

EXPLORING THE INFLUENCE OF SOCIAL ECOLOGICAL FACTORS ON THE
PHYSICAL ACTIVITY BEHAVIOURS OF SOUTHEAST ASIAN YOUTH WHO ARE
NEWCOMERS TO CANADA

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By

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ABSTRACT

Introduction: The term newcomer refers to people who have immigrated within the past ten years and are still adjusting to the culture and customs of their new country. Many youth who are newcomers report having a unique experience with settlement that requires them to settle in the society of their new country while undergoing the psycho-social development associated with adolescence. Physical activity may be beneficial to newcomer youth because it provides an opportunity to experience language and culture in a setting not dominated by verbal communication. The physical activity levels of Canadian newcomer youth are lower than that of immigrants who have lived in Canada longer as well as Canadian born youth. Among young newcomers in Canada, those arriving from Southeast Asian countries have the lowest physical activity levels. **Purpose:** The purpose of this research was to measure the physical activity levels of Southeast Asian youth who are newcomers and to understand the individual, social, community, and policy factors that influence the physical activity behaviours of Southeast Asian youth who are newcomers to Canada. **Methods:** Using an explanatory sequential mixed methods research design, this study collected data in two phases. The first phase was quantitative and used questionnaires and pedometers to measure physical activity levels among the participants ($N = 8$). The second phase used focus groups and a semi-structured interview guide based on McLeroy et al.'s (1988) ecological model of health promotion (EMHP) to explore the social ecological factors that influence the participants' ($N = 8$) physical activity behaviours. **Results:** Results from Phase One revealed that either 0% or 12.5% of participants were physically active enough to meet Canadian physical activity guidelines of 60 minutes of MVPA per day depending on the operationalized definition. Additionally, there were no significant differences in physical activity levels when compared by gender or time since immigration. In Phase Two, participants identified factors in every level of the EMHP (e.g. intrapersonal, interpersonal, institutional, community, and policy) that influenced their physical activity behaviours. **Conclusion:** The findings of this study support previous research that has found that Southeast Asian youth who are newcomers have low physical activity levels. Upon further investigation in the focus groups, the participants identified some factors that enhance or increase their physical activity levels and other factors that make it more difficult for them to be physically active. This study contributes to the growing body of research, by directly measuring physical activity levels of newcomer

youth and by providing newcomer youth with an opportunity to share their personal experiences with physical activity in Canada.

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DEDICATION

To my Grandma Harwood and Grandpa Robert,
my Grandpa Harwood and Grandma “B”,
my Grandpa and Grandma Johnson, &
my Mom, Christine, and my Dad, Earl.

This project has asked me to consider deeply the courage of newcomer parents and grandparents who move their families to Canada to give their children the opportunity for a better life.

It is only right that I dedicate this work to the people who have provided me with every opportunity possible.

To love and to be loved by you is my whole world.

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CHAPTER 1

INTRODUCTION

Canada is an ethnically and culturally diverse country, mainly due to its large population of newcomers. Since 2000, nearly 230,000 newcomers arrive in Canada each year (Statistics Canada, 2016b). The term newcomer describes individuals who have lived in Canada for less than ten years and are currently undergoing some degree of transition as a process of settlement (Khanlou & Crawford, 2006). Many newcomers arrive in Canada in better physical health than the majority of the Canadian population; however, some report an increase in body mass index and a decline in cardiovascular health as they settle into Canadian society (Kukaswadia, Pickett, & Janssen, 2014). The relationship between immigration and health in Canada is frequently studied among the adult newcomer population with less consideration given to the health of newcomer youth. In the small body of research investigating the health status of Canadian youth newcomers, similar to findings in adult newcomers, a decline in physical health has been recorded among youth (Kukaswadia et al., 2014). Youth who are newcomers experience a unique process of settlement in which they come to understand themselves as individuals and their place in their new society concurrently (Doherty & Taylor, 2007; Khanlou & Crawford, 2006). Physical activity is shown to be particularly beneficial to youth who are newcomers because, in addition to the physical benefits that may mediate negative health changes during settlement, participating in physical activity can provide opportunities for language acquisition and exposure to Canadian culture (Doherty & Taylor, 2007).

As indicated in the 2016 Canadian Census, 48% of newcomers arriving in Canada between 2011 and 2016 were born in Asia (Statistics Canada, 2016b). The prairie provinces of Saskatchewan and Manitoba have experienced an increase in the number of newcomers that arrive each year. In the specific prairie city where this study occurred, a large proportion of newcomers arrive from Southeast Asia. Preliminary research exploring the physical activity behaviours of newcomer youth has indicated that newcomer youth of Southeast Asian ethnicity are less physically active than both Canadian-born and newcomer youth from other parts of the world (Kukaswadia et al., 2014). Evidence illuminating this discrepancy in physical activity levels has been based on self-report physical activity measures (Kukaswadia et al., 2014). Self-report physical activity measures have received criticism for overestimating physical activity

levels (Plasqui, Bonomi, & Westerterp, 2013). To address this gap, the first purpose of this study was to objectively measure the physical activity levels of Southeast Asian newcomer youth.

It has been suggested that the physical activity behaviours of youth are influenced by multiple factors (Sallis et al., 2006). The second purpose of this study was to establish a more comprehensive understanding of the many factors affecting the physical activity behaviours of Southeast Asian newcomer youth and the experiences of these youth in Canadian physical activity environments. Previous research indicates that multiple factors at various levels influence health behaviours including physical activity. A social ecological model has been proven to be a useful approach for categorizing factors that influence health behaviours such as physical activity into levels (Humbert et al., 2006; Ramos Salas et al., 2016). This categorization can help individuals and organizations develop opportunities, resources, and supports to increase physical activity among youth (Humbert et. al 2006). The ecological model of health promotion (EMHP) developed by McLeroy and colleagues is effective in identifying and understanding the factors that affect the physical activity behaviours of newcomer youth because this model addresses the intrapersonal, interpersonal, institutional, community, and public policy factors that influence health behaviours like physical activity (McLeroy, Bibeau, Steckler, & Glanz, 1988). The EMHP has been used to understand the physical activity behaviours of adult newcomer women in Canada; however, there is limited research in a Canadian context that applies the EMHP to the physical activity behaviours of newcomer youth and, in particular, Southeast Asian newcomer youth (Ramos Salas et al., 2016). In this study, the EMHP serves as a guiding framework to understand the many factors that influence the physical activity behaviours of Southeast Asian newcomer youth.

This study utilized an explanatory sequential mixed methods approach where each research phase was separate and occurred sequentially (Creswell, 2014). Phase One of this study was quantitative in nature and gathered demographic information and both self-reported and directly measured physical activity levels. Phase Two employed qualitative methods specifically focus group interviews, to explore the factors contributing to the physical activity information collected in Phase One. An explanatory mixed methods approach was selected to allow an opportunity to explain the findings of the quantitative phase by understanding the experiences of the participants collected in the qualitative phase (Creswell, 2014).

One high school in a Canadian prairie city with a high population of Southeast Asian newcomer students agreed to participate in this study. Eight Southeast Asian newcomer youth, all of whom were 14 years old, volunteered to participate. In Phase One, quantitative data was collected using a demographic survey, the physical activity questionnaire for adolescents (PAQ-A), and pedometers. The demographic survey was used to determine time since immigration, country of origin, ethnicity, and gender. The PAQ-A was used as a measure of perceived physical activity in the participating youth (Kowalski, Crocker, & Kowalski, 1997). Pedometers were used to directly measure the participants' physical activity levels. In Phase Two, qualitative data was collected through focus group discussions with the participating youth. Guided by a semi-structured interview format, these focus groups provided information to facilitate an understanding of multiple factors within each ecological level (intrapersonal, interpersonal, institutional, community, and policy). To my knowledge this study is unique in that it measured the physical activity behaviours of South East Asian youth and provided them with an opportunity to discuss their physical activity experiences in their own words. This research aimed to capture the perspectives of a vibrant and rapidly expanding group of young Canadians.

1.1 Literature Review

1.1.1 Benefits of Physical Activity for Youth.

Physical activity is defined as all movements of the body, for leisure and non-leisure purposes, that result in increased energy expenditure when compared to a resting state (Warburton, Nicol, & Bredin, 2006). Physical activity is important for overall health and well-being in all stages of life including adolescence (Canadian Society for Exercise Physiology, 2016). The benefits of physical activity include better physical and psychological health, as well as improved social development in youth (Janssen & LeBlanc, 2010; Spruit et al., 2016). Participation in physical activity during adolescence is critically important to the healthy development of young Canadians.

Physical activity has a positive effect on several physical health outcomes. Youth who are more physically active have been found to have better cardiovascular health, musculoskeletal health, and body composition than youth who are sedentary (Janssen & LeBlanc, 2010). Participation in physical activity has been found to have a limited effect on reducing the body mass index of youth who are overweight and obese, but is favourable for developing healthier body compositions including increased muscle mass, decreased fat mass, and increased bone

density (Janssen & LeBlanc, 2010; Trinh, Campbell, Ukoumunne, Gerner, & Wake, 2013). A positive physical health outcome associated with physical activity is protection against chronic diseases like heart disease, certain cancers, osteoporosis, and diabetes (Warburton et al., 2006). The benefits of physical activity reach far beyond improved physical fitness and affect all aspects of health including, mental health and social health (Spruit et al., 2016).

Engagement in physical activity is associated with many positive psychological outcomes that contribute to the better mental health profiles found in adolescents who participate in physical activity than those who do not (Spruit et al., 2016). Physical activity affects components of psychological well-being including improved self-concept and identity, improved academic achievement, reduced anxiety and depression, and reduced stress (Spruit et al., 2016). Participation in physical activity can foster the development of positive social and emotional health through learning about teamwork and community engagement (Spruit et al., 2016). Through participation in physical activity, youth are given an opportunity for positive development of mental and social health (Spruit et al., 2016).

Despite the large number of benefits associated with participation in physical activity, most adolescents in Canada are not sufficiently active to receive these benefits. The Canadian 24-Hour Movement Guidelines recommend that children and youth achieve 60 minutes of moderate-to-vigorous physical activity (MVPA) each day (Tremblay et al., 2016). The Canadian Health Measures Survey found that of youth living in Canada between the ages of 12 to 17, only 7% were currently meeting physical activity recommendations described in the Canadian 24-Hour Movement Guidelines (Colley et al., 2017). In Canada, the ParticipACTION Report Card reviews and summarizes studies that report on the physical activity levels of Canadian children (ParticipACTION, 2020). The most recent report card was published in 2020 and indicated that Canadian children and youth have low levels of physical activity and high levels of sedentary behaviour (ParticipACTION, 2020). The finding of low physical activity levels among young people in Canada demonstrates a need to increase physical activity among Canadian youth. It is critical to establish physical activity patterns that foster positive health outcomes at a young age because it has been demonstrated that physical activity behaviours developed in adolescence persist in adulthood (Hallal, Victora, Azevedo, & Wells, 2006)

There is no single explanation for why youth in Canada have low levels of physical activity. It is understood that physical activity behaviours are influenced by individual, social, community,

and policy factors (Sallis et al., 2006; Humbert et al., 2006). Youth who have immigrated to Canada have even lower physical activity levels than Canadian-born youth (Kukaswadia et al., 2014).

1.1.2 Settlement and Physical Activity in Newcomer Youth in Canada

The immigrant population in Canada has been increasing for decades (Statistics Canada, 2016b). Since 2000, Canada has welcomed an average of 235,000 newcomers each year (Statistics Canada, 2016b). As of 2016, one in five people living in Canada were born in another country (Statistics Canada, 2016b). The term newcomer refers to people who have arrived in Canada in the past ten years and includes both immigrants and refugees (Affiliation of Multicultural Societies and Service Agencies of B.C., 2017). Immigrant and refugee are different terms used to describe people who come to Canada from other countries. The Canadian government defines an immigrant as a person who is a permanent resident, meaning they have been granted the right to live in Canada permanently (Statistics Canada, 2016a). A person who immigrated made a choice to move to Canada, but a person who is a refugee was forced to flee their country due to violence or threat of persecution (Government of Canada, 2019). The number of newcomers arriving in Canada is expected to grow in the coming years, as the Canadian government continues to increase the number of people allowed to immigrate to Canada annually (Galbraith, 2019). Historically, newcomers to Canada originated from Europe with the largest percentage arriving from the British Isles and Western Europe (Statistics Canada, 2016b). Beginning in the late 1980s, more newcomers began arriving from Asia, and currently newcomers from India, China, and the Philippines make up the majority of people immigrating to Canada (Statistics Canada, 2016b).

This study took place in a city where newcomers from Southeast Asia represent a large proportion of recent immigrants (Statistics Canada, 2016c). Newcomer youth from Southeast Asia make up a rapidly growing and under-researched group in Canada. Countries included in the geographic region of Southeast Asia include: Brunei, Cambodia, East Timor, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam (Statistics Canada, 2016c). The Philippines is the most prominent country of origin for newcomers in the city where this study occurred. Between 2011 and 2016, 21% of all newcomers who arrived in the city where this study occurred were born in the Philippines (Statistics Canada, 2016c). Evidence from the 2010 cycle of the Canadian Health Behaviour in School-Aged Children Study (HBSC)

suggests that youth from Southeast Asia are less likely to engage in physical activity than Canadian youth and newcomer youth of other ethnicities (Kukaswadia et al., 2014).

As newcomers begin to interact within Canadian society, they experience a process referred to as “settlement” (Selismos, 2017). Settlement is viewed as the long-term, non-linear process by which newcomers integrate into the society of their new country and ideally achieve equity and freedom (Selismos, 2017). The settlement process does not occur in discrete stages and there is no endpoint where an individual can be considered "settled" in Canadian society (Selismos, 2017). For newcomers, settlement represents a period of enormous change as they begin to integrate into a society that is foreign to them (Selismos, 2017). For youth who are newcomers, the changes they undergo during settlement often occur simultaneously with the biological, psychological, and social changes characteristic of adolescent development (Khanlou & Crawford, 2006). The challenge of settling in Canada during adolescence while coming to understand one's own identity has been linked to higher rates of mental health problems such as depression (Doherty & Taylor, 2007). Using focus groups Doherty and Taylor (2007) explored how newcomer youth from 18 different countries of origin experienced physical activity and sport while settling in Canada. Their findings suggested that participating in physical activity opportunities assisted in the settlement process for youth who are newcomers by providing opportunities for language acquisition and exposure to Canadian culture in a setting not dominated by verbal communication (Doherty & Taylor, 2007). It is important to note that Doherty & Taylor’s (2007) study did not include any newcomer youth from Southeast Asian countries. As immigration from Southeast Asian countries continues to increase in Canada, it is important to expand research about settlement and physical activity to include Southeast Asian newcomer youth.

Upon arrival in Canada, newcomers of all ages typically have better overall health than the Canadian-born population (Hyman, 2004; Gushulak, 2007). This phenomenon termed “the healthy immigrant effect”, has been observed in adolescent newcomers to Canada (Kwak, 2016). Part of the healthy immigrant effect is the “immigrant paradox”. The immigrant paradox describes how, despite being in better health upon arrival, the overall health of newcomers tends to decrease the longer they live in their new country (Kwak & Rudmin, 2014). While the healthy immigrant effect has been documented among newcomer youth in Canada, there is no conclusive evidence that the immigrant paradox decreases the health of newcomer youth in Canada (Kwak

& Rudmin, 2014; Vang, Sigouin, Flenon, & Gagnon, 2015) This could mean that newcomer youth in Canada arrive healthier than their Canadian born peers and maintain their health advantage over time (Kwak & Rudmin, 2014). Interestingly, there is substantial evidence that the immigrant paradox affects the health of newcomer youth in the United States (Hernandez, Denton, Macartney, & Blanchard, 2012; Marks, Ejesi, Garcia, & Coll, 2014). More research is needed to determine whether Canadian newcomer youth are less affected by the immigrant paradox than newcomer youth in the United States and if so, to examine the factors that may sustain this advantage.

The healthy immigrant effect is believed to be a result of the selection of healthy prospective immigrants at both the individual and governmental levels during the immigration process. In Canada, immigration policy favours applicants who have higher economic status measured by English or French language proficiency, higher levels of education, work experience and skills training (Knowles, 2007). It is understood that factors such as higher socioeconomic status are correlated with better health (Jasso et al., 2004). At the individual level, healthier immigrants are selected for entry to Canada using proxy measures of health that introduce a healthy bias to the pool of applicants who are eligible to immigrate to Canada. At the government level, Canada implements mandatory medical exams to screen for healthy immigrants (Gushulak & Williams, 2004). The goals of the Canadian immigration policy include selecting immigrants who will contribute to the economy and not increase the burden on Canada's healthcare system (Vang, Sigouin, Flenon, & Gagnon, 2015). Immigration policy in Canada decreases the likelihood that unhealthy immigrants will be selected for immigration which leads to a bias towards only healthy prospective immigrants being granted entry to Canada.

It is important to note that the healthy immigrant effect does not describe the health of refugees in Canada. People who are refugees typically arrive in Canada with poorer health than the Canadian population and their health does not typically improve the longer they are in Canada (Lane, 2017; Lu & Ng, 2019). Researchers Lu and Ng (2019) theorize that refugees likely do not experience the healthy immigrant effect because they are "involuntary migrants" (p. 8). Refugees arrive in Canada because they are seeking protection from war, natural disaster, or persecution, whereas immigrants are selected by the Government of Canada based on their economic potential and health (Lu & Ng, 2019). Understandably, refugees and immigrants in Canada have different experiences of health and wellbeing based on their circumstances prior to their entry to Canada.

Another process that is thought to contribute to the immigrant paradox is acculturation. Acculturation refers to the process by which an individual's beliefs and behaviours change as they incorporate features of the dominant culture of their host society into the lived practices of their heritage culture (Kukaswadia et al., 2016). In Canada, newcomers often experience acculturation as they begin to integrate features of Canadian culture into their established cultural practices. The effects of acculturation extend to health behaviours such as diet, sleep, and physical activity (Lane, 2017). A study by Kukaswadia et al. (2014) used self-reports of physical activity from the 2010 Canadian Health Behaviour in School-Aged Children Study and found that during their first two years of settlement, regardless of gender and country of origin, newcomer youth who arrived in Canada were less physically active than their Canadian-born peers (Kukaswadia et al., 2014). However, within six years of settlement, physical activity among newcomer youth increased to match the physical activity levels of Canadian-born youth (Kukaswadia et al., 2014). These findings suggest that as time since immigration increases, the physical activity patterns of youth who are newcomers begin to match the behaviours of Canadian-born youth, which supports the theory of acculturation (Kukaswadia et al., 2014). However, research with Southeast Asian newcomer youth has shown a different result. In a study comparing physical activity levels among adolescent newcomer youth by ethnicity, Kukaswadia et al. (2014) found that Southeast Asian newcomer youth had the lowest levels of physical activity compared to all newcomer youth who arrived in Canada and that their physical activity levels did not increase with time since immigration to the same degree as other newcomer youth. These results suggest that physical activity levels of Southeast Asian newcomer youth may not be as susceptible to acculturation as the physical activity levels of other newcomers.

Physical activity has not been directly measured in Southeast Asian youth who are newcomers to Canada. Past research has relied on self-reported physical activity measures to understand physical activity behaviours in these youth (Kukaswadia et al., 2014). Self-reported data is useful for studies interested in participant's perceived time spent exercising but is less useful for quantifying actual time spent being physically active (Garriguet & Colley, 2014). In general, youth are known to over-report their physical activity in self-reported measures (Plasqui, Bonomi, & Westerterp, 2013). Therefore, it is important to directly measure the physical activity levels of Southeast Asian newcomer youth to determine if they have low rates of physical activity participation as previously found in studies that used self-reported physical activity measures.

1.1.3 The Role of a Social Ecological Approach to Understanding Health Behaviours

Several theories have been used to explain health behaviours, including physical activity. In the 1980s, the work of McLeroy and colleagues was pivotal in understanding how health related behaviours and choices are influenced by multiple factors including, but not limited to, an individual's control (McLeroy, Bibeau, Steckler, & Glanz, 1988). Previously it was thought that when an individual became sick, that individual was responsible for their condition rather than factors that were outside of their control such as their social or environmental conditions (McLeroy et al., 1988). In the 1980s, there was a paradigm shift in public health research, which resulted in the acknowledgement that the factors that influence health behaviours are more complex than solely those within an individual's control (McLeroy et al., 1988). The acceptance that multiple factors influence health resulted in the development of several models that reflected this new understanding.

One of the first psychologists to examine behaviour from an ecological perspective was Kurt Lewin (Williams, 2004). Lewin proposed that behaviour was influenced by more than just internal factors (Lewin, 1936; Williams, 2004). Internal factors refer to the factors within an individual that influence their behaviour, such as personal characteristics and instincts (Williams, 2004). According to Lewin, individual behaviour was influenced by the characteristics of an individual's environment, including other people (Lewin, 1936; Sallis & Owen, 1997). Lewin's work was fundamental to the later development of social ecological models for conceptualizing and understanding behavioural influences.

Burrhus Frederick Skinner proposed that external factors were more influential than internal factors when it came to individual behaviour (Skinner, 1953). External factors refer to factors that are external to an individual including their social networks and environment (Williams, 2004). Skinner is most recognized for his work "characterizing social and environmental influences as having profound influences on behaviour" (Williams, 2004, p. 25). The work of Skinner is echoed in later development of models that categorized behavioural influences into both internal and external factors.

Urie Bronfenbrenner was the first to conceptualize behavioural influences into ecological levels that represent categories for understanding the influence of factors within different structures in one's environment (Bronfenbrenner, 1979; Sallis & Owen, 1997; Williams, 2004). Bronfenbrenner used levels to explain how individual behaviours are influenced by the ecological

environment which is made up of "a series of nested and interconnected structures" (Bronfenbrenner, 1979, p. 206). Bronfenbrenner's model breaks down the interconnected ecological environment into four levels of influence: microsystem, mesosystem, exosystem, and macrosystem. The microsystem involves the social interactions between an individual and their friends, families, and colleagues (Williams, 2004). The mesosystem involves interactions between and among microsystems, for example, an individual's family interacting with an individual's school microsystem (Bronfenbrenner, 1979). According to Bronfenbrenner, the exosystem is defined as "a setting that does not contain a developing individual, but in which events occur that affect the setting containing the person" (Bronfenbrenner, 1979, p. 209). For example, if the individual is a child, some of their exosystems would be their parents' workplaces or their older siblings' school (Bronfenbrenner, 1979). The individual does not experience microsystems within an exosystem, instead, their microsystem may be affected by changes in their exosystems. An example of how an exosystem could affect a microsystem is when a parent is experiencing stress in their workplace which may subsequently put a strain on their relationships with their children (Bronfenbrenner, 1979). The macrosystem describes the influence society has on individuals including policy, economic, and social effects (Williams, 2004). An example of social effects in the macrosystem would be the cultural beliefs and norms that a society shares at a given time (McLeroy et al., 1988). Bronfenbrenner's work is reflected in later social ecological models, like McLeroy et al.'s (1988) ecological model of health promotion (EMHP), in the form of levels of ecological influence (Williams, 2004).

McLeroy et al. (1988) built upon the work of Bronfenbrenner (1979) to develop an ecological model of health promotion which conceptualized the complex factors that influence health behaviours, including physical activity. For the purpose of this research, the abbreviation "EMHP" will be used to denote McLeroy et al.'s (1988) social ecological model. The EMHP proposed that individual health behaviours are influenced by policy, social, and individual factors (McLeroy et al., 1988). Unlike Bronfenbrenner's model, the EMHP was developed specifically to understand health behaviours (McLeroy et al., 1988). The EMHP separates health behaviour influences into five levels: intrapersonal, interpersonal, institutional, community, and policy (McLeroy et al., 1988). McLeroy et al.'s (1988) model used levels to understand the factors that influence behaviour within one's environment as well as to develop appropriate interventions that are specific to each level. Inherent in the EMHP is that factors in each level of behavioural

influence operate on individual health behaviours and it is the interaction of factors between levels that produce behavioural outcomes (McLeroy et al., 1988). This model proposes that in order to improve the health behaviours of individuals, change must occur at multiple levels of influence (McLeroy et al., 1988). Additionally, the EMHP theorizes that change at "higher" levels, like the community and policy levels, will influence changes in the environmental and social levels and consequently have a greater influence on the health of individuals and entire communities (McLeroy et al., 1988).

In 2015, McLeroy co-authored an editorial describing an inverted social ecological model and described its utility for promoting change at the community and policy levels (Golden, McLeroy, Green, Earp, & Lieberman, 2015). The authors argued that the EMHP failed to conceptualize the effect that individuals and social groups had on their communities and the creation and implementation of policies that govern individuals (Golden et al., 2015). Where the EMHP can identify that socioeconomic status influences individual health behaviours, it cannot identify how socioeconomic status is "produced, maintained, or, most critically, changed" (Golden et al., 2015, p. 9). By inverting the social ecological model and placing policy at the centre, attention is focused on the root causes of health disparities at the community and policy levels. Golden et al. (2015) believe that their inverted social ecological model could guide individual health promotion researchers and practitioners toward upstream, tangible policy and community changes that will have more impact on the health behaviours of individuals than the traditional social ecological model.

While the concept of an inverted model is interesting and worthy of consideration, in the current study McLeroy et al.'s (1988) EMHP will be used as the guiding framework as it allows for the identification and understanding of a wide range of influences that act on individual physical activity behaviours. The social ecological model has been used extensively to investigate influences of physical activity behaviour in youth (Sulz, Humbert, Gyurcsik, Chad & Gibbons, 2010; Humbert et al., 2006; Aura, Sormunen, & Tossavainen, 2016). To the best of my knowledge, the current study is the first of its kind to apply the EMHP within a Canadian context to understand the physical activity behaviours of Southeast Asian newcomer youth. The EMHP is advantageous for studying the factors that influence the physical activity behaviours of Southeast Asian youth who are newcomers because preliminary research with newcomer youth has

identified influences that are varied and complex including gender, social support from friends, and knowledge of English (Doherty & Taylor, 2007).

1.1.4 Levels of the Ecological Model of Health Promotion

The ecological model of health promotion developed by McLeroy et al. (1988) is composed of five levels that interact to influence physical activity behaviours. The five levels are: intrapersonal factors, interpersonal processes and primary groups, institutional factors, community factors, and public policy. In the EMHP, behavioural influences are called factors and factors are contained within levels. Factors can either facilitate or hinder physical activity behaviours. Intrapersonal factors reflect individual characteristics and personal attitudes towards physical activity. The interpersonal processes and primary groups level refers to how social interactions among primary groups such as families and friends may influence physical activity. Institutional factors arise from formal and informal rules within social institutions, such as school, work, or church. Community factors encompass interactions between organizations, institutions, and social groups, such as physical activity opportunities available in an individual's neighbourhood (McLeroy et al., 1988). Public policy factors are local, provincial, and federal policies that influence physical activity behaviours. According to McLeroy et al. (1988), factors in each level can interact with factors in other levels in the case of more complex behavioural influences, like socioeconomic status.

1.1.4.1 Intrapersonal factors.

Intrapersonal factors are the first level of the EMHP. Factors included in the intrapersonal level refer to behavioural influences within an individual (McLeroy et al., 1988). In the McLeroy et al. (1988) model, intrapersonal factors include individual characteristics such as “knowledge, attitudes, behaviour, [and] self-concept” (p. 355). In addition to the intrapersonal factors noted by McLeroy et al. (1988), intrapersonal factors experienced by newcomer youth in Canada could include knowledge of the benefits of physical activity and gender (Doherty & Taylor, 2007).

Understanding the benefits of physical activity is an intrapersonal factor that has been found to influence higher levels of physical activity in youth (Martins, Marques, Sarmiento, & da Costa, 2015). In a qualitative study by Doherty & Taylor (2007), the authors found that newcomer youth were able to identify the psychological and physical benefits of physical activity. Some of these benefits included feeling happier when engaging in physical activity and feeling healthier mentally and physically due to exercise. These newcomer youth expressed that

feelings of personal psychological and physical well-being were some of their most important motivations for engaging in physical activity. It is interesting to note that the study by Doherty & Taylor (2007) did not have any Southeast Asian participants.

Gender and sex are important components of the intrapersonal level. Sex refers to a person's biological sex, whereas gender refers to the "socially and culturally constructed behaviours and attitudes" related to a person's identity (Kling, Rose, Kransdorf, Viggiano, & Miller, 2016, p. 48). The sex of an individual has been reported to influence physical activity in youth. A review of data from the Canadian Health Measures Survey found that for children between the ages of 6 to 17, boys were more active than girls (Colley et al., 2017). Young males tend to participate in physical activity more than their female counterparts and this trend has been found to occur regardless of compounding factors such as socioeconomic status and chronological age (Hobin et al., 2012; Mutz & Albrecht, 2017; Roberts et al., 2017). It is important to note that maturation may have a larger effect on physical activity levels of adolescents than sex (Thompson, Baxter-Jones, Mirwald, & Bailey, 2003). Maturation refers to the process in which adolescents progress to a state of biological maturity (Malina & Bouchard, 1991). It is known that on average, female youth mature two years prior to male youth (Malina & Bouchard, 1991). When physical activity levels are compared by sex and controlled for maturation, the physical activity levels of adolescent boys and girls are not significantly different (Thompson et al., 2003). In this study, maturation was not assessed. There is limited research examining the role of gender in the physical activity behaviours of newcomer youth. No research to date reports specifically on the role of gender on the physical activity behaviours of Southeast Asian youth. More research is needed on the intersection between immigration, gender, and physical activity, as the concepts are currently not well documented or understood.

1.1.4.2 Interpersonal processes and primary groups.

The factors included in the second level of the EMHP are interpersonal processes and primary groups directly influencing the individual. Interpersonal processes refer to the interactions between people that influence individual behaviours, whereas primary groups describe families and friendship networks (McLeroy et al., 1988). In the McLeroy et al. (1988) model, the interpersonal level includes an individual's friends, family, and other social support systems. An individual's social environment affects the individual's behaviours (McLeroy et al., 1988).

It is important to remember that newcomer youth are teenagers. Inherent in the social development and the challenges of adolescence is the need to “fit in” (DiPietro & McGloin, 2012). This need to fit in is not new. Over 50 years ago, Coleman (1961) reported that peer relationships essentially determined social status and identity during adolescence. DiPietro & McGloin (2012) found that newcomer youth may value peer acceptance and desire to fit in even more so than their non-immigrant counterparts. All adolescents, regardless of immigrant status, undergo a process of social development as they strive to achieve an autonomous identity (DiPietro & McGloin, 2012). For newcomer youth, this journey to autonomy is compounded by the need to adapt to the social and cultural differences of a new country during settlement (Kwak, 2003). These additional challenges may result in a longer and more complicated journey to autonomy for newcomer youth than their Canadian-born counterparts. In this way, peer relationships and being an immigrant are both inseparable from developing an autonomous identity during settlement for newcomer youth. The value of peer relationships and social inclusion cannot be overstated when it comes to the healthy development of newcomer youth.

Peer relationships can also affect physical activity behaviours. Duncan, Duncan, & Stryker (2005) found that relationships with peers can either positively or negatively influence physical activity behaviours in adolescence. For example, if in a social group it is accepted that everyone plays volleyball, there will be a positive influence to play volleyball. However, if the social group functions based on the premise that playing volleyball is not acceptable, then the members of the social group will be influenced to avoid participation in volleyball. The relationship between friends and physical activity in adolescence has been extensively documented in the literature; however, it is unknown whether the same relationship exists for newcomer youth.

Physical activity can provide opportunities for social inclusion but can also lead to feelings of social exclusion for newcomer youth. Researchers Doherty & Taylor (2007) found that newcomer youth identify physical activity as an opportunity to socialize with Canadian youth, gain exposure to Canadian culture, and facilitate feelings of social inclusion. However, in the same study, participants also identified ways in which physical activity can lead to social exclusion (Doherty & Taylor, 2007). Participants discussed feelings of exclusion due to limited English language skills, lack of familiarity with rules of a particular game or activity, and prejudice and discrimination. There may also be a gender difference in the ways that newcomer

youth cope with social exclusion. Doherty & Taylor (2007) found that male newcomer youth were better able to overcome social exclusion, by remaining involved in sport and recreation and benefit from physical activity. Whereas female newcomer youth felt more constrained by language difficulties, lack of understanding of some games, and discrimination against immigrants and often were not able to overcome feelings of social exclusion to continue participation in sport and physical activity.

Another important primary social group for newcomer youth is their family. While every newcomer family is unique, newcomer parents may often be preoccupied with work and providing financially for the family so the role of family caregiver may fall to the eldest child of the family (Shakya et al., 2010). This can lead to a situation of role reversal in the homes of newcomer youth (Shakya et al., 2010). Many adolescent newcomers are needed to serve as caregivers at home and the need to take on this role may not leave newcomer youth much time for elective activities such as physical activity. In addition to home responsibilities, newcomer youth may also take on the role of cultural translator for their families. The role of a cultural translator is someone responsible for explaining social and cultural customs to those who are not familiar. Newcomer youth typically integrate into the Canadian society and learn English more quickly than their parents, which tends to result in parents relying on their children to explain Canadian culture to them (Shakya et al., 2010). Additionally, newcomer parents tend to emphasize academic success and the idea of working towards a “better future” (Shakya et al., 2010). The responsibilities that newcomer youth have to their families may be seen as more important than physical activity. Like peer influence, family influence can also both positively and negatively affect physical activity behaviours (Sallis, Prochaska, & Taylor, 2000).

1.1.4.3 Institutional factors.

The third level of the EMHP is institutional factors, which can also be referred to as organizational factors (McLeroy et al., 1988). Institutional factors are the influences of social institutions on an individual's behaviour (McLeroy et al., 1988). In the McLeroy et al. (1988) model, examples of institutions that may influence behaviours include schools, churches, workplaces, volunteer associations, and leisure centres. Institutions operate according to "formal and informal rules and regulations" which shape behaviours (McLeroy et al., 1988, p. 355). Examples of formal rules are daily schedules and dress codes, while informal rules would include things like norms and other unspoken rules of acceptable social behaviour.

Canadian youth spend almost 200 days per year in school, making schools prominent institutions in the lives of young Canadians (Hobin et al., 2012). Examples of physical activity opportunities in schools include physical education, intramural sports, sports leagues, and clubs (Fuller, Sabiston, Karp, Barnett, & O'Loughlin, 2011). Schools are an important physical activity setting for youth because school environments that are supportive of physical activity behaviours are successful in encouraging higher levels of physical activity for students (Hobin et al., 2012). There is limited research investigating how schools may influence the physical activity behaviours of Southeast Asian youth who are newcomers.

In addition to schools and community organizations, religious institutions can be important institutions for newcomer youth. Newcomer youth from Southeast Asia have diverse cultural and religious backgrounds. Prominent religions in the Southeast Asian region include: Islam, Christianity, and Buddhism (Pariona, 2018). Researchers Shakya, Khanlou, and Gonsalves (2010) found that newcomer youth may find support and comfort during settlement in their religious institutions. It is not known if involvement in religious institutions influences physical activity behaviour of Southeast Asian newcomer youth.

1.1.4.4 Community factors.

In the context of the EMHP, community factors are defined as the influences on behaviour that result from the interactions between organizations within a geographic area (McLeroy et al., 1988). More generally, community factors refer to the influences that arise outside of institutions, but still within a set geographic area. Such community influences include neighbourhood safety and the built environment.

An important factor that is considered a community influence on physical activity is neighbourhood safety. Neighbourhood safety can act as a barrier to participating in physical activity programs. Newcomers often live in lower income neighbourhoods where perceived safety may be a concern (Booth et al., 2013). Decreased perceived safety also decreases the perception of the walkability of a neighbourhood, which decreases the rates of active transportation in the community (Booth et al., 2013). In lower income areas, youth report that having safe spaces to be active is the most important facilitator for their physical activity (Ries, Voorhees & Gittelsohn, 2010). It is not known if the physical activity behaviours Southeast Asian newcomer youth are influenced by neighbourhood safety.

Another community factor that may influence the physical activity behaviours of

Southeast Asian youth who are newcomers is the built environment. The term built environment refers to the human-made features that make up the environments where people live and work (Hughey et al., 2017). Factors included when considering the built environment include: proximity and access to parks and recreation facilities, street connectivity, neighbourhood walkability, traffic speed, neighbourhood disorder, and vegetation (Ding, Sallis, Kerr, Lee, & Rosenberg, 2011). The built environment influences the physical activity behaviours of youth particularly when it comes to access to parks and greenspace (Hughey et al., 2017). Hughey et al., (2017) found that access to parks was associated with lower BMI for youth who lived in low income neighbourhoods. Another important factor in the built environment is proximity to physical activity opportunities (Humbert et al., 2006; Ding et al., 2011). Proximity refers to how far someone has to travel to be physically active. Proximity may be a particular issue for newcomer youth who are often raised in lower-income households and may have limited access to transportation.

1.1.4.5 Policy factors.

Policy refers to the “regulatory policies, procedures, and laws” that govern individual behaviour (McLeroy et al., 1988, p. 365). Policies influence behaviour by setting standards and regulations that can affect health behaviours. There has been limited research related to how formal policies influence the physical activity behaviours of youth who are newcomers. Immigration policies are intricately linked to newcomers’ experiences in Canada and have broad implications for the health and wellness of newcomers. For instance, a possible explanation of the healthy immigrant effect is the selection bias that occurs via immigration policy. Before immigrating, applicants are screened repeatedly for signs of health issues that could exclude them from being eligible to immigrate to Canada, which results in an unnaturally healthy pool of people who are selected for immigration.

When researching the physical activity behaviours of adults who were newcomers to Canada, Ramos Salas et al. (2016) determined two policy factors that influenced their physical activity behaviours: recognition of newcomer credentials and English language programmes. Policies relating to the transferability between countries of post-secondary degrees and professional training often result in highly trained newcomers being forced into low-paying jobs which leads to barriers to physical activity for their children due to lower family socioeconomic status (Ramos Salas et al., 2016).

Due to English-language program requirements and eligibility policies that govern enrolment in these programmes, adult newcomers may also experience limited job opportunities upon arriving in Canada. The policies regarding who is eligible for English-language programmes and who requires English-language certification resulting from these programmes in order to find work frequently limit job opportunities available to adult newcomers (Ramos Salas et al., 2016). Adult newcomer women in Canada describe a "vicious cycle" that emerges through lower income employment and eligibility for English language classes (Ramos Salas et al., 2016). For example, newcomers who are employed are often not eligible for English language classes; however, an English-language certificate is required before they can seek employment in the field they are professionally trained in (Ramos Salas et al., 2016).

While these policies are focused on adults, they have wide-ranging consequences that may influence the physical activity opportunities of youth who are newcomers. In a qualitative study about the determinants of newcomer youth mental health, researchers Shakya, Khanlou and Gonsalves (2010) found the most profound stressor for newcomer youth is the barriers their parents face when entering the Canadian job market. Limiting the employment opportunities of the parents of newcomer youth puts limits on the physical activity opportunities available to newcomer youth and their families due to many factors including under-employment and resulting lower socioeconomic status (Lane, 2017).

1.1.4.6 Interactions among levels.

An important feature of the EMHP is the emphasis placed on the interactions between factors in each level. English language ability is a factor that influences physical activity behaviours at multiple levels of the EMHP. Language barriers such as low English fluency or accents have been found to decrease self-esteem and increase stress and anxiety among newcomer youth which may cause them to avoid social situations like organized physical activity (Shakya, Khanlou & Gonsalves, 2010). Difficulty understanding English has been linked to feelings of social exclusion in physical activity settings, which leads to negative perceptions of organized physical activity programs for youth who are newcomers (Doherty & Taylor, 2007; Spracklen, Long, & Hylton, 2015). At the policy level, regulations are governing the quality of the English-language education programs and who is eligible to enroll in them (Shakya et al., 2010; Ramos-Salas et al., 2016). English-language ability dictates the employment opportunities

available for the parents of newcomer youth which in turn affects the socioeconomic status of the family.

Another example of how the levels of the EMHP interact to influence behaviour is socioeconomic status. In Canada, youth who are newcomers tend to be of lower socioeconomic status and the reasons for this are complex and varied (Lane, 2017). It is common for the parents of newcomer youth to be underemployed, meaning that parents are working jobs that are well below what they are suited to work given their educational attainment (Gilmore, 2009). Underemployment is frequently caused by government policies regarding degree transferability and contributes to disproportionately high rates of poverty among newcomers in Canada. A study with newcomer youth in St. John's, Newfoundland by Shea & Beausoleil (2012), found that most of their participants' parents had professional careers in their countries of origins, but were now working low paying jobs in Canada. While the Canadian-born population has a poverty rate of 13.9%, the newcomer population is experiencing poverty at a rate of 31.4% (Citizens for Public Justice, 2017). Other possible explanations for lower socioeconomic status in newcomer communities are the costs associated with relocating or arriving in Canada as a refugee.

The relationship between socioeconomic status and physical activity is under-researched as it relates to newcomers but is well documented among the Canadian-born population. People who are of lower socioeconomic status are less likely to participate in physical activity (Giles-Corti & Donovan, 2002). There is no single explanation for how lower socioeconomic status influences low physical activity behaviours, but there are several theories including the cost of physical activity opportunities, neighbourhood safety, and less understanding of the benefits of physical activity (Humbert et al., 2006; Stalsberg & Pedersen, 2010). Another possible explanation is that youth from lower socioeconomic families are more likely to share the responsibility of supporting their family (Stalsberg & Pedersen, 2010). This may occur at home through caring for younger siblings and managing housework or by working a part-time job to help support their family financially (Stalsberg & Pedersen, 2010). Lower socioeconomic status likely influences the physical activity behaviours of youth who are newcomers for a combination of these reasons.

In applying the EMHP to how socioeconomic status influences physical activity, it is apparent that there are many factors at play. There are government policies at the policy level and neighbourhood safety, which fits in the EMHP at the community level. Then there is the

increased responsibility of newcomer youth at home which fits in the EMHP at the interpersonal level. Lack of knowledge of the benefits of physical activity can be categorized in the intrapersonal level of the EMHP. All of these factors on their own are barriers to physical activity, but when looked at in the context of the EMHP it is clear that these factors interact to create complex barriers to physical activity.

1.2 Summary and Statement of Purpose

A significant proportion of newcomers to Canada are from Southeast Asia (Statistics Canada, 2016b). Although, no studies have directly measured physical activity levels among Southeast Asian newcomer youth in Canada, previous research using indirect measures has found that, compared to Canadian-born youth, Southeast Asian newcomer youth report lower levels of physical activity participation (Kukaswadia et al., 2014). Further, literature suggests that various factors within each ecological level (intrapersonal, interpersonal, institutional, community, and policy) may play a role in influencing physical activity behaviours among Southeast Asian newcomer youth (Ramos Salas et al., 2010; Doherty & Taylor, 2007). As such, the current study applied the ecological model of health promotion to identify, explore and categorize factors that influence physical activity behaviours among Southeast Asian newcomer youth.

This study aimed to address the following research questions:

1. What are the physical activity levels of Southeast Asian male and female youth who are newcomers in Canada?
2. What are the social ecological factors that influence the physical activity behaviours of Southeast Asian male and female youth who are newcomers in Canada?

CHAPTER 2

METHODOLOGY

2.1 Research Design

This study was divided into two phases and utilized an explanatory sequential mixed methods research design (Creswell, 2014). In an explanatory sequential mixed methods design, the quantitative phase of data collection and analysis precedes the qualitative phase (Creswell, 2014). An advantage of an explanatory mixed methods design is that the quantitative phase can provide a general understanding of the research topic and the subsequent qualitative phase serves to explain or elaborate on the quantitative findings (Ivankova, Creswell, & Stick, 2006). In this study, physical activity behaviours and demographic information were measured in Phase One and an in-depth qualitative exploration into the social-ecological influences on the measured physical activity levels took place in Phase Two. A mixed methods approach was suitable for this research because such an approach provided an opportunity to better understand the findings of the quantitative phase by exploring the experiences of the participants in the qualitative phase.

Ivankova et al. (2006), recommends the weight of each phase of a sequential mixed methods design should reflect the purpose of the research and the decision on the weighting of each phase should be made during the conceptual stage of the research process. In an explanatory mixed methods design, the quantitative phase is typically more heavily weighted than the qualitative phase (Creswell, 2014). However, the purpose of this research was to both understand the physical activity levels and explore the factors that influence the physical activity levels of the participants. Due to the balanced nature of the weighting between quantitative and qualitative purposes, this study approached each research phase with equal weight.

2.2 Participants

Eight participants, all of whom were 14 years old and had immigrated to Canada from Cambodia and the Philippines in the past ten years, volunteered to participate in this study. To my knowledge, the majority of the participants arrived in Canada as immigrants. All participants attended the same high school located in a Canadian prairie city. The participants could all speak and write English and thus translation services were not required. All participants provided assent and their parents provided written informed consent. Pseudonyms have been used to refer to the participants, teachers, and school. It is important to note that the participants in this study were all volunteers and, as such, chose to spend their free time completing questionnaires and discussing

their experiences with physical activity. It is possible that the students who chose to participate in this study already viewed physical activity favourably which would be influential on the results on this study.

2.3 Obtaining Access to the Research Site

Ethical approval for this project was obtained from the University of Saskatchewan's Behavioural Research Ethics Board. Following ethical approval, an application for external research was submitted to a Roman Catholic school division and approval to conduct research was granted. Pseudonyms have been used for individuals and the school to protect the identities of all involved in the study. A Superintendent responsible for approving research in the school division recommended I approach Green Catholic High School because of their high population of Southeast Asian newcomers. Initial contact was made with the principal of Green Catholic High School, Ms. Gomez, in November 2019. Ms. Gomez was very receptive to the study and was instrumental in the success of the recruitment process. Initial contact with the participants occurred via a pizza lunch held in the school cafeteria. Ms. Gomez advertised the pizza lunch by making an announcement over the intercom shortly prior to the students' lunch break. Students who were interested in hearing about the study were encouraged to come have pizza and learn more about what they would be asked to do if they chose to participate in the study. After learning more about the study, students who were interested in participating were asked to provide their email address and received a printed consent form (See Appendix B). The consent forms were distributed in unlabelled manila envelopes and students were asked to return the signed consent forms in the same envelope to a sealed drop-box in the main office of the school. This measure was taken to protect the privacy of students who decided to participate in the study. The students were asked to take the consent forms home and read through them with their parents or guardians. Students who provided their email address at the pizza lunch were also sent consent forms electronically and informed that they could return signed forms electronically if that would be more convenient. None of the participants took advantage of the electronic consent process, which I later learned, was because none of the participants had access to a printer or scanner at home. Ms. Gomez and I kept in contact during December and January as I waited for forms to be returned. During this time, I sent weekly email reminders to encourage students who expressed an interest in participating to remind them to hand in their consent forms. By mid-January, eight students had returned consent forms and data collection began.

During Phase Two of this study, permission to access to the research site was revoked due to school closures resulting from the COVID-19 pandemic. At the time of the school closures, the focus groups had been completed, but follow-up focus group interviews were still needed to confirm and clarify the participants' ideas. The school closures and social distancing measures introduced by the provincial government prevented me from being able to complete follow-up focus group interviews as originally proposed. An amendment to the Behavioural Ethics Approval was obtained and granted permission to complete data collection using one-on-one over-the-phone interviews. All participants received an update about the change of the study's procedures via an emailed information sheet (See Appendix B). One male participant and one female participant volunteered to be interviewed over the phone.

2.4 Data Collection

2.4.1 Phase One: Quantitative Methods

After obtaining written informed consent from the parents/guardians of participants, data collection for Phase One began. Phase One was completed during two lunch sessions at the participating high school. In the first session, participants were provided with assent forms and encouraged to ask questions about anything they did not understand (See Appendix C). Participants were also made aware that they did not have to do anything they did not feel comfortable doing and that they were free to leave the study at any time without consequence. After participants provided their assent, the demographic questionnaire and the physical activity questionnaire for adolescents were distributed (See Appendices D & E). All questionnaires were completed using pen and paper. During the second lunch session, participants were provided with pedometers. The detailed procedures for pedometer distribution and collections is described in section 2.4.1.2.2.

2.4.1.1 Demographic questionnaire.

A demographic questionnaire was created to gather background information about the participants (See Appendix D). The purpose of the questionnaire was to collect information about the participants' age, time since immigration, country of origin, and self-reported ethnicity and gender. In consideration of the varying levels of English-language comprehension of the participants, the questionnaire was written at a Grade 5 reading level.

2.4.1.2 Physical activity measurements.

Physical activity can be measured both indirectly and directly (Corder, Ekelund, Steele, Wareham, & Brage, 2008). Indirect measures of physical activity include self-report questionnaires, interviews, diaries, and observation by researchers (Corder et al., 2008). Whereas direct physical activity measures are used to quantify physical movement and can include pedometers and accelerometers (Corder et al., 2008). Both indirect and direct physical activity measures were used in this study. The benefit of using both types of physical activity measures was that the indirect measure provided a measure of the participants' perception of their physical activity and the direct measure provided a more valid and reliable measure of physical activity levels (Corder et al., 2008).

2.4.1.2.1 Physical Activity Questionnaire for Adolescents.

The Physical Activity Questionnaire for Adolescents (PAQ-A) is a reliable and valid seven-day recall questionnaire for high-school-age youth (Kowalski et al., 1997). The PAQ-A was modeled after its predecessor, the Physical Activity Questionnaire for Children, a measure of physical activity levels in children between Grades 4 and 8 (Kowalski et al., 1997). The PAQ-A was developed to address a need for physical activity questionnaires suitable for use with high school youth. For example, the PAQ-C asks participants if they were active with their friends at recess and this is not an appropriate question for high school youth. The PAQ-A includes eight-items scored on a 5-point scale that can be used to calculate a total mean activity score for each participant. A PAQ-A score of 1 indicates low perceived physical activity level and a score of 5 signifies a high perceived level of physical activity. The eight items include spare time physical activity, physical activity during physical education, at lunch, immediately after school, during the evening, and on weekends (Kowalski et al., 1997). The PAQ-A was validated for use with high school age students and is moderately positively correlated with direct physical activity measures (Kowalski et al., 1997).

2.4.1.2.2 Pedometers.

Pedometers were used to collect quantitative physical activity data by recording total daily steps. Pedometers are valid and reliable tools for measuring youth physical activity (Vincent & Sidman, 2003; Tudor-Locke, Williams, Reis, & Pluto, 2002). In Canada, the 24-hour movement guidelines recommend that children and youth between the ages of 5 and 17 obtain a minimum of 60 minutes of moderate-to-vigorous physical activity (MVPA) per day (Tremblay et

al., 2016). Pedometer data can be used to estimate whether youth are meeting these physical activity recommendations. Canadian researchers, Colley, Janssen, and Tremblay (2012), proposed that approximately 12,000 steps per day is the equivalent of 60 minutes of MVPA in one day. The step count proposed by Colley et al. in 2012 is used by many major Canadian physical activity research institutions including CANPLAY, the Canadian Fitness and Lifestyle Research Institute, and Statistics Canada (ParticipACTION, 2020). To the best of my knowledge, pedometers have not been used to directly measure physical activity in Southeast Asian newcomer youth in Canada. Pedometers were chosen as a tool to address this gap given their availability and utility in measuring steps per day (Colley et al., 2012).

In the present study, New Lifestyles Digi-Walker SW-700 pedometers were used to directly measure physical activity. Participants received an in-person demonstration of appropriate pedometer placement as well as verbal and written instructions for pedometer use and care (Oliver et al., 2011). I gave a demonstration for how to properly wear a pedometer to all participants in a classroom during noon-hour and answered any questions. The participants were instructed to wear the pedometer on their right hip for all waking hours for 6 consecutive days (Oliver et al., 2011). Participants were asked to remove the pedometer for bathing or swimming and were made aware that their pedometer should not get wet (Oliver et al., 2011). As part of the pedometer demonstration, participants completed a sample tracking sheet and were encouraged to ask questions about how to track their steps. Participants were asked to track their own daily step counts because the pedometers used in this study did not allow for data storage (See Appendix F). The participants were instructed to place their tracking sheet in a place where they would see it every day like the top of their dresser or beside their toothbrush. Finally, participants were asked to keep a record of the time they put their pedometer on in the morning, the time they took their pedometer off at night and the total step count recorded on their pedometer at the end of the day on their pedometer tracking sheet. After recording their daily step count in the evening, participants were instructed to reset their pedometer. As an extra precaution, participants were also asked to confirm their pedometer had reset before putting it on in the morning.

The participants were encouraged to wear their pedometers and track their steps every day. As an incentive, participants were informed that anyone who wore their pedometer and tracked their steps for all six days would be entered in a draw for a gift card. As an additional measure to encourage pedometer wear time, participants received a text message each morning at

7:30 am to remind them to wear their pedometer that day. One week after the participants received their pedometers, I returned to the School to pick up the pedometers during the noon hour. All participants returned their pedometers and tracking sheets on time and were entered in the draw for the gift card. The collection of the pedometers marked the end of data collection for Phase One.

2.4.2 Phase Two: Qualitative Methods

2.4.2.1 Focus groups.

Focus groups are often used in qualitative research to facilitate discussion about the research topic of interest from a group of people who have experienced the topic of interest first-hand (Freeman, 2006). The strengths of focus groups as a method of data collection include the ability of participants to interact and the focussed nature of group discussions (Kitzinger, 1995; Powell & Single, 1996). When participants are able to interact with each other, there is a potential to develop a richer discussion because participants can build their responses based on what others have already shared (Kitzinger, 1995). Focus groups are an effective method of data collection for use among youth because focus groups allow youth to interact and generate discussion rather than interact solely, with the researcher as is the case in a one-on-one interview (Clark, 2009). Working with newcomer adult women in Canada researchers Ramos Salas et al. (2016), found focus groups to be a useful data collection tool because participants were able to interact and build off of each other's thoughts. Another Canadian study by Doherty and Taylor (2007) used focus groups to discuss the impact that physical activity has on settlement for immigrant youth living in Toronto. Due to their effectiveness as a form of data collection with newcomer women and newcomer youth in general, focus groups were used to explore the factors that influence the physical activity behaviours of the participants following their recent immigration to Canada.

In the current study, the eight participants were separated by self-reported gender into two focus groups (a male group and a female group). The focus groups were separated by gender because it has been suggested that newcomer youth experience settlement and physical activity differently based on their gender (Doherty & Taylor, 2007; Colley et al., 2017). Each of the two focus groups had four participants. Initially, there was a hope of recruiting enough participants to allow for stratification of focus groups by physical activity level, but due to the small sample size, stratification was not possible. The male and female groups each participated in two focus group interviews.

Table 2.1 – Focus group procedures

	Day 1	Day 2
Male Group (<i>N</i> = 4)	First Focus Group Interview (<i>N</i> = 3)	Second Focus Group Interview (<i>N</i> = 3)
Female Group (<i>N</i> = 4)	First Focus Group Interview (<i>N</i> = 4)	Second Focus Group Interview (<i>N</i> = 2)

Participant numbers are represented by (*N* = *x*).

A focus group interview guide was developed using the ecological model of health promotion (See Appendix G). Using the EMHP was beneficial to the development of the focus group interview guide because it provided a systematic framework for which physical activity influences could be examined. The purpose of the interview guide was to lead a discussion with the participants about the factors that they believed influenced their physical activity. The interview guide used open-ended questions so that descriptive data could be collected from participants. Open-ended interview questions were used to allow the participants to construct their own meaning of the questions and share only what they perceived as relevant to the questions asked (Creswell, 2007). In this way, open-ended interview questions encourage the participants to interpret the meaning of the question and share information they find pertinent in their own words (Creswell, 2007).

The focus groups were facilitated by two fourth-year Kinesiology students. These students received training on focus group facilitation from a professor with over 20 years of experience interviewing children and youth. After the training was completed, the interviewers pilot tested the focus group interview guide with a sample population of 16-year-old newcomers from the Philippines. Pilot testing was done for two reasons. First, to allow the interviewers an opportunity to facilitate a focus group interview using the interview guide with a population similar to the one they would be working with during data collection. Second, to verify the accuracy and thoroughness of the interview guide and provide an opportunity for revisions before the beginning of data collection. I chose to use these two Kinesiology students to lead the interviews to address the challenges of facilitating focus groups across race, age and gender (Cox, 2004; Kosygina, 2005). Interviewers were selected based on their background in Kinesiology, training in research methods, gender, and Southeast Asian ethnic backgrounds. Cox (2004) described the inevitable challenge that a researcher will encounter when trying to conduct focus groups with

participants of another race and Kosygina (2005), wrote about the challenges that female researchers will likely encounter when attempting to elicit rich, descriptive conversation from male participants. For these reasons, the focus groups interviews were led by facilitators of the same race and self-reported gender as the participants.

A total of four focus group interviews took place in this study; two with the male group and two with the female group. The focus groups occurred during two lunch hours at the participating high school. The principal booked two classrooms so that the male and female focus groups could be conducted simultaneously in separate classrooms. Students received notice of the timing and location of the focus groups via text and email. Attendance at focus group sessions was encouraged by providing lunch and holding a gift card draw at the completing of all the focus groups. However, only one focus group interview session had full attendance.

As previously discussed, the closure of the school due to the COVID-19 pandemic affected our ability to complete data collection in Phase Two. The school where this study took place closed following the completion of the focus group interviews. Due to the school closures, it was not possible to conduct in-person follow-up focus group interviews to clarify the participants' ideas and confirm that saturation had been reached. An amendment to my Behavioural Ethics Approval was obtained to allow follow-up focus group questions to be completed through one-on-one over the phone interviews. A revised interview guide was created to better understand the information discussed by participants in the focus groups (See Appendix H). I revised the interview guide after listening to the audio recordings and reading the transcripts of the focus group interviews. The revised interview guide was designed to probe for greater depth and discussion from the participants, particularly around some of the novel findings from the focus group interviews. The participants received information letters via text briefing them about new data collection procedures and reminding them that their participation in the study was voluntary and could be withdrawn at any time. Despite repeated efforts to complete a follow-up interview with each participant, only two participants volunteered to participate in the phone interviews.

2.5 Verification Procedures

The rigour of this study was upheld from its outset to the completion of the final report. Mixed methods research designs include elements of rigour from both quantitative and qualitative research designs. Researchers who choose to utilize mixed methods designs must

carefully consider how they will ensure they have drawn valid conclusions because research quality is assessed differently in quantitative and qualitative research. Quantitative research is assessed through the principles of validity and reliability and qualitative research is most commonly assessed for rigour using the concept of trustworthiness (Creswell, 2014; Lincoln & Guba, 1985). There are no accepted criteria for evaluating the rigour of mixed methods research (Creswell & Plano Clark, 2011; Eckhart & DeVon, 2017). Traditionally, mixed methods research is evaluated for rigour by separately assessing the quality of the quantitative and qualitative phases. However, Eckhart & DeVon (2017) suggest that the traditional method of evaluation of rigour in mixed methods studies fails to address the integration of qualitative and quantitative methods that occurs in mixed methods research, which may lead to inaccurate assessment of the rigour of the study. Ivankova (2014) proposed that to ensure rigour in mixed methods research, the researcher should assess the quality of quantitative and qualitative methods separately, and then assess the quality of the integration of the methods.

Valid and reliable data collection tools were used in the quantitative phase (Mohammed, 2013). Data validity and reliability are key principles in assessing the quality of quantitative data and findings (Mohammed, 2013). The demographic questionnaire asked about age, self-reported gender, time since immigration, and country of origin, and was written at a Grade 5 reading level to ensure participants understood what they are being asked to share (Mohammed, 2013). The Physical Activity Questionnaire for Adolescents (PAQ-A) is a valid and reliable questionnaire for measuring physical activity levels in youth (Kowalski et al., 1997). Pedometer validity was ensured through the use of research-grade pedometers and an evidence-based description of a valid wear day. For the purpose of this study, a valid wear day was defined as greater than 1000 and less than 30,000 steps per day and greater than 10 hours of wear time (Clemes & Biddle, 2013). All participants were above the cut-off of greater than four valid days meaning no data was excluded from data analysis.

In qualitative research, several strategies should be used to ensure the credibility and trustworthiness of data and findings (Creswell, 2007). In this study, triangulation of findings, a critical friend, and thick, rich description were used to uphold the rigour of the qualitative phase. Triangulation occurs in qualitative research when findings from one method of data collection are also found by another method of data collection (Creswell, 2007). In this study, I met with each interviewer after each focus group to debrief. The purpose of these debrief meetings was to

collect any impressions or ideas that the interviewers had during the focus group interviews and determine if they had any questions about their role as an interviewer. Additionally, the factors discussed in the first focus group interview were presented at the beginning of the second interview to allow participants to provide clarification and verification of their ideas.

A critical friend was also used in this study as a method of ensuring qualitative rigour. The term "critical friend" refers to a person recruited to fulfil the role of a trusted person who asks key questions, clarifies ideas, advocates for the success of the work, and provides feedback on the researcher's work (Costa & Kallick, 1993; Williams & Todd, 2016). In this study, my critical friend was my thesis supervisor, Dr. Louise Humbert. Dr. Humbert was selected for her expertise in qualitative research, particularly with school-age youth, and her familiarity with this study. Dr. Humbert's role as a critical friend was to review the focus group interview transcripts and confirm factors that emerged from the qualitative data analysis.

Thick, rich description is used in the knowledge translation phase of qualitative research. This type of description involves providing the most detailed account of the research setting and participants as possible (Shenton, 2004). In this study, thick rich description was upheld through detailed descriptions of participants and the research setting and direct quotes to maintain the voice of the participants (Shenton, 2004). In qualitative research, it is the reader, not the researcher, who decides if the findings are transferable to other contexts. By using thick description, the reader is provided with a complete and accurate view of the boundaries of this study, which allows the reader to accurately judge whether the findings of this study are generalizable to their own contexts (Shenton, 2004).

In explanatory sequential mixed methods designs, special consideration must be given to how the findings of the quantitative phase are integrated into the purpose and execution of the qualitative phase (Ivankova, 2014). The integration phase of the present study was assessed for quality using two strategies. The first strategy ensured that results arising from the quantitative phase were "followed-up on" in the qualitative phase. In this study, focus groups were used to address the physical activity levels measured in the quantitative phase. The second strategy was to observe the interaction between the quantitative and qualitative phases at all stages in the study (Ivankova, 2014). Making multiple connections between quantitative and qualitative phases helped achieve interpretive rigour when it came to drawing conclusions from the study as a whole (Teddle & Tashakkori, 2009). Rigour was ensured first separately, in the validity and reliability

of the quantitative phase and the credibility and trustworthiness of the qualitative phase, and then together in the interaction and relationships between the two phases.

2.6 Role of the Researcher

In research that uses qualitative methods, it is important to account for the perspectives and experiences of the researcher and to consider how the researcher may influence the study itself (Creswell, 2003). My previous experiences formed the foundation from which I viewed this research throughout the entire process. As the researcher in this study, my role was to formulate the research questions, recruit participants, facilitate data collection in Phase One, organize data collection in Phase Two, analyze data from both phases, integrate the literature and form conclusions based on the findings. To begin, it is necessary for me to explain who I am and how I became interested in conducting research with newcomer youth. I think it is essential that I acknowledge the privilege I experience in Canadian society because a key element of research with newcomer youth is considering how race, culture and language may influence the opportunities that one has access to. I am a fourth generation Canadian and I have lived in the same city all my life. I have never been a newcomer. I am an English-speaking white woman with a bachelor's degree from a Canadian university and a white-sounding name; all of which award me with a certain level of privilege in Canadian society. Many newcomers to Canada do not have the same privileges that I do. Although I am not a newcomer and never have been, I have been influenced by the experiences of people close to me who immigrated to Canada with their families. In particular, my partner is a first-generation Canadian who was born in Canada shortly after his parents immigrated from the Philippines. In the Philippines, his father was an engineer and a scholar who focussed his work on improving the agricultural processes and infrastructure in his community and his mother was a registered nurse. In the late 1980s, my partner's parents chose to leave behind their families and friends and give up their professional degrees to begin a new life in Canada. As Canadian citizens, they have devoted their life's work to care for some of the most vulnerable people among us. My partner's parents continue to own and operate several care homes and pride themselves on their delicious meals and beautiful gardens.

Although his parents worked tirelessly to provide for their children, growing up in Canada presented many challenges for my partner and his siblings. A story that first sparked my interest in providing equitable physical activity opportunities for newcomer children and youth was

shared with me by my partner a couple of years ago. Although we lived in the same neighbourhood and attended the same school when we were children, our experiences with sport and recreation could not have been more different. My partner and his two siblings were the only children who were newcomers in our elementary school community. In his story, my partner described being fascinated by hockey and how most of the boys in our class were on the same community hockey team. When he was 7 years old, he convinced his father to take him to the community team registration night held in our elementary school gymnasium so he could sign up for the hockey team like the rest of his friends. He and his father walked into the school gym and past each of the sign-up tables looking for the community hockey table. When they found the hockey table, his father saw the price of the program and told him that they could not afford for him to play. Instead of signing up for hockey with the rest of the boys in his class that night, his father paid for one registration in a Tae Kwon Do class because it was the most affordable program. My partner described how he and his younger brother would attend the Tae Kwon Do class on opposite weeks so they would both get to participate.

My drive to research this topic has stemmed largely from the contrast between my partner's childhood experiences and my own. Although we grew up only a couple of blocks apart and attended the same schools, we had very different opportunities. While his parents had to prioritize spending money on food and housing over recreation opportunities for their children, I was able to participate in any activity I wanted. Growing up I took swimming lessons, played on basketball and soccer teams, attended gymnastics camps and outdoor summer camps, took piano lessons and participated in a variety of other activities that suited my interests. It's this stark comparison of our opportunities that sparked my interest in this research area. I believe in developing communities in Canada that provide children and youth who are newcomers with equitable opportunities to participate in sport and recreation.

My previous experiences formed the foundation from which I viewed this research throughout the entire process. As the researcher in this study, my role was to recruit participants, facilitate data collection in Phase One, organize data collection in Phase Two, analyze data from both phases, and form conclusions based on the findings.

2.7 Data Analysis

2.7.1 Quantitative Data Analysis

Prior to data analysis, pedometer data was first assessed for validity. A valid wear day was considered to be wear time lasting longer than 10 hours and at least four valid wear days in total were required for inclusion in the study (Clemes & Biddle, 2013). In this study, every participant had six valid days, except for one participant whose pedometer broke and as such had one less valid day. No participants were excluded for an insufficient number of valid wear days. Pedometer data output was reported in steps per day which were then used to calculate each participant's mean step count throughout the monitoring period (Clemes & Biddle, 2013). The data from the demographic questionnaire, including self-reported gender, time since immigration, and country of origin, were integrated and analyzed for frequencies. PAQ-A scores were calculated using criteria provided by Kowalski et al. (1997). All data resulting from the questionnaires and pedometers was inputted into Statistical Package for the Social Sciences (SPSS), version 26.0. Independent samples t-tests were used to compare PAQ-A scores and pedometer step counts by gender. To test for significant differences between time since immigration and PAQ-A scores and pedometer step counts, a one-way ANOVA was used.

2.7.2 Qualitative Data Analysis

Qualitative data analysis began upon entry to the School and was ongoing and iterative throughout the research process (Creswell, 2007). A fundamental feature of qualitative research is reflexive iteration (Srivastava & Hopwood, 2009). Srivastava & Hopwood (2009) suggest iteration is the “key to sparking insight and developing meaning” in qualitative research (p. 2). To ensure the data analysis process remained iterative, I continued to read on new topics that arose during data collection and debriefed with interviewers to gain any information they may have gathered throughout their time with participants. Throughout the research process, I strived to remain reflexive in my approach to the data. In this study, reflexivity involved reflecting on the ways that my personal attitudes, experiences and interests may have shaped my ideas about this research (Lincoln & Guba, 1985).

Qualitative data from focus groups was transcribed verbatim from audio-recordings by a trained research assistant. Following transcription, qualitative data analysis occurred in four steps (Morse & Richards, 2002). The first step of data analysis was to become familiarized with the data. Familiarization occurred via reading the interview transcripts multiple times to ensure a

deep grasp of the content of the transcripts. The second step was to begin coding the data using topic coding. Topic coding is the process of organizing data into categories based on specific topics (Morse & Richards, 2002). Transcripts were coded by hand. Topic coding occurred by organizing ideas, concepts, or keywords associated with physical activity behaviours into any of the five categories of the EMHP: intrapersonal, interpersonal, institutional, community or policy. Topic coding was used systematically throughout the entire data set. The third step was to group similar ideas into factors (Morse & Richards, 2002). Factor searching occurred inductively by grouping similar codes and arranging them into larger ideas. In this study, rather than referring to the findings of the qualitative phase as themes, they are referred to more accurately as factors. In this study, the data was organized into factors and themes were identified within each factor. The fourth step of qualitative data analysis was to define and name the factors. After all factors were defined and named, qualitative data analysis was completed.

CHAPTER 3

RESULTS

This study had two purposes. The first was to assess the physical activity levels of Southeast Asian newcomer youth and the second was to apply an ecological lens to identify, explore, and categorize the factors that influenced their physical activity levels. Eight Southeast Asian newcomer youth who attended a high school in a Canadian prairie city volunteered to participate in this study. A mixed methods approach was used and occurred in two phases, with the quantitative phase occurring prior to the qualitative phase. In the quantitative phase, participants were asked to complete questionnaires about their physical activity, demographics, and culture as well as wear pedometers for one week. Using the ecological model of health promotion, the findings from the quantitative phase were explored in the qualitative phase (McLeroy et al., 1988). The findings of both phases are described below.

3.1 Quantitative Results

3.1.1 Demographic Questionnaire

Seven participants were from the Philippines and one was from Cambodia and overall, participants had lived in Canada for between one to nine years. There were an even number of male and female participants and all participants were 14 years old at the time of data collection. The findings of the demographic questionnaire are presented in Table 3.1.

Table 3.1 – Demographic characteristics of participants

Pseudonym	Self-Reported Gender	Country of Origin	Time Since Immigration (Years)	Age
Andres	M	Philippines	8	14
Joaquin	M	Philippines	1	14
Gabriel	M	Philippines	3	14
Jayson	M	Philippines	9	14
Althea	F	Philippines	8	14
Belen	F	Philippines	8	14
Marisol	F	Philippines	8	14
Tevy	F	Cambodia	4	14

3.1.2 Physical Activity Measures

3.1.2.1 PAQ-A.

Results from the PAQ-A indicated that male participants reported mean physical activity levels of 2.90 ± 0.72 and female participants reported mean physical activity levels of 2.97 ± 0.44 . To interpret the meaning of the PAQ-A score, criteria developed by researchers Thompson and Hannon (2012) for evaluating perceived physical activity levels among high school students was used. Thompson and Hannon (2012) categorized PAQ-A scores rounded to 1-2 as low active, 3 as moderately active and 4-5 as highly active. Using the criteria developed by Thompson & Hannon (2012), seven participants reported moderate physical activity levels and one participant reported a low physical activity level. Overall, the mean physical activity score of all participants was $2.93 (\pm 0.55)$, indicating a moderate physical activity level. An independent samples *t*-test was used to compare PAQ-A scores by gender and no significant difference was found ($p > 0.05$). A one-way ANOVA was used to compare PAQ-A scores by time since immigration (years) and again no significant difference ($p > 0.05$) was revealed. Table 3.2 presents mean PAQ-A scores for male and female participants as well as an overall mean score for the entire group of participants.

Table 3.2 - Mean PAQ-A scores

	PAQ-A
Male	2.90 ± 0.72
Female	2.97 ± 0.44
Overall	2.93 ± 0.55

Mean values are presented ± standard deviation.

No significant differences between groups were found.

3.1.2.2 Pedometers.

Pedometer data revealed that male participants had an average of 9015.08 ± 1169.62 steps per day while female participants had an average of 8481.17 ± 4067.34 steps per day. Mean steps per day were compared by gender using an independent samples *t*-test and there were no significant difference between groups ($p > 0.05$). Mean steps per day were also compared by time since immigration (years) using one-way ANOVA and again there were no significant differences ($p > 0.05$).

Table 3.3 - Mean steps per day

	Pedometer (steps per day)
Male	9015.08 ± 1169.62
Female	8481.17 ± 4067.34
Overall	8748.12 ± 2785.21

Mean values are presented ± standard deviation.

No significant differences between groups were found.

Canadian researchers Colley, Janssen, and Tremblay (2012) proposed a step count of 12,000 steps per day to determine if youth are meeting the recommended guideline of 60 minutes of moderate-to-vigorous intensity physical activity every day (Tremblay et al., 2016). The recommendation of 12,000 steps attempts to approximate exercise intensity and was developed by comparing accelerometer-measured step counts to accelerometer-measured activity levels (Colley et al., 2012). To be considered adherent to Canadian physical activity guidelines, participants in this study must have achieved at least 12,000 steps on each valid wear day of pedometer measurement. Seven participants had six valid days of measurement and one participant had five valid days. Table 3.4 represents the number of participants in each group that

had a daily step count of at least 12,000 steps per day and could be assumed to be meeting physical activity guidelines.

Table 3.4 - Percentages of participants meeting Canadian physical activity guidelines using standards proposed by Colley, Janssen, & Tremblay (2012)

	Males	Females	Overall
Meeting MVPA Guidelines	0% (0)	0% (0)	0% (0)
Not Meeting	100% (4)	100% (4)	100% (8)

Percentages are presented along with (n).

In 2016, the Canadian 24-hour Movement Guidelines proposed that children whose mean daily moderate-to-vigorous physical activity participation was at least 60 minutes per day could be considered adherent to Canadian physical activity guidelines (Tremblay et al., 2016). When the 2016 definition of the Canadian physical activity guidelines was applied to the pedometer data in this study, 12.5% of the participants were meeting the guidelines. Table 3.5 depicts the percentage of participants meeting physical activity guidelines when the definition was operationalized as 12,000 mean steps per day rather than 12,000 steps daily.

Table 3.5 - Percentages of participants meeting Canadian physical activity guidelines using definition proposed by Canadian 24-hour movement guidelines

	Males	Females	Overall
Meeting MVPA Guidelines	25% (1)	0% (0)	12.5% (1)
Not Meeting	75% (3)	100% (4)	87.5% (7)

Percentages are presented along with (n).

3.2 Qualitative Results

Following the quantitative research phase, participants were asked to participate in focus groups to discuss the factors that influence their physical activity levels. The interview guide used in the focus groups was designed based on the McLeroy et al.'s (1988) ecological model of health promotion and sought to identify influential factors at each ecological level. The participants identified factors in each level of the EMHP that impacted their physical activity behaviours (see Figure 3.1).

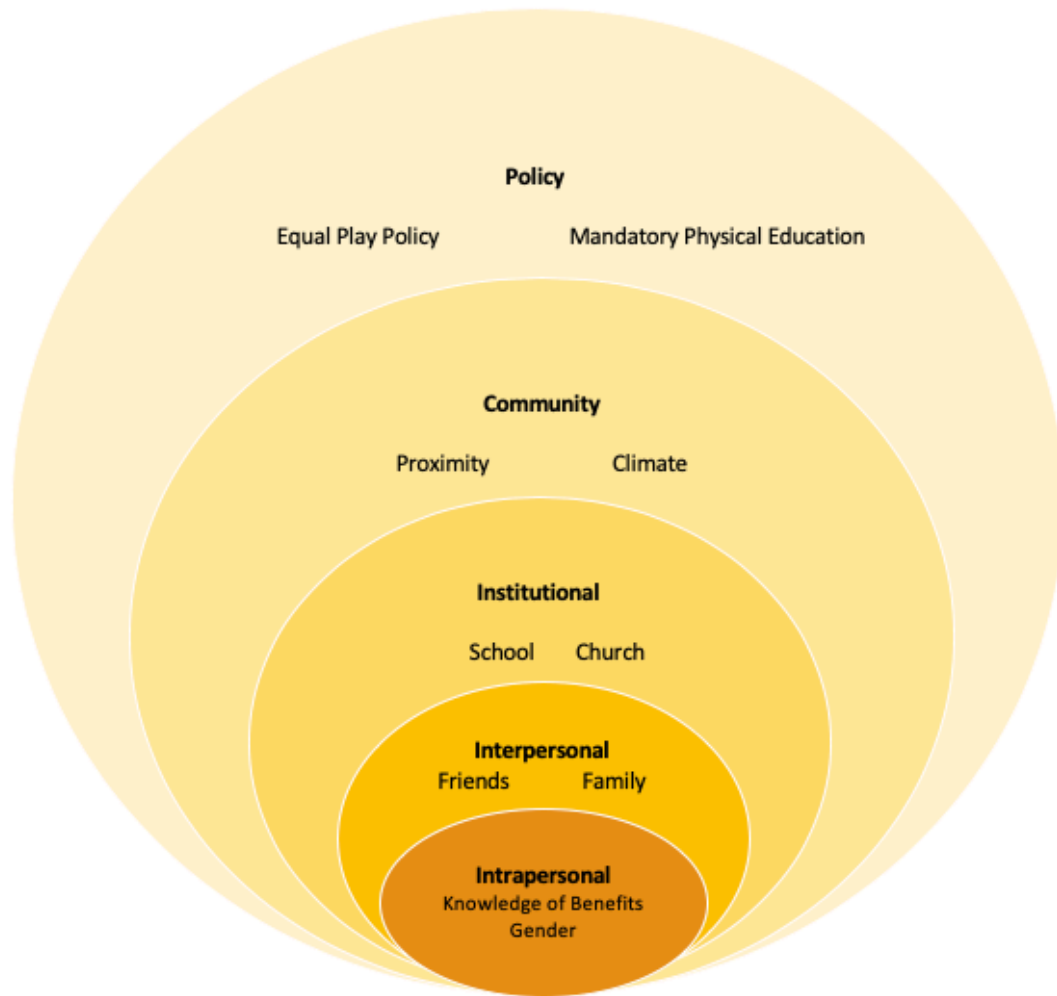


Figure 3.1 – Factors that influenced participants’ physical activity using the ecological model of health promotion (McLeroy et al., 1988).

3.2.1 Intrapersonal Factors

When asked if any intrapersonal factors influenced their physical activity, participants offered several examples. The factors that participants reported within the intrapersonal level were knowledge of physical activity benefits and their gender.

It was evident in their discussions of physical activity that participants were able to identify a number of ways they benefited physically and mentally from participating in physical activity. Some benefits of physical activity identified by participants included improved physical fitness, staying healthy, and having fun. Some participants discussed the benefits for themselves in the “long run” if they were physically active at this point in their lives.

“I think it’s, to me it’s very important because being active in like, like right now, is going to serve you a big benefit in the long run because it gives you strength and gets you fit.”

(Andres)

One participant shared how physical activity makes him feel now that he is a healthy body weight because he had been overweight for much of his childhood.

“It makes me like happy, cause like at least I have more energy than the old me, because the old me doesn’t have like a lot of energy and today I have a lot of energy, because I improved my agility, my jumping and like, and um, yeah. Like I just improved my body.”

(Gabriel)

The male participants in this study were especially interested in playing basketball. At times, it seemed as though their discussion of physical activity was synonymous with basketball.

“I really love this sport because, I put my heart and soul into like efforts and I watch like basketball every [day]. It’s like my passion to play one sport that I love.” *(Gabriel)*

Interesting findings emerged regarding whether participants felt gender was a factor that influenced their physical activity behaviour. The male participants felt that they were more active than girls, but the female participants did not feel there was a gender difference in their physical activity levels. The male participants discussed reasons why they thought girls were not as physically active as boys such as wanting to look pretty or being lazy.

“Cause boys, they want their strength to be good or something, they lift weights, and girls sometimes doesn’t because sometimes there’s some reason. Some girls are lazy to go to the gym, like they just do their makeup or something.” *(Gabriel)*

However, the female participants did not identify a gender difference and felt that their physical activity behaviours were not affected by the fact that they are girls.

“I feel like I’m just as active as boys.” *(Althea)*

“Me too.” *(Tevy)*

3.2.2 Interpersonal Processes and Primary Groups

In the interpersonal level of the EMHP, the participants discussed two factors that influenced their physical activity: friends and family.

The first factor discussed was the important role friends played in their physical activity behaviours. Participants described a number of ways that their relationships with friends influenced their physical activity behaviours. Some participants explained that their friends

helped them be more physically active by encouraging them to try new things like try out for the volleyball team.

“Sometimes like my friends, they get me into like, sports, like they encourage me, cause like I hang out with them the most that’s when I do physical activity.” (Althea)

One participant seemed to think it was obvious as to why she was physically active with her friends given that her friends play the same sports as her and they are already together all the time.

“I hang out with them the most and they do the [same] sport as I do so...” (Tevy)

While others described being physically active with their friends as a way of socializing. For example, going to the park to play basketball with a group of friends. One participant explained that when he was physically active with his friends, as opposed to when he was alone, he was able to express himself.

“Because when you’re with your friends you can express yourself more, because humans are like social creatures, so they like to be around other people.” (Andres)

The second factor participants discussed was the influence of their families on their physical activity behaviours. Some participants were quick to connect seeing their parents being physically active with feeling like they should be physically active too.

“Cause my parents themselves are really active and that’s why I want to be active too.” (Belen)

However, not all participants had physically active families. For example, one participant shared that the people in his family are too busy with work and school to be physically active.

“My parents, actually my whole family except me aren’t really that active. Like to be honest because like my brother and sister are caught up in so much work, ..., my brothers in schooling, my parents started doing like two part[-time] jobs, so there’s like no time.” (Andres)

Almost all participants described being physically active to fulfill their parents’ wishes. Some participants explained that their parents encouraged them to be physically active because of the beliefs that their parents held about physical activity and health.

“My parents want me to be physical, physical fit to be like if you can sick too easily, like if you’re more fit you won’t get sick that much like other people who doesn’t get fit.” (Gabriel)

Both male and female participants described having a number of responsibilities at home like childcare and housework. However, instead of considering their home responsibilities as a barrier to their physical activity, they portrayed a kind of optimism about their roles and pointed out a number of ways they were active at home. For example, some participants described being responsible for younger siblings at home but did not feel that their responsibility took away from their opportunities to be physically active.

“I’m responsible for taking care of my little brother, but we are active together. We can go to the park or play in the yard” (Belen)

Other participants described the kinds of tasks they are responsible for at home, for example, cleaning the car, shovelling snow, and doing laundry. However, they felt that their home responsibilities increased their physical activity rather than limiting their opportunities to be physically active.

“You move a lot. Your feet moves. Your hand moves. Maybe like shovelling outside, the snow. You get out of breath.” (Andres)

3.2.3 Institutional Factors

Participants identified schools and churches as two prominent institutions in their lives and offered several examples of how these institutions influenced their physical activity behaviours.

Participants acknowledged a number of ways their school influenced their physical activity behaviours. A prominent point of discussion was the many different activities offered at their school. The participants felt that having a variety of options to choose from encouraged them to participate in the many opportunities provided at their school.

“Right now, I’m on the badminton team, I still like to play basketball, I like to play baseball, there’s soccer, there’s volleyball, there’s karate, there’s the punching bag, there’s running, there’s long jump, there’s broad jumping, yeah so many more. It makes you feel like you should try something.” (Belen)

In addition to wide variety of options provided at school, participants also discussed the encouragement they received from teachers to participate in physical activity at school.

“Yes, they’re pushing you to play any kind of sports. Yeah like anyone, just like join them. It encourages, like they ask like you join sports to get more fit or go on the Jumpstart to do exercise after school to get more fit.” (Joaquin)

One participant felt that his high school environment encouraged him to be physically active.

“[Our high school is] really good with like making you active and encouraging you to be active because [our high school is] all about like you join as much sports as possible and they’re always down for that.” (Andres)

Participants frequently mentioned that they felt fortunate to attend a smaller school, where the pool of potential athletes for school teams was smaller. They often compared the opportunities available to them at their current high school to what they expect their opportunities would be like at a much larger nearby high school.

“I feel like because in [larger nearby high school] it’s a really big school with a lot of people, so maybe you tried for the basketball team and you didn’t get in so you wouldn’t get to play anymore.” (Andres)

In addition to viewing their school as an institution that provided them with opportunities to be active, some participants discussed how their involvement in religious institutions influenced their physical activity behaviours. They explained that their participation in youth groups often afforded them opportunities to be active.

“Yeah we’re very active. Our youth club group is very active, like every 5 seconds we would like dance.” (Marisol)

Participants discussed a variety of activities they took part in while at youth group including dance, volleyball, ping-pong, and camping trips in the summer. Some participants noted that being physically active with their youth group was about more than physical activity. One participant expressed that she felt that being physically active with her youth group helped to foster a sense of community.

“[We are physically active at youth group] to be able to like have fun with each other and to connect with each other.” (Belen)

3.2.4 Community Factors

At the community level, participants identified proximity to physical activity opportunities and the Canadian climate as two factors that influenced their physical activity behaviours.

Nearly every participant mentioned proximity to indoor and outdoor spaces to be active as factors that influenced their physical activity. Participants expressed that it was easier to be

physically active when spaces for physical activity, such as leisure centres and public parks, were nearby.

“Because if you have a basketball court near, or some fields close [but then] if there is a basketball court that like you have to maybe drive there or like bike there. It might resist you from actually playing.” (Andres)

Furthermore, many participants expressed that they were responsible for finding their own transportation, which increased the burden of accessing physical activity opportunities outside of their neighbourhoods. One participant described his experience trying to coordinate transportation to a leisure centre outside his neighbourhood.

“Let’s say if you want to you go to [a leisure centre], to play basketball, it’s an indoor basketball court. And it takes you what like 30 minutes, maybe an hour to [bus] there? So, if you leave at like 3, and pay for like a few hours, you have to leave early so you can get back home.” (Andres)

Participants also shared that certain activities that were located outside of their neighbourhood were not accessible to them.

“For example, if you want to go swimming, in my area there’s no swimming pool, so I have to go somewhere else and I don’t drive so I don’t go.” (Jayson)

Although participants described proximity to physical activity opportunities as positive influences on their physical activity behaviours, it was evident that this feeling was dependent on the season. The participants seemed to only access outdoor parks and courts during the summer.

“I live close to the park, so like during summer I like go there.” (Althea)

Participants discussed climate as an influence on their physical activity behaviours and often compared the climate of Canada to the climate of their country of origin. They were especially concerned with cold weather and being confined indoors during winter months.

“Cause when its winter, the basketball courts are like, they got ice on them or snow so you can’t play.” (Jayson).

A few of the participants felt it was easier to be physically active outside before they came to Canada.

“I would play [basketball] every morning when I lived in the Philippines. Cause I lived close to a court and it was way warmer outside. In Canada, I can’t play basketball outside so much.” (Gabriel)

One of the participants felt that it was obvious that she would be less physically active in the winter than in the summer.

“Well it’s winter so of course it’s going to be lazying around.” (Marisol)

Some participants discussed their parents’ concerns about neighbourhood safety and expressed that the safety of a neighbourhood “could” affect someone’s physical activity. This sentiment turned out to be more of a hypothetical influence than an actual influence on the physical activity of the participants in this study. When asked about whether the neighbourhoods where they lived were safe, all participants felt that they lived in safe neighbourhoods. However, some participants felt that the neighbourhood where their high school was located was not as safe as the neighbourhood where their homes were located and used phrases like “sketchy” and “ghetto” to describe their high school’s neighbourhood. However, no one felt that the safety of the neighbourhood where the high school was located influenced their physical activity in any way.

3.2.5 Policy Factors

Participants discussed two factors in the policy level of the EMHP that influenced their physical activity behaviours. Both of the policies identified by participants were related to their experiences with physical activity at school. While policies at school represent an interaction between institutional and policy factors, the following factors have been categorized as policy factors due to the nature of how they arose from data collection. The participants only discussed the following factors when asked specifically about policies that influenced their physical activity behaviours. Furthermore, the participants did not discuss school-based policies when asked about how their school influenced their physical activity behaviours.

One participant discussed the need for a policy that mandated requiring equal playing time on school sports teams. He explained that being selected for a high school sports team did not necessarily result in increased physical activity.

“If you get benched more, you won’t get a lot of minutes than other people. Like who started the game, then you sitting there the whole time so you don’t play at all.” (Gabriel)

A school division policy that participants felt increased their physical activity was the policy that required all students in Grade Nine and Ten to enrol in physical education. Some participants discussed that this policy increased their physical activity because since they were in Grade Nine they had to take physical education and they looked forward to continuing to

participate in physical education in Grade Ten. However, they speculated that their participation in physical education might not continue when the course became optional in Grades Eleven and Twelve.

“I think in Grade 12 it’s optional to have gym or something like that so some people might not want to have that and they’ll be less active.” (Althea)

3.2.6 Interactions Among Levels

The participants discussed two factors that could not be categorized into a single level of the EMHP because they were the result of interactions among factors at multiple levels. These two factors were the cost of participation in physical activity and their knowledge and comprehension of English. Additionally, the school-based policies discussed in the previous section reflect interactions between levels of the EMHP. However, due to the nature of the discussion around school-based policies in the focus groups, I chose to categorize school-based policies at the policy level of the EMHP.

A factor that was discussed by the males in this study was the cost of participation in certain physical activity opportunities. Many male participants discussed difficulty accessing certain types of leisure activities due to cost; however, female participants did not mention cost. For example, one young man felt that the cost of admission to swimming pools prevented him from going swimming.

“I was thinking about like going swimming, because if you’re going to a swimming pool it costs money to like to be there right? Like its I don’t know like \$13 maybe?” (Andres)

Another young man described the costs associated with playing basketball with club teams. He felt that playing on a club basketball team was not an option for him due to the high costs.

“That’s like joining the team, like [club team] that’ll cost a lot, you need to pay.” (Gabriel)

Almost all of the participants had the shared experience of learning English after arriving in Canada. One participant shared an experience that described the challenge of low English fluency in Canadian physical activity settings.

“I [asked], what do we do coach? And he was like do drills. And I was like what are drills? Then he [said], you don’t know drills? You play basketball. Then I was like how am I supposed to know? I [hadn’t] even made the basketball team yet.” (Gabriel)

Gabriel's example demonstrates how misunderstanding terminology can lead to negative experiences with physical activity. Aside from the example provided by Gabriel, the participants did not discuss any other negative experiences with physical activity while learning English. Alternatively, participants described that being physically active with other young people with the same heritage language as themselves allowed them to help each other navigate English dominant physical activity settings more easily.

“Cause I like, I've been here in Canada for like 4 years, so I don't know that much English, but Joaquin can help me.” (Gabriel)

CHAPTER 4

DISCUSSION

The purpose of this study was to understand the physical activity levels of a group of Southeast Asian newcomer youth and explore the factors that influenced their physical activity behaviours. The study used an explanatory sequential mixed methods approach and occurred in two phases. The first phase was quantitative and measured physical activity using direct and indirect measures. The results of the quantitative phase revealed that through an indirect measurement of physical activity, the participants perceived themselves as moderately physically active and through direct measurement, between 0%-12.5% of the participants were meeting the recommended physical activity guidelines. Additionally, there was no association between gender or time since immigration and the direct or indirect measures of physical activity. Following the quantitative phase, the qualitative phase utilized focus groups and a semi-structured interview guide to explore the factors that influenced the physical activity behaviours of the participants. This guide was based on McLeroy et al.'s (1988) EMHP and posed questions that addressed all five levels of the model. The qualitative phase established that physical activity behaviours of Southeast Asian newcomer youth are influenced by factors in all five levels of the EMHP as well as the interactions between factors at different levels.

4.1 Physical Activity Levels

The results from the PAQ-A and pedometers represent indirectly and directly measured physical activity levels, respectively. The findings from the two measures are not directly comparable because the units are not the same; however, a general comparison can be made between the level of physical activity participants believe they achieved and how physically active they actually were based on direct measure (Adamo, Prince, Tricco, Connor-Gorber, & Tremblay, 2009). The PAQ-A provided a measure of the participants self-reported physical activity level in the previous week (Kowalski, Crocker, & Donen, 2004). Data resulting from the PAQ-A revealed that participants reported themselves to have moderate levels of physical activity, with a mean physical activity score of 2.93 (\pm 0.55).

Physical activity was also measured directly through the use of pedometers. An important concept when using direct physical activity measurement is that conclusions about adherence to physical activity guidelines differ based on the operationalized definition of the guideline. The

Canadian physical activity guidelines for children ages 6-17 indicates that children should acquire 60 minutes of moderate-to-vigorous intensity physical activity (MVPA) every day (Tremblay et al., 2016). Colley et al. (2012) determined that a step count of 12,000 steps per day correlates with 60 minutes of MVPA per day. Thus, for the purpose of this study, a step count of 12,000 steps per day for all valid wear days of the monitoring period indicated that a participant was meeting Canadian physical activity guidelines. A comparison of individual participants' daily step counts to the Canadian physical activity guidelines equivalent of 12,000 steps each day indicated that none of the participants in this study met the Canadian guidelines.

Another way to present pedometer-measured physical activity levels is to use mean daily step counts. In 2016, the Canadian 24-Hour Movement Guidelines proposed that youth are considered adherent to Canadian physical activity guidelines if their mean daily MVPA is at least 60 minutes per day (Tremblay et al., 2016). When mean daily step counts were compared to 12,000 steps per day (the equivalent for meeting physical activity guidelines) it was found that 12.5% of participants in this study met the guidelines. Therefore, depending on the operationalized definition of physical activity guidelines, the percentage of participants thought to be meeting physical activity guidelines changed from 0% to 12.5%. A review of accelerometer data from the Canadian Health Measures Survey data from 2007 to 2015 found a similar relationship between the operationalized definition of physical activity and the percentage of participants who met physical activity guidelines (Colley et al., 2017). The analysis by Colley et al. (2017), found that 33% of Canadian children and youth were meeting physical activity guidelines when the guidelines were operationalized as mean daily MVPA of at least 60 minutes compared to 7% when participants were required to achieve 60 minutes of MVPA daily. Further evidence of this discrepancy based on operationalized definitions was demonstrated by the 2019 CANPLAY study conducted by the Canadian Fitness and Lifestyle Research Institute. In 2019, the CANPLAY study found that 14% of Canadian children and youth between the ages of 5-19 years meet 12,000 steps on 6 valid wear days, however 41% achieve an average of 12,000 steps per day (Canadian Fitness and Lifestyle Research Institute, 2019). Regardless of the operationalized definition of the Canadian physical activity guidelines, the participants in this study were less physically active than Canadian-born children.

While the number of participants in this study is small, to my knowledge this is the first study to directly measure the physical activity levels of Southeast Asian newcomer youth in

Canada. The findings of this study are supported in the existing literature that has identified youth who are newcomers have low levels of physical activity (Kukaswadia et al., 2014). It is important to note that the pedometer measurement period captured only a snapshot of the participants' overall physical activity levels. The participants' physical activity levels were only measured for six days in early February. As such it is entirely possible that their physical activity levels would be different if measured for longer or during a warmer season. Interestingly, the participants in the current study reported moderate physical activity levels on the PAQ-A, but when their physical activity levels were directly measured it was revealed that either zero or one participant was meeting physical activity guidelines depending on the definition. This finding is also supported by existing literature that has found that self-reported physical activity measures may over report youth physical activity levels when compared to direct measures (Plasqui et al., 2013). To my knowledge, this is the first study to establish the over-reporting of self-report physical activity among Southeast Asian newcomer youth.

4.1.1 Gender Differences

Previous research has indicated that physical activity levels among adolescents are influenced by gender and that boys are more likely to meet physical activity guidelines than girls (Nadeau, Letarte, Fratu, Lebel, & Waygood, 2016; Godin, Anderson, Lambert, & Desharnais, 2005). In this study, it was expected that male participants would have higher levels of physical activity than female participants. However, when PAQ-A scores and pedometer measures were compared by gender, there were no significant differences between male and female participants. Although not statistically significant, when mean daily step counts were compared to the recommended number of steps per day, one male met the physical activity guidelines compared to zero female participants. Due to the sample size it is difficult to make conclusions as to whether a gender difference in physical activity levels existed among the participants.

4.1.2 Acculturation and Physical Activity Levels

In this study, time since immigration was used as a proxy measure for acculturation with longer times since immigration indicating a higher degree of acculturation (Kukaswadia et al., 2014). It has been reported that most newcomer youth experience an increase in physical activity levels the longer they live in Canada (Kukaswadia et al., 2014). However, in a study by Kukaswadia et al. (2014), using data from the Canadian Health Behaviour in School-Aged Children Study, Southeast Asian newcomer youth were found to be less physically active than

newcomers from other countries of origin and their physical activity levels did not increase as their time since immigration did. The data from the current study supports the findings of Kukaswadia et al. (2014) as there were no significant differences in reported or measured physical activity when compared by time since immigration.

4.2 Ecological Influences of Physical Activity Behaviours

4.2.1 Intrapersonal Factors

Participants discussed two intrapersonal factors that influenced their physical activity behaviours. These factors included the participants' knowledge of the ways they benefit from being physically active and their gender.

4.2.1.1 Knowledge of physical activity benefits.

All participants identified numerous benefits of being physically active. They provided examples of the positive effects on both their physical and mental health due to their participation in physical activity. A study by Shea & Beausoleil (2012), also found that newcomer youth associate physical activity with health and wellness. In this study, participants discussed engaging in physical activity to improve their physical fitness, feel happy, and acquire long-term health benefits. This finding supports previous research conducted by Doherty & Taylor (2007) who determined that youth who are newcomers are knowledgeable about the psychological and physical benefits of physical activity. In the current study, participants were not explicitly asked to compare how much one factor influences their physical activity behaviours compared to another; however, Doherty & Taylor (2007) found that physical and psychological benefits were some of their participants' most important motivations for engaging in physical activity. A review of facilitators and barriers of the physical activity behaviours of youth found that young people who are more physically active could often identify more benefits of physical activity than youth who have low levels of physical activity (Martins et al., 2015). The participants in this study also discussed enjoying physical activity and feeling confident participating in physical activity in Canada. By expressing confidence and enjoyment of physical activity the participants in this study may have felt that they had the skills to participate. Fundamental motor skills can also be thought of as motor competence and are defined as the degree of skilled performance in a wide range of motor tasks and include the quality and control of the movement, as well as movement coordination (Gabbard, 2015). Adolescents who perceive themselves as having a greater degree of motor competence are more likely to be motivated to participate in physical activity (Meester

et al., 2016). It is possible that the young newcomers in this study engaged in physical activity because they felt confident in their motor abilities.

4.2.1.2 Gender.

The discussion of gender in the interviews produced interesting findings. Rather than discuss how their gender influenced their own physical activity levels the male participants in the study discussed reasons why they thought girls did not participate in physical activity as much as they did. Some male participants felt that boys were physically active to look fit, but girls were more concerned with looking pretty and thus spent more time on make-up. However, female participants did not consider their gender to be a factor that influenced their physical activity behaviours. Additionally, the quantitative results indicated there was no statistically significant gender difference between indirect physical activity levels. Using direct measure and the Canadian 24-Hour Movement Guidelines operationalized definition, one of the male participants met physical activity guidelines compared to zero female participants, although this finding was not statistically significant. To the best of my knowledge, there have not been any Canadian studies examining the influence of gender on the physical activity levels of Southeast Asian newcomer youth. While the physical activity levels of the female participants in this study did not appear to be influenced by their gender, more research is needed with larger numbers of youth to determine conclusively whether Southeast Asian newcomer youth experience physical activity differently based on their gender.

4.2.2 Interpersonal Processes and Primary Groups

When asked about how their interactions with other people influenced their physical activity, participants discussed two important interpersonal factors: their friends and their parents.

4.2.2.1 Friends.

Being active with friends emerged as a factor that positively influenced the participants' physical activity. All participants reported that they enjoyed being physically active with their friends and did so regularly. A systematic review of qualitative studies that examined adolescent perspectives on the barriers and facilitators of physical activity by Martins et al. (2015) noted that every study in their review discussed the role of friends. Following their review, Martins et al. (2015), concluded that friends can positively and negatively influence the physical activity behaviours of youth. The concept that friends can be either a facilitator or a barrier to physical

activity in youth is well documented in the literature (Salvy et al., 2009; Duncan, Duncan, & Stryker, 2005; Martins et al., 2015). Friends can positively influence physical activity behaviours of youth as friends often provide encouragement and create more supportive and entertaining physical activity experiences (Martins et al., 2015; Maturo & Cunningham, 2013). Additionally, the presence of friends can make physical activity experiences more comfortable and safer for young people. Feeling comfortable and safe may be especially important for youth who are newcomers who have reported social exclusion as a barrier to physical activity (Martins et al., 2015; Doherty & Taylor, 2007). On the other hand, if friends are not physically active the presence of friends can negatively influence the physical activity behaviours of youth (Martins et al., 2015; Maturo & Cunningham, 2013). The participants in this study described only positive influences from friends. For instance, participants shared that they enjoyed physical activity with their friends because it was an opportunity to express themselves and socialize with each other.

It has been suggested that newcomer youth may benefit from being physically active with Canadian-born youth (Doherty & Taylor, 2007). A study by researchers Doherty & Taylor (2007) found that newcomer youth viewed physical activity as an opportunity to socialize with Canadian-born youth and familiarize themselves with Canadian culture. However, participants in the current study only discussed physical activity as an opportunity to socialize with their existing friends rather than as a way to forge new friendships with their Canadian-born peers. Further discussion indicated that most of the participants in this study were friends with other adolescents of similar cultural backgrounds.

4.2.2.2 Parents.

A factor discussed by all participants was the support their parents gave them to be physically active. One way in which participants felt their parents supported their physical activity was through words of encouragement. Participants described their parents encouraging them to engage in physical activity to help them stay healthy. Some participants explained that their parents believe that physical activity improves health and prevents illness. The findings of the current study contradict previous research that depicted immigrant parents in Canada as preoccupied with the academic success of their children and not supportive of their children's participation in physical activity (Shakya et al., 2010). Instead, the parents of participants in this study purposefully encouraged their children's physical activity by sharing their beliefs about the benefits of physical activity. Previous research examining how parents influence their children's

physical activity has indicated that parental beliefs and encouragement are associated with increased physical activity levels of their children (Trost et al., 2003).

Another way in which parents influenced the participants' physical activity behaviours was through being physically active themselves. Several participants discussed their parents' physical activity as a factor that influences their own physical activity. Participants described feeling more motivated to be physically active because their parents are physically active. Previous research has found that the physical activity behaviours of parents are important influences on the physical activity behaviours of children (Trost et al., 2003). Overall, parental influence was a key factor discussed by participants concerning their beliefs about physical activity and their physical activity levels.

4.2.3 Institutional Factors

Participants described schools and churches as two prominent institutions that influenced their physical activity behaviours. It was evident in focus group discussions that these two institutions were key sites for physical activity in the lives of the participants.

4.2.3.1 School.

Participants described feeling encouraged by school staff to participate in physical activity at school. Interestingly, in my many discussions with Ms. Gomez, there was no mention of any school policies or initiatives designed to increase physical activity among students. However, participants reported feeling very encouraged by staff to participate in school-based physical activity opportunities. The simple act of encouraging students to participate in physical activity has been demonstrated to increase physical activity levels among youth (Hobin et al., 2012). A study examining school features associated with physical activity among high school students in Ontario found that schools that actively encourage physical activity were successful at increasing physical activity levels among their students (Hobin et al., 2012). Importantly, in this study participants were not simply encouraged to be more physically active; they were specifically encouraged to participate in low-cost physical activity opportunities. Participants described being encouraged to join school sports teams and intramural leagues as many teachers understood these school-based opportunities were readily available to newcomer youth, as opposed to receiving general encouragement to be more physically active. The participants in this study demonstrated satisfaction with their school's efforts to provide physical activity opportunities. In a study with newcomer youth in Newfoundland, researchers Shea & Beausoleil (2012) found that their

participants were dissatisfied and frustrated by their high school's lack of physical activity opportunities. The findings of Shea & Beausoleil (2012) are opposite to the findings of this study. It was apparent that the direct approach taken by the school was instrumental in engaging the participants in physical activity at school.

Participants also described the wide variety of physical activity opportunities available to them at school as a factor that positively influenced their physical activity behaviours. For example, participants discussed that at school they could participate on school teams and individual sports. In addition to a variety of sports teams, the school in this study also provided free physical activity opportunities that were popular among students. For example, the school ran a robust supervised intramural basketball league at lunch where students had an opportunity to play basketball. Researchers Bocarro, Kanters, Casper, & Forrester (2008) wrote that the combination of intramural sports leagues with a school environment that encourages physical activity can have powerful positive effects on the physical activity levels of high school youth. Intramural sports leagues are especially positive for youth physical activity because they are inclusive to all skill levels and function with very few barriers to the participant (Bocarro et al., 2008). Furthermore, intramural leagues may increase participation in lifelong physical activity by creating positive physical activity experiences for young people (Bocarro et al., 2008). The intramural league at the school in the current study was very popular among male participants. In fact, on multiple occasions, male participants chose to play intramural basketball at lunch instead of attending data collection sessions for this study. The intramural basketball league was a good example of how the school maximized their resources to provide physical activity opportunities for their students. Interestingly, the female participants did not discuss intramural leagues. Although Bocarro et al. (2008) wrote that intramural leagues are designed for both boys and girls, multiple studies have identified that adolescent girls choose to participate less often in physical activity opportunities that involve competition (Sulz et al., 2010). The female participants in this study were also involved in scholastic sports teams; however, they also discussed enjoying non-competitive physical activity like dance and walking. It is possible that female Southeast Asian newcomer youth would benefit from free physical activity opportunities that did not emphasize competition. Previous research has indicated that more opportunities to be active at school increased physical activity levels among youth of both genders (Sallis et al., 2001, Bengoechea, Sabiston, Ahmed, & Farnoush, 2010). All participants in this study greatly benefited from having

a number of accessible physical activity opportunities available to them at school as well as a school environment that encouraged them to participate.

It is important to note that Green High School was asked to participate in this study due to its high number of students who were Southeast Asian newcomers. During my time at the high school, I noted that Southeast Asian newcomer youth made up the majority of students at Green High School. It is possible that the participants in this study received more culturally relevant and accessible opportunities for physical activity because Southeast Asian newcomer youth made up such a large proportion of the students that attended Green High School. As such it may also be possible that Southeast Asian newcomer youth who attend other high schools may not have access to the same physical activity opportunities at school as the participants in this study.

4.2.3.2 Church.

Some participants discussed the physical activity opportunities offered by their churches. In particular church youth groups, provided opportunities for physical activity such as volleyball, dance, and summer camping trips. Youth groups, sometimes referred to as youth ministry, are common among Christian churches and typically function to engage youth in religious teachings outside of church service. Participants described being involved in physical activities such as dance and volleyball while attending their church youth group. The participants in this study explained that being physically active with the other young people at youth groups helped them develop feelings of connection and social inclusion within their group. Researchers Shakya, Khanlou & Gonsalves (2010) found that newcomer youth frequently found support and comfort during settlement in their religious institutions.

Interestingly, little research exists on the influence of the relationship of church youth groups on physical activity behaviours in newcomer youth in Canada. Several participants attended the same weekly church youth group and this group was comprised of predominantly Filipino youth. For participants in this study, attendance at a church youth group was a way of participating in faith-based activities while connecting with young people who were like them. Faith-based youth groups may be an important prospect for offering physical activity opportunities for newcomer youth. Previous research from the United States has indicated that churches can be successful sites of physical activity interventions for youth (Thompson, Berry, & Hu, 2013). However, the idea that involvement in religious institutions may provide physical activity opportunities for newcomer youth has not been researched extensively.

It is important to note that Southeast Asia is a geographic region of vast cultural diversity and includes almost all major religious groups in the world. While the participants in this study discussed their participation in Christian churches, it is understandable that many newcomers from Southeast Asia may not attend Christian church services, and thus, may be involved in different religious institutions, or perhaps do not practice religion. It is not known whether Southeast Asian newcomer youth with religious practices other than Christianity have the same faith-based physical activity opportunities as the participants in this study.

4.2.4 Community Factors

When discussing factors at the community level that influence their physical activity behaviours, participants described proximity to recreation opportunities and seasonal climate as key factors.

4.2.4.1 Proximity.

Nearly all participants discussed a feature of their neighbourhoods' built environments, known as proximity, as a factor that influenced their physical activity behaviours. Specifically, participants described the proximity of their homes to outdoor spaces as positively influencing their physical activity. The outdoor spaces frequently discussed by participants included recreation spaces available to the public at no cost such as parks, playgrounds, outdoor courts, and outdoor skating rinks. Past studies have found that the proximity of physical activity opportunities, including access to parks and greenspaces, can positively influence the physical activity behaviours of youth (Hughey et al., 2017; Humbert et al., 2006; Ding et al., 2011). In addition, proximity to outdoor spaces has been associated with increased physical activity and decreased body mass index (BMI) in adolescent populations (Besenyi et al., 2016; Hughey et al., 2017). The participants discussed that they were often responsible for their own transportation, which made it difficult for them to be physically active outside of their neighbourhoods. In a previous study with youth who were newcomers to Canada, researchers Shea & Beausoleil (2012) found that because participants lacked access to transportation, they were not able to participate in physical activity opportunities that they could not walk to. Given that the participants in this study had difficulty accessing transportation and high-cost programs, it was understandable that they relied on outdoor spaces in their neighbourhoods for physical activity opportunities. Public parks and outdoor recreation spaces that were easily accessible by walking and did not require a fee to use provided critical opportunities for physical activity for the

participants in this study. Interestingly, researchers Shea & Beausoleil (2012) noted that their participants were not able to be physically active in their neighbourhoods due to a lack of proximity to greenspace and public facilities. It is encouraging that, although the young newcomers in this study discussed lack of transportation and a need for low and no-cost physical activity opportunities, they were still able to be physically active in their own neighbourhoods. Importantly, the participants in this study did not consider the neighbourhoods where they lived to be unsafe. Although they felt that the neighbourhood where their high school was located did have issues with safety; however, they did not feel that the safety of their high school's neighbourhood influenced their physical activity behaviours.

4.2.4.2 Climate.

Many participants described the Canadian climate as an influential factor on their physical activity behaviours. Although they frequently discussed accessing outdoor spaces for physical activity, this was dependent on the season. The participants in this study contrasted Canadian climate with the climate in their countries of origin which were warm for most of the year. Shea & Beausoleil (2012), found that the newcomer youth who participated in their study also contrasted the climate in Canada with their countries of origin. The participants in this study frequently mentioned that they were less physically active in the winter compared to warmer months. In Canada, many adolescents experience season-dependent physical activity levels with lower physical activity levels during winter and higher levels in warmer months (Nadeau, Letarte, Fratu, Lebel, & Waygood, 2016; Belanger, Gray-Donald, O'Loughlin, Paradis, & Hanley, 2009). In this study, participants described enjoying a variety of physical activity opportunities outdoors during warm months but discussed being "lazy" and feeling stuck inside during winter months. Given the participants' reliance on outdoor physical activity opportunities, it would appear that participants are mostly limited to physical activity opportunities within their institutions during winter. This could be a reason why the schools play such a large role in their physical activity behaviours.

4.2.5 Policy Factors

Previous studies using the EMHP with youth have chosen to exclude policy factors in their data collection and analysis based on the belief that youth are not "policy-minded" and are likely not capable of identifying policies that impact their lives. Contrary to this belief, the participants in this study discussed two key policies that directly influenced their physical activity behaviours.

The factors discussed by participants in this section are school-based policies.

Although school-based policies could be categorized in the institutional level, I have chosen to discuss them at the policy level. I have chosen to do so because participants did not discuss the following policies when asked about how their school influenced their physical activity behaviours, but instead only discussed these policies when asked specifically about what types of policies influenced their physical activity behaviours. School-based policies are a key component of research surrounding physical activity promotion in schools. The Comprehensive School Health (CSH) model describes four pillars that affect health behaviours at school: teaching and learning, social and physical environments, healthy school policy, and partnerships and services (Pan-Canadian Joint Consortium for School Health, 2012). As one of the pillars of the CSH, school-based policies are integral to the health of young people in schools (Veugelers & Schwartz, 2010). In 2014, a team of researchers in Edmonton, Alberta used a quasi-experimental study to examine the effectiveness of the APPLE school program on the physical activity levels of Grade 5 students (Vander Ploeg, McGavock, Maximova, & Veugelers, 2014). The APPLE (A Project Promoting healthy Living for Everyone) Schools program was developed by researcher and professor Dr. Paul Veugelers based on his research with the CSH model (APPLE Schools, 2020). The school-based health policies implemented as part of the APPLE schools program are specific to the goals of each school community (APPLE Schools, 2020). For example, many APPLE schools choose to implement a policy that encourages active breaks during class time (APPLE Schools, 2020). In the study by Vander Ploeg et al. (2014), the students who were exposed to APPLE schools program achieved significantly higher levels of physical activity both during school and outside of school hours compared to students who were not exposed to the intervention program (Vander Pleog et al., 2014). The findings by Vander Ploeg et al. (2014) demonstrate the potential effectiveness of school-based physical activity policies on the physical activity behaviours of students both during and after school hours.

4.2.5.1 Equal playing time policy.

Due to the prohibitive costs associated with playing on club teams, many participants discussed their reliance on school-based teams for opportunities to participate in sports. The lack of an equal playing time policy influenced the physical activity behaviours of the participants who played on their school sports teams. One participant described being selected for sports teams only to find themselves watching their teammates play. A study conducted by Lorentzen

(2017) found that playing time is seldom discussed in existing literature despite being a common point of conflict between athletes, parents, and coaches. According to the Canadian Centre for Ethics in Sport (2020), the debate about equal playing time is a debate about the value of inclusion in youth sports. Lorentzen theorized that playing time is allocated based on the skill of the athletes and the goals of the team (Lorentzen, 2017). On teams with athletes who have a wide range of skill levels and whose goal is to win, it is common for teams to use unequal playing time to meet their goal. If the team's athletes are of similar skill level and the team's goal is to develop athletic skills, then it is more likely that equal playing time will be used (Lorentzen, 2017). In order to minimize conflict between athletes, parents, and coaches, Lorentzen (2017) recommended that rules about playing time should be consistent with the level of development of the athletes on the team. An example of considering the athletes' level of development comes from The Aspen Institute's Project Play (2020) which recommends that all youth sports teams commit to equal playing time until their athletes are at least 12 years old. To ensure they are meeting the goals of their team, coaches could include an evaluation of the skill development and opportunities available to the athletes on their team when deciding whether to utilize an equal playing time policy. For the participants in this study, playing on their high school's team was the only opportunity they had to participate in sport.

4.2.5.2 Mandatory physical education.

All participants in this study were in Grade Nine, and their school followed the school division policy that stated that enrollment in physical education in Grades Nine and Ten was required. Some participants discussed the important role that mandatory physical education played in their physical activity behaviours. These participants felt they benefitted from their physical education classes as they were given more opportunities to be physically active at school and they learned a variety of sports and activities. Their thoughts and experiences support the goal of physical education in Saskatchewan, which is to develop in students the knowledge, skills, and motivation to be active for life (Saskatchewan Curriculum, 2020). Gibbons and Gaul (2004) reported that in Canada, the purpose of physical education is to promote physical activity that is life-long by equipping students with the skills, knowledge, and attitudes that empower current students to be physically active throughout their lives. It is interesting to note that even though participants reported enjoying their required physical education class they were unsure if they would enroll in physical education in Grade Eleven and Twelve when it became an elective.

In 2010, a team of researchers asked a group of Canadian students about the factors that affected their decision to enroll in elective physical education (Sulz, Humbert, Gyurcsik, Chad & Gibbons, 2010). Their findings revealed several factors that influenced students' intentions to enroll in physical education. These factors reflected the intrapersonal, interpersonal, and institutional levels of the social ecological model. Sulz et al. (2010) found that many of the factors described by their participants were dependent on their gender. For example, female students who felt confident in their skills and could fit physical education into their academic schedule chose to continue their participation in physical education when it became optional (Sulz et al., 2010). However, male students did not discuss their confidence or their academic schedule as influences on their decision to enroll in elective physical education. Some factors were described by participants of both genders. Male and female students chose to enroll in physical education if their previous experiences were positive and if their parents believed in the importance of physical education. Students chose not to enroll in elective physical education because of negative past experiences in physical education or because they and their parents did not view physical education as an important class compared to subjects like math and science (Sulz et al., 2010). For the participants in the current study, it will be important for them to continue to have positive experiences in their current physical education classes and establish their understanding of the benefits of physical education to encourage their enrollment in physical education when the course is no longer mandatory.

This study has revealed the degree to which Southeast Asian newcomer youth rely on school-based opportunities for physical activity. In addition to equipping students with skills to pursue physical activity throughout their lives, physical education serves as a daily opportunity for physical activity for youth who do not have many options. Southeast Asian newcomer youth would likely benefit from an extension of current mandatory physical education policies to include Grades Eleven and Twelve to provide the students with a reliable opportunity for physical activity.

4.2.6 Interactions Among Levels

Inherent in the ecological model of health promotion is the interaction of factors between levels to produce behavioural influences. Interactions were decided when factors were discussed by participants at multiple levels of the EMHP. It is important to note that school-based policies also emerged as an interaction of factors between levels: however, policies at school were

categorized and discussed at the policy level.

4.2.6.1 Cost.

The high cost of community and club physical activity opportunities was discussed by all participants. In this context, cost and socioeconomic status cannot be separated because the socioeconomic status of the participants and their families influenced whether they were able to afford to participate in physical activity programs. If the participants perceived the cost of participation was high, they knew they would not be able to afford to participate. For example, one participant discussed the costs associated with playing on a club basketball team and that, due to the high cost, he was not able to play basketball with a club team. Cost was categorized as an interaction because cost influenced physical activity at multiple levels of the EMHP. For example, the participants were unable to afford the cost of programming themselves which is a factor in the intrapersonal level. In addition, their parents or families were often not able to cover the cost of their participation in physical activity which was considered an interpersonal factor. Additionally, the cost of programs can be an institutional, community or policy factor depending on where the program occurred and whether the program received any funding from local, provincial or federal governments. For example, a program that takes place at school that is subsidized by a community funding agency would influence physical activity at both the institutional and community levels.

A systematic review by Stalsberg & Pedersen (2010), found that cost is a barrier to physical activity opportunities for youth in low-income households. Participants did not discuss their families' financial situations; however, newcomers to Canada often experience more poverty and lower income than the Canadian population (Citizens for Public Justice, 2017). In the current study, participants described accessing free and low-cost programs at their school and church as well as utilizing free physical activity opportunities in their communities such as parks and outdoor basketball courts. It was apparent that participants accessed low and no-cost physical activity opportunities because they could not afford to participate in higher cost physical activity programs.

4.2.6.2 Knowledge of English.

All the participants in this study described their experience participating in Canadian physical activity settings while learning English. At the time of data collection, all of the participants were able to read, write, and speak English at a level that allowed them to complete

questionnaires independently and share their personal thoughts and feelings in focus groups. However, some participants described feeling less confident in their knowledge of English than their peers and nearly every participant discussed their experience learning English after their family moved to Canada. Knowledge of English was categorized as an interaction because this factor influenced physical activity behaviours in more than one level of the EMHP. For example, an individual's knowledge of the English language and their personal experiences as an English language learner influenced physical activity at the intrapersonal level. In addition, an individual's experience communicating with others also influenced their physical activity behaviours at the interpersonal level. Knowledge of English also influenced physical activity at the institutional and community levels because understanding English may dictate the types of activities that newcomer youth are able to participate in. For example, English language learners may have a more difficult time signing up for programs or learning about what types of activities are available in their neighbourhoods if they are unable to read advertisements or communicate with English speakers in their communities.

Participants shared that, while they were in the early stages of learning English, they felt confused about what their coaches and physical education teachers were instructing them to do. One participant discussed his experience with a coach asking him to participate in basketball drills, and while the participant was an avid basketball player, he was not familiar with the word "drills". In this particular interaction, the coach responded by questioning his skill as a basketball player. Due to his difficulty in translating a single English word this young man described feeling misunderstood and underestimated in terms of his skill as a basketball player. Furthermore, he understood what it meant to practice drills and frequently did so to improve his basketball technique; however, he explained there is no Tagalog translation for drills and his confusion was interpreted as a lack of motivation. It is critically important that educators and coaches working with youth who are learning English do not mistake low English fluency for a lack of understanding of the concept. Instead, it is important for educators to develop positive attitudes towards English language learners by understanding common misconceptions, for example, that it is easy for children to learn a second language and that children who speak English can be considered fluent (Burden, Columa, Hodge, & Martinez de la Vega Mansilla. 2013). Through positive attitudes towards student-athletes who are English language learners, coaches can provide positive physical activity experiences for newcomer youth and create environments

where newcomer youth can both increase their physical activity levels and improve their English language skills.

Aside from this example, participants described mainly positive experiences in Canadian physical activity settings despite sometimes encountering situations where they could not understand certain words or phrases. Contrary to previous research that has indicated youth who are learning English face social exclusion due to low English fluency or accents, participants in this study described overcoming language barriers by asking their friends for help (Shakya, Khanlou & Gonsalves, 2010). The participants explained that they were able to rely on their friends to translate when they encountered words or phrases they did not understand. It appears probable that participating in physical activity with people who share the same heritage language is protective against the possibility of exclusion in English-dominant Canadian physical activity settings.

4.2.7 Summary

In Phase One, the participants self-reported that they were moderately physically active. However, when their physical activity levels were directly measured using pedometers, the participants had low physical activity levels that were not significantly different based on their self-reported gender or time since immigration in years. In Phase Two, the participants identified factors that influenced their physical activity behaviours at every level of the EMHP (McLeroy et al., 1988). Interestingly, the participants identified more factors that facilitated their participation in physical than factors that acted as barriers to their physical activity participation. Novel factors that emerged from the data in Phase Two included: newcomer parents who were supportive of their children's participation in physical activity, schools and public parks as key opportunities for physical activity and the role of churches and, in particular, youth groups as important sites of physical activity for Southeast Asian newcomer youth.

CHAPTER 5

SUMMARY AND CONCLUSIONS

Previous research has shown that newcomer youth in Canada do not achieve the recommended levels of physical activity (Kukaswadia et al., 2014). For reasons not yet understood, Southeast Asian youth appear to have the lowest levels of physical activity of all newcomer youth in Canada (Kukaswadia et al., 2014). This study used a mixed methods approach to (1) assess the physical activity levels of Southeast Asian newcomer youth and (2) explore the factors that influence the physical activity behaviours of Southeast Asian youth who are newcomers. Participants were recruited from a high school in a Canadian prairie city identified to have a large population of Southeast Asian newcomer youth. Eight Grade Nine students volunteered to participate in this study. In the first phase of the study indirect and direct physical activity measures were used to assess the physical activity levels of participants. In addition, demographic information such as time since immigration, country of origin, and self-reported gender were also collected. The second phase of this study was qualitative and utilized the ecological model of health promotion to explore social ecological factors that influenced the physical activity behaviours of the participants (McLeroy et al., 1988).

Using an indirect physical activity measure, the PAQ-A, the participants reported moderate levels of physical activity. However, direct pedometer measures revealed that between 0% and 12.5% of the participants were physically active enough to meet Canadian physical activity guidelines, depending on the operationalized definition. This finding was consistent with previous research that found adolescents generally tend to over-report their physical activity on self-report measures (Plasqui et al., 2013). Furthermore, this study documented for the first time that Southeast Asian newcomer youth might over-report their physical activity levels on self-report physical activity measures. Using pedometers to directly measure physical activity, it was found that the participants had low levels of physical activity. Previous research has also found that Southeast Asian newcomer youth have low levels of physical activity (Kukaswadia et al., 2014). The research by Kukaswadia et al. (2014), using self-report data from the Canadian Health Behaviour in School-Aged Children Study, found that Southeast Asian newcomer youth have lower levels of physical activity than newcomer youth from other countries and Canadian born youth. Additionally, Kukaswadia et al. (2014) determined that the physical activity levels of Southeast Asian youth do not increase with time since immigration. In the current study, there

was also no relationship between time since immigration and either indirectly or directly measured physical activity levels which support the findings of Kukaswadia et al. (2014) and provides further evidence that the physical activity levels of Southeast Asian newcomer youth who participated in this study were not influenced by acculturation. The reason for a lack of influence of acculturation on the physical activity behaviours of Southeast Asian youth is not understood and to my knowledge has not been documented in existing literature.

In the current study, there was no relationship between indirect and direct physical activity measures and gender. The male and female participants had statistically similar levels of physical activity. This finding contradicts a large body of research that has documented that, at the same chronological age, adolescent boys generally have higher levels of physical activity than adolescent girls (Colley et al., 2017; Roberts et al., 2017; Mutz & Albrecht, 2017). To my knowledge this study is the first to directly measure the physical activity levels of Southeast Asian newcomer youth in Canada as well as make comparisons based on gender. It is possible that no gender difference in physical activity levels exists among Southeast Asian youth who are newcomers, but it is also possible that the findings of this study are not consistent with the body of existing research due to the small sample size.

To explore the factors that influenced the participants' physical activity levels, focus groups were conducted using a semi-structured interview guide based on the ecological model of health promotion (McLeroy et al., 1988). The participants described a number of factors that influenced their physical activity levels. This finding supported previous research with youth that identified that their physical activity behaviours are influenced by factors at multiple levels (intrapersonal, interpersonal, institutional, community, and policy) of a social ecological model (Sallis et al., 2006). Interestingly, although participants' physical activity levels were low, they identified more factors that encouraged them to be physically active than factors that made it more difficult for them to engage in physical activity.

At the intrapersonal level, participants identified their gender and their knowledge of the benefits of physical activity as factors that influenced their physical activity levels. In regard to gender, male participants felt that they were more active than females; however, the female participants in this study believed they were just as physically active as their male peers. Every participant believed that physical activity was beneficial for physical and mental health. Factors identified in the interpersonal level included the participants' relationships with their friends and

their parents. The participants described enjoying physical activity with their friends, who were mostly Southeast Asian newcomer youth, and being encouraged by their friends to be physically active. With regard to their parents, many participants felt their parents influenced them to be more physically active by engaging in physical activity themselves or by encouraging them to be physically active in order to acquire the benefits of physical activity. At the institutional level, the participants felt that their school and their church influenced their physical activity behaviours. At school, participants felt encouraged by staff to participate in the wide variety of activities offered. Their school also offered a very popular intramural basketball league at noon-hour, which provided a free and accessible opportunity for physical activity that the male participants in this study valued greatly. Many participants attended a youth group held at a neighbourhood church where they described participating in many physical activity opportunities such as dance, volleyball, and camping trips. Within the level of community, participants felt that the built environment and the Canadian climate influenced their physical activity behaviours. In relation to the built environment, the participants primarily discussed the proximity of parks and greenspace to their homes. Participants felt that when they could access physical activity opportunities by walking, it was easier for them to be physically active because they were often responsible for coordinating their own transportation if they needed to travel farther than walking would allow. Although participants described frequently accessing nearby parks and basketball courts in the summer months, they also discussed that they were unable to access these same opportunities in the winter due to snow and cold weather. At the policy level, the participants discussed mandatory physical education and the absence of an equal playing time policy on their school sports teams. The participants felt that they currently benefitted from mandatory physical education but were unsure if they would continue to participate in physical education when it was no longer mandatory. Some of the participants who were on school sports teams noted that their playing time was not guaranteed due to the absence of any policies requiring equal playing time. The participants noted that being selected for a sports team did not mean they would be given an opportunity to participate in games and competitions.

An inherent tenet of the ecological model of health promotion is the concept that factors among levels can interact to influence behaviour (McLeroy et al., 1988). In this study, the cost of participation in physical activity and knowledge of English were categorized as interactions due to their influence on physical activity at multiple levels of the EMHP.

5.1 Limitations and Strengths

There are a number of limitations to this study. Perhaps most importantly, this study had a small sample size. As such, the findings are limited to the participants, their school, and community. In qualitative research, the generalizability of the findings of a study is decided upon by the reader (Shenton, 2004). For this reason, every attempt was made to provide a rich, thick description of the setting and the participants in this study to empower the reader to decide whether the findings may extend to their own setting.

Another limitation to this study was the use of pedometers to directly measure physical activity levels. Pedometers are useful for directly measuring physical activity levels because they are affordable and easy to use. However, pedometers have many limitations compared to other direct physical activity measures like accelerometers (Corder et al., 2008). First, the pedometers used in this study required the participants to manually record their steps on a tracking sheet. It is possible that the participants' daily step counts were influenced by being responsible for witnessing and recording their step counts each day. As such, there is a possibility that the physical activity levels recorded by the pedometers in this study were not actually objectively measured. Another limitation of pedometers lies in the fact that pedometers only measure the number of steps a participant takes per day and thus cannot measure the level of intensity of physical activity (Corder et al., 2008). In this study, a threshold of 12,000 steps was used to approximate 60 minutes of moderate-to-vigorous intensity physical activity (Colley et al., 2012). Although 12,000 steps is a threshold widely used in Canadian physical activity research, it is not possible to conclusively determine the physical activity intensity of the participants in this study due to the nature of pedometers as a measure.

Despite measures to encourage attendance, only one focus group interview had full attendance. I learned after the conclusion of the focus group interviews that some of the boys chose to participate in intramural basketball games instead of attending their focus group interviews. In the future, a time that does not preclude participation in physical activity should be selected for focus group interviews so that some participants would not have to choose between talking about physical activity or being physically active.

Another limitation of this study was the use of student researchers to facilitate focus group interviews. The intent of using student researchers to facilitate focus group interviews was to remove barriers to communication, such as race and gender, as identified in previous research

(Cox, 2004; Kosygina, 2005). Although the student researchers had completed an undergraduate course in research methods, received training from a professor with 20 years of experience interviewing children and youth, and pilot tested the interview guide with a group of young Southeast Asian newcomers, they lacked the experience needed to elicit detailed responses from the participants in focus groups. It is likely that the student researchers were not comfortable probing for depth in participant answers because they were not yet confident in their roles as focus group facilitators. As such, some deeply interesting and novel findings may have been under investigated. For example, the female participants in this study felt they were just as physically active as their male peers. However, this finding was not discussed in depth to determine why they felt this way, in light of what appeared to be less school and community-based opportunities for them to be active.

Finally, the timing of this study was an unfortunate limitation. Due to the COVID-19 pandemic, Phase Two of this study was stopped prior to its completion. In an effort to complete data collection, an amendment to the ethics application was granted and individual phone interviews were added to the study. Two one-on-one interviews were held over the phone with two participants who responded to repeated requests to continue with the study. It is my belief that saturation was not reached in the qualitative phase of data collection as a result of the COVID-19 pandemic. Ideally when using focus groups, the process of data collection ends when participants begin to repeat similar ideas and redundancy has occurred which indicates that saturation has been reached (Morse, 2005). In this study, we were no longer able to conduct one-on-one interviews due to a lack of participants rather than making the choice to end data collection based on saturation.

Although this study had a number of limitations, the strength of this study lies in the gaps in research that it addressed. This study directly measured physical activity levels of Southeast Asian newcomer youth. To my knowledge, this is the first study that has used direct measures to determine the physical activity levels of Southeast Asian newcomer youth physical activity in Canada. This study also compared the measured physical activity levels of Southeast Asian newcomer youth by time since immigration and gender. Additionally, Southeast Asian newcomer youth were provided with an opportunity to share their thoughts about the factors that influenced their physical activity opportunities.

5.2 Recommendations for Practitioners

Based on the findings of this study, I have formulated some recommendations for practitioners looking to provide accessible physical activity opportunities for Southeast Asian newcomer youth. Schools were one of the most important sites for physical activity among our participants. The school that participated in this study ran a very popular intramural basketball league during noon-hour. However, upon observation, it was noted that male students were participating in the basketball league, while girls were sitting on the sidelines as spectators. A recommendation based on this finding is that schools should look to provide additional noon-hour opportunities, such as open gym for dance or volleyball, so female students can have a space to physically active as well. Additionally, it is important for schools to consider implementing equal playing time policies and mandatory physical education for Grades 11 and 12. The participants identified that these two policies were influential on their physical activity opportunities at school. Specifically, an equal playing time policy would allow newcomer students playing on teams an opportunity to participate in games and competitions with their school sports teams. It is important to consider the reality that school sports teams are often the only opportunity for newcomer youth to participate in team activities due to the expenses associated with club and community league teams.

Another recommendation for practitioners looking to work with newcomer youth and physical activity is to learn, understand, and embrace activities that newcomer youth enjoy. It is not enough to offer newcomer youth opportunities to participate in physical activity that only reflect activities that are typically found in Canada. Furthermore, it is not enough to expect newcomer youth to enjoy activities that are traditionally Canadian. For physical activity opportunities to be truly equitable, newcomer youth should be invited to participate in physical activities that they find enjoyable and culturally relevant to them, and not just in activities that practitioners are familiar with and feel comfortable leading. In Canada, it should be the goal of a practitioner to be life-long learners who continues to grow and gain new experiences as they learn about different cultures. Practitioners have an opportunity to create equitable and meaningful physical activity opportunities for newcomer youth in Canada.

5.3 Future Research

First, it is important to continue to directly measure the physical activity levels of newcomer youth in Canada. In future studies, physical activity levels of Southeast Asian newcomer youth could be measured in a larger sample of youth. Additionally, the physical activity levels of youth who come to Canada from other regions in the world should be measured directly. It is important to measure the physical activity levels of newcomer youth directly because it provides an objective depiction of the degree to which newcomer youth in Canada are meeting physical activity guidelines and obtaining the benefits for health and wellness that being physically active provides.

The findings of this study indicated that the physical activity levels of Southeast Asian newcomer youth were influenced by factors in every level of the ecological model of health promotion (EMHP). Future research intent on examining the factors that influence the physical activity levels of newcomer youth should use a social ecological model to categorize and understand these influential factors. Such an understanding could help program developers offer physical activity opportunities for newcomer youth that address their needs. For example, based on the findings of this study, it is likely that Southeast Asian newcomer youth would benefit from programs that are free, take place at school or at church, and do not require participants to endure cold weather.

Some previous research using the EMHP with youth has chosen not to ask youth about factors in the policy level based on the notion that youth are not policy minded. The findings of this study demonstrated that Southeast Asian youth who are newcomers are attuned to the policies that influence their physical activity experiences at school. For this reason, I think future research with newcomer youth should consider including the policy level of the EMHP in their studies and further explore the impact of policies in all levels of the social ecological model.

In future research involving high-school age participants, I recommend using text messages, as opposed to email, to communicate with participants. I think the use of text messages in this study was very beneficial because it kept a line of communication open between the participants and the researcher throughout the data collection period. For example, on the third day of pedometer data collection, after sending out the daily text message reminder at 7:30 am, a participant immediately responded to let me know his pedometer had broken the night before. This immediate communication provided me the time I needed to get him a new pedometer by

the start of school that day which resulted in only one valid measurement day lost as opposed to two. I found that using text messages was effective for fostering open communication between the participants and myself which in turn helped the study move forward with less difficulty.

In this study, churches, especially youth groups, provided key opportunities for physical activity for Southeast Asian newcomer youth. To the best of my knowledge, there is no existing literature examining the relationship between youth groups, churches, and the physical activity behaviours of Southeast Asian youth who are newcomers. Based on the findings in this study, opportunities to include physical activity in faith-based practices should be explored as a strategy to increase physical activity in newcomer youth. Furthermore, it has been demonstrated in previous research that youth who practice religion and spirituality are more likely to engage in positive health behaviours like physical activity (Cotton, Zebracki, Rosenthal, Tsevat, & Drotar, 2006). Future research with Southeast Asian newcomer youth in Canada could assess whether the practice of religion and spirituality itself is a factor that influences their physical activity behaviours.

Additionally, in the future, researchers are encouraged to include newcomer youth in their studies. With each passing year, the diversity of the Canadian population continues to grow, and it is important to understand the experiences of newcomer youth to ensure that appropriate opportunities for physical activity are a part of their settlement process.

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APPENDICES

APPENDIX A – Consent Form



Project Title: Factors affecting the physical activity behaviours of South East Asian newcomer youth.

Principal Investigator :

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INVITATION

Your child is invited to take part in a research study conducted by the College of Kinesiology at the University of Saskatchewan. This project involves understanding the physical activity experiences of youth who have immigrated to Canada in the past five years. We anticipate that this information could be used to educate future leaders and assist with the planning and implementation of appropriate physical activity programs for youth who are newcomers to Canada.

WHAT'S INVOLVED

Before the study begins, you will be asked to give permission (consent) for your child to participate in this study. Your child will be asked to agree to participate as well. The study will occur at school and every effort will be made to ensure minimal class time is disrupted. Your child's participation in this study will involve answering questions on three question sheets called questionnaires (15 minutes), wearing an activity recorder (pedometer) similar to a FitBit for seven days, and participating in group discussions (two 45 minutes-1 hour sessions). The questionnaires will be completed, and the pedometers will be distributed during the same lunch period at school. A pedometer is a small device that tracks your child's physical activity levels throughout the day. A pedometer cannot track your child's location or activities and data from the pedometer cannot be used to identify your child. The pedometer will be provided for your child to wear around the waist for seven days for all waking hours except when swimming or bathing. After seven days the activity recorder will be returned to the researcher during a lunch period. If your child is unable to attend the scheduled drop off period, a time that works for them can be arranged.

POTENTIAL BENEFITS AND RISKS

There are no known or anticipated rewards or risks associated with participation in this study. The information collected will permit the research team to better understand the factors that influence youth who are newcomers to be physically active. It is hoped that the information provided will improve the physical activity behaviours of newcomer youth.

PUBLICATION OF RESULTS

When the study is over, the participants will receive a report with a summary of the results. No individual information will be in the summary only the results of the entire group. The summary of results may also appear in printed or published reports such as journal articles and may also be presented at conferences. The final report for this project will be given to you after the study is completed. A final report will also be provided to the Research Council of the school board.

CONFIDENTIALITY

The focus groups will be audio-recorded and transcribed by the student researcher, Emily Harwood-Johnson. Only a study number (no names) will be associated with your child's interview. All information your child provides will be considered confidential. If we chose to use a quote that your child has provided, we will use a different name and we will not use quotes that makes your child easily identifiable.

The researcher will undertake to safeguard the confidentiality of the discussion, but cannot guarantee that other members of the group will do so. We ask that everyone involved in the study, please respect the confidentiality of the other members of the group by not disclosing the contents of this discussion outside the group, and be aware that others may not respect your child's confidentiality.

Access to the information from the group discussions will be restricted to the Principal Researcher, Dr. Louise Humbert, and the student researcher, Emily Harwood-Johnson. Your child's name will not appear in any report resulting from this study. The Principal Investigator will store physical data, like interview transcripts and questionnaires, in a locked filing cabinet in their office and electronic data, like audio-recordings, will be stored in a secure online cabinet using the University of Saskatchewan online system. Data will be stored for 5 years. After 5 years, physical data will be shredded and electronic data will be permanently deleted.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If your child wishes, they may decline to answer any questions or decline to participate in any component of the study. Further, your child may decide to withdraw from this study at any time and may do so without any penalty. Your child will be encouraged to send an email to the researcher to let her know they have decided to stop attending activities in the study. If emailing is not possible, your child can simply stop attending the activities in the study and they will not be contacted any more. If your child decides to withdraw, the information they have shared with us will be withdrawn and deleted. Your child's right to withdraw from the study will apply until the data has been distributed in the form of a written report and presentation. After this it is possible that some form of distribution of research will have already occurred and it may not be possible to withdraw your child's data.

CONTACT INFORMATION

If you have questions about this project, please contact the principal investigator, Dr. Louise Humbert at 306-966-1070 or by email at louise.humbert@usask.ca. You may also contact the student researcher, Emily Harwood Johnson at emh677@usask.ca. Any questions regarding your rights or your child's rights as a participant may be brought to the committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975.

Thank you for your assistance in this research project. Please keep a copy of this form for your records.



Parental Consent for Child to Participate

STUDY TITLE: Factors affecting the physical activity behaviours of South East Asian youth who are newcomers.

- I have read, or someone has read to me, the information in this consent form.
- I understand the purpose and procedures, and the possible risks and benefits of the study.
- I was given sufficient time to think about the study and my child's participation.
- I grant permission for my child to be audio-recorded.
- I had the opportunity to ask questions and have received satisfactory answers.
- I understand that my child is free to withdraw from this study at any time for any reason.
- I give permission to the use and disclosure of my child's de-identified information collected for the research purposes described in this form.
- By agreeing to for my child to participate in this study, I do not waive any of my legal rights.
- I understand I will be given a signed copy of this consent form.

Consent to Participate:

By completing and returning this form, you indicate that you understand the above conditions and agree to allow your child to participate in the activities you have checked below.

Put a check-mark in the circle of the activities you agree to allow your child to take part in:

- Answering questions on question sheets
- Wearing an activity recorder for one-week
- Participating in group discussions about physical activity

(Signature of Parent or Guardian)

(Date)

(Signature of Researcher)

APPENDIX B – Information Sheet: COVID-19 Update



UPDATED STUDY INFORMATION

Project Title: Factors affecting the physical activity behaviours of South East Asian newcomer youth.

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Hello Participants,

First, I hope all is well with you and your family during this time. As most of you know, we still have a few questions left in our discussion about physical activity. We are no longer able to finish our focus group interviews in person because your school will be closed for at least a few weeks. If you would like to finish our discussion about physical activity, I have arranged to do one-on-one interviews over the phone. This means that it will just be you and me discussing physical activity on the phone. There is nothing you need to do to prepare for the phone call. The phone interview will be recorded using the same audio-recorder that we used in the focus groups. Everything that you discuss during the phone interview is confidential. When the findings of this study are put into a report, the report will use a pseudonym (fake name) instead of your name. As with every part of this study so far, if you do not want to participate you do not have to. If you have any questions, all of my contact information is listed at the top of this letter.

Thank you,

Emily Harwood-Johnson

APPENDIX C – Assent Form



Principal Investigator:

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ASSENT FORM FOR PARTICIPANTS

INVITATION

You are being asked to take part in a research study. This study is going to help us learn about the factors that influence you to be physically active. We anticipate that this information could be used to educate future leaders and assist with the planning and implementation of appropriate physical activity programs for youth who are newcomers to Canada.

WHAT WILL HAPPEN DURING THE STUDY?

First, you will answer some questions about yourself on paper question sheets called questionnaires. The questions will be about things like the country where you were born and how old you are. Then, we will ask you to wear an activity recorder, called a pedometer, around your waist for one week for all waking hours other than swimming or bathing. A pedometer works like a FitBit and will measure your physical activity throughout the day. The pedometer does not tell us anything about your location or what you are doing, only how much you are moving throughout the day. You will be asked to complete the questionnaires and pick up a pedometer during lunch at school. Lunch will be provided during this session. After one week, you will return the pedometer to the researcher during lunch. If you are busy during either of the lunch periods, we can arrange to have you pick up or drop off your pedometer at a time that works better for you. A snack will be provided at the drop-off session.

Later, we will get together in groups, called focus groups, to talk about your experience with physical activity in Canada. You do not have to study or do any work to prepare for this. You do not have to answer any question that you do not want to and may leave the focus group at any time without any consequence. We plan to speak with each focus group twice for 45 minutes-1 hour each time. The focus groups will be audio-recorded only (no video) and the audio from the focus groups will be transcribed into writing by the student researcher Emily Harwood-Johnson. The focus groups will occur either before school, during lunch, or after school. Snacks or lunch will be provided during focus groups.

WHO WILL KNOW WHAT I DID IN THE STUDY?

All of the information about what you do in the study and what you tell us in the focus group will be kept confidential by the researchers. No one at school or your teacher or parents will see your information.

The researcher will undertake to safeguard the confidentiality of the discussion, but cannot guarantee that other members of the group will do so. Please respect the confidentiality of the other members of the group by not disclosing the contents of this discussion outside the group, and be aware that others may not respect your confidentiality.

All of the results of everyone in your class will be put together and written in a paper. It may also be presented at a conference, but no one will know that it was you who participated.

DO I HAVE TO BE IN THE STUDY?

You do not have to be in the study. This study doesn't have anything to do with your usual schoolwork and you can still do all of the things you usually do in the class if you aren't in this study. We will also ask your parents if they would like you to be in the study. Even if your parents want you to be in the study you can still say no. Also, if you say yes now its ok to change your mind later and not be in the study any more. If you decide to stop participating in the study, you can email the Emily, the researcher, but if you don't want to email Emily you can simply stop coming to the activities in the study.

WHAT IF YOU HAVE ANY QUESTIONS?

You can ask questions any time, now or later. When I ask you later if you want to be in the study I will ask you again if you have questions. Please ask as many questions as you like-questions are a good thing!

ARE THERE GOOD THINGS AND BAD THINGS ABOUT THE STUDY?

Good things: You may learn more about why you choose to be physically active.

Bad things: There are no bad things associated with participating in this study.

PUBLICATION OF RESULTS

When the study is over, the you will receive a report with a summary of the results. No individual information will be in the summary only the results of the entire group. The summary of results may also appear in printed or published reports such as journal articles and may also be presented at conferences. The final report for this project will be given to you after the study is completed. A final report will also be provided to the Research Council of the school board.

WHAT HAPPENS WITH THE DATA WHEN THE STUDY IS OVER?

The Principal Investigator will store physical data, like interview transcripts and questionnaires, in a locked filing cabinet in their office and electronic data, like audio-recordings, will be stored in a secure online cabinet using the University of Saskatchewan online system. Data will be stored for 5 years. After 5 years, physical data will be shredded and electronic data will be permanently deleted.

Assent

I have read this paper or have had it read to me.

I understand what I have to do in this study and I agree to participate in the activities that are check-marked below.

Put a check-mark in the circle of the activities you agree to take part in:

- Answering questions on question sheets**
- Wearing a pedometer for one-week**
- Participating in group discussions about physical activity**

Child's Name (Print)

Child's Signature

Date

APPENDIX D – Demographic Questionnaire

Name: _____

Date: _____

Postal Code (first 3 digits only): _____

Date of Birth (including year): _____

How long have you lived in Canada?

1 Year	2 Year	3 Years	4 Years	5 Years	6 Years or more
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What year did you arrive in Canada?

How old were you when you arrived in Canada?

Which country were you born in? Circle.

Brunei	Cambodia	East Timor
Indonesia	Laos	Malaysia
Myanmar	Philippines	Singapore
Thailand	Vietnam	Other:

How do you describe your ethnicity? (ex: Filipino, Vietnamese, Canadian, etc.)

Did you live in any countries, other than your birth country, before arriving to Canada? Please list below or write “No”.

How do you describe your gender? (ex: female, male, transgender, etc.)

APPENDIX E – PAQ-A Questionnaire

Physical Activity Questionnaire (High School)

Name: _____

Age: _____

Sex: M _____ F _____

Grade: _____

Teacher: _____

We are trying to find out about your level of physical activity from *the last 7 days* (in the last week). This includes sports or dance that make you sweat or make your legs feel tired, or games that make you breathe hard, like tag, skipping, running, climbing, and others.

Remember:

3. There are no right and wrong answers — this is not a test.
4. Please answer all the questions as honestly and accurately as you can — this is very important.

1. Physical activity in your spare time: Have you done any of the following activities in the past 7 days (last week)? If yes, how many times? (Mark only one circle per row.)

	No	1-2	3-4	5-6	7 times or more
Skipping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rowing/canoeing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-line skating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking for exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bicycling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jogging or running	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aerobics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swimming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baseball, softball	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dance	<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"/>
Badminton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skateboarding	<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"/>
Street hockey	<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"/>
Floor hockey	<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"/>
Ice skating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cross-country skiing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ice hockey/ringette	<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"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. In the last 7 days, during your physical education (PE) classes, how often were you very active (playing hard, running, jumping, throwing)? (Check one only.)

- I don't do PE
- Hardly ever
- Sometimes
- Quite often
- Always

3. In the last 7 days, what did you normally do *at lunch* (besides eating lunch)? (Check one only.)

- Sat down (talking, reading, doing schoolwork).....
- Stood around or walked around
- Ran or played a little bit
- Ran around and played quite a bit
- Ran and played hard most of the time

4. In the last 7 days, on how many days *right after school*, did you do sports, dance, or play games in which you were very active? (Check one only.)

- None
- 1 time last week
- 2 or 3 times last week
- 4 times last week
- 5 times last week

5. In the last 7 days, on how many *evenings* did you do sports, dance, or play games in which you were very active? (Check one only.)

- None
- 1 time last week
- 2 or 3 times last week
- 4 or 5 last week
- 6 or 7 times last week

6. *On the last weekend*, how many times did you do sports, dance, or play games in which you were very active? (Check one only.)

- None
- 1 time
- 2 — 3 times
- 4 — 5 times
- 6 or more times

7. Which *one* of the following describes you best for the last 7 days? Read *all five* statements before deciding on the *one* answer that describes you.

- F. All or most of my free time was spent doing things that involve little physical effort
- G. I sometimes (1 — 2 times last week) did physical things in my free time (e.g. played sports, went running, swimming, bike riding, did aerobics)
- H. I often (3 — 4 times last week) did physical things in my free time
- I. I quite often (5 — 6 times last week) did physical things in my free time
- J. I very often (7 or more times last week) did physical things in my free time

8. Mark how often you did physical activity (like playing sports, games, doing dance, or any other physical activity) for each day last week.

	None	Little bit	Medium	Often	Very often
Monday	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tuesday	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wednesday	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thursday	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friday	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Saturday	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sunday	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Were you sick last week, or did anything prevent you from doing your normal physical activities? (Check one.)

- Yes
- No

If Yes, what prevented you? _____

APPENDIX F – Pedometer Tracking Sheet

PEDOMETER TRACKING SHEET

NAME: _____

	Saturday Feb. 8	Sunday Feb. 9	Monday Feb. 10	Tuesday Feb. 11	Wednesday Feb. 12	Thursday Feb. 13
Time You Put the Pedometer On in the Morning	_____	_____	_____	_____	_____	_____
Time You Took the Pedometer Off at Night	_____	_____	_____	_____	_____	_____
DAILY STEP COUNT	_____	_____	_____	_____	_____	_____

EXAMPLE	Friday July 31
Time You Put the Pedometer On in the Morning	_____
Time You Took the Pedometer Off at Night	_____
DAILY STEP COUNT	_____

What to do with your pedometer:

1. Wear it EVERY DAY.
2. In the Morning: Write down the time you put the pedometer on.
3. In the Evening: Write down the time you took the pedometer off and the number inside your pedometer.
4. After writing down your daily step count, press the yellow button to reset the pedometer so you are ready to put it on the next morning!
5. Bring the pedometer, tracking sheet & consent form back to school on Friday February 14 at lunch in Room 113.
6. If you forget to bring everything back on Friday February 14th, text Emily at 306-361-3678 and plan a time for her to pick it up from your house on February Break!

APPENDIX G – Focus Group Interview Guide

Preamble:

The purpose of this study is to find out what influences people your age to be physically active. The purpose of this discussion today is to give you a chance to give us some ideas on how people your age could be encouraged to be more physically active.

We will start with a few questions about each of you and then will give you a chance to tell us what you would do to encourage kids like you to be active.

Icebreaker: *Use this as opportunity to discuss what physical activity and sedentary behaviour are to going forward there is a higher level of comprehension.*

1. What does the word physical activity mean to you?
 - In a typical week, when are you physically active? How many days per week?
 - What do you do? With who? Where?
 - How long?
2. What does it mean to be sedentary?
 - When are you sedentary?
 - What do you do?
 - How long?

Intrapersonal:

How does who you are affect your physical activity?

- Are you confident about your physical activity?
- How important is it to be physically active? Why? What does physical activity give you? Or, why not?
- Does your ability to speak and understand English affect your physical activity? Why?
- Does your gender affect your physical activity? Why? Did your culture influence your physical activity before you came to Canada?
- Does your culture influence your physical activity? Why? Did your culture influence your physical activity before you came to Canada?

Interpersonal:

What do other people have to do with your physical activity?

- Are you usually active alone or with other people? Who are you active with? Why do you pick them? Where? What do you do?
- Are your friends physically active? Does it matter to you?
- Is your family physically active? Does it matter to you?
- How many people do you have responsibilities at home like chores or looking after younger siblings? Do those responsibilities affect your physical activity?

Institutional:

Does the school you go to influence your physical activity?

- How would it be different if you went to a different school?
- Do you have a job? Does that affect your physical activity?
- Do you go to church or religious service? Does your religious institution affect your physical activity?

Community:

Does the area where you live affect your physical activity?

- Does the safety of your neighbourhood affect your physical activity? How safe the place where your activities are? Does that matter to you?
- Are you active in the neighbourhood you live in? Or do you have to go outside of your neighbourhood?
- Does the weather affect your physical activity?

Policy:

What are some rules that affect if you can be physically active?

- Are there any rules at school?
- Are there rules in public places?
- Are there any reasons you feel like you should or should not be physically active that aren't written out as rules?
- What about any laws?
- Do you know of any policies impacting family immigration, health, finance, insurance?

If you were in charge of getting your friends active or getting them to be more active, what would you do?

- What is most important?
- What is least important?

APPENDIX H – One-on-One Interview Guide

Hello. How are you?

The purpose of this study is to find out what influences people your age to be physically active. The purpose of this discussion today is to continue the discussion we had during our focus groups and to see if you have anything else you would like to share. We can stop the phone call at any time and you don't have to answer any questions that you don't want to.

For participants who spoke repeatedly about basketball:

- What does basketball mean to you?
- Why do you like to play basketball?
- What makes basketball better than any other sport?
- If your friends didn't play basketball would you still play? Why or why not?
- Did you play basketball in the Philippines? What is basketball like in the Philippines?
What is it like here?
- Is there anything that makes it difficult for you to play basketball? What kinds of things?
Why do they make playing basketball difficult?

Is physical activity different in the Philippines? Why?

Some of you talked about how your responsibilities at home affect if you can be physically active. What kinds of responsibilities do you have at home? Are you ever the person in charge at home? Do you ever need to translate English for your parents or other family members? Do you ever need to explain Canadian things to your parents or family members?

You guys talked about how learning English can make being physically active difficult? Did you learn English before or after you came to Canada? Did you go to school before you knew how to speak English well? What was physical activity like for you when you first came to Canada and were still learning English? Do you remember what it was like in gym class or if you on any

teams? How did you feel? Were there other people around you who spoke Tagalog? How did that make you feel?

When you are physically active, are you with other Filipino people, other Canadian people or both? Why do you think that is?

Does being a boy or girl affect your physical activity? Would physical activity be different for you if you were a girl or boy? Why are boys physically active? Why are girls physically active?

You guys shared that you like to be physically active in your neighbourhood? What types of activities do you like to do in your neighbourhood?

You guys talked a lot about the safety of your communities and how feeling unsafe may prevent you from being physically active. When you talk about safety of your neighbourhood, do you mean the safety of your neighbourhood where your home is? Are your home and your school in the same neighbourhood? Does the safety of the neighbourhood where your school is matter to you? Does the safety of these neighbourhoods affect your physical activity? How so? Would it be the same if you were born in Canada? Why or why not?

You guys talked about how going to church and youth group helps you be physically active. What kinds of physical activities do you do with your youth group? Who goes to your youth group? Is it mostly Filipino kids? Why do you think you guys are physically active at youth group?