5.834	0.016
	Agree	38.8%	61.2%		
Family Participates Regularly in Sports	Disagree	46.2%	53.8%	5.297	0.021
	Agree	31.8%	68.2%		
Rain affects sport participation	Disagree	26.0%	74.0%	5.216	0.022
	Agree	39.0%	61.0%		
Hot Temperature affects sport participation	Disagree	28.6%	71.4%	4.889	0.027
	Agree	40.5%	59.5%		
Clean Facilities	Disagree	55.6%	44.4%	4.255	0.039
	Agree	31.9%	68.1%		
Not Overcrowded Facilities	Disagree	47.5%	52.5%	4.175	0.041
	Agree	31.1%	68.9%		

Table 12 Significant Task Constraints from Bivariate Analysis for Non-Immigrant Girls

Variable	Reference	Does not Participate in sports	Participates in sports	Chi-square	P value
Participate in sports that are competitive	Not Likely	67.3%	32.7%	30.197	0.000
	Likely	28.4%	71.6%		
Participate in sports that have Long Duration	Not Likely	61.1%	38.9%	20.052	0.000
	Likely	29.2%	70.8%		
Participate in sport that is Physically Intense	Not Likely	61.4%	38.6%	22.339	0.000
	Likely	28.5%	71.5%		
Participate in sports that have Strict Rules	Not Likely	54.5%	45.5%	17.705	0.000
	Likely	28.3%	71.7%		
Participate in sports that have both Girls and Boys	Not Likely	46.3%	53.7%	5.019	0.025
	Likely	31.8%	68.2%		
Participate in sports that require contact	Not Likely	46.8%	53.2%	4.267	0.039
	Likely	31.9%	68.1%		

3.3.3 Multivariate Analysis for Immigrant Adolescent Girls

Results of binary logistic regression included constraints that were significant in the bivariate analysis, as well as those that had a p-value of less than 0.1. These additional constraints included age ($p=0.064$), perceived overall health ($p=0.058$) parent high school education ($p=0.052$), enjoy sports ($p=0.066$), culture (0.094), energetic ($p=0.066$). A total of 21 constraints were entered into the binary logistic regression.

Results of multivariate analysis revealed four significant constraints to sport participation among immigrant adolescent girls (Table 13). Results suggest that those who had family members that did not participate in sports were less likely to participate in sports (OR=0.123, 95% CI 0.026-0.572, $p=0.008$). In regards to belief that certain sports are not for girls, those who disagreed were less likely to participate in sports (OR= 0.066, 95% CI 0.007-0.596, $p=0.015$). Additionally, those who had friends that did not encourage them to participate in sports were less likely to participate in sports (OR= 0.096, 95% CI 0.014—0.643, $p=0.016$). Lastly, physical intensity was found to be the only significant task constraint, whereby those who did not prefer physically intense sports were less likely to participate (OR= 0.086, 95% CI 0.010-0.741, $p=0.026$). As a result, although five significant constraints were anticipated, results of this study determined four constraints, which included friends' encouragement, family sport participation, belief that certain sports are not for girls, and physical intensity.

Table 13 Binary Logistic Regression Results for Immigrant Adolescent Girls

Variable	Constraint	Reference	Odds Ratio	95% CI
Family Participates**	Environmental	Does not Participate	.123	(0.026,0.572)
Belief that certain sports not for girls*	Environmental	Disagree	.066	(0.007,0.596)
Friends Encourage*	Environmental	Does not Encourage	.096	(0.014,0.643)

Physical Intensity *	Task	Less likely	0.086	(0.010,0.741)
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Note:

** p value <0.01

* p value <0.05

3.3.4 Multivariate Analysis for Non-Immigrant Adolescent Girls

Constraints identified within the bivariate analysis along with any additional constraints that had a p-value of less than 0.1 were entered into a binary logistic regression to identify the most significant constraints among non-immigrant adolescent girls. Additional constraints included body satisfaction (p=0.052), sidewalk safety (p=0.056), having a negative experience (p= 0.058), humidity (p=0.064), employment (p=0.067), weather prevents (p=0.073) and family support (p=0.089). A total of 50 constraint variables were entered.

Results of the binary logistic regression for adolescent girls who did not immigrate found 10 significant constraints (Table 14). This included confidence, perceived being energetic, having time, feeling positive, greenspace, rain, perceived flexibility, having friends, opportunity outside of school and the competitiveness of the sport. Based on the results, those who feel less confident (OR= 0.074, 95% CI 0.019-0.283, p=0.00), perceive themselves as less energetic (OR= 0.029, 95 CI 0.004-0.187, p=0.00) and less flexible (OR=0.264, 95% CI 0.095-0.733, p=0.011), have less time (OR= 0.074, 95 CI% 0.015-0.356, p=0.001) and who feel less positive (OR=0.026, 95 CI% 0.002-0.288, p=0.003), are all individuals who are less likely to participate in sports. In regards to green space, those who have less greenspace (OR=0.038, 95 CI% 0.003-0.407, p=0.007) in their environment are less likely to participate in sports. Alternatively, those who indicated that rain did not affect their participation (OR=3.793, 95 CI% 1.350-10.659, p=0.011) were more likely to participate in sports. In terms of having friends (OR= 0.065, 95% CI=0.015-0.356, p=0.012), those who did not have friends were less likely to participate in

sports. In regards to opportunity outside of school, those who did not have the opportunity outside (OR=2.976, 95% CI 0.002- 0.288, p=0.051), were more likely to participate. Lastly, in relation to competitiveness of the sport, those who preferred less competitive sports (OR=0.236, 95% CI 0.053-1.044, p=0.057) were less likely to participate in sports. When determining the most significant constraints to sport participation among girls who did not immigrate, the most significant constraints were determined based on p values. Within this sample, the top five constraints were not feeling positive, being less energetic, not having time, low confidence and lack of green space.

Table 14 Binary Logistic Regression Results for Non-Immigrant Adolescent Girls

Variable	Constraint	Reference	Odds Ratio	95% CI
Confident **	Individual	Not Confident	0.074	(0.019,0.283)
Perceived Energetic**	Individual	Not Energetic	0.029	(0.004,0.187)
Have Time **	Individual	No Time	0.074	(0.015,0.356)
Positive**	Individual	Don't feel positive	0.026	(0.002,0.288)
Greenspace**	Environmental	Not a lot of green space	0.038	(0.003,0.407)
Rain*	Environmental	Does not affect sport participation	3.793	(1.350,10.659)
Perceived Flexibility*	Individual	Don't have flexibility	0.264	(0.095,0.733)
Have Friends*	Environmental	Don't have friends	0.065	(0.015,0.356)
Opportunity Outside of School	Environmental	Don't have opportunity outside	2.976	(0.002,0.288)
Competitive	Task	Not likely to participate	0.236	(0.053,1.044)

Note:

** p value <0.01

* -p value <0.05

3.4 Discussion

Results of this study suggest that there is a clear difference in constraints to sport participation that immigrant adolescent girls face, in comparison to those experienced by adolescent girls who were born in Canada. In particular, three out of four of the top significant constraints among immigrant adolescent girls were identified as environmental. This may be a result of the change in environment when immigrating to a new country, in which individuals may require additional support when joining new activities. In comparison, among girls who did not immigrate, four out of five of the top constraints were identified as individual constraints.

3.4.1 Constraints to Sport Participation Among Immigrant Female Adolescents

When examining environmental constraints to sport participation among immigrant girls, support from friends, family sport participation, and social norms related to sports being for females, all had significant associations. In regards to family sport participation, those whose family members did not participate in sports regularly were found to participate in sports less. This was consistent with findings related to physical activity among female adolescents in which those parents who had inactive lifestyles influenced their daughters to also be inactive (CAAWS, 2009). Similarly, not having encouragement from friends was also associated with lower sport participation among immigrant girls in this study. This was found in previous literature regarding adolescent immigrants in Canada, in which support and interest in sports from friends and peers had a large influence on sport participation (Social Planning Toronto, 2016; Taylor & Doherty, 2005). In particular, friends were shown to be an important influence during adolescence in which the activities young girls selected often depend on friend support (CAAWS, 2009). Thus, both results regarding family sport participation and friends encouragement support findings

from previous research related to sport participation among immigrant adolescents (Pang et al., 2015; Simpkins et al., 2012; Walseth & Strandbu, 2014).

In addition to family participation and friends' encouragement, the belief that certain sports were not for girls also influenced sport participation. In particular, those who agreed with the belief that certain sports are not for girls were found to still participate in sports. This belief may be a result of certain stereotypes presented at school which may influence the type of sports females participate in (Azzarito, Melinda, & Louis Harisson, 2006; Slater & Tiggemann, 2010). A study described this theme in which females recognized basketball to be a 'male space', but would still participate in sports such as tennis and badminton (Azzarito et al., 2006). At the same time, when comparing with males, female adolescents were known to participate more often in individual physical activities compared to high-risk sports (Vu, Murrie, Gonzalez, & Jobe, 2006). This may be a result of attempting to be physically active while still maintaining an image of femininity. However, further exploration of this belief and social norms related to girl sport participation should be explored in future studies.

Lastly, physical intensity was also significantly associated with participation in sports in which girls who did not prefer physically intense activities were less likely to participate in sports. This constraint may be related to the familiarity of sports where immigrant adolescents participated in sports less due to not knowing the sport or what it required (Social Planning Toronto, 2016; Taylor & Doherty, 2005). In particular, some immigrant youth assumed they lacked the skills to participate and were uncomfortable with the physical nature of certain sports such as basketball and hockey (Social Planning Toronto, 2016). These feelings related to physical intensity may also be a result of an individual's perceived competence in which the person may assume the sport may be too difficult for them. This was found among female

adolescents from diverse communities in Canada, in which some girls perceived themselves as not having the knowledge or skills to be physically active and feared being unsuccessful if they tried (CAAWS, 2009). Thus, constraints such as physical intensity of a sport may be related to an individual's perceived competence, which as a result, limits their sport participation.

3.4.2 Immigrant Adolescent Girls versus Non-Immigrant Adolescent Girls

When focusing on adolescent girls who were born in Canada, findings demonstrated that individual and environmental constraints were associated with sport participation. In particular, individual constraints such as lack of time, confidence, feeling positive and being energetic were found to be the most significant constraints among adolescent girls who were born in Canada. This is consistent with similar research conducted regarding female adolescents who live in Canada, where challenges to sport participation involved interpersonal factors and environmental factors (Dwyer et al., 2006; Yungblut et al., 2012). Specifically, constraints to sport participation among female adolescents such as lack of time, self-image concerns and not feeling good about participation were all consistent with the findings of this current study (Biddle et al., 2016; Dwyer et al., 2006; Yungblut et al., 2012). Likewise, previous research highlighted environmental challenges such as lack of peer support and accessibility to facilities which were also constraints identified within this study (Dwyer et al., 2006; Eime et al., 2014; Yungblut et al., 2012). Thus, there is a clear difference between the constraints faced between girls who immigrated versus those who did not immigrate.

3.4.3 Strengths and Limitations

This study determined significant constraints to sport participation for an underrepresented population. Previous studies regarding sport participation among female adolescents reported samples that had limited representation of diverse groups such as

immigrants (Slater & Tiggemann, 2011; Yungblut et al., 2012). Likewise, studies that focused on immigrant adolescents did not explore constraints specifically faced by females (Pang et al., 2015; Shea & Beausoleil, 2012; Simpkins et al., 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005; Thul & Lavoie, 2011; Walseth & Strandbu, 2014; Wieland et al., 2013). Therefore, findings of this study addressed constraints faced among immigrant adolescent girls, a cohort that had limited information regarding sport participation.

In addition to providing knowledge on an underrepresented group, this study identified different challenges faced by individuals who immigrated and those who did not. Previous studies on immigrant female adolescents focused on specific ethnic communities and did not compare if those challenges were faced with other groups (Thul & Lavoie, 2011; Walseth & Strandbu, 2014). This study examined constraints to sport participation faced between two groups and acknowledged the differences between the two cohorts. Thus, findings in this study highlighted specific constraints faced by immigrant adolescent girls in comparison to female adolescents who did not immigrate. This aided in demonstrating that different groups within a population may face different challenges to sport participation that is unique to their cohort.

Lastly a third strength of this study involved its methods for data collection in which quantitative data was collected to determine constraints to sport participation. Previous research on immigrant adolescents generally used qualitative methods to explore possible challenges or constraints to sport participation (Pang et al., 2015; Shea & Beausoleil, 2012; Simpkins et al., 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005; Thul & Lavoie, 2011; Walseth & Strandbu, 2014; Wieland et al., 2013). However, this study examined constraints to sport participation by providing quantitative data in which the results involved responses from a survey. Thus, this study contributed by conducting quantitative research related to sport

participation among immigrant adolescents, a type of methodology, which was limited within this area.

Despite the various strengths, this study did have a limitation regarding its generalizability. Participants of this study all lived in the GTA and as a result, the findings may not be applicable to those living outside of the GTA or in more rural areas. Similarly, when examining the 90 individuals who identified as immigrants, 62.2% of participants were born in countries in Asia and 23.9% of individuals identified as having a south Asian background. Thus, given these demographics, a large portion of the sample may share certain beliefs and cultures that may not be applicable to the rest of the immigrant population. At the same time, the definition of immigrant that was used in this study did not account for how long an individual resided in Canada. As a result, the findings may differ between those who lived in Canada longer compared to those who newly arrived. Therefore, when interpreting results of this study, it is important to note the specific characteristics of this sample and not generalize findings to the entire immigrant population.

In addition to generalizability, another limitation was that results from the survey involved self-reported data, which may contribute to response bias. Response bias occurs when individuals answer questions inaccurately due to various reasons such as misunderstanding of the measure or wanting to give a socially acceptable response (Rosenman, Tennekoon, & Hill, 2014). To combat this, participants in this study were made aware that the responses were anonymous and could not be traced back to the individual.

Another limitation to this study was the use of the survey administered by Barakat et al., which was developed based on literature on constraints to sport participation identified for all female adolescents. As a result, it is possible that constraints included in this survey may have

not been as relevant among immigrant adolescent girls compared to non-immigrant adolescent girls and may have excluded constraints that are specific to this cohort. Possible constraints include specific cultural norms, experiences with discrimination, linguistic barriers, and unfamiliarity with certain sports. Thus, the use of this survey may have limited the number of constraints found among immigrant girls since its information was based on female adolescents and not on immigrant populations. Therefore, in order to get a better understanding, further exploration of constraints to sport participation among immigrant girls is required.

3.5 Conclusion

The importance of conducting research among immigrant populations is demonstrated through the demographic changes within Canada, where there has been an increase in immigration within the last several years (Statistics Canada, 2017). Thus, through this study, significant constraints to sport participation among an underrepresented group were highlighted. At the same time, this study addressed differences in constraints faced between immigrant girls and non-immigrant girls. This aided in emphasizing the importance of conducting research with specific groups, since the results demonstrated how different populations can face different challenges exclusive to their group.

Overall, findings of this study provided valuable information regarding constraints to sport participation which can aid in promoting healthier lives among the Canadian adolescent population. In particular, results of this study can help in informing the development of tailored interventions for immigrant adolescent girls that can mitigate the constraints faced. Promoting sport participation among immigrant girls may provide an easier transition in moving to a new country since sports can provide opportunities to make friends, build support networks and practice their English (Social Planning Toronto, 2016). At the same time, providing interventions

may help the general adolescent population since participation in sport is linked to various benefits such as reduction in chronic diseases, greater mental health and better quality of life (Pharr & Lough, 2014; Somerset & Hoare, 2018). Thus, results of this study can inform future strategies and policies regarding sport participation among diverse adolescent populations. Nevertheless, future studies should further examine constraints to sport participation among larger samples of immigrant adolescents and explore if there are differences in constraints faced depending on how long an immigrant resided in Canada. Similarly, future studies should explore constraints to sport participation faced among individuals born in certain countries or who identify with a specific ethnic background to further examine the role of culture and ethnicity in sport participation. At the same time, based on the findings of this study, additional research is required to gain a better understanding of constraints faced by immigrant adolescents, specifically focusing on girls.

3.6 Bridge to Qualitative Methods for Study 2

Using a pragmatic view, the first three objectives of this study were met by employing quantitative methods in the form of a secondary analysis. The purpose of the secondary analysis in Study 1 was to examine constraints to sport participation among immigrant female adolescents who reside in the GTA. Results of the analysis found that family participation, friends' encouragement, belief that certain sports are not for girls, and physical intensity were all associated with sport participation among immigrant adolescent girls. Additionally, secondary analysis highlighted differences between girls who immigrated compared to those who were born in Canada. Results demonstrated that certain constraints to sport participation were exclusive to immigrant girls. In order to explore these findings further, qualitative methods in the form of semi-structured interviews were conducted for a follow-up study in Study 2. The objective of

Study 2 is to gain an in depth understanding of the experiences of immigrant female adolescents in relation to constraints to sport participation they face in the Greater Toronto Area. At the same time, interviews held in this follow-up study will aid in exploring other possible constraints relevant among immigrant female adolescents that were not addressed through the secondary analysis in Study 1. Thus, the next study will use qualitative methods to further explore the findings of the secondary analysis and understand constraints to sport participation among immigrant girls who reside in the GTA.

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Chapter Four: Exploring Experiences of Immigrant Adolescent Girls on Constraints to Sport Participation

4.1 Introduction

According to Sports Canada, a sport is defined as any activity that involves two or more individuals engaged for the purpose of competition (Canadian Heritage, 2013). Participation in sports is associated with improved physical, psychological, social wellbeing in an individual and is also linked to increased economic development and prosperity within a society (Cragg et al., 2016; Pharr & Lough, 2014; Slater & Tiggemann, 2011; Somerset & Hoare, 2018). In addition to numerous social and health advantages, participating in sports is also viewed as a way to integrate individuals who have immigrated to a new country. Canada, which has one of the highest rates of immigration in the world, encourages sport participation among immigrants as it provides an opportunity to learn about Canadian culture and build social bonds with other Canadians (Cragg et al., 2016; Institute for Canadian Citizenship, 2014). In particular, immigrants, who are defined as individuals who reside in Canada and were born outside of Canada, account for approximately 21.9% of Canada's population (Statistics Canada, 2010, 2017). Given that a large portion of Canada's population consists of immigrants, it is important to facilitate easier transitions by promoting activities such as sport participation.

Despite the benefits related to sport participation and immigration, many immigrant adolescents in Canada have reported various constraints, or limiting factors, that affect their participation in sports (Cragg et al., 2016; Shea & Beausoleil, 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005). This may be a result of immigrants having certain experiences and beliefs regarding sports that may be different from how sports are presented in Canada (Cragg et al., 2016; Institute for Canadian Citizenship, 2014). In regards to the constraints faced, having responsibilities and expectations, feelings of discomfort, and being unfamiliar with

sports, were all factors that limited sport participation among immigrant adolescents (Shea & Beausoleil, 2012; Simpkins et al., 2012; Taylor & Doherty, 2005; Thul & Lavoie, 2011; Wieland et al., 2013). At the same time, environmental constraints such as parental support and beliefs, cultural influences, and access to community space and resources were also shown to influence participation in sports among immigrant adolescents (Pang et al., 2015; Simpkins et al., 2012; Thul & Lavoie, 2011; Walseth & Strandbu, 2014). Additionally, challenges such as limited language proficiency, lack of opportunities available, and the costs related to sports were also shown to limit sport participation (Cragg et al., 2016; Ross et al., 2016).

Although research has identified constraints to sport participation among adolescents who immigrated to Canada, there is limited information on immigrant girls and their experiences (Shea & Beausoleil, 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005). This is concerning as girls and young women who immigrated may face complex challenges that prevent their participation in community-based sport and physical activity (CAAWS, 2014). At the same time, studies that explored the experiences of constraints to sport participation among immigrant girls were specific to certain ethnic groups, which may not relate to adolescents currently residing in Canada (Thul & Lavoie, 2011; Walseth & Strandbu, 2014). As a result, there is a need to explore the experiences of constraints to sport participation among immigrant adolescent girls as this is an underrepresented population that has limited information regarding its cohort (CAAWS, 2014). Furthermore, it is important to focus specifically on immigrant female adolescents, as rates of sport participation are lower among immigrant females compared to males (Canadian Heritage, 2013; Walseth, 2008).

Within Canada, the Greater Toronto Area (GTA), which consists of Toronto, Durham, Halton, Peel, and York, has one of the largest shares of individuals born outside of the country

(Lo et al., 2011; Statistics Canada, 2017). Thus, when exploring constraints to sport participation among immigrant girls, this study focuses on the GTA, which represents a significant portion of individuals who have immigrated to Canada. The objective of this study is to gain an in depth understanding of the experiences of immigrant adolescent girls in relation to constraints to sport participation they face in the Greater Toronto Area. Studies that have explored experiences of immigrant populations typically employed qualitative methods which may aid in addressing complex challenges that cannot be examined through quantitative methods (Pang et al., 2015; Shea & Beausoleil, 2012; Simpkins et al., 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005; Thul & Lavoie, 2011; Walseth & Strandbu, 2014; Wieland et al., 2013). Therefore, the use of qualitative methods will provide a better insight to the constraints faced among this cohort and how their experiences with certain constraints affect their sport participation. As a result, findings from this study may aid in implementing future strategies to promote sport participation, which may in turn enable individuals to experience the health and social benefits related to sport.

4.2 Methods

4.2.1 Interpretive Phenomenology

In order to develop a deeper understanding of the constraints to sport participation faced by immigrant female adolescents, qualitative methods were conducted through semi-structured interviews. The interviews employed a phenomenological approach which involves exploring, describing and analyzing the experiences of an individual, in order to gain an in depth understanding of the constraints faced (Basil & Zabkiewicz, 2014; Creswell, 2014). Within phenomenology, there are different methods and perspectives often grouped into two types; descriptive phenomenology which focuses on the description of peoples' experiences, and

interpretative phenomenology that emphasizes the interpretation of experiences (Matua & Van Der Wal, 2015; Sloan, Bowe, & Bowe, 2014). For this research study, an interpretative phenomenological approach, which focuses on achieving a deeper understanding of an experience through discovering the hidden meanings in the descriptions of the experiences, was employed (Matua & Van Der Wal, 2015). Unlike descriptive phenomenology, in which researchers are required to set aside their previous knowledge related to the phenomenon, interpretive phenomenology views preunderstandings or previous knowledge regarding the phenomenon as a valuable guide to the inquiry (Lopez & Willis, 2004; Matua & Van Der Wal, 2015).

For this study, previous knowledge was gained through examination of previous literature on sport participation among immigrant adolescent populations. At the same time, the semi-structured interviews were guided from the results of the secondary analysis presented in Study 1. As a result, techniques such as bracketing, that try to temporarily set aside previous knowledge on the research question, were not used in this study since prior knowledge was required to conduct the interviews. Thus, this study implemented an interpretive phenomenological approach in order to explore the experiences of immigrant adolescent girls in relation to the constraints to sport participation they face in the Greater Toronto Area. This approach aided in providing a deeper understanding of the constraints immigrant girls face and how their experiences affect their sport participation.

4.2.2 Recruitment Strategy

This study employed purposive sampling to ensure participants met the inclusion criteria. As a result, individuals who participated in the interviews were girls, between 13 and 19 years old, who immigrated to Canada, and resided in the Greater Toronto Area. Recruitment involved

contacting organizations related to youth or newcomer services within the Greater Toronto Area by phone and email (Appendix C). Those organizations interested in the research study were contacted with additional information (Appendix D) and were asked to send information regarding the study along with the consent forms for the study to parents of potential participants (Appendix E and F). Organizations who were able to identify participants who met the criteria and receive consent were contacted to arrange interviews. All methods for data collection involved in this study were approved by the Ontario Tech University Ethics Committee.

4.2.3 Participants

Participants were recruited from Malton Neighborhood Services, a community center in Mississauga, located in the Peel region of the GTA. This community center had a youth program specifically for girls and newcomer populations which aided in meeting the inclusion criteria for this study. The researcher was in contact with the program coordinator and ensured that all participants met the requirements for the study. A total of seven adolescent girls participated in this study between September 30th 2019 and October 2nd 2019; the interviews took place after school between 3-5 p.m. This sample size was within the targeted sample of 5-10 participants, which was based on studies that used similar methods to collect data among immigrant populations (Pang et al., 2015; Walseth & Strandbu, 2014). On average each interview session lasted 41 minutes which included the time spent to go over information regarding the study and sign the informed consent forms (Appendix G), and was followed by debriefing sessions which took approximately 5 minutes (Appendix H).

In regards to the characteristics of the 7 participants, the girls all resided in Mississauga and ranged between the ages of 14-18 years old. In regards to country born, two participants were born in Syria, two were from Somalia, one was born in Pakistan, one from India and the

last individual was born in Afghanistan. In terms of year of immigration, responses ranged from 2004 to 2016.

4.2.4 Data Collection

Semi-structured interviews were held to develop an understanding of immigrant female adolescents' experiences with certain constraints to sport participation, which were identified through the survey analysis in Study 1. The constraints were based on preliminary results of the bivariate analysis of Study 1 in which 14 significant constraints were identified. These included physical intensity of the sport, having energy, family participating regularly in sports, air quality, dress code, belief that certain sports are not for girls, long duration, perceived competence, having opportunity outside of school, perceived skills such as flexibility and speed, overall health, and having friends who encourage participation.

Discussions were facilitated by an interview guide which was based on the significant constraints found within the survey responses and was reviewed by experts in the field (Appendix I). During the interviews, participants shared their experiences with constraints to sport participation and explained how those constraints affected their participation in sports. Additionally, participants were asked questions regarding immigration, their views on sport participation and other challenges they faced to sport participation and physical activity. The interviews were audio recorded and digitally transcribed; the files were saved on a password-protected device for analysis.

4.2.5 Data Analysis

4.2.5.1 Thematic Analysis

Data analysis of the interviews was supported through NVivo in order to conduct a thematic analysis, which is a method for identifying and analyzing patterns within data (Braun &

Clarke, 2006). Following the six-step approach for a thematic analysis, the transcripts were first read several times in order to become familiar with the data. After establishing a clear understanding of the data, initial codes were generated through a deductive or theoretical approach which involves coding with a specific research question in mind (Braun & Clarke, 2006). In this case, constraints to sport participation was the focus of the first few codes, based on the preliminary constraints discussed from the survey. As the transcripts were read, additional codes that were viewed as possible constraints were formed. Once all transcripts were coded and reviewed, initial themes were created based on organizing similar codes into groups. Themes were then reviewed by comparing the coded data extracts and analyzing each theme individually with its relation to the entire dataset. This phase involved repeatedly examining the codes and transcripts to ensure proper representation of the data. During this process, the researcher's thoughts and decisions were written in a document to keep track of the methods taken during analysis. Once the themes were found to be consistent and relevant with the data, each theme was defined and explained.

4.2.5.2 Ensuring Trustworthiness

When evaluating qualitative research, there are certain criteria that must be met in order to ensure trustworthiness of a study, which include credibility, transferability, dependability and confirmability (Guba, 1981; Shenton, 2004). Credibility refers to representing an accurate or true picture of a phenomenon and is viewed as an important factor in establishing trustworthiness (Shenton, 2004). On the other hand, transferability refers to whether the findings are similar to other situations and if they can be applied to other settings (Shenton, 2004). Dependability (the qualitative counterpart to reliability) refers to whether the findings of a study can be repeated

(Shenton, 2004). Lastly, confirmability refers to the findings being a result of the data collected and not the researcher's own predispositions (Shenton, 2004).

For this study, several methods were employed to meet the criteria for establishing its trustworthiness and maintaining its rigor. One strategy proposed for establishing trustworthiness in qualitative research was the development of a research audit trail which enables the reader to follow the researcher's logic and understand the decisions taken (Carcary, 2009). In this study, the process of data analysis was recorded in a form of an audit trail. The audit trail included detailed notes of the thoughts and decisions formed by the researcher and also provided a description of how themes were derived from the transcripts (Appendix J).

Additionally, detailed descriptions of participants and methods involved were written in this study, which also aids in maintaining its trustworthiness. By providing thick descriptions of the participants and setting involved, the reader is able to understand the context of this study and compare the findings with other similar studies. This ensures both the transferability and credibility of the study. At the same time, descriptions of the methods also aided in ensuring the dependability of the study.

Other strategies involved in establishing trustworthiness of this study included the adoption of well-established research methods, use of tactics to help ensure honesty, and iterative questioning. At the same time, although purpose sampling was used to recruit participants, a random approach was used to select participants in which there was no preference for a certain level of sport participation or how long ago the participant immigrated. Lastly, the data collected and analyzed was reviewed by experts in health research to ensure the information found was an accurate representation of the data. Thus, all these strategies helped in meeting the criteria for developing trustworthiness of this study.

4.3 Results

Results from the thematic analysis determined five key themes associated with sport participation among immigrant adolescent girls. The first theme *Lack of time and energy due to competing responsibilities* relates to how girls who immigrated have various commitments that take up their time and energy. The second theme, *Unsupportive social environments* relates to individuals such as peers or instructors who influence girls' decisions regarding sport participation. The third theme, *Social norms related to girls sport participation*, involves the beliefs related to girls participating in sports. The fourth theme, *Issues with accessibility and availability* explains external challenges related to joining a sport. Lastly, the fifth theme, *The role of self-perception*, relates to an individual's own beliefs regarding themselves and their comfort levels which affect their sport participation. To ensure anonymity, all participants in this study were given pseudonyms.

4.3.1 I Just Didn't Have the Energy: Competing Responsibilities as a Constraint to Sport Participation

When discussing sport participation among immigrant girls, a common theme in their responses was having various responsibilities, which limited their time and energy for sports. Their schedules involved having priorities such as schoolwork commitments and household chores, which resulted in them feeling too tired to participate in sports. Participants such as Alina, a 16-year-old girl who emigrated from India in 2006, mentioned how school related commitments did not allow time for sport participation:

So yeah mostly honestly, its school, it just school with the work, cause as you get older obviously there's more work and stuff so like now especially because were all like.... In grade 11 it's a lot harder for us to just find the time to do it. [Interviewer: Do you feel like academics gets in the way of trying to -] Yeah it does because you have to do that and you have to do extracurriculars and clubs and stuff and balance those things and then volunteering and then some of us work, so then that on top of that and then stuff at home" – Alina

Similarly, Layla, a 16-year-old girl who emigrated from Somalia in 2013, described her experience in joining a sport:

yeah, so umm, I joined badminton last year and because school was getting like it was in January and that's like the time we have our exams are coming up so like everything was heavy on me, the work on school, so I just, so after a couple of weeks of doing badminton, I just quit because I didn't have the energy

Zara, an 18-year-old who emigrated from Afghanistan in 2011, also shared not having enough energy. She explained how going to school was already tiring and if she participated in sports, she would be too tired to help around the house afterwards:

Umm like sometimes you're like after school like if you participate in sports it's like, it can be a challenge you know because you're already tired from school and then there's sports and things, like you can get more tiredyeah and then you can't even help at home afterwards

Helping around the house, as Zara mentioned, was also a responsibility that took up a lot of time and energy for many girls. When asked the type of household responsibilities, Sofia, a 17-year-old girl who emigrated from Syria in 2016, listed “*like cleaning, helping my mom, like take care of my younger sisters*”. This was common with many of the other participants in this study; many mentioned having household chores that involved cleaning and assisting their parents around the house.

In addition to having responsibilities such as school and household chores, some participants mentioned their use of technology as also limiting their time and energy. Layla explained, “*I am usually on my phone a lot and that kind of like and then I haven't finished my homework and then it gets late then I have to like quickly finish my homework and then I'm tired*”. Similarly, Aria, a 16-year-old girl who emigrated from Syria related not having energy due to lack of sleep, where she stated, “*because like maybe sometimes like the day like before the*

school, I stay up late, on the phone, or some other thing”. Thus, preference for other activities which typically involve technology, were also shown to limit time and energy for sports.

4.3.2 The Environment Gets Kind of Toxic: Unsupportive Social Environments related to Sport

A second theme found among this sample was the influence of unsupportive social environments. Many participants expressed how individuals around them such as their peers and instructors played a large role in their participation in sports. Alina described having a negative experience with an instructor when she was a child, which led her to leaving the sport:

So, when I was super young, before I started school, my parents put me in swimming then but then I, I actually stopped, I asked them to take me out of it, because of an experience with one of my instructors ... Where they said that I ,like I wasn't able to do it, because of- because as a child I was kind of, a bit chubby, so they said something about that, and so I didn't want to do it anymore

In addition to experiences with instructors, many participants felt that their peers or teammates were discouraging in regards to sport participation. Hannah, a 16-year-old girl who emigrated from Pakistan in 2004, explained the environment within sports teams through the following:

... like I've seen like being on teams and stuff some people get really competitive, girls especially, they kind of you know catch an attitude and like just the environment kind of gets toxic and stuff because you just feel like you know like you're not doing good enough you're not liked and stuff. Like I know it's far-fetched and everything but like I felt that way because sometimes if I , if I weren't doing as to some, not my coach but let's say like a teammates expectation, I feel like I wouldn't get, not that they would say anything rude to me sometimes their attitudes and stuff during the game when it's really intense they would just yell out things, not rude things precisely, but like things that could kind of evoke kind of like you know like evoke that fact that you are feeling not so good about yourself

Similar views were shared by Alina who also mentioned how peers would promote a serious environment and instill pressure:

Plus like other students too, give that pressure, I know a lot of times they take it too seriously, and if someone kind of messes up or... something like that, they just put blame

on them and then it turns into a big thing, and so then I feel like in that sense people need to calm down a bit

Zara also experienced environments, which were unsupportive. She described it as *“I mean there is in some places, not most, like there’s some that don’t encourage you and instead of encouraging you they like tell you oh you did that wrong, you shouldn’t do it this way and that way”*. She clarified that mostly teammates and sometimes teachers contribute to that feeling. In addition, she explained how an experience with bullying also affected her participation. *“yeah I use to get bullied when I was a child...yeah that kind of stopped me, I use to play basketball with guys and girls and this one guy use to bully me and I kind of like stopped”*. Thus, unsupportive environments provided by individuals such as peers or instructors were found to limit sport participation among this sample.

4.3.3 Because You Are a Girl You Cannot Do This : Social Norms related to Girls Participating in Sport

Social norms related to girl sport participation involved societal and cultural beliefs regarding girls participating in sports. Many participants shared encounters with certain beliefs that limited their ability to participate in sports. Alina recalled her experience as a child when trying to participate in sports:

Oh yeah, so like, for example, just like a couple of times... you know when you’re like little, boys don’t like... girls joining in on whatever they are doing so like I remember in elementary school in grade 4 or grade 5, they always play soccer at lunch, and on some times, on some days that we would want to play some times, umm they wouldn’t really want us to... because they would be like well this is just for....[for boys?] ...yeah

The notion that sports was an activity for boys was a common belief encountered by many participants; some participants mentioned having the belief originate from the country they were born in. Aria described this belief in Syria where she explained *“Like back home, like sports only for boys so like, like, sports only for boys, but here its girls and boys”*. Hannah also shared a

similar encounter explaining how when growing up she did not hear about girls participating in sports from her parents and did not think it was common in Pakistan, the country she emigrated from. She described how *“like it’s not as common for girls to be more participating into sports as compared to Canada, in like other countries such as Pakistan where I am from”*.

Maya, a 14-year-old girl who emigrated from Somalia in 2013, also described the belief that certain sports are not for girls. She explained, *“People like think that sports that are that have to do with like strength are like not for girls”*. When asked if she experienced this with a certain sport, she explained how her family discouraged her from playing football; she elaborated on how their reason was that it was too intense and *“that like girls are not usually, girls don’t play that sport and it’s like not for girls...”*.

In regards to explaining these beliefs of sports not being for girls, participants shared various answers. Aria explained how her friends were unable to participate in sports because of their parents’ beliefs where she described it as *“because of their culture or religion or whatever. Because you are a girl you cannot do this, and you can’t do this.”* On the other hand, Maya explained how her family believed that girls had more important responsibilities to complete instead of participating in sports:

Well they like they let our brothers do it, but for like us, they think, they think like it’s like we have more stuff to do and like we can’t make way, like we can’t push sports in our like lives.

When asked what responsibilities they had, Maya listed, *“we have to do homework, um take care, like help our siblings, um help our mom, yeah”*. She also elaborated on the belief shared by her family where she explained, *“no cause in their time, like in their time it was like, girls usually like don’t play sports they would be like uhh, they would be home, not playing sports.”*

In addition to girls having certain responsibilities, Zara explained that her mother's belief regarding why sport participation wasn't good for girls had more to do with culture beliefs regarding marriage:

I feel like it's a culture belief, like sometimes when I exercise my mom's like don't flex your legs like this, it's not good, you know, like in the future if you get married your husband will think something else of you

She further explained how “when you get married, and you have sex first time you kind of get the blood thing yeah so my mom thinks if you flex your legs if something happens you won't get your blood that day”. She explained how this is a belief she encountered in her culture but at the same time it did not stop her from participating sports.

4.3.4 It's Not the Most Convenient Thing :Issues with Accessibility and Availability

Another theme focused on the issue of accessibility and availability of sports. Many participants emphasized struggles in attempting to join a sport and the challenges faced during the process. Alina expressed her interest in joining sports but mentioned how there were not many opportunities outside of school available to her:

I guess like if it's something closer to me, then it's definitely easier. If it's like for example at the community centre if there's like sports, like I did swimming here, so that was easy to do and that was outside of school. If there were other sports available, he-like that were nearby outside of school then I guess that would be easier but like there's not a lot

Similarly, Hannah expressed the issue of girls not having that many opportunities available and at the same time had difficulties in getting the information:

I feel like the opportunities are there but I just feel like there aren't, I feel like as compared to guys there obviously, like uhh like the ratio from guys to girls, is like the girls have it much like lesser opportunities but I feel like at the same time like the opportunities are there for girls I feel like they aren't brought to the surface like to the surface so like ease like you gotta like you know it's not the most convenient thing, you know like not convenient, I feel like it's just not the easiest to find specific opportunities for like, and everything is you know suitable for you

When looking at opportunities available, some participants mentioned the preference for having girls only sports offered. Aria explained her discomfort in participating in co-ed sports and explained how she would participate in sports if *“like if it’s only girls, like sports only for girls and sports only for boys like it can be”*. Likewise, Maya shared a similar challenge where she described how *“my parents don’t like let us do mixed um gender sports so yeah. That’s sometimes when I want to do the sport but then like it’s like both boys and girls that makes me like not do it”*. Thus, lack of sports available for only girls was also found to be a challenge.

At the same time, transportation and safety were also challenges. Layla expressed not being able to join a sport that was too far:

If it takes a long time to trans- if it takes a long time to get to a place I would not participate because umm because of like I feel like at home I have lot of siblings I have 9 siblings, and because of that, if it’s only me then I don’t think I would really like travel that, and I don’t like buses and because of that I feel like I wouldn’t participate in activities that take a long time to get to

Layla also mentioned a shooting in her community which also contributed to her parents not letting her travel on her own. Maya shared similar concerns regarding transportation where she explained how her parents were not comfortable with her taking the bus. *“No, the buses, they don’t like think buses are safe, so they drop us off, but sometimes they’re like busy and they can’t drop us off, and they don’t like us walking by ourselves cause they don’t think it’s safe”*

4.3.5 I Didn’t Want to Try: The Role of Self-perception in Sport Participation

Lastly, many girls’ perceptions of their self or comfort levels were found to limit their sport participation. These beliefs were common especially when individuals initially immigrated to Canada. Maya explained how when she immigrated she was cautious and perceived herself as not having the skills to participate in sports *“when I first came here uh cause like I never done a lot of sports I was like not fast, I was not flexible ...people would make fun of you”*. She

explained how she was scared to try sports where *“I didn’t want to because I don’t want people to like laugh at me or like make me feel bad so then I don’t even try”*.

Zara also expressed a similar experience of not feeling good enough to play sports when she first moved. She mentioned her experience of liking basketball but mentioned it took some time to join *“because as I said like language you know I took some time to learn and watch them play and then I kind of joined them”*.

Similarly, Layla explained her initial experiences of immigrating to Canada and sport participation.

Umm, in the beginning, maybe only because I didn’t know how to speak the language so I never knew the umm ways of playing the sports so like I’m I feel like I never made an effort to like participate in activities but as slowly as I got used to it, I felt like I got back to it...

She explained how *“I had the energy, but I don’t think I had the confidence because coming here I felt like I was more shy in the beginning than I am right now so yeah”*

Self-perception was also seen as an issue even after initially moving to Canada. Hannah explained not having a positive image of herself when she was younger which affected her participation:

Oh, so for like example like umm I remember when I was a bit younger and stuff like I wasn’t the healthier in terms of my body and I didn’t really have good self-image but like at that time at that peak I kind of stopped trying.... Because I felt like not so good about myself ... but like that only had to do with health because like it had to do with weight, and eating habits and all

She also elaborated:

Sometimes there certain sports that I felt like I was really unconfident about and then there were some that I felt better about and it’s just like sometimes you just know when you’re not doing as good as you want to do and I feel like that kind of restricts you cause it kind of brings down your self confidence

At the same time, comfort with dress code was also an individual preference that influenced sport participation. Zara mentioned that she did not like dress codes “*I mean like I would actually mind when there’s a dress code, I would want to wear anything instead of you know*”. When asked the type of dress code, Sofia explained not feeling comfortable with wearing “shorts and t-shirts” and preferred dress codes with “pants and like long t-shirts”. Maya shared similar thoughts where she identified as Muslim and explained how certain dress codes she could not wear. Thus, dress code of a sport also contributed to an individual’s preference and comfort level.

4.4 Discussion

Through the interviews conducted in this study, five themes related to constraints to sport participation faced by immigrant adolescent girls residing in the GTA were identified.

Table 15 Summary of Themes and Constraints

Theme	Constraints
Lack of time and energy due to competing responsibilities	Lack of time Lack of energy Household responsibilities School
Unsupportive social environments	Influence from friends Family support Experience with instructors Team atmospheres
Social norms related to girls participating in sport	Culture Family beliefs

	Societal beliefs
Issues with accessibility and availability	Safety Types of sports available Opportunities outside of school
The role of self-perception	Perceived skills Feeling comfortable Dress code Perceived competence

Findings demonstrated that participants experienced various individual and environmental constraints that limited their participation in sports. In particular, two themes highlighted individual constraints while the other three themes focused on environmental constraints to sport participation. Themes such as unsupportive social environments, social norms regarding girl sport participation and issues related to accessibility and availability all involved environmental constraints to sport participation among girls who immigrated. On the other hand, individual constraints were found both in themes related to lack of time or energy due to competing responsibilities and also within the theme regarding the role of self-perception. Based on the findings of this study, certain experiences with constraints to sport participation were shown to strongly influence participation among girls who immigrated.

4.4.1 Experiences regarding Environmental Constraints to Sport Participation

When focusing on unsupportive social environments, individuals such as peers and instructors, influenced participation in sports among immigrant girls. Many participants described experiences of certain individuals around them who were discouraging and

demonstrated negative feelings, which often limited many girls' participation in sports. This is consistent with similar studies regarding immigrant adolescents where social support from various sources such as teachers, coaches, and peers, was shown to affect an individual's decision to participate (Taylor & Doherty, 2005; Thul & Lavoie, 2011; Wieland et al., 2013). In particular, the amount of support provided by people such as teachers and peers affected one's motivation to participate (Taylor & Doherty, 2005; Wieland et al., 2013). However, lack of support from individuals may be more relevant among immigrant females compared to their male counterparts. Girls face additional challenges in which they receive limited support to participate in sports from family, friends and peers, in comparison to boys. (CAAWS, 2014; Taylor & Doherty, 2005; Wetton et al., 2013). Thus, although unsupportive social environments are relevant among the immigrant adolescent population, lack of support from individuals may play a larger role in sport participation among immigrant girls.

Similarly, the environment was also shown to affect sport participation through social norms regarding girls' sport participation. Within this theme, participants described social and cultural beliefs related exclusively to girls that often limited their participation in sports. Beliefs regarding sport participation typically involved the notion that sports was an activity specifically for boys. This was demonstrated in a study among girls who immigrated, in which cultural ideals shared by their families often viewed competitive sports as not promoting ideal femininity (Walseth & Strandbu, 2014). Additionally, some cultures viewed girls' participation in physical activity as steering away from normative gender roles for girls which involved them staying at home and helping the family (Thul & Lavoie, 2011). This was shared by some participants in which many girls were encouraged to spend their time at home instead of participating in sports.

As a result, these beliefs regarding female sport participation influenced immigrant adolescent girl's decision to participate in sports.

Another theme related to environmental constraints was the constraints related to the accessibility and availability of sports. This theme was largely related to the physical environment among individuals and the challenges related to joining a sport at a facility. Issues regarding opportunities available, distance, transportation, and safety were all mentioned as constraints that limited sport participation among these participants who resided in the GTA. These findings are supported by previous literature on sport participation among immigrant adolescents in which lack of opportunities, safety and access to facilities impacted participation (CAAWS, 2014; Shea & Beausoleil, 2012; Thul & Lavoie, 2011; Wieland et al., 2013). However, immigrant boys were found to have more opportunities and resources to be active compared to immigrant girls (CAAWS, 2014; Thul & Lavoie, 2011). Additionally, safety was a common concern for many parents of immigrant female adolescents (CAAWS, 2014; Pang et al., 2015). As a result, certain challenges regarding accessibility and availability of sports may be more relevant to immigrant girls, which in turn affects their participation in sports.

4.4.2 Experiences regarding Individual Constraints to Sport Participation

A common theme in limiting sport participation was having competing responsibilities that involved schoolwork and household obligations. This was consistent with other studies regarding immigrant adolescents in which schoolwork was a limiting factor to sport participation due to the amount of time it required (Social Planning Toronto, 2016; Taylor & Doherty, 2005). At the same time, youth were also found to have less time due to home responsibilities such as taking care of siblings, cooking, and other household chores (Social Planning Toronto, 2016). However, an important note was that work and family commitments were mentioned as

constraints exclusively by girls compared to boys; girls perceived less flexibility in their schedules due to household obligations (Taylor & Doherty, 2005; Wieland et al., 2013). This was common among the participants in this study who described having to help around the house because they were girls.

In addition to work commitments, self-perception or individual beliefs and concerns regarding oneself, was also shown to limit sport participation. Within this theme, concerns regarding self-competence, perceived skills, and personal comfort were found among participants. When initially immigrating to a new country, many participants felt that they did not have the skills or knowledge to participate in sports. Similar findings were shown in other studies in which girls felt that they lacked the knowledge and skills for activities and were uncomfortable about being active around fit peers (Taylor & Doherty, 2005; Thul & Lavoie, 2011). In particular, girls were found to be more affected by constraints such as unfamiliarity with activities compared to boys, which would make them feel excluded and abandon the sport (Taylor & Doherty, 2005). In addition to their self-perceptions regarding sports, many participants expressed feeling uncomfortable participating in sports that required certain dress codes. This was consistent with other studies involving immigrant girls in which certain clothing requirements were viewed as uncomfortable (Taylor & Doherty, 2005; Wieland et al., 2013). Thus, the beliefs and concerns of girls who immigrated had a role in influencing their participation in sports.

4.4.3 Strengths and Limitations

A strength of this study is its contribution to providing knowledge about a population that has limited information regarding constraints to sport participation. The findings highlighted key themes in relation to possible constraints to sport participation specifically among immigrant

adolescent girls. At the same time, since this study used an interpretive phenomenological approach, knowledge regarding the experiences of constraints to sport participation among immigrant adolescent girls was gathered. This provided a deeper understanding of the constraints to sport participation experienced by immigrant adolescent girls who reside in the GTA which could only be achieved through qualitative methods.

Although this study aided in contributing knowledge on an underrepresented group, there were some limitations present. Firstly, in regards to the interviews, some participants were reluctant to answer questions and share their experiences, often giving short responses. This may be a result of numerous factors such as shyness, fatigue, or difficulty in understanding the question. However, to limit these factors, various techniques were used such as rephrasing questions and reminding that the responses were anonymous, in order to encourage responses from participants.

Additionally, the sample size of this study consisted of seven participants, which although was consistent with studies that shared similar methods, may only be transferable to individuals who share the same characteristics. At the same time, all participants resided in Mississauga, a specific area of the GTA, and five out of seven of the individuals were born in Asian countries. Thus, the characteristics of these individuals may limit the transferability of these results to all immigrant girls living in the GTA.

4.5 Conclusion

In conclusion, this study provided a deeper understanding of the experiences of constraints to sport participation among immigrant adolescent girls who reside in the GTA. In particular, this study highlighted certain experiences of immigrant girls that affected their sport participation. Themes related to individual and environmental constraints faced specifically by

this cohort were identified. Although certain experiences such as unfamiliarity with a sport or linguistic barriers may be related to immigration, the role of cultural and societal norms was relevant among this sample. Future studies should consider exploring the experiences of immigrant girls who were born in specific countries or share similar cultures or religions to understand the role of culture as a constraint to sport participation. At the same time, future research should explore the role of immigration and gender in regards to other healthy lifestyle behaviours such as diet practices and physical activity.

Nevertheless, results of this study offer insight into the challenges faced by a specific cohort within Canada. Many girls and young women who immigrated experience complex constraints which limit their sport participation (CAAWS, 2014). Additionally, rates of sport participation are lower among immigrant females compared to immigrant males (Canadian Heritage, 2013; Walseth, 2008). Thus, findings in this study help in understanding constraints to sport participation experienced by immigrant girls, which can help inform future strategies in health promotion. This in turn can aid in improving sport participation and provide wider community resources to immigrants in Canada.

There are various benefits related to promoting sport participation among girls who immigrated. Encouraging sport participation among immigrants may facilitate an easier transition and help them understand Canadian culture (Cragg et al., 2016; Institute for Canadian Citizenship, 2014). Additionally, sport participation can provide opportunities to make friends, build support networks in their new country and practice their English (Social Planning Toronto, 2016). In regards to sport organizations, promoting sport participation among immigrant adolescents can increase membership and cultural richness, which can also improve social inclusion within these associations (Sawrikar & Muir, 2010). Lastly, as Canada's demographics

continue to change with increased immigration, it is important to promote sport participation in order to prevent any exclusion from health and social benefits related to sport. Thus, understanding sport participation among immigrant adolescent girls may aid in promoting better and healthier lifestyles among the overall Canadian population.

4.6 References for Chapter 4

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Chapter Five: Conclusion

This study aimed to explore constraints to sport participation among immigrant adolescent girls who reside in the GTA. By employing a pragmatic view, an explanatory sequential mixed methods approach was conducted to meet the four objectives of this study, which included the following:

1. To identify individual, environmental, and task constraints to sport participation among immigrant adolescent girls who reside in the Greater Toronto Area (GTA).
2. To determine the most significant constraints that are negatively associated with sport participation among immigrant adolescent girls who reside in the Greater Toronto Area (GTA).
3. To compare the most significant constraints to sport participation between immigrant and non-immigrant adolescent girls who reside in the Greater Toronto Area (GTA).
4. To gain an in depth understanding of the experiences of immigrant adolescent girls in relation to constraints to sport participation they face in the Greater Toronto Area (GTA).

For the quantitative methods, a secondary analysis was performed on survey responses in Study 1 to meet objectives 1, 2 and 3 in which the most significant constraints to sport participation among immigrant adolescent girls were determined. At the same time, significant constraints were compared between immigrant adolescent girls and non-immigrant adolescent girls who reside in the GTA. For the qualitative methods, semi-structured interviews were conducted to meet objective 4 which involved developing an in depth understanding of constraints to sport participation faced among immigrant adolescent girls who reside in the GTA. Thus, through a mixed methods approach, all four objectives of this study were achieved.

5.1 Summary of Findings

In regards to the quantitative methods, a secondary analysis of the survey aided in identifying individual, environment and task constraints among immigrant girls who resided in the GTA. At the same time, up to five significant constraints were determined and compared between immigrant girls and non-immigrant girls. The results of the analysis found that friends' encouragement, family sport participation, belief that certain sports are not for girls, and physical intensity were the most significant among girls who immigrated. Likewise, feeling positive, being less energetic, having time, being confident and having access to green space were all significant constraints found among girls who did not immigrate. As a result, through the secondary analysis, the difference in constraints faced between immigrant adolescent girls and their non-immigrant counterparts was highlighted. The findings demonstrated that immigrant girls were more likely to report environmental constraints whereas non-immigrant girls were more likely to face individual constraints.

To explore the results from the survey responses further, semi-structured interviews were conducted to develop a better understanding of the constraints to sport participation faced by girls who immigrated. The interviews provided a deeper insight into the experiences of constraints to sport participation faced among immigrant girls. Significant constraints found in the secondary analysis were discussed along with other challenges to sport participation faced by participants. Based on the experiences mentioned, themes including lack of time and energy due to competing responsibilities, unsupportive social environments, social norms regarding girl sport participation, issues related to accessibility and availability, and the role of self-perception, were all relevant among girls. Thus, through the interviews, relevant themes related to constraints to sport participation experienced by immigrant girls were addressed.

Overall, by using a mixed methods approach, the exploration of constraints to sport participation among immigrant girls was achieved. When comparing findings between the quantitative and qualitative data, both results emphasized the role of environmental and individual constraints to sport participation among immigrant adolescent girls. In particular, the constraints identified within the survey analysis were further explored and explained within the semi-structured interviews. For example, constraints such as family support and friends' encouragement were relevant with the themes identified in the interviews such as unsupportive social environments and social norms. Specifically, the lack of family support may be linked to social norms related to female sport participation; some participants had family members who had discouraging beliefs regarding sport participation. Likewise, friends' encouragement may be related to experiences regarding unsupportive social environments as participants explained how lacking support from the individuals around them affected their participation. Thus, results collected from both the secondary analysis and interviews demonstrated similar findings regarding constraints to sport participation among immigrant adolescent girls.

Although both the quantitative and qualitative data supported each other's findings, there were some differences in results. For example, the survey analysis did highlight physical intensity as a significant constraint, but this was not as relevant among the interviews. Similarly, having lack of time and energy due to various responsibilities was a common theme among participants in the interviews. However, although having energy was identified as a constraint within the survey, it was not one of the most significant constraints among the subsample. The differences in results can be contributed to the different samples between the two data collection methods. Nevertheless, the data collected through qualitative methods supported the results in

the quantitative methods and addressed constraints to sport participation faced among immigrant adolescent girls who reside in the GTA.

5.2 Strengths and Limitations

Based on the findings of this study, valuable knowledge was gathered on constraints to sport participation faced among immigrant girls who reside in the GTA. Previous research highlighted declining rates of sport participation among female adolescents in Canada and explored possible barriers or constraints related to participating in sports faced by this cohort (Slater & Tiggemann, 2011; Yungblut et al., 2012). However, there was limited information on diverse groups within the female adolescent population, such as girls who immigrated to Canada. As a result, this study provided insight into the constraints to sport participation faced specifically within the immigrant female adolescent population in Canada. At the same time, results of this study emphasized the importance of conducting research among different groups since it showed that constraints faced by immigrant girls were different compared to those girls who did not immigrate. Thus, this study addressed the constraints to sport participation among immigrant girls, a group that was underrepresented in sport research.

In addition to providing knowledge on a limited area of research, another strength of this study was its use of a mixed methods approach. Previous research regarding immigrant adolescents generally used qualitative methods to explore challenges or constraints to sport participation (Pang et al., 2015; Shea & Beausoleil, 2012; Simpkins et al., 2012; Social Planning Toronto, 2016; Taylor & Doherty, 2005; Thul & Lavoie, 2011; Walseth & Strandbu, 2014; Wieland et al., 2013). However, by using a pragmatic view, this study gained both quantitative and qualitative data through a secondary analysis of survey responses and semi-structured

interviews. Thus, through this study, a different approach in exploring constraints to sport participation was utilized, which was not common in previous studies.

Although this study had many strengths in providing information on constraints to sport participation among immigrant girls, there were some limitations. One limitation was that the same sample for the quantitative methods was not used for the qualitative methods. The secondary analysis of the survey responses was conducted on a subsample from a study led by Barakat et al. which involved examining constraints to sport participation among female adolescents in Ontario. However, for the interviews, the sample was recruited from a community centre in Mississauga, which did not involve the participants from the survey. As a result, the characteristics of each sample were different which may contribute to any variation in the results.

Another limitation was participants' understanding of the questions that were asked; some questions may not have been understood correctly or answered properly by participants. Specifically within the survey responses, if some participants were confused with certain questions, they did not have the same opportunity to ask for clarification from the researcher compared to the participants in the interviews. This was noticeable during the interviews when participants required more clarification with certain definitions or questions related to certain constraints as English was not their first language. Thus, although participants were in direct contact with the researcher during the interviews, individuals who participated in the survey did not have the same advantage. As a result, this may have affected their responses to certain questions which may have influenced the findings of the study.

Lastly, as mentioned in both studies, generalizability of the results is a limitation because of the characteristics of each sample. Both samples consisted of participants from the GTA. As a result, findings may not be applicable to immigrants from other areas in Canada. Likewise,

majority of participants in both samples came from countries located in Asia and had certain ethnic backgrounds which may not be applicable to the entire immigrant population in Canada. Thus, the generalizability or transferability of the findings may not be applicable to the entire female adolescent population who immigrated to Canada. However, the findings may still provide insight into those individuals who share similar characteristics with the samples.

5.3 Conclusion and Future Research

Sport participation in Canada is continuously emphasized due to its several health and social benefits. Nevertheless, a decline in sport participation is shown during adolescence, especially among girls (Berger et al., 2008; Yungblut et al., 2012). Although studies have explored possible constraints to sport participation among adolescent girls, there is limited information regarding diverse groups such as immigrants. As countries such as Canada continue to become more diverse with increased immigration, it is important to investigate sport participation among adolescent girls who immigrated as it is well known that they may face complex barriers to sport participation specific to their cohort (CAAWS, 2014).

5.3.1 Implications for Future Policies and Programs

Given the benefits associated with sport participation, the findings of this study can be used to improve sport participation rates through informing future policies and programs related to sport. This in turn may aid in promoting sport participation among immigrant adolescent girls and combat the overall decline in sport participation among girls in Canada. Results of both the quantitative and qualitative analyses emphasized the role that family plays for sport participation among immigrant adolescent girls. Programs that target families may help promote sport participation by informing family members including parents or guardians of the various available sports and make them more engaged and comfortable with sport engagement for all

family members. . Thus, future interventions should target both girls and their families in order to promote sport participation and address constraints regarding unfamiliarity of sports and social norms related to sport participation.

When examining both immigrant and non-immigrant adolescent girls, both cohorts faced various individual constraints related to self-perception and self-esteem that often limited their participation in sports. These findings are consistent with previous research on sport participation where factors such as perceived competence, body image concerns, and self-esteem were all shown to limit sport participation and physical activity among girls (Eime, Payne, Casey, & Harvey, 2010; Eime et al., 2014; Slater & Tiggemann, 2011; Wetton, Radley, Jones, & Pearce, 2013; Yungblut et al., 2012). Therefore, in order to mitigate these constraints, future programs should focus on improving self-perception among girls by highlighting positive female role models who are physically active, and promoting female sport in the media (CAAWS, 2009; Wetton et al., 2013). This may also help in improving physical activity rates for those not inclined to sports, since many girls reported intrapersonal factors such as self-efficacy and self-image concerns as reasons for not being physically active (Yungblut et al., 2012)

In addition to offering family programming and improving self-perception, programs should address the importance of providing supportive environments for girls in order to promote both sport participation and physical activity. In particular, future interventions should examine the influence of instructors in physical education classes and sport. Findings from this study highlighted the role of peers and instructors, where some participants addressed negative experiences with instructors and peers that resulted in limiting their participation in sport. Similarly, previous research has emphasized the need for instructors and teachers who motivate participation in sport and provide a positive environment for girls to be physically active (Social

Planning Toronto, 2016; Wetton et al., 2013). Thus programs should focus on training instructors and teachers to be aware of various constraints faced among adolescent girls and to encourage participation among different diverse groups.

Overall, future programs and policies are imperative as participation in sports is linked to various health and social benefits that should be available to all individuals living in Canada. Specifically for immigrant populations, sport participation may facilitate an easier transition to new surroundings and help in understanding Canadian culture (Cragg et al., 2016; Institute for Canadian Citizenship, 2014). It can also provide opportunities to make new friends and build networks along with developing a range of skills such as cooperation, self-discipline and leadership (Slater & Tiggemann, 2011; Social Planning Toronto, 2016). At the same time, given that females who immigrate may be at risk for poor mental health, promoting sport participation may help in reducing depression and anxiety along with various other mental health benefits (Eime, Young, Harvey, Charity, & Payne, 2013; McKenzie, Muntaner, Noh, Carrasco, & Kim, 2013).

In addition to providing numerous advantages for the immigrant population, increasing sport participation among girls can also help in improving the health of the Canadian population. In particular, preventing the decline in sport participation rates may aid in reducing physical inactivity and obesity rates in Canada and also provide reduction in chronic diseases such cardiovascular disease, osteoporosis and diabetes (Eime et al., 2013; Slater & Tiggemann, 2011). Furthermore, individuals who participate in sports are shown to have greater mental health and a better quality of life than their non-participant counterparts (Pharr & Lough, 2014; Somerset & Hoare, 2018). Thus, understanding the challenges related to sport participation can help improve rates and in turn provide numerous health benefits.

5.3.2 Recommendations for Future Research

Overall, results of this study may aid in informing future programs and policies to improve sport participation among adolescent groups and provide various advantages to the immigrant population. This study highlighted various constraints to sport participation among girls and confirmed that girls may face certain challenges exclusive to their cohort. At the same time, this study also demonstrated the importance of conducting research among different diverse groups who may face challenges specific to their population.

Thus, to ensure all individuals living in Canada receive the benefits related to sport participation, future studies should explore challenges to sport participation faced by other diverse groups. In particular, future research should focus on immigrants from specific countries, ethnic backgrounds, and religions. By conducting research on several diverse groups, Canada will be more inclusive of its population and provide individuals with more opportunities to experience the various advantages related to sport participation. At the same time, by focusing on individuals from certain countries or ethnic backgrounds, studies can explore the role of culture and ethnicity in regards to sport participation. Likewise, studies should also examine the year of immigration and determine if changes occur in sport participation depending on the length of immigration.

Beyond sport participation, future studies should also explore constraints among girls regarding different lifestyle behaviours such as different forms of physical activity, diet practices and sleep patterns. This will aid in addressing other possible challenges girls face regarding their health. In the end, based on the findings of this study, it is clear that to ensure all individuals have equal opportunities to healthy lifestyles, future research must be inclusive of all diverse groups and focus on several different populations.

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Appendices

Appendix A - Survey

Sport Participation among Adolescent Females in Ontario

Thank you for participating in the survey! This survey is made up of THREE (3) Sections. The first section will ask about your demographics - who you are, where you live etc. The second section will ask about your sport participation and the third section will ask about the area in which you live. The survey may take 20-25 minutes to complete, and must be completed in one session.

If you wish to STOP the survey and withdraw your participation, you may do so at any time during the survey by closing this window. Your information will not be saved unless you click "Submit" at the end of the survey. Once you click "Submit", your responses will be processed by UOIT Information Technology and will not be traceable back to you, and we will not be able to remove your input from the study. The aggregate data collected from this survey may also be used as secondary data for future studies.

Please try to be as accurate as possible.

Questions marked with an asterisk (*) must not be left blank.

If you have any questions concerning the research study or experience any discomfort related to the study, please contact Dr. Caroline Barakat-Haddad at caroline.barakat-haddad@uoit.ca

Any questions regarding your rights as a participant, complaints, or adverse events may be addressed to Research Ethics Board through the Research Ethics Coordinator – researchethics@uoit.ca or 905.721.8668 x. 3693.

This study has been approved by the UOIT Research Ethics Board (REB#14230) on March 3, 2017.

*** Required**

DEFINITION OF SPORT

According to Sport Canada, sport is defined as:

"... an activity that involves two or more participants engaged for the purpose of competition. Sport involves formal rules and procedures, requires tactics and strategies, specialized neuromuscular skills, and a high degree of difficulty and effort."
Some examples of sport activities are basketball, gymnastics, hockey, soccer and swimming.

Physical activities do not involve two or more participants engaged for the purpose of competition(For example brisk walking, dancing, running, or household chores). These ARE NOT considered sports.

Parental/Guardian Consent

Dear Parents/Guardians,

We are researchers in Health Sciences at the University of Ontario institute of Technology, currently collecting information for my research on constraints to sport participation among adolescent females. We are writing to request your permission for your child to be included in this study.

Participants will be asked to complete an online survey through Google Forms, in which they will be asked about their sport participation behaviours and attitudes, the facilities, and services available to them, as well as some demographic data (postal code, family health status (including family health history), participants'/parents' employment status, etc.).

The information collected will be used as part of group data only. No individual participants will be identified by name and all responses will be held in confidence. Results will be analyzed for common themes in constraints to sport participation and the interaction of various factors. The aggregate data collected from this survey may also be used as secondary data for future studies.

Please complete the bottom section of this text. If you have any questions concerning the research study or experience any discomfort related to the study, please contact Dr. Caroline Barakat-Haddad at caroline.barakat-haddad@uoit.ca or Dr. Sarah Dash at sarah.dash@uoit.ca. Also, please contact Dr. Caroline if your daughter requires any special accommodation for the study (e.g. a helper, extra time to complete the survey etc.) so that we may assist in facilitating your child's participation.

Thank you for your assistance.

Any questions regarding your rights as a participant, complaints, or adverse events may be addressed to UOIT Research Ethics Board through the Research Ethics Coordinator researchethics@uoit.ca or 905.721.8668 x. 3693. This study has been approved by the UOIT Research Ethics Board REB (REB#14230) on March 3, 2017.

Sincerely,

Dr. Sarah Dash

Postdoctoral Research Fellow , UOIT Faculty of Health Science

Sent on behalf of Dr. Caroline Barakat-Haddad, primary investigator

1. *

Check all that apply.

☐ Yes, I consent for my child to participate in this study.

Consent
PURPOSE

Some adolescents choose not to participate in sport due to "constraints", which are things that prevent or get in the way of a person's ability to participate in sport. We want to find out more about how constraints interact to cause non-participation.

RISKS AND BENEFITS

There may not be any immediate or direct benefits to you from completing this survey, but this research might help us find ways to help other adolescents to be more involved in sport in the future.

We do not expect that you will experience any negative effects from completing this survey, but if some questions make you uncomfortable or you do not want to answer them, you do not have to.

By completing this survey, you are agreeing to participate in this study.

2. I consent to participating in this study *

Mark only one oval.

- ☐ Yes
☐ No **Stop filling out this form.**

Age

3. Please confirm you are a female between 13-18 years old *

Mark only one oval.

- ☐ Yes, I am between 13-18 years old
☐ No, I am not between 13-18 years old **Stop filling out this form.**

Demographic Information

4 How did you hear about this study?

Mark only one oval.

- ☐ School
☐ Community Center/Organization
☐ Prefer Not to Say
☐ _____ Other:

5. Please enter the first three digits of your postal code (example: A1A)

If you do not know, please enter 000

6. Which of the following best describes your racial background? *

Select all that apply.

Check all that apply.

- ☐ Black(Examples: Ethiopian, Jamaican, Kenyan, Nigerian, Somalian, Vincentian)
- ☐ East Asian(Examples: Chinese, Japanese, Korean)
- ☐ First Nations, Métis and/or Inuit
- ☐ Latin American (Examples: Colombian, Cuban, El Salvadorian, Mexican, Peruvian)
- ☐ Middle Eastern (Examples: Afghani, Iranian, Lebanese, Saudi Arabian, Syrian)
- ☐ South Asian (Examples: Bangladeshi, Indian, Pakistani, Sri Lankan and Indian)
- ☐ Caribbean such as Guyanese)
- ☐ Southeast Asian (Examples: Filipino, Malaysian, Singaporean, Thai, Vietnamese)
- ☐ White (Examples: British, Greek, Italian, Portuguese, Russian, Slovakian)
- ☐ Prefer not to say _____

Other:

7. In what year were you born?

Please enter in the format of YYYY, e.g. 2003.

8. In what country were you born?

9. If you were NOT born in Canada, in which year did you immigrate to Canada? (Leave blank if you were born in Canada)

10 If one or both of your parents were not born in

Canada, in which year did they immigrate to Canada?

Please enter in the format of YYYY, e.g. "2003". If you do not know, enter "0000" If your parents were both born in Canada, enter "NA" If your parents came to Canada at different times, please enter the date of the parent who arrived FIRST.

11. What is the language (other than English) that you first learned at home in childhood and still understand?

Please leave blank if English is the only language spoken at home.

12. Including yourself, how many children under the age of 18 live at your home?

13. Of those, how many children are under the age of 5?

14. Please select which describes you: * Mark only one oval.

- ☐ Only child (I have no siblings or step-siblings)
- ☐ First born (I have at least one younger sibling or step-sibling)
- ☐ Youngest (I have at least one older sibling or step-sibling)
- ☐ Middle (I have at least one younger sibling and at least one older sibling)
- ☐ Don't know/Prefer not to say

15. Have any health concerns interfered with your ability to participate in sports? Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ Prefer Not to Say

16. If you answered "yes" above, please specify which health condition

17 Do you use an assistive device/mobility aid regularly? *

This can include a wheelchair, walker, crutches, cane, guide dog, hand held magnifiers, which you are using for a term of longer than 3 months. This does NOT refer to eye glasses correcting to good vision, hearing aids, ostomies or orthoses. **Mark only one oval.**

- ☐ NO
- ☐ Yes, but my device NEVER prevents me from accessing facilities or participating in sport.
- ☐ Yes, my device ALWAYS prevents me from accessing facilities AND participating in sport.
- ☐ Yes, my device prevents me from accessing facilities, but I can still participate in sport.

Yes, my device prevents me from participating in sport, but I can still access facilities

Prefer not to say

18. What is your approximate weight? (in kg)

Please enter numbers only (e.g. "80" instead of "80 kg")

19. What is your approximate height ? (in cm

e.g.

170 cm)

20. How would you describe your body type? *

Mark only one oval.

- ☐ Overweight
- ☐ Average
- ☐ Underweight
- ☐ Don't know/Prefer Not To Say

21. How satisfied are you with your body type? * **Mark only one oval.**

- ☐ Very satisfied - I wouldn't change it.
☐ Somewhat satisfied
☐ I am neither satisfied nor dissatisfied with my body type
☐ Somewhat dissatisfied
☐ Very dissatisfied - I would make many changes if I could.
☐ Prefer Not To Say

22 How would you describe your overall health? * Mark only one oval.

- ☐ Excellent
☐ Very Good
☐ Good
☐ Fair
☐ Poor
☐ Prefer Not to Say

23. Did your parent(s)/guardian(s) complete high school? *

If your guardian is female, please answer under "Mother/guardian", even if she is not related to you. **Mark only one oval per row.**

	Completed high	Did not complete high	I don't know/Prefer Not to school	school Say
Parent 1/Guardian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parent 2/Guardian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Are you currently employed? If so, how many hours per week do you work? *

This refers to work for which you are paid. **Mark only one oval.**

- ☐ I am NOT employed
☐ I am employed and work less than 4 hours per week
☐ I am employed and work between 5 and 10 hours per week
☐ I am employed and work more than 10 hours per week
☐ Prefer not to say.

25. On average, how many hours per week do you spend on responsibilities apart from school work and employment? *

Mark only one oval per row.

0/Not Less than 4 5-10 hours More than 10 Prefer

	Applicable	hours per week.	per week.	hours per week.	not to say
Babysitting (eg. younger siblings or other children)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caregiver role (eg. grandparents, individuals older than yourself)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Housekeeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The questions in this section refer to your sport participation.

Please be as accurate as possible.

26 Did you regularly participate in any sports during the past 12 months? *

"Regularly" means at least once a week during the season or for a certain period of the year. For example being a member of a school basketball team, or soccer club outside of school. This does NOT refer to your sport participation in Physical Education classes in school, or physical activities such as cycling for transportation, activities involving a motorized vehicle (e.g. snowmobiling) or dance/yoga. **Mark only one oval.**

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

27. Which sports do you participate in? *

Check all that apply.

Mark only one oval per row.

	No	Yes, IN school	Yes, after school	I used to, but not anymore	I want to try it	I would never try this sport
Baseball	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basketball	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Soccer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ice Hockey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ball/Field Hockey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Softball	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Volleyball	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rugby	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tennis/Badminton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Football	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swimming/Diving (Competitive)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Martial Arts (Jujitsu, Karate, Taekwondo, Judo etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Track & Field (short/long distance running, triathlon, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gymnastics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water sports (rowing, polo, sailing, canoeing etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cricket	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lacrosse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equestrian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Winter sport (ski, snowboard, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. If you selected 'Other' in the previous question, which sport were you referring to?

Leave blank if you did not have any other sport in mind.

29 The number one reason why you do NOT participate in the sports you would like to participate in is:

30. Have you ever had a negative experience while practicing sport which caused you to stop practicing that sport? Mark only one oval.

☐ Yes

☐ No

31. Have you ever dropped out of a sport after trying it? * Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ Don't know/ Prefer not to say

32. If you answered "yes" to dropping out of a sport, what was the reason?

Leave blank if you did not answer "yes", or if you prefer not to say.

33. If you answered "yes" to dropping out of a sport, how long had you been participating in the sport before dropping out?

Please enter a unit of time e.g. "1 month" instead of "1". Leave blank if you did not answer "yes", or if you prefer not to say.

34 Please indicate how often the following statements apply to you:

Mark only one oval per row.

	Always	Almost always	Sometimes	Never	Don't know/Prefer not to say
I have friends who I can participate in sports with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends encourage me to participate in sports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having friends makes me willing to participate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my family participate in sport regularly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family supports my participation in sports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family/I can afford to participate in the sports of my choosing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have energy to participate in sports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have time to participate in sports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable with the dress code of my preferred sport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When something slows down or prevents my participation in sport, I try my best to resolve the issue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate how the following questions apply to you. A "3" means that you neither agree nor disagree with the statement.

35. I participate in sports regularly (three times a week or more) Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

36. I enjoy sports.
Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

37. I am good at the sports I enjoy. Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

38 I feel confident when I participate in sports. Mark only one oval.

1	2	3
Strongly Disagree	<input type="radio"/>	<input type="radio"/>

39 I have had the opportunity to try different sports at school. Mark only one oval.

1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

40. I have had the opportunity to try different sports on my own time, outside of school. Mark only one oval.

1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

41. In my culture, it is expected that girls participate in sports. Mark only one oval.

1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

42. I feel comfortable with the dress code of my preferred sport. Mark only one oval.

1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

43. I believe that participating in sports will make me a healthy adult. Mark only one oval.

1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

44. I believe that participating in sport is important. Mark only one oval.

1 2 3 4 5

45 I believe that participating in sport is fun. Mark only one oval.

1 2 3

Strongly Disagree ☐ ☐ ☐

46 Girls should participate in sports. Mark only one oval.

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

47. There are certain sports in which girls should NOT participate. Mark only one oval.

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

48. If you answered 4 or 5 in the previous question, please list the sports in which girls should NOT participate.

49. Sport helps youth develop into strong adults. Mark only one oval.

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

50. Participating in sport is viewed as important in society. Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

51. Sport makes me feel positive. Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

52 I feel gross when I participate in sports. Mark only one oval.

	1	2	3	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

53 I strive to excel in the sports that I play. Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

54. Most people I know agree that sport participation is important. Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

55. Participating in sports will help me be successful in other avenues of life. Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

56. Please rate the degree to which these characteristics describe you.

* Mark only one oval per row.

	Very High	Moderate	Average	Below Average	Low	Don't know/Prefer not to say
Assertive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physically Strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexible / Agile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High Speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

57 Please rate how likely you are to participate in a sport which is/has/requires:

*** Mark only one oval per row.**

	Very likely	Somewhat likely	Not likely at all	Don't know/Prefer not to say
Highly competitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreational	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physically intense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strict Rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Boys and Girls On Same Team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contact With Other Players	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Games of long duration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following questions pertain to the area in which you live.

Think about the community in which you live. This can include your neighborhood (within walking distance to your home or school) your city and town.

Note:

Always = 100%

Almost Always = Above 50%, less than 100%

Sometimes = Around 50% of the time

Very Rarely = Less than 25% of the time, more than 0%

Never= Almost 0% of the time

58. Your Neighborhood: Please indicate how often the following statements apply to you: Mark only one oval per row.

	Always	Almost Always	Sometimes	Very Rarely	Never	Don't know/ Prefer not to say
The outdoor air quality in my neighborhood prevents me from participating in outdoor sport.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am proud of where I live	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a lot of green space (eg. parks, paths, fields) in my neighborhood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The weather in my geographical area allows me to participate in my chosen sport when I want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The weather in my geographical area prevents me from participating in my chosen sport when I want to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My neighborhood is safe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The sidewalks and walking paths in my neighborhood are safe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

59 Facilities: Please indicate how often the following statements apply to you: *

Mark only one oval per row.

Almost

Very

Don't

	Always	Always	Sometimes	Rarely	Never	know/Prefer not to say
I have options for where to participate when weather conditions change (eg. indoor running track/soccer pitch).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is safe public transportation available for me to access sport opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are safe places close to my home where I can participate in or practice sport.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The sport facilities close to my home are for sports and activities that I want to participate in.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The sport facilities close to my home are clean.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The sport facilities close to my home are accessible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The sport facilities close to my home are not over-crowded	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

60. What mode of transportation do you most often use to access the sport of your choice?

If you don't participate in sports in or outside of your neighborhood, select "Not applicable". **Mark only one oval.**

- ☐ Walking/Cycling
- ☐ Someone drives me (parent, friend)
- ☐ I drive myself
- ☐ Public Transit (bus, taxi)
- ☐ Not applicable

61. Please enter the amount of time in minutes that it takes you to get to your sport/activity of choice.

Based on the previous question. If you usually take the bus, how long does it take? If you answered "Not Applicable" enter "NA"

62 Please rate how the following weather conditions negatively affect your participation in your preferred sports. * Mark only one oval per row.

	Always	Almost Always	Sometimes	Very Rarely	Never	Don't know/Prefer not to say
Cold temperature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hot temperature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Humidity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The next questions are about your physical activity levels and preferences.

Physical activity is any movement that increases your heart rate and breathing. It can take place at home or at school, indoors or outdoors, on your own, or with family and friends.

Some examples of physical activity are brisk walking, running, dancing, yoga, swimming, household chores like vacuuming or mowing the lawn, rollerblading, biking, soccer, basketball, and the list goes on.

63. Tell us your 5 favorite physical activities in the space below.

Please do NOT include the sports you indicated earlier in the survey. Please list up to 5 physical activities.

64. In the last 7 days, how many days were you active at a moderate-to vigorous-intensity? * Moderate- to vigorous-intensity means that you're working hard enough to raise your heart rate, or your heart rate has gone up quite a bit. Mark only one oval.

- ☐ 0 days
- ☐ 1 day
- ☐ 2 days
- ☐ 3 days
- ☐ 4 days
- ☐ 5 days
- ☐ 6 days
- ☐ 7 days

Don't know/prefer not to say

65 In the last 7 days, how many days were you active at a moderate- to vigorous-intensity for 60 minutes or more? *

Moderate- to vigorous-intensity means that you're working hard enough to raise your heart rate, or your heart rate has gone up quite a bit. **Mark only one oval.**

- ☐ 0 days
- ☐ 1 day
- ☐ 2 days
- ☐ 3 days
- ☐ 4 days
- ☐ 5 days
- ☐ 6 days
- ☐ 7 days

Don't know/prefer not to say

End of study prize draw

Following completion of recruitment for this study, there will be a draw for prizes as a thank you for your participation. If you wish to be included in this draw, please provide your email below:

66. Email address:

Appendix B- Constraint Variables for Secondary Analysis

** Based on information gathered in pilot study

Variable	Question	Constraint	Type of Constraint
1. Q03_Race	Which of the following best describes your racial background?		Individual
2. Q04_Age	In what year were you born?		Individual
3. Q09_ChildrenAtHome	Including yourself, how many children under the age of 18 live at your home?	Presence of children in the family	Environment
4. Q10_ChildrenUnderFive	Of those, how many children are under the age of 5?	Presence of children in the family	Environment
5. Q11_BirthOrder	Please select which describes you		Individual
6. Q12_HealthCondition	Have any health concerns interfered with your ability to participate in sports?	Perceived wellness	Individual
7. Q14_AssistiveAid	Do you use an assistive device/mobility aid regularly?	Perceived wellness	Individual
8. Q17_BodyType	How would you describe your body type?	Body Type, Body Image	Individual
9. Q18_BodySatisfaction	How satisfied are you with your body type?	Body Type	Individual
10. Q19_OverallHealth	How would you describe your overall health?	Perceived wellness	Individual
11. Q20_Parent1HS	Did you parent(s)/guardian(s) complete high school?	Parent Education Level	Environment
12. Q20_Parent2HS	Did you parent(s)/guardian(s) complete high school?	Parent Education Level	Environment
13. Q21_Employment	Are you currently employed? If so, how many hours per week do you work?	Individual responsibilities	Individual
14. Q22_Babysitting	On average, how many hours per week do you spend on responsibilities apart from school work and employment?	Individual responsibilities	Individual
15. Q22_Caregiverrole	On average, how many hours per week do you spend on responsibilities apart from school work and employment?	Individual responsibilities	Individual
16. Q22_Housekeeping	On average, how many hours per week do you spend on responsibilities apart from school work and employment?	Individual responsibilities	Individual
17. Q22_Other	On average, how many hours per week do you spend on responsibilities apart from school work and employment?	Individual responsibilities	Individual

18. Q27_NegativeExperience	Have you ever had a negative experience while practicing sport which caused you to stop practicing that sport?	Interest	Individual
19. Q31_HaveFriends	Please indicate how often the following statements apply to you: I have friends who I can participate in sports with	Lack of friends	Environment
20. Q31_FriendsEncourage	Please indicate how often the following statements apply to you: My friends encourage me to participate in sports.	Lack of peer support	Environment
21. Q31_FriendsWilling	Please indicate how often the following statements apply to you: Having friends makes me willing to participate	Peer influence	Environment
22. Q31_FamilyParticipateRegularly	Please indicate how often the following statements apply to you: My family/I can afford to participate in the sports of my choosing	Family Commitment	Environment
23. Q31_FamilySupports	Please indicate how often the following statements apply to you: My family supports my participation in sports	Lack of family support	Environment
24. Q31_FamilyAfford	Please indicate how often the following statements apply to you: My family/I can afford to participate in the sports of my choosing	SES	Environment
25. Q31_HaveEnergy	Please indicate how often the following statements apply to you: I have energy to participate in sports.	Lack of energy	Individual
26. Q31_HaveTime	Please indicate how often the following statements apply to you: I have time to participate in sports.	Lack of time	Individual
27. Q31_DressCode	Please indicate how often the following statements apply to you: I feel comfortable with the dress code of my preferred sport	Dress code	Individual
28. Q31_Persistence	Please indicate how often the following statements apply to you: When something slows down	Perseverance, motivation	Task

	or prevents my participation in sport, I try my best to resolve the issue.		
29. Q33_EnjoySports	Please rate how the following questions apply to you: I enjoy sports	Interest	Individual
30. Q34_GoodatSports	Please rate how the following questions apply to you: I am good at the sports I enjoy	Perceived competence	Individual
31. Q35_Confident	Please rate how the following questions apply to you: I feel confident when I participate in sports	Self esteem, self efficacy	Individual
32. Q36_OpportunityAtSchool	Please rate how the following questions apply to you: I have had the opportunity to try different sports at school.	Lack of opportunity, presence of facility/opportunity	Environment
33. Q37_OpportunityOutsideSchool	Please rate how the following questions apply to you: I have had the opportunity to try different sports on my own time, outside of school.	Lack of opportunity, presence of facility/opportunity	Environment
34. Q38_Culture	Please rate how the following questions apply to you: In my culture, it is expected that girls participate in sports	Culture	Environment
35. Q40_BeliefHealthyAdult	Please rate how the following questions apply to you: I believe that participating in sports will make me a healthy adult.	Social Norms	Individual
36. Q41_BeliefImportant	Please rate how the following questions apply to you: I believe that participating in sport is important.	Sport is Important	Individual
37. Q42_BeliefSportFun	Please rate how the following questions apply to you: I believe that participating in sport is fun.	Not fun	Individual
38. Q43_GirlsShouldParticipate	Please rate how the following questions apply to you: Girls should participate in sports.	Social Norms	Environment
39. Q44_SportsNotForGirls	Please rate how the following questions apply to you: There are certain sports in which girls should NOT participate.	Social Norms	Environmental
40. Q46_StrongAdults	Please rate how the following questions apply to you: Sport helps youth develop into strong adults.	Social Norms	Environmental
41. Q47_ImportantinSociety	Please rate how the following questions apply to you: Participating in sport is viewed as important in society.	Social norms, Sport is Important	Environmental
42. Q48_Positive	Please rate how the following questions apply to you: Sport makes me feel positive.	Self esteem	Individual

43. Q49_FeelGross	Please rate how the following questions apply to you: I feel gross when I participate in sports.	Feel gross	Individual
44. Q50_StrivetoExcel	Please rate how the following questions apply to you: I strive to excel in the sports that I play.	Perseverance, Motivation	Individual
45. Q51_PeopleSportImportant	Please rate how the following questions apply to you: Most people I know agree that sport participation is important.	Sport is important	Environment
46. Q52_Successful	Please rate how the following questions apply to you: Participating in sports will help me be successful in other avenues of life.	Personal Goals	Individual
47. Q53_Assertive	Please rate the degree to which these characteristics describe you: Assertive		Individual
48. Q53_Strong	Please rate the degree to which these characteristics describe you: Physically Strong	Strength	Individual
49. Q53_Flexible	Please rate the degree to which these characteristics describe you: Flexible	Agility	Individual
50. Q53_Energetic	Please rate the degree to which these characteristics describe you: Energetic	Have energy	Individual
51. Q53_Speed	Please rate the degree to which these characteristics describe you:	Physical Speed	Individual
52. Q54_Competitive	Please rate how likely you are to participate in a sport which is/has/requires: Highly Competitive	Competition/Recreational	Task
53. Q54_Recreational	Please rate how likely you are to participate in a sport which is/has/requires: Recreational	Competition/Recreational	Task
54. Q54_PhysicallyIntense	Please rate how likely you are to participate in a sport which is/has/requires: Physically Intense	Intensity of sport	Task
55. Q54_StrictRules	Please rate how likely you are to participate in a sport which is/has/requires: Strict Rules	Rules, Type of Sport	Task
56. Q54_BothGirlsandBoys	Please rate how likely you are to participate in a sport which is/has/requires: Boys and Girls on the same team	Co-Ed	Task
57. Q54_Contact	Please rate how likely you are to participate in a sport which is/has/requires: Contact with Other Players	Contact sport, Type of sport	Task

58. Q54_LongDuration	Please rate how likely you are to participate in a sport which is/has/requires: Games of Long Duration	Long games, Type of sport	Task
59. Q55_AirQuality	Your Neighborhood: Please indicate how often the following statements apply to you: The outdoor air quality in my neighborhood prevents me from participating in outdoor sport.	Air Quality	Environment
60. Q55_ProudWhereILive	Your Neighborhood: Please indicate how often the following statements apply to you: I am proud of where I live	Neighborhood perception	Environment
61. Q55_GreenSpace	Your Neighborhood: Please indicate how often the following statements apply to you: There is a lot of green space (eg. parks, paths, fields) in my neighborhood.	Neighborhood features	Environment
62. Q55_WeatherPromotes	Your Neighborhood: Please indicate how often the following statements apply to you: The weather in my geographical area prevents me from participating in my chosen sport when I want to.	Weather	Environment
63. Q55_WeatherPrevents	Your Neighborhood: Please indicate how often the following statements apply to you: The weather in my geographical area prevents me from participating in my chosen sport when I want to.	Weather	Environment
64. Q55_SafeNeighborhood	Your Neighborhood: Please indicate how often the following statements apply to you: My neighborhood is safe	Neighborhood perception	Environment
65. Q55_SidewalkSafe	Your Neighborhood: Please indicate how often the following statements apply to you: The sidewalks and walking paths in my neighborhood is safe	Neighborhood features	Environment
66. Q56_FacilitiesOptions	Facilities: Please indicate how often the following statements apply to you: I have options for where to participate when weather conditions change (eg. Indoor running track/soccer pitch).	Lack of facilities	Environment

67. Q56_SafeTransportation	Facilities: Please indicate how often the following statements apply to you: There is safe public transportation available for me to access sport opportunities.	Transportation	Environment
68. Q56_SafePlaces	Facilities: Please indicate how often the following statements apply to you: There are safe places close to my home where I can participate in or practice sport.	Lack of facilities	Environment
69. Q56_OfferSports	Facilities: Please indicate how often the following statements apply to you: The sport facilities close to my home offer sports and activities that I want to participate in.	Lack of opportunities	Environment
70. Q56_CleanFacilities	Facilities: Please indicate how often the following statements apply to you: The sport facilities close to my home are clean.	Lack of facilities	Environment
71. Q56_AccessibleFacilities	Facilities: Please indicate how often the following statements apply to you: The sport facilities close to my home are accessible.	Lack of facilities	Environment
72. Q56_NotOvercrowdedFacilities	Facilities: Please indicate how often the following statements apply to you: The sport facilities close to my home are not overcrowded	Lack of facilities	Environment
73. Q59_ColdTemperature	Please rate how the following weather conditions negatively affect your participation in your preferred sports: Cold Temperature	Weather	Environment
74. Q59_HotTemperature	Please rate how the following weather conditions negatively affect your participation in your preferred sports: Hot Temperature	Weather	Environment
75. Q59_Humidity	Please rate how the following weather conditions negatively affect your participation in your preferred sports: Humidity	Weather	Environment
76. Q59_Rain	Please rate how the following weather conditions negatively affect your participation in your preferred sports: Rain	Weather	Environment

77. Q59_Snow	Please rate how the following weather conditions negatively affect your participation in your preferred sports: Snow	Weather	Environment
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Klicnik, I. (2019) Development and pilot of a survey to build capacity for examining interactions of constraints to sport participation. (Masters thesis, Ontario Tech University)

Appendix C- Recruitment Letter

Invitation to Participate in Interviews regarding Constraints to Sport Participation

Dear [ORGANIZATION]

I am a graduate student in Health Sciences at Ontario Tech University, currently collecting information for my master's thesis titled "*Exploring Constraints to Sport Participation among Immigrant Female Adolescents in the Greater Toronto Area*"

I have received Research Ethics approval from Ontario Tech University (REB#15384) and would like to speak with you about conducting semi structured interviews at [Organization Name]

We are recruiting **female adolescents, aged 13-19 who have immigrated to Canada** in our study, where the interviews will involve discussions on recent constraints found in a survey administered in a study entitled "Examining Constraints to Sport Participation among Ethnically Diverse Female Adolescents in Ontario". Participants in the interviews will be able to share their experiences with certain constraints to sport participation and discuss the role of immigration in regards to sport participation. For the interview, a room/school facility will be required during break time to host 1-2, interview discussions, which will last no longer than an hour each.

As a token of appreciation, individuals who opt to participate in this study will each be compensated through a \$20 gift card.

Please contact me if you feel that this is something your organization would benefit from, or if you have any questions about the interviews or the study in general.

You may also contact the Research Ethics Board through the Research Ethics Officer, if you have any questions regarding this study's approval – researchethics@uoit.ca or [905.721.8668 x.3693](tel:905.721.8668).

I look forward to speaking with you soon,
Samah Mohammed
MHSc Candidate
Faculty of Health Science
Ontario Tech University

Appendix D – Follow up Email for Interested Organizations

Dear _____

I hope this letter finds you well

Thank you for expressing interest in our study titled *Exploring Constraints to Sport Participation among Immigrant Female Adolescents in the Greater Toronto Area*”.

We truly appreciate your response and interest in our research!

As mentioned in the previous email, we are recruiting female adolescents, aged 13-19 who have immigrated to Canada. The study involves participating in a 45-60 minute interview, where each participant will have the opportunity to share her experiences regarding sport participation and any challenges she has faced.

As a token of appreciation for participation, we will offer a \$20 dollar gift card to each participant.

To participate in this study, a room/school facility will be required during break time to host the interviews.

We have included below recommended tasks should you wish for your girls to participate in our research.

- ☐ Explain the study briefly to your organization (recommended only)
- ☐ Distribute information letter and parental consent forms to girls to get parental signatures (The forms can be either mailed to your organization or emailed).
- ☐ Once parental consent forms are received- contact us at samah.mohammed@uoit.ca
- ☐ If possible, assist in booking a room to hold the interviews

Please contact me at samah.mohammed@uoit.ca if you feel that this is something your students would benefit from, or if you have any questions about the study in general.

You may also contact the Ontario Tech University Research Ethics Board through the Research Ethics Officer– researchethics@uoit.ca or [905.721.8668](tel:905.721.8668) x. 3693.

I look forward to speaking with you soon,

Samah Mohammed

MHSc Candidate

Faculty of Health Science

Ontario Tech University

Appendix E- Parent Information Letter

Parent Information Letter

Dear Parents/Guardians,

I hope this letter finds you well

I would like to discuss an opportunity for your child to be involved in a research study undertaken by a group of researchers from Ontario Tech University entitled '*Exploring Constraints to Sport Participation among Immigrant Female Adolescents in the Greater Toronto Area*'

We have received Research Ethics approval from the Ontario Tech University Ethics Committee (REB#15384), as well as permission to conduct research at Malton Neighbourhood Services.

For this research study, we are recruiting female adolescents, aged 13-19 who have immigrated to Canada. The study involves participating in a 45-60 minute interview, where each participant will have the opportunity to share her experiences with sport participation and any challenges she has faced.

As a token of appreciation for participation, we will offer a \$20 dollar gift card to each participant.

We have included below recommended tasks should you wish for your daughter to participate in our research.

- ☐ Read this information letter and the consent forms. If you have any questions regarding the research study feel free to contact us at samah.mohammed@uoit.ca
- ☐ Discuss the research study with your child.
- ☐ Sign the consent forms and return them to the organization.

Please contact me if you have any questions about the study in general.

You may also contact the Ontario Tech University Research Ethics Board through the Research Ethics Officer– researchethics@uoit.ca or 905.721.8668 x. 3693.

I look forward to speaking with you soon,

Samah Mohammed

MHSc Candidate

Faculty of Health Science

Appendix F- Parental Consent Form

Exploring Constraints to Sport Participation among Immigrant Female Adolescents who reside in the GTA: Parental Consent Form

Dear Parents/Guardians

I am a graduate student in Health Sciences at the Ontario Tech University, currently collecting information for my master's thesis titled "*Exploring Constraints to Sport Participation among Immigrant Female Adolescents in the Greater Toronto Area*". I am writing to request your permission for your child to be included in this study, which involves participating in an interview regarding current challenges to sport participation

This study has been approved by the Ontario Tech University Research Ethics Board REB [REB # 15384] on July 2nd 2019

Please read this consent form carefully, and feel free to ask the Researcher any questions that you might have about the study. If you have any questions about your rights as a participant in this study, please contact the Research Ethics Officer at 905 721 8668 ext. 3693 or researchethics@uoit.ca.

Researcher(s): Ms. Samah Mohammed

Principal Investigator /Faculty Supervisor etc.: Dr. Caroline Barakat

Departmental and institutional affiliation(s): Ontario Tech University

Contact number(s)/email: samah.mohammed@uoit.ca / caroline.barakat@uoit.ca

External Funder/Sponsor: Sports Canada through the SSHRC

Purpose

Recently, girls across Ontario completed a survey for a study entitled 'Examining Constraints to Sport Participation among Ethnically Diverse Female Adolescents in Ontario'. Based on the survey analysis, certain constraints to sport participation were found and analyzed for major themes. The constraints found will be used in this study, where we wish to hold interviews for those female adolescents who have immigrated to Canada in order to understand their experiences and challenges regarding sport participation.

Procedure

If selected, your child will take part in an interview, which will last approximately from 45-60 minutes and will be audio-recorded. The interview will involve discussions about the constraints to sport participation generated from the survey results and how they limited sport participation for each participant. We will also encourage participants to share their thoughts on the role of immigration in relation to sport participation. During the interview, we will not ask any participant to share anything that they are not comfortable sharing.

Risks and Benefits

During the interview, there is a risk that your child may share some personal information by chance, or that they may feel uncomfortable talking about some of the topics. However, we will remind all participants during the interviews that they do not have to answer any question that they find too personal or that makes them uncomfortable. There is no direct benefit of having your child participate in this study. However, participation in the interview will provide valuable information, which will hopefully aid in improving the health and physical activity levels of many girls in the future.

Compensation:

Your child will be given a **\$20 gift card** as a thank-you for their time.

Storage of Data:

The interviews will be audio recorded and kept on a password-protected laptop, in which the recordings will be destroyed once transcribed. At the same time, to maintain further security and privacy, the participants in the interview will be given aliases (fake names) to ensure that their real names are not used. Only individuals involved in this study (the researcher and principal investigator) will have access to the transcripts.

Confidentiality:

To ensure confidentiality, each participant will have an alias instead of her name. The aggregate data collected from the interviews may also be used as secondary data for future studies. Once the study is completed, we will publish the results in aggregate form and share them with the community.

Right to Refuse or Withdraw

The decision to participate in this study is yours and your child's. Your child does not need to participate if she does not wish to do so. The decision, whether you choose to participate or not, will not affect how you or your child is treated at this organization. During the interview, your child may withdraw from the study at any time by simply stopping the discussion, and after the interview is finished, you may contact the researchers to withdraw your child's contribution to the study up to one week after the interview takes place.

If you have any questions concerning the research study or experience any discomfort related to the study, please contact me at samah.mohammed@uoit.ca

Any questions regarding your rights as a participant, complaints, or adverse events may be addressed to Research Ethics Board through the Research Ethics Officer researchethics@uoit.ca or 905.721.8668 x. 3693.

Sincerely,

Samah Mohammed

MHSc Candidate

Ontario Tech University,

Faculty of Health Sciences

I have read the information above and I consent for my child _____ to participate as a participant in this study and agree to the following:

1. I have read the consent form and understand the study being described;
2. I have had an opportunity to ask questions and my questions have been answered. I am free to ask questions about the study in the future;
3. I freely consent to participate in the research study, understanding that I may discontinue participation at any time without penalty. A copy of this Consent Form has been made available to me.

Date

Signature of Parent/Guardian

Appendix G- Informed Assent Form

Exploring Constraints to Sport Participation among Immigrant Female Adolescents who reside in the GTA: Informed Assent Form

Hello,

Thank you for your interest in our study regarding sport participation among female adolescents who have immigrated to Canada.

We would like to invite you to be part of an interview on sport participation. We have obtained consent from your parent(s)/ guardian(s) and would like to receive your consent to participate in our research.

This study has been approved by the Ontario Tech University Research Ethics Board REB [REB #15384] on July 2nd 2019.

Please read this consent form carefully, and feel free to ask the Researcher any questions that you might have about the study. If you have any questions about your rights as a participant in this study, please contact the Research Ethics Officer at 905 721 8668 ext. 3693 or researchethics@uoit.ca.

Researcher(s): Ms. Samah Mohammed

Principal Investigator /Faculty Supervisor etc.: Dr. Caroline Barakat

Departmental and institutional affiliation(s): Ontario Tech University

Contact number(s)/email: samah.mohammed@uoit.ca / caroline.barakat@uoit.ca

External Funder/Sponsor: Sports Canada through the SSHRC

Purpose:

We want to explore the reasons or constraints for lack of sport participation among female adolescents who have immigrated to Canada. Through this study, we hope to address the constraints discussed, where we believe if these constraints can be reduced, more girls will participate in sports and be more physically active.

Our interviews will consist of adolescents your age– between the ages of 13 and 19– who live in the Greater Toronto Area and who have immigrated to Canada. We will be discussing the results of a survey on sport participation because we want to know your opinions and experiences about some of those constraints or challenges to sport participation found. The interviews should take less than an hour and will be audio recorded.

Procedure

If selected, you will take part in an interview, which will last approximately from 45-60 minutes and will be audio-recorded. The interview will involve discussions about constraints to sport participation and how they limit sport participation for each participant. We will also encourage participants to share their thoughts on the role of immigration in relation to sport participation. During the interview, we will not ask any participant to share anything that they are not comfortable sharing.

Risks and Benefits: By participating in this discussion, you might help other girls your age be more involved in sports in the future. We do not expect that you will experience any risk or negative effects during the interviews. However, if you feel that some of the questions are too personal or make you feel uncomfortable, you do not have to answer them

Compensation: You will be given a \$20 Gift Card to thank you for your participation.

Storage of Data:

The interviews will be audio recorded and kept on a password-protected laptop, in which the recordings will be destroyed once transcribed. At the same time, to maintain further security and privacy, the participants in the interview will be given aliases (fake names) to ensure that their real names are not used. Only individuals involved in this study (the researcher and principal investigator) will have access to the transcripts.

Confidentiality:

Information shared during the interview will be audio recorded but no one but the researchers will have access to it. Once the interview is written down, the audio recordings will be destroyed. You will also be given an alias or fake name at the beginning of the interview to ensure that no information will be traced back to you.

Once the study is completed, information will be published so that more people can learn about the research and our findings. We will do this by writing and sharing reports and by going to meetings with people who are interested in the work we do. The aggregate data collected from interviews may also be used as secondary data for future studies.

Right to Refuse or Withdraw

The decision to participate in this study is yours and your parents'. You do not need to participate if you do not wish to do so. The decision, whether you choose to participate or not, will not affect how you or your parents are treated at this organization. During the interview, you may withdraw from the study at any time by simply stopping the discussion, and after the interview is finished, you may contact the researchers to withdraw your contribution to the study up to one week after the interview takes place."

If you have any questions concerning the research study or if you would like to withdraw your input from the interview up to **one week** after the interview, please contact me at samah.mohammed@uoit.ca

Any questions regarding your rights as a participant, complaints, or adverse events may be addressed to Research Ethics Board through the Research Ethics Officer researchethics@uoit.ca or 905.721.8668 x. 3693.

Sincerely,
Samah Mohammed
MHSc Candidate
Ontario Tech University,
Faculty of Health Sciences

I understand the research is about constraints to sport participation for female adolescents and read all the information above. I understand that I will give opinions during the interview based on my own experience.

1. I have read the consent form and understand the study being described;
2. I have had an opportunity to ask questions and my questions have been answered. I am free to ask questions about the study in the future;
3. I freely consent to participate in the research study, understanding that I may discontinue participation at any time without penalty. A copy of this Consent Form has been made available to me.

Print name of child _____

Date: _____

Signature of child: _____

Appendix H -Thank You Letter

Exploring Constraints to Sport Participation among Immigrant Female Adolescents who reside in the GTA: Thank you Letter

Dear Participant,

Thank you for contributing to our research study, entitled “Exploring Constraints to Sport Participation among Immigrant Female Adolescents who reside in the Greater Toronto Area”.

Based on the information you provided during our discussions, we will be better able to complete this study and help work on promoting sport participation among female adolescents.

We hope that you enjoyed participating in the interview and found the discussion helpful. We truly appreciate the time and contribution you gave to this study and as a token of appreciation, a \$20 Gift Card is enclosed in this letter.

If you have any questions about our research please contact me at samah.mohammed@uoit.ca

Thank you again for your participation.

Samah Mohammed
MHSc Candidate
Ontario Tech University,
Faculty of Health Sciences

Appendix I – Interview Guide

Interview Guide

The following is an interview guide for the study entitled “Exploring constraints to sport participation among immigrant female adolescents who reside in the Greater Toronto Area”.

Checklist

- ☐ The interviewer must verify all the consent forms are completed before the interview begins (Parental Consent Form & Individual Consent Form)
- ☐ Interviewer should introduce themselves, restate the purpose of the study and thank participants for their time
- ☐ Remind the participant that the interview will be audio recorded and that they do not have to answer any question that they feel uncomfortable with
- ☐ Ask the participant if they have any questions
- ☐ Thank the participant and distribute honorarium

Script

The following is a script for interviews based on the template and guidelines provided by the World Health Organization.

Introduction

Thank: Welcome and thank you for volunteering to take part in this interview. My name is _____ and I will be facilitating this discussion.

Purpose: The purpose of this interview is to explore your current thoughts and feelings about sport participation. The interview will take no more than 1 hour and will be audio recorded in order for data analysis.

Anonymity: Although this discussion will be audio recorded, it will remain anonymous. The recordings will be kept safely until they are transcribed, then they will be destroyed. The transcribed notes of the interview will contain no information that would allow individual subjects to be linked to specific statements. Please try to answer and comment as accurately and truthfully as possible. If there are any questions that you do not wish to answer or participate in, you do not have to do so.

Do you have any questions? (answers).

General Questions

Before we begin with the discussion, I just want to ask you a few questions about yourself, if you do not feel comfortable answering, you may pass the question.

Questions to ask:

- How old are you?
- Which country were you born in?
- When did you move to Canada?
- How do you like to spend your free time?
 - Do you enjoy hanging out with your friends? What do you do together?
 - Are you part of any clubs or teams?
 - Do you play music or sing?
 - Do you play sports?

- Is there a sport you would like to try in the future?

Guiding Questions

(This will be based on the constraints found in the survey analysis, this script is just a guide of what to expect, some questions are retrieved from Acting living, 2012)

Keywords to Define:

Constraints are restrictions that limit sport participation but that can be changed or negotiated. In other words, constraints are challenges that may limit your sport participation but they can be solved or reduced through proper interventions.

Physical activity is any activity that gets your body moving. It can include sports, exercise, or other activities such as running, walking, dancing etc.

Sports are a form of physical activity that typically involve some form of competition and rules. Examples of sports include soccer, basketball, football etc.

Part 1 – General Constraints

- Were you physically active as a child? Physical activity is any activity that gets your body moving and can include exercise, sports or activities such as running, walking or dancing.
 - What activity did you do?
 - Do you still do it? Why or why not?
- Did you participate in sports regularly as a child?
 - Which sports did you participate in?
 - Growing up, were there certain events or experiences that changed your participation in that sport?
- What do you think are some possible constraints or challenges to sport participation?
- How does participating in sports affect your health?
 - Do you think participating in sports makes you healthier?
 - Do you feel like participating in sports affects your mental health?

Part 2 – Significant Constraints

- From a survey our research team administered last year, we found that _____ was a constraint to sport participation. Do you feel the same way? (This question will be asked for each significant constraint found in the analysis)
- Can you explain further on how X constraint limits your sport participation?
- Do you think X constraint can be changed in any way?
- Prompt: If you were in charge, how would you change X to make it easier for girls like you to play sports?

Part 3 – Other possible questions to ask ...

- What do the people around you (e.g. your family, friends etc.) think of sports?
 - Do they think it's important to participate in sports?
 - Do they support the idea of girls participating in sports?
 - Are their ideas similar to your ideas of sport?

- Do you feel that immigrating to Canada affected your participation in sports?
 - If yes, how so?
 - Do you feel like certain constraints that we discussed earlier were a result of moving to a new country?
 - Which constraints?
- We talked a lot about sport today, but can you tell me some other ways you are currently physically active? (Remind participant definition of Physical activity- it involves any activity that gets your body moving.)
 - Why do you like that type of physical activity?
 - Is there anything that makes it hard to do that activity?
 - What might make it easier to do that activity?

Concluding question

- Of all the things we've discussed today, what would you say is the most influential constraint to sport participation. In other words, if you could choose one problem that doesn't allow you to participate in sports, what would that be?

Conclusion

- Thank you for participating. Your opinions will be a valuable asset to the study
- I would like to remind you that any comments featuring in this report will be anonymous
- If there is anything you are unhappy with or have a concern with, please contact the local PI or speak to me later
- Deliver thank you letters & incentives

Reference

- Activity, P., & Living, H. (2012). *Making Healthy Connections with Racialized Communities*. Retrieved from https://www.caaws.ca/onthemove/e/racialized_girls/documents/MakingHealthyConnections-E.pdf
- WHO. (n.d.). Instructions for Using Focus Group Discussions. Retrieved from http://www.who.int/patientsafety/implementation/checklists/instructions_focus_group.doc

Appendix J – Research Audit Trail for Interviews

Journal for Interviews Data analysis

Following 3 articles on Thematic analysis were referred to during this entire process:

- Using Thematic Analysis in Psychology – Braun and Clarke 2006
- Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars – Macguire and Delahunt 2017
- Thematic Analysis: Striving to Meet the Trustworthiness Criteria – Nowell et al. 2017

Step 1 of Thematic Analysis – Become Familiar with Data

October 14th 2019 Week

- Read up on the different types of phenomenology – decided to go with interpretive phenomenology since
 - o IP involves trying to get a deeper understanding about a phenomenon which is similar to Objective 4 : *“To gain an in depth understanding of the experiences of immigrant female adolescents in relation to constraints to sport participation they face in the Greater Toronto Area (GTA)”*
 - o IP allows pre-existing knowledge and views it as a guide. Personal knowledge is useful and necessary. Literature reviews are encouraged.
 - o Allows the use of theory or framework as part of the inquiry
 - o
- I am using information from the literature and survey responses to interpret data and make sense of it, not just describing data and trying to keep my thoughts at the side
 - o Used knowledge of previous constraints through survey and previous studies when conducting interviews and going about my analysis
- Thematic analysis <https://www.psych.auckland.ac.nz/en/about/our-research/research-groups/thematic-analysis.html>
- Thematic analysis – deductive way (pre existing ideas)/ theoretical since having research question in mind while starting coding...

October 18th-20th

- Downloaded student NVivo and signed up for basic training
- Started training course
- Uploaded all 7 Transcripts and labelled files etc. and created memos for each file - added interview notes into each memo/ brief summaries of each interview
- Created cases and attributes within case classifications (Age, Country Born, Immigration Year)
- Added information for each interview participant (added descriptions and added info for each attribute)
- Read over files again to familiarize

Researcher Notes Before Coding:

- Noticed that the individuals who immigrated earlier had more experience participating in sports teams and mentioned the issue of competitiveness and unhealthy environment within sports
- Constraints in the survey don't seem to completely apply to participants... they mention yes or no to constraint, but actual experiences related to challenges to sport participation have to do with other constraints E.g. the constraints in the survey are linked to other constraints that weren't found significant that seem to be more influential (e.g. not having energy is related to feeling tired because of school work)

Step 2 of Thematic Analysis – Generate Initial Codes

October 21st Week

Research Question : “*What constraints are associated with decreased sport participation among immigrant female adolescents who reside in the Greater Toronto Area?*”

Objective 4 :To gain an in depth understanding of the experiences of immigrant female adolescents in relation to constraints to sport participation they face in the Greater Toronto Area (GTA)

- Continued training course on NVivo
- Ran a word frequency query – added sports sport participation participate constraints constraint barriers barrier challenges challenge, like,yeah,okay, feel, think, just, ummm, know, make, really, physical activity ,want,trying, right, to stop words list
- Created a separate folder in codes called ‘constraints’
- Started coding by creating initial codes based on significant constraints (14 constraints) found within survey responses and continued to create codes while reading the transcripts , reading the responses from participants, interpreting the data and labelling it with a constraint that fits their response and continuing to code using that method
 - o Entered into table 1 for constraints below and added description of each node/code
- Also made a folder for codes on additional information related to possible solutions suggested by participants (may be helpful later on)

Researcher Note During Coding Process:

- When coding, only coded participants experiences or when they mentioned a situation or explained something.... One word answers with no explanations were not coded when the data couldn’t be interpreted or made sense of
- Coding with the intention of what are possible constraints that are limiting sport participation.... Anything that seems that might limit their sport participation is being coded ... going through each transcript , not just choosing particular sections within the transcript
- Initial Nodes in Table 1 below have either I E or T labelled beside to identify if its an individual, environmental or task constraint based on Newel’s model which was used categorize constraints asked in original survey
- Noticing a link between many codes or even overlap... e.g. dress code is an issue because of co-ed sports.... Not feeling good about the sport has to do with atmosphere in teams...
- Noticing a theme about unsupportive environments – negative comments that discourage participation
- Family views seems to be a common idea between transcripts
- Some participants mention why other girls / their friends don’t participate... e.g. because of their parents views

Table 1 Constraints for Nodes

Code	Origin	Description
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Speed	Pre existing – Survey Results	Individual Characteristic: Having Speed (I), The participant described needing speed to participate in sports
Physically Intense	Pre existing – Survey Results	Physical Intensity of the sport (T) How intense or difficult the sport is for the person to participate in
Family Participates Regularly	Pre existing – Survey Results	Family Participating in Sports Regularly (E): Family being described as participating or not participating in sports which influences the participant
Dress Code	Pre existing – Survey Results	Dress Code of the Sport (I) Feeling comfortable with the dress code of the sport
Have Energy	Pre existing – Survey Results	Having Energy to Play Sport (I)- Participant has the energy, is not too tired to participate
Belief that Certain Sports is not for girls	Pre existing – Survey Results	Related to social norms surrounding the individual , belief that certain sports girls cant do (E)
Flexible	Pre existing – Survey Results	Individual Characteristic: Being Flexible (I) The participant is describing needing flexibility to participate in a sport
Have Opportunity outside of school	Pre existing – Survey Results	Opportunities outside of school to participate in sports(E)
Overall Health	Pre existing – Survey Results	How the participant feels about their overall health (I): How their self reported health affects participation in sport
Long Duration	Pre existing – Survey Results	How long the sport/ game takes, participant not having the time to do that long of a sport (T)
Feel Good at Sports	Pre existing – Survey Results	Feel good at the sports you enjoy/ play (I), the concept of feeling good or not feeling good about sport affecting participation
Friends Encourage	Pre existing – Survey Results	Have Friends Encouraging (E): friends who are supportive and encourage participation
Time for Transportation	Pre existing – Survey Results	Time it takes to get to sports facility (E)
Air Quality	Pre existing – Survey Results	Air Quality of Neighbourhood (E)
Distance	Transcript 1	How close or far facilities are to play sports
Timings for Sports Teams	Transcript 1	The timings available for practises or games
Experience with Instructor	Transcript 1	Experiences with instructors or coaches
Atmosphere in Teams	Transcript 1	The environment while playing sports / team mates comments
School	Transcript 1	Pressure from school, homework anything school related

Commitment	Transcript 1	Having to commit a lot of time and effort into participation
Getting Information	Transcript 1	Finding out information for sports available ** can also have to do with recent immigration
Family Views	Transcript 1	Family members beliefs or priorities about sports (E)
Friends Views of Sports	Transcript 1	Friends beliefs about sports (E)
Comments from Boys	Transcript 1	Comments made by boys that prevent participation (E)
Fitting in	Transcript 1	Fitting in with others **Immigration (I)
Household Responsibilities	Transcript 1	Responsibilities at home, helping parents, chores , taking care of siblings (I)
Lack of time	Transcript 1	Being busy with other things, work etc that take up time , don't allow participation (I)
Culture	Transcript 1	Beliefs imposed by culture (E)
Co-Ed Sports	Transcript 2	Mixed sports, Sports that have both boys and girls present (T)
Lack of Sleep	Transcript 2	Not having enough sleep and feeling too tired to participate (I)
Language	Transcript 2	Not being familiar with the language **Immigration
Lazy	Transcript 2	Sport not being an interest or priority
Country Born Views of Sports	Transcript 2	Views of girls participating in sports or sport participation in general from the country they immigrated from (E)
Having Friends	Transcript 3	Friends being present with participant during the sport
Technology	Transcript 3	Preference for technology (phone, social media) rather than participating in sport
Self Esteem	Transcript 3	Having a low self esteem- not feeling good about one self overall
Confidence	Transcript 4	Having confidence or lack of confidence in one's ability to participate in sport
Rules of the sport	Transcript 4	Not knowing the rules or how to play the sport ** has a lot to do with recent immigration
Expectations	Transcript 4	Expectations from others to perform well in the sport
Safety	Transcript 4	Safety related to the area or neighbourhood where they participate
Feel Comfortable	Transcript 4	Feeling comfortable with the surroundings with others to participate in sport
Process related to Sport	Transcript 5	Has to do with try outs and not feeling good when going through the process
Teasing Bullying	Transcript 5	Negative comments towards an individual that makes them not want to participate

Weather	Transcript 5	Weather such as hot or cold temperatures that prevent from playing outdoors or going out
Religion	Transcript 5	Religious views that might make it harder to participate

Step 3 of Thematic Analysis – Search for Themes

October 24- 27th , 2019

- Reread and coded transcripts twice to see if I was missing anything ... continued to code sections that seemed to mention anything that limited sport
- Noticing that some codes can be merged together.... E.g. speed and flexibility can be one node as individual skill, nodes that have to do with friends can be another category
- For table 2 below: the following changes were made
 - o Speed and Flexibility → Individual Skills (skills that an individual might assume is required to participate in a sport)
 - o Physical intensity, long duration and co-ed sports → Type of sport
 - o Friends encourage, Friends Views and Have Friends → Influence from Friends
 - o School, Household responsibilities, Lack of time → Individual responsibilities (Tasks that take up time from participating in sport)
 - o Self esteem, confidence, overall health → Self Perception (how an individual perceives their self)
- Created table 3 for preliminary themes based on grouping codes together that shared common ideas, tried to describe each theme
 - o Note: Following guide for thematic analysis from *Using Thematic analysis in psychology* (Braun & Clarke, 2006) and *Doing a thematic analysis :A practical step by step guide for learning and teaching scholars* (Maguire & Delahunt, 2017)
- Preliminary themes
 - o Theme 1: Having priorities or preferences for other things/tasks that make it harder to fit sport participation within schedule. This can be related to individual responsibilities such as school or household chores, or preference for other activities. The idea about this theme is that participants have other priorities that are valued more than sports.
 - o Theme 2: Unsupportive social environments that prevent participation in sport. This has to do with participating or attempting to participate in sports, many individuals expressed how they felt discouraged, had expectations from peers and instructors, experiences with teasing etc. These “comments” showed lack of support and made the individuals not want to participate
 - o Theme 3: Social norms related to Sport Participation, has to do with beliefs and views of sport from family, culture, religion. More do to with the belief related to girls participating in sports and how certain norms or beliefs affect participation.
 - o Theme 4: Certain constraints are specific to the initial immigration experience and being in a new environment, such as not knowing the language or information about the sport, which may limit participation for some time until the individuals get past those challenges

- Theme 5: The difficulties or challenges related to actually joining a sports team. The constraints or challenges that are associated with sports in general, e.g. the places they are offered, the distance, the type of sport etc., which all contributes to whether an individual wants to join or not
- Theme 6: Individuals ability or comfort to participate in sport. This has to do with the individual themselves, what they feel as a person or what they are comfortable as a person to do
- Theme 7: Miscellaneous – group for constraints that were found in the interviews but not sure if they fit into a specific theme
- Created additional column in table 3 to reference preliminary themes in table 3
-

Research Notes During Coding Process

- More confident that nodes that were based on significant constraints found in survey don't seem as relevant compared to other challenges or constraints mentioned
- Initial difficulty in whether family views and support from family should be looked into further and have its own theme....
- Figuring out themes that connect multiple codes is difficult, required reading some of the data over and noticing multiple codes on certain responses
- Following steps from thematic analysis articles while going through this process
- Feel like the themes so far need to be more distinct, sort of hard to describe them clearly

Table 2 Updated Coding with some Merged Nodes

Code	Origin	Description	Theme
1. Individual Skills	Pre existing – Survey Results	<p>**Merged node speed and flexibility**</p> <p>Speed: Individual Characteristic, Having Speed (I), The participant described needing speed to participate in sports</p> <p>Flexibility: Individual Characteristic, Being Flexible (I) The participant is describing needing flexibility to participate in a sport</p>	6
2. Type of Sport	Pre existing – Survey Results Transcript 2 (CoEd Sports)	<p>Physical Intensity of the sport: (T) How intense or difficult the sport is for the person to participate in</p> <p>Long duration: How long the sport/ game takes, participant not having the time to do that long of a sport (T)</p> <p>Co-Ed Sports: Mixed sports that have both boys and girls present (T)</p>	5

3. Influence from Friends	<p>Pre existing – Survey Results (Friends Encouraging)</p> <p>Transcript 1 (Friends Views about Sports)</p> <p>Transcript 3 (Having friends)</p>	<p>Friends Encouraging (E): friends who are supportive and encourage participation</p> <p>Friends views about sport :Friends beliefs about sports (E)</p> <p>Having friends: Friends being present with participant during the sport (E)</p>	2
4. Individual responsibilities	<p>Transcript 1 School</p> <p>Transcript 1 Household Responsibilities</p> <p>Transcript 1 Lack of time</p>	<p>School: Pressure from school, homework anything school related (I)</p> <p>Responsibilities at home: helping parents, chores , taking care of siblings (I)</p> <p>Lack of time: Being busy with other things, work etc that take up time , don't allow participation (I)</p>	1
5. Self perception	<p>Pre existing – Survey Results Overall Health</p> <p>Transcript 3 Self esteem</p> <p>Transcript 4 Confidence</p>	<p>How the participant feels about their overall health (I): How their self reported health affects participation in sport</p> <p>Self esteem: Having a low self esteem, not feeling good about one self overall (I)</p> <p>Confidence: having confidence or lack of confidence in one's ability to participate in sport</p>	6
6. Family Participates Regularly	Pre existing – Survey Results	Family Participating in Sports Regularly (E): Family being described as participating or not participating in sports which influences the participant	7
7. Dress Code	Pre existing – Survey Results	Dress Code of the Sport (I) Feeling comfortable with the dress code of the sport	6
8. Have Energy	Pre existing – Survey Results	Having Energy to Play Sport (I)- Participant has the energy, is not too tired to participate	6,1
9. Belief that Certain Sports is not for girls	Pre existing – Survey Results	Related to social norms surrounding the individual , belief that certain sports girls cant do (E)	3
10. Have Opportunity	Pre existing – Survey Results	Opportunities outside of school to participate in sports(E)	5

outside of school			
11. Feel Good at Sports	Pre existing – Survey Results	Feel good at the sports you enjoy/ play (I), the concept of feeling good or not feeling good about sport affecting participation	6
12. Time for Transportation	Pre existing – Survey Results	Time it takes to get to sports facility (E)	5
13. Air Quality	Pre existing – Survey Results	Air Quality of Neighbourhood (E)	7
14. Distance	Transcript 1	How close or far facilities are to play sports	5
15. Timings for Sports Teams	Transcript 1	The timings available for practises or games	5
16. Experience with Instructor	Transcript 1	Experiences with instructors or coaches	2
17. Atmosphere in Teams	Transcript 1	The environment while playing sports / team mates comments	2
18. Commitment	Transcript 1	Having to commit a lot of time and effort into participation	5
19. Getting Information	Transcript 1	Finding out information for sports available ** can also have to do with recent immigration	5
20. Family Views	Transcript 1	Family members beliefs or priorities about sports (E)	3
21. Comments from Boys	Transcript 1	Comments made by boys that prevent participation (E)	3
22. Fitting in	Transcript 1	Fitting in with others **Immigration (I)	4
23. Culture	Transcript 1	Beliefs imposed by culture (E)	3
24. Lack of Sleep	Transcript 2	Not having enough sleep and feeling too tired to participate (I)	7
25. Language	Transcript 2	Not being familiar with the language **Immigration	4
26. Lazy	Transcript 2	Sport not being an interest or priority	1
27. Country Born Views of Sport	Transcript 2	Views of girls in sports from the country they immigrated from (E)	4
28. Technology	Transcript 3	Preference for technology (phone, social media) rather than participating in sport	1
29. Rules of the sport	Transcript 4	Not knowing the rules or how to play the sport ** has a lot to do with recent immigration	4
30. Expectations	Transcript 4	Expectations from others to perform well in the sport	2

31. Safety	Transcript 4	Safety related to the area or neighbourhood where they participate	5
32. Feel Comfortable	Transcript 4	Feeling comfortable with the surroundings in order to participate in sport	6,2
33. Process related to Sport	Transcript 5	Has to do with try outs and not feeling good when going through the process	5
34. Teasing	Transcript 5	Negative comments towards an individual that makes them not want to participate	2
35. Weather	Transcript 5	Weather such as hot or cold temperatures that prevent from playing outdoors or going out	7
36. Religion	Transcript 5	Religious views that might make it harder to participate	3

Table 3 Preliminary themes with codes

Themes	Codes
1. Having priorities or preferences for other things/tasks that make it harder to fit sport participation within schedule	<ul style="list-style-type: none"> - Individual Responsibilities - Technology - Lazy - Have energy
2. Unsupportive social environments that prevent participation in sport (comments or experiences related to sport that affect participation)	<ul style="list-style-type: none"> - Atmosphere in teams - Influence from Friends - Experience from instructors - Teasing - Expectations - Feeling comfortable
3. Social norms related to Sport Participation (Beliefs and views related to girls participating in sports that limit participation)	<ul style="list-style-type: none"> - Family views - Comments from Boys - Belief that certain sports is not for girls - Culture - Religion
4. Certain constraints specific to initial immigration experience and being in a new environment	<ul style="list-style-type: none"> - Language - Rules or How to play sport - Fitting in - Country born views of sports
5. The difficulties or challenges related to actually joining a sports team	<ul style="list-style-type: none"> - Getting Information - Safety - Distance - Commitment - Time for Transportation - Process related to sport

	<ul style="list-style-type: none"> - Timings for sports teams - Have opportunity outside of school - Type of sport
6. Individuals ability or comfort to participate in sport	<ul style="list-style-type: none"> - Self perception - Individual skills - Dress code - Feel good - Feel comfortable - Have energy
7. Miscellaneous (Not sure if some of these should be removed completely)	<ul style="list-style-type: none"> - Air Quality - Weather - Lack of sleep - Family participates regularly

****Note bolded codes are categorized in more than one theme****

Step 4 of Thematic Analysis – Review Themes

(Involves two steps 1- Reviewing coded data extracts, Step 2- Review individual themes in relation to entire data set)

October 28-29, 2019

- Steps 1-3 were sent to Dr. Kerpan- process was approved
- Inserted charts for each Interview memo on how many codes per transcript, to get an idea of the main codes
- Made nodes for each preliminary theme and grouped the possible codes within it.
- Theme 1 – Priorities and Preferences
 - o Noticing a lot of the responsibilities constraints are linked with not having energy or feeling too tired.
 - o Noticed similarities between lack of sleep and having energy, decided to group both of them together and put within theme 1
 - o Theme has more to do with having the time and energy to get through all the tasks in the day.
 - o Lack of time was removed from Individual responsibilities, kept as its own constraint within this theme
- Theme 2- Unsupportive Social Environments
 - o Not sure if Friends Views or having friends should be included
- Note: Noticed Feel comfortable is mostly linked with dress code and being comfortable with boys on the team- Will put into theme 6 for now
- Note: Family Participates Regularly only has 2 codes, which can be recoded into family views. Recoded and deleted.
- Theme 3 Social Norms
 - o Noticing that the ‘Family Views’ Constraint is overlapping within theme 2 and 3. Decided to develop separate code “Family Support” which codes experiences where family is supportive for sport and moved it to theme 2. “Family Views” will only be used for views of sports

- Moved religion to Theme 6- any mention of religion has to do with dress code, not really religious beliefs on sport participation
- Changed the name “Comment from Boys” into “Sport for Boys” because the constraint has more to do with how sports are linked with boys, comments is more to do with teasing, which has a separate constraint in Theme 2
- Theme 4-Initial Immigration Experience (Removed)
 - Removed this theme... Went through the individual constraints within this category.... Feel like they can be each moved into other themes
 - Country Born View of Sports → Theme 3 - Social Norms
 - Rules or How to Play → Theme 5- Difficulties Joining Sports team
 - Fitting in and Language→ Theme 6- Individual
- Theme 5-Difficulties Joining Sports Team
 - Removed timing for sports constraint- only had one code which could be moved to lack of time
 - Removed commitment constraint – the two codes within it were recoded to lack of time
 - Removed process related to sport – constraint was already coded into friends constraint and fit better there
 - This theme has to do with more of the logistics of sport, the issues with the sport itself
 - Added the weather constraint
 - Distance constraint was merged into Time for Transportation
- Theme 6-Individual Beliefs and Concerns
 - Theme has to do with Individual’s concerns and beliefs... I feel like the idea of being comfortable with oneself and comfortable in the sport is the underlying theme
 - Removed Fitting in code- recoded the two codes into feel comfortable
- Removed Air quality constraint since it is not relevant, and also the extract that is coded isn’t really an experience right now (Transcript 7)
- No Miscellaneous group since codes were either deleted or regrouped
- In the end, went from 7 preliminary themes to 5 themes ,

October 30th -November 3rd

- Went through the code extracts again to verify if they make sense with the themes
- Theme 1 – has to do with lack of energy and time due to priority for other tasks... not sure if “Lazy” node should be included
- “Family Support” node within Theme 2 is debatable.... References have to do with the family supporting sport participation but the theme is about unsupportive social environments.... might be important for results section.
 - Noticed same issue with some of the references within “Influence from Friends”
 - Decided to keep both within the theme, since it reinforces the idea that if you have supportive environments then girls are more likely to participate...
- Theme 3 – should the focus just be on beliefs about sport participation or beliefs about girls and sport....

- Theme 4- needs a better title/ description of what the theme is about Has to do with the logistics? Or actual difficulties related to the sport itself.
- Theme 5 – has to do with self-comfort and perceived competence Like how the individual themselves feels about participating in a sport or their individual beliefs and how that affects their interest in sport participation
- Based on Dr. Kerpan’s suggestions, decided to move nodes that aren’t used in themes into a separate folder “Additional Constraints” which is located in the “Additional Info” folder
 - Recoded section related to air quality and put it in the extra nodes folder
 - Decided to move “Lazy” into “Additional Constraints” folder since laziness doesn’t really fit into theme 1, and at the same time, the references in this node are also coded as other nodes as well such as lack of energy or lack of sleep etc. that fit better with the theme
 -
- Went through the references in each theme again to see if they fit within the theme

Table 4 Reviewed Themes

Theme	Codes	References
Preferences	<ul style="list-style-type: none"> - Have Energy (Includes lack of sleep) - Individual Responsibilities (Includes school and household chores) - Lack of Time - Technology 	60
Unsupportive Social Environments	<ul style="list-style-type: none"> - Atmosphere in teams - Expectations - Experience with Instructors - Family Support - Influence from Friends (Includes Friends Encouraging, Friends Views of Sport and Having Friends) - Teasing 	57
Social Norms	<ul style="list-style-type: none"> - Belief that certain sports are not for girls - Country Born View of Sports - Culture - Family Beliefs (<i>Previously known as Family Views</i>) - Sport for Boys 	38
Difficulties Joining Sports	<ul style="list-style-type: none"> - Getting Information - Having Opportunities outside of School - Rules of How to Play - Safety - Time for Transportation - Type of Sport (Includes Co-ed sports, Long duration, Physically Intense) - Weather 	45

Individual beliefs	<ul style="list-style-type: none"> - Dress code - Feel comfortable - Feel good - Individual Skills (Includes Flexible and Speed) - Language - Religion - Self Perception (Includes confidence, overall health and self esteem) 	64
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November 3rd -5th 2019

- Compare themes with entire datasets to see if they are relevant (still part of step 4)
- Go through each transcript and see if the themes apply- Read each interview transcript with the 5 themes in mind, to see if they are relevant to the data
 - o Created Table 5 to note examples in each transcript that relate to theme
- Noticing overlap between family support in theme 2 and family views in theme 3..... the two themes need to be distinct.
 - o Recoding some references in Family views into Family support (e.g. references that mentioned family thinking sport wasn't that important, nothing to do with girls participating, was moved into family support)
 - o Also relabelling family views into family beliefs
 - o Decided that theme 3 will be specifically related to girls participating in sports, family beliefs related to girls participating
 - o Theme 2, family support has to do with if the family supports sport participation, if they think its important, do they encourage/ discourage
- Overall all the themes do seem present within the dataset

Researcher Notes during Review Theme Process

- Trying to make themes as distinct as possible while relating to research question on constraints to sport participation ... struggling with describing some of the themes
- Some nodes don't necessarily fit within the theme, don't know if I should disregard...Update: decided to put them into a separate folder in case of future use
- Question of how themes are connected but shouldn't overlap
 - o Noticed overlap between theme 2 and theme 3 and had to make distinction (See above)
- Thinking of sticking to 5 themes to represent this dataset.

Table 5 – Brief Overview of Transcripts in relation to Themes

Transcript	Theme 1 (Priorities)	Theme 2 (Unsupportive Environment)	Theme 3 (Social Norms)	Theme 4 (Difficulties with Sport)	Theme 5 (Individual Beliefs)
1 – 16 yrs., India, 2006	- Being busy with school and work , having lack of time, fitting everything into schedule	-Family is supportive hence why she participates -- Did have an experience with swimming instructor -team environment	-Comments from boys -Family beliefs for other friends	-Distance and getting information related to sports -Having sports offered at local centres	-Dress code and feeling comfortable is an issue for some people she knows
2 – 15 yrs., Syria	-Being tired because of lack of sleep (on the phone) -Lots of responsibilities at home	-Wanting friends to participate - Family believes academics is more important	-Sports in Syria were only for Boys -Knows friends whose family doesn't believe girls should participate	-Issue with mixed sports	-Dress code -Language
3 –16 yrs., Pakistan, 2004	-School course load harder	-Hockey being an anxiety driving atmosphere -Team environment	-Not many girls participating in sports in Pakistan	- Physical intensity and having opportunities outside	- Wearing hijab (religion) -Dress code for swimming -Confidence in sports
4 –16 yrs., Somalia, 2013	-School work, studying, responsibilities -Preference for technology	-Friends encouraging is important -Family participating -Expectations	-Genders are separated in Somalia	-Time for transportation -Mixed sports -Safety, mentions shooting	-Skills like speed -Dress code, wears dresses and skirts -Language - Initially not having confidence
5 –14 yrs., Somalia, 2013	-Not having energy/ being too tired because of household chores etc.	-Aggressive environment in sports -Issue with tryouts -Family support is important	-Family said Football not for girls -Family thinks girls have other things to do -Boys being discouraging	- Opportunities outside and nearby - Mixed sports -Not knowing the rules initially	-Individual skills -Dress code, identifies as Muslim -Language

6 –17 yrs., Syria, 2016	-Being busy with school and chores	-Family believes school is more important	-Being a girl gives less time, have more responsibilities	-Mentions physical intensity and duration	-Dress code -Perceived competence in sports/ not feeling good -Language
7 –18 yrs., Afghanistan, 2011	-School, lack of sleep ,cleaning	-Team mates discouraging environment, sometimes teachers as well -Family and friends don't really see it as important	-Mother belief about sports that have to do with flexing legs not good for her -Afghanistan- girls not having many rights	-Sports that take up a lot of time -Mentions weather and air quality	-Dress code- wants to wear what she wants -Feeling good -Language

Step 5 of Thematic Analysis – Define Themes

- Provide a description of each theme, how they relate to the research question etc.
- Need to determine theme names – the name should reflect the theme clearly
- Themes are all related in the sense that they all limit sport participation among immigrant female adolescents
- Initial rough summaries of each theme ... for better description see table below
 - Theme 1- The idea that many individuals have other priorities in their day, that take up their time and energy. These include tasks such as going to school, studying, working, helping with chores etc. At the same time, when they do have free time, they feel like they are too tired to participate in sports and prefer other things such as being on their phones or sleeping.
 - Theme 2- Having the support from the people around you, through family, friends, teams etc. affects sport participation since if you have people around you that discourage you, you end up not participating.
 - Theme 3- the beliefs or views of girls participating in sports. These views are often suggested by family members or peers and are a result of either culture or societal beliefs. Many beliefs also involve sport participation being associated with boys
 - Theme 4- difficulties or the logistics in joining a sports team, the type of sports available, transportation to the facility, distance, type of sports available all affect girls sport participation.
 - Theme 5- Female adolescents having certain beliefs or concerns regarding themselves that prevent them from participating. The idea that they need to be comfortable and their concerns have to be met in order for them to participate in sports.

Researcher Notes During Defining Theme Process

- As the descriptions are being written for each theme and being edited, it's becoming more clear what issues each theme is encompassing.
- Noticing that theme 1 and 5 have more to do with individual constraints, whereas themes 2,3,and 4 have more to do with the environment.
- Noticing that the themes also interact in a way which causes the limit in sport participation. For example, a girl may not feel good about playing a sport (perceived competence) due to an unsupportive environment from her team OR Girls might have more tasks or priorities because of social norms that view household responsibilities as a task for girls. All the themes interact together and play a role in limiting sport participation among immigrant female adolescents

Table 6- Description of each Theme

Theme	Title	Description
1	Lack of energy and time due to other priorities	Female adolescents have busy schedules that consist of various tasks they must prioritize which as a result prevents them from participating in sports. Their priorities include going to school, having a job, and helping with household responsibilities which result in lack of time and energy, causing many girls to be too tired to participate. At the same time, when they do have free time, some individuals prefer to be on devices or catch up on sleep rather than participating in sports, since they are too tired from their daily tasks.
2	Unsupportive Social Environments	The people who interact with female adolescents such as family members, friends, instructors, need to be supportive in order for girls to participate in sports. If the environment isn't encouraging, many girls do not want to participate in sports. For example, if family members don't view sport participation as important or emphasize other priorities as more important, this affects the girl's sport participation. At the same time, if the team environments aren't supportive, if the team mates are aggressive or the instructors have too many expectations, this also causes girls to feel discouraged. As a result, unsupportive social environments are found to be a relevant issue for girls when participating in sports.
3	Social Norms related to Girls participating in Sports	There are beliefs or certain views of girls participating in sports that discourage sport participation among female adolescents. These views are often suggested by family members or other individuals and are a result of either culture or societal beliefs. Specifically in this sample, there were beliefs that originated from the country they were born, in which girls were not encouraged to participate in sports. These beliefs were carried on through family members which affected sport participation for many girls when they arrived in Canada. At the same time ,within society many individuals involve sport participation being associated with boys, whereas girls were encouraged to

		spend time with other tasks such as chores. This theme relates to the beliefs regarding sport participation among girls.
4	Issues with Accessibility and Availability of Sports (Previously known as 'Difficulties in Joining Sports Teams')	Individuals who had interest in sport participation expressed the difficulties in actually joining a sport. Within this theme, accessibility was a main concern, in which the process and logistics related to joining a sports team needed to be more accessible and available. These challenges included having opportunities available, having transportation to the facility, distance from the sport, type of sports available, getting information and safety.
5	Individual Beliefs and Concerns	Female adolescents having certain beliefs or concerns regarding themselves that prevent them from participating in sports. These beliefs can include their perceived competence in a sport, their self-perception, their religious beliefs, their views on dress code and their perceived skills, which all affect their choice in sport participation. As a result, they need to be comfortable and have their concerns met in order for them to participate in sports. For example, if a girl is not comfortable in the dress code of a sport or if she feels like she is not good enough for the sport, she will not participate.

Step 6 of Thematic Analysis – Producing the Report

This section will be provided within the Methods and Results chapter of my thesis dissertation.

Note:

Names given to each participant /Reference

- Participant 1 = Alina
- Participant 2=Aria
- Participant 3= Hannah
- Participant 4=Layla
- Participant 5=Maya
- Participant 6=Sofia
- Participant 7=Zara