

Supporting the Healthy Development of Rural Children:
An Ecologically Based Investigation of Barriers and Facilitators Identified by Early Years
Caregivers in the Promotion of Physical Activity and Healthy Eating

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By

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ABSTRACT

Physical activity and healthy eating are key components of healthy living, and they reduce the risk of developing chronic diseases. Current research indicates that Canadian early years children are not active enough for healthy growth and development. Additionally their diets are high in processed foods and lack fresh and locally grown foods. Parents play a key role in establishing healthy behaviours; however caregivers also have a strong influence, as many early years children spend a large portion on their day in care centres. To date, very little is known about the factors influencing rural caregivers in the provision of healthy opportunities for early years children in their care. **Purpose:** The purpose of this study was to use an ecological framework to identify facilitators and barriers that rural caregivers face when providing physical activity and healthy eating opportunities in care centres. **Methods:** Caregivers ($N = 8$) in rural settings participated in one on one semi-structured interviews. Perceived facilitators and barriers reported by caregivers were categorized using the ecological model as (intrapersonal, interpersonal, institutional, community, and policy). **Results:** Caregivers identified facilitators and barriers. (i.e., personal health and wellness, caregiver perceptions of lack of parental knowledge, parental support and access to facilities and local foods in the community), that influenced their ability to provide physical activity and healthy eating opportunities for children in their care. Similar barriers and facilitators were clustered together to create themes within each ecological category. A total of 12 key themes emerged from the data. **Conclusion:** Rural caregivers identified a number of factors that facilitated and inhibited their ability to provide opportunities for engaging in health promoting behaviours. Interestingly caregivers did not identify any intrapersonal barriers. Factors in the interpersonal category were the most commonly reported. Thus behaviours of others were the often indicated as a key factor influencing caregivers in the

provision of healthy opportunities. In the institutional and community categories caregivers identified a number of facilitators that supported them in the provision of healthy opportunities. Additionally, some caregivers discussed practices they used to overcome barriers and this in turn, facilitated the promotion of physical activity and healthy eating within the care centres. Research in rural areas is limited and the majority of studies focus the barriers to living in rural areas. This study contributes to the literature because it identified, not only challenges, but also benefits to living in rural areas. Furthermore, the use of an ecological framework allowed barriers and facilitators to be classified into distinct categories. This is important, as classification of specific factors can aid in designing initiatives that target facilitators and alleviate barriers. Such initiatives can then support early years caregivers in the provision of healthy opportunities for children. In turn, this will aid Canadian early years children in establishing lifelong physical activity eating and healthy eating patterns.

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CHAPTER 1

1.1 INTRODUCTION

Eating well and engaging in physical activity promote healthy lifestyles for all ages (Leitch, 2007). However, early child development sets the foundation for an individual's subsequent health and general well being (Keon, 2009). Thus, the benefits of healthy living are most effective when established during early years (ages 1 to 5 years) (Black & Hurley, 2007; Keon, 2009). Despite the importance of establishing healthy behaviours in the early years, research suggests that children under the age of 6 are not engaging in healthy physical activity patterns (Pate, Dowda, Trost, Almedida & Sirad, 2004; Temple, et al., 2009). The 2010 Active Healthy Kids Canada report card reported that physical activity levels in preschool-age children in child care facilities were very low and a grade of "C" was given to reflect these findings. In addition, the diets of early years children are lacking in fresh fruits, vegetables, and locally grown foods and are excessively high in processed foods that have little nutritional value (Desrosiers & Bedard, 2006; Wilkinson & McCargar, 2008). Furthermore, it was recently reported that 15.3% of Canadian children aged 2 to 5 years are overweight and 6.2% of these children are obese (Shields, 2006)

Parents and caregivers are children's first teachers and role models. Therefore, they play a key role in establishing and determining lifelong physical activity and healthy eating patterns of early years children (Segal & Gadola, 2008; Timmons, Naylor, & Pfeirrer, 2007). While, parents have a large influence on the development of children's behaviours and lifestyle patterns, over 54% of Canadian parents rely on non-parental care for their children (Bushnick, 2006). Thus, it is not surprising that there has been an increase in the use of child care centres over the last 10 years with children spending approximately 29 hours per week in care (Bushnick, 2006).

The two types of licensed child care in Saskatchewan include child care centres and family child care homes. A family child care home is a facility operated in a caregiver's private home (Government of Saskatchewan, 2009). Legislation developed by the Government of Saskatchewan specifies the number of children of different ages who may be cared for and the standards that a home must meet. In comparison, child care centres provide care for up to 90 children in a group setting. Most child care centers in Saskatchewan provide services to an average of 30 to 40 children (Government of Saskatchewan, 2009). A child care centre provides services to children ranging in age from 6 weeks up to and including 12 years of age. However, on average, children in full day care are between ages 6 months to 5 years (Government of Saskatchewan, 2009). The current study was carried out in child care centres in rural Saskatchewan.

Evidence suggests that child care settings and caregivers strongly influence children's physical activity and dietary patterns (Bower et al., 2008; Story, Kapinhangst, & French, 2006; Temple et al., 2009). Recently experts have emphasized that child care centres are ideal environments for understanding and exploring the health behaviours of children and their caregivers (Active Healthy Kids Canada, 2010). A recent systematic review of physical activity levels in early years care centres reported very low physical activity levels and high levels of sedentary behaviours among children in care (Reilly, 2010). For example, Temple and colleagues (2009) reported that children attending family child care homes are only engaging in approximately 7 to 13 minutes of moderate to vigorous physical activity (MVPA) per 7-hour day. Furthermore Needham, Dwyer, Randal-Simpson, and Heeney (2007) investigated the eating habits of early years children attending care centres. The researchers in this study found that

outside of the care centre, children frequently ate convenience foods with little nutritional value and this made it difficult to encourage children to eat healthier foods while in care.

In order to understand caregivers' decisions to engage in behaviours that promote physical activity and healthy eating for children within the care centre, it is necessary to identify the factors influencing their decisions (Naha, Goldfine, & Collins, 2003). These factors can be identified as barriers (factors that discourage behaviour) or facilitators (factors that encourage behaviour) (Nahas et al., 2003). Previous research has used an ecological model to understand factors that influence behaviours (Gyurcsik, Spink, Bray, Chad, & Kwan, 2006; Humbert et al., 2006; Needham et al., 2007). An ecological model is a conceptual framework, which assumes that multiple types of factors influence behaviour (McLeroy, Bibeau, Steckler, & Glanz, 1988; Needham et al., 2007). By using McLeroy's ecological model researchers can group factors (barriers and facilitators) influencing behaviour into the following five categories: intrapersonal, interpersonal, institutional, community and public policy (Nahas et al., 2003).

The classification of factors into specific categories is important because it allows barriers and facilitators to be analyzed at multiple levels and aids in the identification of interactions among these characteristics (Bauman, Sallis, Dzewaltowski, & Owen, 2002). For example, intrapersonal barriers and facilitators reflect characteristics of the individual, such as personal health and wellness. Conversely interpersonal barriers and facilitators relate to social networks, such as family, friends and co-workers. Institutional barriers and facilitators exist within social institutions, such as care centres. Community barriers and facilitators occur between organizations, institutions and groups within defined boundaries, such as schools and care centres coming together and sharing facilities. Lastly, public policy barriers and facilitators

are local, provincial, and federal laws and guidelines, such as provincial legislations put in place to ensure care centres are providing nutritionally sound meals for children.

A recent study by Froehlich and Humbert (2009) used McLeroy's ecological model to identify specific factors (facilitators and barriers) affecting the provision of physical activity and healthy eating opportunities by caregivers in urban care centres. McLeroy's ecological model was used to organize facilitators and barriers identified by caregivers into one of five categories: intrapersonal, interpersonal, institutional, community, and physical environmental. Caregivers identified a number of factors (barriers and facilitators) in all categories outlined in the ecological model. It should be noted that caregivers only identified facilitators in the intrapersonal category. For example, an intrapersonal facilitator reported by many caregivers was their own personal healthy eating patterns. A key theme that emerged in the interpersonal ecological category was lack of caregiver support to participate in physical activities with the children. The Froehlich and Humbert (2009) study provided valuable information regarding the factors influencing urban early years caregivers in their attempts to engage in behaviors that promote physical activity and healthy eating among early years children. However, little is known about rural early years caregivers and their ability to promote and provide physical activity opportunities in care centres. In addition, no research in Saskatchewan has been conducted to investigate healthy eating, such as the consumption of healthy locally grown foods in early years care centres.

According to the Public Health Agency of Canada (PHAC) (2006), approximately 95% of Canada's landmass is considered rural and 30% of Canadians live in rural areas. Many large young families settle in rural parts of the country, thus a significant percentage of rural residents are children (PHAC, 2006). Thus, it is also important to understand the experiences of rural

caregivers because research suggests that unique physical activity and dietary patterns and risks may differentially exist in rural and urban environments (Bruner, Lawson, Pickett, Boyce, & Janssen, 2008).

The recent Canadian Population Health Initiative (CPHI) (2006) reported that rural residents were more likely to be obese than urban dwellers. Results of the survey found that 58% of rural residents were overweight or obese, compared with 50% of urban Canadians. Recommendations from Bruner et al. (2008) suggested that in relation to healthy behaviors, rural-urban differences exist, however, little is known about health behaviors of early years children in rural settings. A report by the CPHI (2006) stated that compared to school aged children living in urban Saskatchewan, school aged children in rural Saskatchewan reported less participation in physical activity and lower consumption of fruits and vegetables (Marko, 2008). However, little research has investigated the physical activity and nutrition opportunities provided to rural early years children. Additionally, no studies have employed an ecological framework to investigate factors (barriers and facilitators) identified by rural early years caregivers in the provision of physical activity and healthy eating opportunities among early years children in their care.

1.1.1 Statement of Purpose

The purpose of this study was to understand the factors associated with rural caregivers' decisions to engage in behaviours that provided physical activity and healthy eating opportunities to the early years children in their care. To achieve the main purpose, two main research questions were examined:

- 1) What were the barriers to the provision of physical activity and healthy eating opportunities identified by rural early years caregivers?

- 2) What were the facilitators to the provision of physical activity and healthy eating identified by rural early years caregivers

1.1.2 Importance

This study was needed for three primary reasons. First, Canadian early years children are failing to engage in the recommended 90 minutes of daily physical activity (Active Healthy Kids Canada, 2010). It is widely accepted that physical activity is important for healthy growth and development (Keon, 2009). Additionally, youth and adults are more likely to be physically active if they establish physical activity patterns during the early years (Canadian Sport for Life, 2010).

Second, many early years children in Canada are not meeting the nutrition recommendations for healthy eating (Needham et al., 2007). For example, children's diets are lacking in fruits, vegetables, and whole grains. As such, children are not receiving the nutrients that are necessary for healthy growth and development.

Third, early years children learn from the behaviors modeled by caregivers; as such, the physical activity and healthy eating behaviors of caregiver play a key role in determining the health behaviours of children (Temple et al., 2009). Thus, it is important to determine and understand the factors that influence rural caregivers in the provision of healthy opportunities for children in their care.

1.2 Literature Review

1.2.1 Benefits of Physical Activity and Nutrition in the Early Years

It is widely accepted that good nutrition and participation in regular physical activity promotes healthy living and lowers the risk of developing chronic diseases, such as obesity and diabetes, throughout all stages of life (Leavitt, 2008). These healthy behaviours are also key components of child development, as they provide many physical and psychological health

benefits (Warburton et al., 2006; Wilkinson & McCargar, 2008). Research suggests that the health benefits of physical activity and healthy eating are most effective when these patterns are established in the early years (Keon, 2009). A number of recent studies also emphasize the importance of establishing healthy behaviours in the early years, as this is a critical time to prevent the onset of chronic diseases such as obesity and cardiovascular disease (Ammermann et al., 2008; Raynor, Jelalian, Vivier, Hart, & Wing, 2009; Tucker & Irwin, 2008; Ward et al., 2008). Increases in overweight and obesity have recently been reported among children aged 2 to 5 years (Bower et al., 2008; Raynor et al., 2009). These recent trends have been associated low levels of physical activity and poor dietary practices among early years children (Black & Hurley, 2007; Reilly et al. 2004).

Although, the vast majority of research around the benefits of physical activity is conducted with grade school-aged children, adolescence, and adults, some studies have investigated the health promoting effects of physical activity in the early years. Saakslahti and colleagues (2004) measured the relationship between physical activity and the risk of developing coronary heart disease (CHD) in 4-year-old children from Europe. The study measured the triglycerides, total serum cholesterol levels, and systolic blood pressure of male and female children who participated in light, moderate, and vigorous levels of physical activity over the course of three years. The results indicated that physical activity was related to a decrease in the prevalence of CHD risk factors in early years children. These researchers determined that highly active children benefited from health-maintaining effects of physical activity. Specifically these children received an increase in protection against developing CHD in the future (Saakslahti et al., 2004).

Physical activity in the early years has also been identified as a key factor supporting fundamental movement skill development. According to the National Association for Sport and Physical Education (2002) (NASPE), movement skills are basic patterns of movement such as catching, throwing, kicking, and jumping. Body management activities, manipulation opportunities with a variety of equipment, and both locomotors and non-locomotors activities should form the basis of a young child's movement experiences (Temple & O'Connor, 2005). These basic movement patterns can be refined and combined to provide a foundation for lifetime sporting, recreational and physical activities. However, evidence suggests that if children do not establish these fundamental movement skills in the early years, they are less likely to participate in sports and physical activities later when they become school age and as they progress into adolescence (NASPE, 2002). Although not extensive, research to date illustrates that physical activity during the early years is beneficial for healthy child development and long-term health and wellness.

In addition to understanding the benefits of physical activity in the early years, there are also many benefits to healthy eating. Dietary patterns are established in the early years, thus it is essential that early years children be regularly introduced to a variety of healthy foods (Black & Hurley, 2007). Although it is not uncommon for young children to reject new foods, it is important that parents and caregivers are persistent and continue to offer the children healthy food choices. The child may not try the new food at first, but if the food continues to be presented in different ways the child is much more likely to try it (Dietitians of Canada, 2006). Moreover, poor dietary patterns that are not addressed early on may negatively affect children's growth and development. They may also cause long-term unhealthy eating patterns (Black & Hurley, 2007).

The Canadian Food Guide (“Eating Well with Canada’s Food Guide”) offers recommendations for children ages 2 years and older. These guidelines promote the consumption of a well-balanced, nutrient-rich diet. These recommendations have been designed to promote healthy growth and development in the early years. Children who follow the recommended eating pattern are more likely to meet their nutritional requirements, achieve overall health and vitality, and lower their risk of suffering from chronic diseases (Health Canada, 2007). For toddlers (2 to 4 years old) and preschool children (4 to 6 years old), specific serving sizes have been recommended for each age group. Among infants and children, ages 6 months to 6 years, the most common nutritional deficiencies reported are calcium, vitamin D, and iron (Brown, 2008). Health Canada emphasizes that in order to support healthy development early years, children should consume foods that are high in these nutrients (2007).

Recent studies have shown that good nutrition in the early years can protect against a range of health and economic consequences (Ruel & Hoddinott, 2008). Nutrition patterns of early years children have been closely linked to physical and cognitive development. According to Ruel and Hoddinott (2008), early years children who are poorly nourished may have delayed motor and cognitive skills development. A significant economic burden has been placed on Canada’s health care system, as a result of the resources allocated to healthcare for individuals suffering from diseases related to poor nutrition (Ruel & Hoddinott, 2008). Less well known are the indirect long-term costs of poor nutrition. For example, adults who were malnourished as children have been found to be less physically and intellectually productive, and attain lower levels of education (Pollitt et al., 1996; Ruel & Hoddinott, 2008). Thus, the establishment of healthy eating behaviours in the early years may result in short-term and long-term health benefits, and also in economic benefits.

1.2.2 Current Physical Activity and Nutrition Patterns of Canadian Early Years Children

The benefits of physical activity and good nutrition, and the high health and economic burden of physical inactivity and unhealthy eating are well researched. However, poor physical activity and dietary patterns continue to be reported among Canadian early years children (Shields, 2006; Temple et al., 2009). Although how much and what type of physical activity is necessary to optimize the health and development of Canadian early years children is unclear, evidence has indicated that early years children do not participate in physical activity of sufficient intensity, duration, and frequency adequate for healthy benefits (Temple et al., 2009; Timmons et al., 2007). Despite this lack of evidence, there is general consensus among experts that early years children should not be sedentary for more than 60 minutes at a time (except when sleeping) and they should engage in a minimum of 90 minutes of physical activity daily (Active Healthy Kids Canada, 2010; NASPE, 2002).

Findings of a recent Canadian study suggested that some early years children are insufficiently active during their time in child care. Temple et al. (2009) examined the physical activity levels of 65 children between 3 and 5 years of age in child care centres in British Columbia, Canada. Accelerometers and direct observations were used to measure the MVPA levels of the children. During the 8 hours that the children spent in care, they engaged in an average of 1.76 minutes of MVPA per hour (Temple et al., 2009). MVPA is operationally defined as activities that raise one's heart rate (NASPE, 2002; Temple et al., 2007). These physical activity levels are significantly lower than current recommended 90 minutes of physical activity daily for early years children (Active Healthy Kids Canada, 2010).

A longitudinal study conducted by Reilly et al. (2004) investigated physical activity and sedentary behaviours among preschool children in an urban care centre in Scotland. The

researchers monitored the total energy expenditure (TEE) and sedentary behaviour of children at 3 years of age and again when the children were 5 years old. They determined that the TEE of boys was significantly higher than TEE of girls at 3 years of age and the TEE increased from ages 3 to 5 years in boys and girls. An accelerometer was used to measure the time children spent engaging in sedentary and active behaviours. The results showed that girls 3 years of age spent an average of 81% percent of their time in sedentary behaviour, while boys 3 years of age spent, on average, 76% of their time in sedentary behaviour. At 5 years of age, a slightly lower percentage of time in sedentary behaviour was reported for girls and boys, thus children became more active as they became older. Reilly and colleagues (2004) also found that children in this study only spent 20 to 25 minutes per day engaging in MVPA. These findings suggest that children in Scotland establish sedentary lifestyles by 3 years of age.

Similar findings were reported in a study conducted by Pate, Pfeiffer, Trost, Ziegler, and Dowda (2004). These researchers studied 281 children ages 3 to 5 years, from nine urban preschools in Columbia, South Carolina. Accelerometers and direct observations were used to calculate levels of MVPA participation among preschool children. Overall, children spent an average of seven minutes per hour participating in MVPA. Researchers of this study also reported that boys engaged in a significantly larger amount of MVPA than girls (Pate et al., 2004). Considering that most children attend preschool for 8 hours a day, these children would be engaging in approximately one hour of physical activity daily. The results of these studies provided useful information on the physical activity behaviours of early years children in urban care centres. However these studies did not investigate the physical activity practices in rural early years care centres.

1.2.3 Physical Activity and Healthy Eating Patterns of Rural Children

Rural Canadians are not as active as their urban counterparts (Pampalon, 1991; PHAC 2006). In addition, an annual report by the CPHI (2006) stated that compared to children living in urban Saskatchewan, children in rural settings reported less participation in physical activity (Marko, 2008). A study conducted by Bruner et al. (2008) found that rural adolescents were more likely to be overweight than urban adolescents. However, the researchers in this study were unable to identify specific behaviours as risk factors that could fully account for the differences in overweight and obesity among rural and urban adolescents. Bruner and colleagues (2008) recommended that future studies consider using a prospective design that focuses on measuring correlates of healthy living in the rural environment (e.g., physical activity opportunities, condition of recreation facilities and accessibility of nutritious foods).

Current research investigating the physical activity patterns of rural children has focused primarily on school-aged children. It has been determined that the majority of rural school-aged children are not active enough for health benefits (Bilinski, Semchuck, & Chad, 2005; Marko 2008; PHAC 2006). Bilinski et al. (2005) investigated the physical activity patterns of children in grades four to six (aged 8 to 13 years), living in rural Saskatchewan. A two-part self-report questionnaire, which included a seven-day recall, was administered to 100 students. The results indicated that during the seven-day recall only 53% of the rural children reported being active enough for health benefits. Bilinski and colleagues (2005) suggested that three key factors impact the physical activity levels among rural children. The first factor is participation in physical activities in and out of school. The second is parental support. Children whose parents were not able or willing to drive to extracurricular physical activities were less likely to meet the guideline for physical activity. Lastly, distance from activities was suggested as a key factor

impacting the physical activity levels of rural children. It is particularly difficult for rural families to enroll their children in physical activities outside of school because most parents have to travel a minimum of 40 minutes for their children to attend the events. To date, there is no research that investigates the physical activity patterns of children attending rural early years care centres.

In addition to engaging in low levels of physical activity, research indicates that the diets of Canadian early years children are lacking in fruits and vegetables, and do not have sufficient nutritional value to support healthy development (Desrosiers, Bedard, & Dubois, 2006; Fox, Pac, Devaney, & Jankowski, 2004; Gariguet, 2004; Wilkinson & McCargar, 2008). Moreover, 26.8% of the daily calories consumed by children aged 4 to 8 years were consumed between regular mealtimes and the majority of these foods were processed containing large amounts of saturated fat, sugar, and sodium (Gariguet, 2004). Health Canada (2007) recommends that in order to promote healthy development, early years children should consume a balanced diet of fruits, vegetables, whole grains, low-fat dairy products and lean meats. Furthermore, previous research has found that children who consume diets that are high in processed foods, are at an increased risk for becoming overweight or obese (Shields, 2004). Additionally, research shows that children who consume fewer than 5 vegetables and fruit daily are significantly more likely to be overweight or obese (Shields, 2004).

A recent study conducted in Canada used qualitative methods to understand the eating habits of 4-year-old children in urban communities in Quebec (Desrosiers, Bedard, & Dubois, 2006). Researchers conducted interviews with the children's parents and found that 8 to 15 % of children in the study did not eat breakfast in the morning, and 72% of the children ate meals from a restaurant on a weekly basis. This is a concern because, on average, when compared to

home-cooked foods, meals prepared in restaurants are lower in fibre and higher in fat, sugar, and salt, which is associated with a number of health risks such as obesity, diabetes, and heart disease (Desrosiers et al., 2003). Children in this study had a low intake of dietary fibre combined with higher than recommended levels of fat. Parents reported that they often fed their child while driving and it was easier to give their child pre-packaged snack foods. As a result, children in this study also consumed a large amount of processed foods, such as granola bars and fruit juice beverages.

These studies are important as they suggest that the nutritional patterns of Canadian urban early years children may not be adequate for healthy growth and development and may be associated with increases in overweight and obesity. Little is known about the healthy eating patterns of rural early years children. However, it has been reported that there are rural-urban differences in health behaviours of adults (Marko, 2008). Thus, further research is needed to investigate the eating patterns of rural early years children and the factors influencing their healthy eating behaviours (Marko, 2008; PHAC, 2006).

Numerous studies have reported that rural residents have poorer dietary practices than their urban counterparts (CPHI, 2006). A recent study conducted in Saskatchewan by Marko (2008) suggested that rural children and youth consume fewer fresh fruits and vegetables than urban youth. A similar study was conducted to investigate eating habits of youth in Alberta and Ontario. The study examined associations between geographic locale (rural/urban) and dietary behaviours of the adolescents in both provinces. Youth from rural settings consumed more servings of food high in fat and sugar than their urban counterparts (Minaker et al., 2006). Although there is no research that specifically investigates the dietary patterns of rural Canadian early years children, it is probable that rural early years children may have access to similar

foods as older children in the same geographic location. Therefore, they too would have lower fruit and vegetable consumption than urban early years children (Marko, 2008).

1.2.4 The Role of Caregivers in Influencing Physical Activity and Nutrition Patterns of Early Years Children

In order to increase the current physical activity and healthy eating patterns of both rural and urban early years children, it is necessary to understand factors that influence these behaviours. Previous research has reported that environmental factors have a large influence on establishing the physical activity and nutrition practices of early years children (Finn, Johannsen, & Specker, 2002; Froehlich & Humbert, 2009; Jackson, et al., 2003; Trost, Sirard, Dowda, Pfeiffer, & Pate, 2003). Interpersonal aspects of a child's environment play a key role in determining the physical activity and nutrition patterns of early years children (Benjamin et al., 2007; Froehlich & Humbert, 2009). These interpersonal factors include: behaviours and prompts of parents, caregivers, and other children. It is difficult to measure the effects of these factors because children 6 years and under cannot complete surveys and inventories relating to these social variables. Measures such as direct observation, parent/caregiver reports, and accelerometers are often used to measure the effects of social variables on early years physical activity and nutrition behaviour. Based on such assessments, researchers reported that physical activity and eating behaviours of parents, caregivers, and other children significantly influence the behaviours of toddlers and preschool children (Sallis et al., 1993; Timmons et al., 2007).

Parents play a large role in influencing the development of physical activity and healthy eating of early years children (Timmons et al., 2007). However, over half of Canadian early years children are cared for out of the home (Bushnick, 2006). In the past decade, Canadian daycare centres have reported large increases in enrolment, where usage has increased from 20%

in 1995 to 28% in 2003 (Bushnick, 2006). Children are typically in care from 9:00 am to 5:00 pm (Bushnick, 2006). During their time in care, children consume over 50% of their daily dietary intake. Additionally, children are in care during the hours that experts have suggested are optimal for active play (Ammerman et al., 2007; Story et al., 2006). Since many children spend a large portion of their day in care centres, caregivers have an influential role in shaping the physical activity and healthy eating behaviours of early years children (Ward et al., 2008).

It is well established that children learn and develop behaviours through observation of others (also known as observational learning or modeling; Bandura, 1986). Child care settings provide an optimal environment for caregivers to model health promoting behaviours. Previous research suggests that the attitudes and beliefs caregivers have toward behaviours, such as physical activity and healthy eating, can impact how early years children in their care engage in these health promoting behaviours (Froehlich & Humbert, 2008; Needham et al., 2007; Timmons et al., 2007; Verrall, Berenbaum, Chad, Nanson & Zello, 2000). Bower and colleagues (2008) reported that previous training in physical activity and staff behaviours were the strongest predictors of physical activity behaviours of children in child care centres. In addition, children were more likely to be physically active when caregivers participated in physical activities with the children, such as dancing, hide-and-seek, and outside games (Bower et al., 2008). Thus, it is necessary to identify the factors such as (physical activity and nutrition) knowledge, attitudes and beliefs, that affect caregivers' decisions to engage in behaviours that promote physical activity and good nutrition among children in their care (Timmons et al., 2007; Verrall et al., 2000).

1.2.5 An Ecological Model

To identify early years caregivers' behaviours and practices associated with the provision of physical activity and healthy eating opportunities, it is essential to understand the correlates of

these behaviours. (Nahas et al., 2003). Correlates refer to those factors that may affect an individual's behaviour (Bauman, Sallis, Dzewaltowski & Owen, 2002; Sallis, Prochaska & Taylor, 2000). Correlates may be characterized as barriers, those factors identified as discouraging behaviours, and facilitators, those factors identified as promoting behaviours (Nahas et al., 2003). These factors can influence caregivers' decisions regarding the promotion of physical activity and healthy eating behaviours. For example, previous research shows that personal health and wellness and co-worker support are key factors in influencing caregivers' attitudes and behaviours toward the provision of physical activity and healthy eating opportunities in urban early years care centres (Froehlich & Humbert, 2009).

Models used in previous research suggest that three factors influence health behaviours: intrapersonal, social, and environmental (Sallis & Owen, 1999; Timmons et al., 2007). However, a limitation of these models is the broad categorization of factors. The ecological model developed by McLeroy and colleagues (1988) uses a multilevel approach that serves to direct attention to specific factors identified by participants (Gyurcsik et al., 2006; Needham et al., 2007; Sallis & Owen, 1999). The ecological model can be used in data collection as it allows the researcher to develop ecologically structured questions aimed at identifying factors influencing behaviour. The model can also be used in data analysis to classify factors into one of five ecological categories (intrapersonal, interpersonal, institutional, community, and public policy) outlined in the model (McLeroy et al., 1988) (See Figure 1). The ecological categories are systematically connected (McLeroy et al., 19988). Therefore, the factors within in each category may be interconnected and as such, a factor from one ecological category may influence a factor in another ecological category. The identification and classification of factors into specific categories outlined in the ecological model is important, as it provides the information necessary

for developing initiatives aimed at alleviating barriers and targeting facilitators identified by caregivers (McLeroy et al., 1988; Needham et al., 2007; Sulz., 2008). Such information could support rural early years caregivers in the promotion of physical activity and healthy eating within their care centres.



Figure 1. Ecological Model adapted from McLeroy and colleagues (1988)

1.2.6 Barriers

Barriers are obstacles that hinder an individual when they are attempting to engage in behaviours that promote physical activity: they may be intrapersonal barriers, such as an individual's lack of knowledge, or they may be interpersonal barriers, such as a lack of support from co-workers (Allison, Dwyer, & Makin, 1999; Needham et al., 2007). Very few studies have examined specifically the barriers perceived by caregivers in their efforts to promote and provide both physical activity and healthy eating among Canadian early years children in their care (Froehlich & Humbert, 2009; Needham et al., 2007).

Research conducted by Needham and colleagues (2007) used focus group interviews to investigate the challenges perceived by urban care centre staff as they supported healthy eating among children in their care. An ecological model was used to categorize the barriers identified by caregivers into one of three factors: intrapersonal, interpersonal, and physical environment (McLeroy et al., 1988). The results provided useful information on factors that make it challenging for child care staff to support healthy eating among early years children.

Furthermore, there are at least three ways that results from this study can be expanded. First, this study cannot be generalized to care centres in various geographic locations, because only urban care centres participated in the study. Thus, examination of rural care centres would offer an expansion. Second, this study only investigated barriers to supporting healthy eating among early years children. It did not examine the factors influencing early years caregivers in the promotion of physical activity. Third, factors which aid (facilitators) caregivers in supporting healthy eating among early years children were not distinctly identified.

As indicated earlier, both physical activity and healthy eating play a key role in supporting healthy growth and development in children and these behaviours should be established in the early years (Keon, 2009; Needham et al., 2007; Timmons et al., 2007). Froehlich and Humbert (2009) investigated factors that influence urban caregivers' decisions and abilities to engage in behaviours that promote physical activity and healthy eating among early years children in their care. The researchers used one-on-one interviews designed around McLeroy's ecological model and, the specific factors identified by caregivers were categorized into one of five categories outlined in the ecological model. The urban caregivers in this study identified personal physical activity patterns and lack of knowledge regarding healthy foods as personal barriers to promoting physical activity and healthy eating among the early years

children in their care. The following factors were reported as barriers hindering their ability to promote physical activity and healthy eating practices: coworkers' support, parental support, access to resources, time spent outside, children's selective eating, and play restrictive rules including procedures and policies. The study provided detailed information regarding factors influencing caregivers' decisions to engage in behaviours that promote both physical activity and healthy eating among early years children in their care. However, the researchers did not include rural caregivers as participants in the study. Therefore, potential rural-urban differences among the perceptions of caregivers were not addressed. Evidence indicates that differences in health promoting behaviours exist among rural and urban residents (Marko, 2008). Investigating these differences would be beneficial to understanding factors affecting the choices of all caregivers to support physical activity and healthy eating among early years children.

1.2.7 Facilitators

To clearly understand the decision-making process of engagement in behaviours that promote physical activity and healthy eating, it is necessary to identify all factors that influence an early years caregivers' decisions to engage in these behaviours. Factors that aid caregivers in promoting and engaging in healthy behaviours, such as healthy eating patterns and co-worker support are defined as facilitators (Nahas et al., 2003). Identifying facilitators is important from an intervention perspective in that targeting facilitators along with alleviating barriers may be more effective than focusing solely on facilitators or barriers (Rimmer, Riley, Wang, Rauworht, & Jurkowski, 2004).

To date, limited research has specifically focused on understanding perceived facilitators to engaging in behaviours that aid early years caregivers in the promotion of both physical activity and healthy eating (Froehlich & Humbert, 2009). However, a study by Temple and

O'Connor (2005) explored the factors that influenced physical activity opportunities provided to Australian children in family daycare. Family day homes are care environments located in a caregiver's home; no more than seven children can be in care at one time, and only four of the seven children can be under the age of 5 years (Temple & O'Connor, 2005). Although this study did include barriers to physical activity, it also revealed factors (facilitators) that aided caregivers in the provision of physical activity. These facilitators included availability of training opportunities for caregivers and a number of helpful resources that provided caregivers with ideas for providing physical activity opportunities for children in their care.

The study conducted by Froehlich and Humbert (2009) previously discussed in the barriers section, also explored facilitators that aided urban caregivers in promoting physical activity and healthy eating among children in their care. The intrapersonal factors that caregivers identified as facilitating physical activity were personal health and wellness and adequate knowledge regarding the importance of engaging in physical activity and healthy eating. Although very few factors were identified by caregivers as facilitators, some urban caregivers did indicate access to community gyms and resources for making healthy meals as key factors aiding the promotion and provision of physical activity and healthy eating opportunities for early years children. This study provided necessary information on factors that influence urban caregivers in the promotion of physical activity and healthy eating among early years children in their care.

1.2.8 Summary and Statement of Purpose

In summary, the purpose of this study was to understand the factors associated with rural caregivers' decisions to engage in behaviours that provided physical activity and healthy eating

opportunities to the early years children in their care. In order to achieve this purpose, two main research questions were examined:

- 1) What were the barriers to the provision of physical activity and healthy eating opportunities identified by rural early years caregivers?
- 2) What were the facilitators to the provision of physical activity and healthy eating identified by rural early years caregivers?

CHAPTER 2

2.1 METHODOLOGY

2.1.1 Research Design

Qualitative methods were used to gain an understanding of the barriers and facilitators that rural caregivers experienced when attempting to provide physical activity and healthy eating opportunities for early years children in their care. Qualitative research allows the researcher to understand and interpret aspects of the world and increases the universal knowledge of objective and subjective lived experiences being studied (Thomson, Nelson, & Silverman, 2005). This type of research provides an avenue for exploring participants' view of reality, obtaining a common understanding of the meaning assigned to everyday experiences, and enables the researchers to identify commonalities among themes that emerge from the descriptions of participants (Reinharz, 1992). This is a valuable method for understanding the research topic and capturing the participants' beliefs, values, and experiences (Thomas et al., 2005). No research has investigated the specific barriers and facilitators identified by rural caregivers in their efforts to promote and provide physical activity and healthy eating opportunities in early years care centres. Thus, the experiences and perceptions of rural caregivers cannot be pre-determined, which required qualitative research design was utilized in the present study. This design allowed the researcher to identify and understand the experiences and perceptions of rural caregivers.

The goal of qualitative research is to gather and collect insightfully rich, meaningful, and textured data that captures the participants' beliefs and lived experiences (Creswell, 2002). To accomplish this goal, semi-structured qualitative interviews were utilized in this study. Semi-structured interviews are often used when the researcher knows enough about the domain of

inquiry to develop questions about the topic in advance of interview, but not enough to be able to anticipate the answers (Morse & Richards, 2002). In addition, semi-structured interviews contain open-ended questions that allow the participants to express their experiences and identify the barriers and facilitators that apply to their personal lives (Thomson et al., 2005).

2.2 Participants

A total of eight care centre directors/caregivers participated in the study. The participants were sampled from rural care centres in the same rural health region. This health region is located in northeast part of the province and includes one city, 58 municipalities, and five First Nations communities. The population in the health region is approximately 41,500. The health region recently conducted a research study called “Understanding the Early Years: 2005-2008” (Ives et al., 2008). This was a community mapping study aimed at understanding the overall health and well being of early years children. One key finding reported was that early years children in the health region were not as ready for schools in the area of physical development. Specifically, some children were not reaching developmental milestones associated with motor skill development. For example, children did not have the necessary motor skills for tying their shoes, throwing a ball, and hopping on one foot. Furthermore, early years children in this region consumed less fresh fruits and vegetables than most early-years children in Saskatchewan. In response to these findings, healthcare workers in the health region began to develop an initiative that aims to promote the health of early years children, families, and caregivers in their health region. A member of the team developing the initiative invited me to help in the initial stages of the initiative. This individual became a key informant for my research, as he connected me with all of the care centre directors throughout the health region. The current research study completed the first step of the initiative, as it identified factors that influenced caregivers in the

provision of physical activity and healthy eating practices provided in care centres located in the health region.

The participants were female directors/caregivers over the age of 18 years, who lived within or nearby the community where their care centre was located. The care centre directors worked on the floor with the children, and, as such, they were also child caregivers. All participants were females, as no males were employed at any of the care centres included in the study. One caregiver from each care centre was interviewed, with the exception of one care centre, where two directors/caregivers participated in the interview. All licensed care centres in the health region agreed to participate in the study. This may indicate that caregivers wanted to their experiences to be heard. All participants had attended a post secondary institution and received a diploma from the Early Childhood Educator program. The caregivers worked from 8 to 9 hours daily. The number of caregivers working at each care centre, ranged from 5 to 12, depending on the number of children at each care centre. In most of the participating care centres, the child to caregiver ratio was 6:1.

2.3 Description of Care Centres

In order to provide a rich and thick description of what is being studied, a researcher's description should reflect everything they have observed and heard (Patton, 2002).

In the current study, I documented detailed observations about the care centre environments. These included describing both indoor and outdoor play areas and the dining area in each of the care centres. Collecting this information can be beneficial as it provides greater detail of a study and can aid in comparisons among similar environments in future research.

The care centres were located in rural communities of similar sizes and were housed in facilities that had been specifically built or renovated for a care centre. My observations of the

care centre environments determined that all care centres complied with the provincially legislated dimensions for outdoor play space. Some care centres had larger play areas than other care centres. However, those care centres with smaller outdoor play areas also had access to the local school playground or park. Variation among indoor play areas was prevalent among care centres. For example, a few care centres had an entire room of the care centre devoted to gross motor skill activities; whereas the majority of care centre did not have the space to do this. Descriptions of dining areas were similar across all the care centres. The dining areas were located in the main living area of each care centre and there were typically two to four tables with a chair for each child. A more detailed description of specific resources and equipment located in the care centres is reported in the document analysis section.

2.4 Data Collection

2.4.1 One-on-One Interviews

At the beginning of each interview, I explained the purpose of the study. I also assured the participants that the study was approved by the University of Saskatchewan Behavioural Research Ethics Board (Appendix A). With the participants' consent, the interviews were tape-recorded. The interviews were approximately one hour and took place at the care centre during working hours. Carrying out the interviews during care centre hours enhanced discussions as participants frequently showed me examples of activities and resources used in the care centre. The participants were given a consent form (Appendix B) and providing they read the form and still wished to participate, the researcher asked them to sign the consent form before the interview began. One-on-one interviews are a commonly used data collection method in health and social research (Ryan, Coughlan & Cronin, 2009). One-on-one interviews are a valuable method for gaining insight into people's perceptions, understandings and experiences of a given

phenomenon, and can contribute to in-depth data collection (Ryan et al., 2009). It helps a researcher to engage in conversation with the participant. However, the interview is not only a conversational interaction between two people; as they require considerable knowledge and skill on the interviewer's behalf. Specifically, the interviewer must be able to guide the conversation to ensure the participant discusses issues related to the topic under investigation. This is a private type of interview format and allows the participant to feel comfortable sharing personal experiences with the researcher. As such, the researcher made every effort to ensure that the participants felt comfortable sharing their experiences and perceptions.

Confidentiality of all data provided was assured. No names or means of identification were or will be used in any printed or published reports. Anonymity or protecting the participants' identities was assured in the reporting and all aspects of the study. When the interviews were completed, participants were given a debriefing form and asked if they had any questions (Appendix C).

2.4.2 Semi-structured Interview Guide

The questions in the interview guide were developed around the ecological model, which was beneficial because it afforded a systematic approach for data collection and analysis (McLeroy et al., 1988). According to the ecological model, behaviour is influenced by factors that can be categorized as: intrapersonal, interpersonal, institutional, community, and public policy (McLeroy et al., 1988). Including open-ended questions, developed around an ecological framework, allowed barriers and facilitators identified by participants to be classified into one of five factors outlined in the McLeroy's ecological model. To ensure thoroughness and accuracy of the questions and an approximate timeframe needed to complete the interviews, the interview guide was previously piloted in research conducted for my Honour's thesis. Revisions were

made before the interview guide was utilized in the rural care centres. A semi-structured interview guide containing open-ended questions was used to gather rich descriptive data (Appendix D). Specifically, the interview guide was used to structure discussion so that participants could share information about facilitators and barriers they experienced when providing physical activity and healthy eating opportunities in their care centres. Since the interviews were semi-structured, the conversations did not always include direct questions from the interview guide.

2.5 Researcher as an Instrument

2.5.1 Background of Researcher

In qualitative research, the researcher is the primary research instrument in the data collection and analysis (Morse & Field, 1995). The amount and quality of data and the depth of the analysis depend on the ability and the biases of the researcher (Morse & Field, 1995). It is important that the researcher be able to manage these biases throughout the entire research process. Various strategies are available within qualitative research to protect against bias (Mays, 1995). The strategies used in the current study will be discussed below.

I am the primary research instrument in this study; as such my experiences and beliefs will have an impact on the research. Thus, it is necessary for me to provide a description of my background. My interest in this area of research began in my first few years as an undergraduate student. While working at a child care centre, I became concerned with the lack of physical activity and poor diets of many children attending the centre. In addition, many of my university classes focused on healthy development through the life cycle and I became interested in the role of physical activity and healthy eating in child development. I completed my undergraduate Honour's degree in Psychology at the University of Saskatchewan. As part of the requirements

for my degree, I proposed and conducted a research study, and completed a thesis. My Honour's research investigated the barriers and facilitators identified by urban early years caregivers attempting to promote physical activity and healthy eating in care centres. My experiences as a new researcher during my Honour's degree provided me with an understanding of the ability of caregivers in an urban centre to provide health-promoting opportunities for early years children. In addition, I began to work as a member of an interdisciplinary team of health professionals, to develop an early years initiative aimed at promoting physical activity and healthy eating among early years children in Saskatchewan. Currently, the team is preparing to pilot the initiative in four care centres (two Anglophone and two Francophone centres). As a member of this interdisciplinary team I have had numerous opportunities to collaborate with faculty members and program coordinators in various health regions and key community stakeholders. I played a key role in organizing an early years symposium; during the symposium I facilitated group discussions. I also had the opportunity to present my Honour's work and guide group discussions at a workshop for early years caregivers.

Taken together, my past experiences have provided me with the insight and guidance necessary for understanding the research questions, engaging in data collection, and data analysis. As the researcher, my role was to contact the care centre directors, recruit participants, and facilitate the one-on-one interviews. Each of these tasks required me to use the different skills I developed in my past experiences. According to Bogden and Biklen (1992), a researcher must transition between the role of expert and the role of the learner. For example, during the contact and recruitment phases of the study, I found that I was able to assume the role of the expert to ensure these procedures were carried out properly. In qualitative research it is also important for researchers to understand that they are entering the participants' world, not as an

expert to give advice; but as an individual who has come to listen and learn from the participant (Bogdan & Biklen, 1992). According to Bogdan and Biklen (1992) the researcher is not a person like the participant, but rather a person who wants to know what it is like to be them, because the participant is the expert about their lives and personal experiences. According to Morse and Field (1995) it is important for the researcher to transition to the role of the learner during the interview phase because it allows the participant to take control of the conversation and interact with researcher. This in turn helps the researcher to establish a connection and gain the participant's trust (Mores & Field, 1995). I assured the participants that they were the experts and I was there to learn from their perceptions and experiences. I explained to the caregivers that they worked in this environment on a regular basis; as such they were the only individuals who could describe the factors affecting their ability to provide healthy opportunities for children. I also emphasized the fact that there were no wrong answers; doing so helped me to create an environment where the participant felt comfortable interacting with me and sharing their perceptions and experiences.

2.5.2 Reflexive Journal

I kept a reflexive journal throughout the entire research process. Reflexivity is a process in which the researcher uses self-disclosure to reflect on the ways that personal attitudes, experiences and interests shape the research (Lincoln & Guba, 1985). The first section of the journal included a daily schedule and logistics of the research study. The second part of the journal was a personal account. In this section, I reflected upon what was happening in regards to my own values, interests, and growing insights. The third portion of the journal was a methodological log. In this section, I recorded methodological decisions, such as changes made during the interviews and the rationale behind the changes.

2.6 Document Analysis

Document analysis is another method for collecting data about the phenomena being studied (Patton, 2002). Analysis of documents can reveal what people do or did and what they value. Documents analyzed by a researcher typically exist prior to the research study. Types of documents may include both written and visual information (Patton, 2002). In this study, I investigated physical activity and nutrition policies at both provincial and community levels. I also reviewed the care centres' physical activity and healthy eating resources, and built environments, such as physical activity equipment like jungle gyms and sport equipment, posters promoting healthy behaviours, and the menus in the care centres. Additionally, I reviewed the study, "Understanding the Early Years" to obtain background and demographic information about the families and children attending the care centres.

2.7 Data Analysis

The goal of data analysis is to transform the lived experience of participants into a textual expression of its essence through reading, reflecting, and writing (Morse & Richards, 2002). This is an ongoing process that involves conducting interviews, keeping an ongoing journal and observing and reviewing documents and materials in the care centres. For example, following each interview, I recorded thoughts and observations in a reflexive journal. Additionally, I analyzed documents such as menus and daily schedules used in each care centre.

Once the interviews had been completed, the interviews were transcribed and mailed to the participants to review and confirm the information contained in the transcripts. A letter was sent with the transcripts asking the participants to comment on the transcripts and revise their transcript in order to ensure that the transcripts accurately portrayed their responses and views. The participants did not request that any revisions to their transcripts. The caregivers were also

asked to sign the transcript release form when they felt their transcripts were accurate. Upon receiving the transcript release forms, the data coding process began (Appendix E).

As previously discussed, McLeroy's (1988) ecological model was used to develop the one-on-one interview questions in order to identify and understand different levels of factors (barriers and facilitators) influencing rural caregivers' abilities to provide and promote physical activity and healthy eating among children in their care. The ecological model was also used to categorize results. The first step in categorizing the barriers and facilitators was to code the data into one of the five ecological categories. The organization of data into categories based on specific topics is referred to as topic coding (Morse & Richards 2002). This is an important first step in data analysis, as it allows data to be organized into broad categories that the researcher can return to for further review to create subtopics within the data (Morse & Richards, 2002). Following topic coding, the barriers were categorized into subtopics within each of the ecological categories (i.e. intrapersonal, interpersonal, institutional, community, and public policy) and facilitators were categorized into subtopics in each of the five categories (i.e. intrapersonal, interpersonal, institutional, community, and public policy). This coding processes produced 10 topics (see Figure 2)

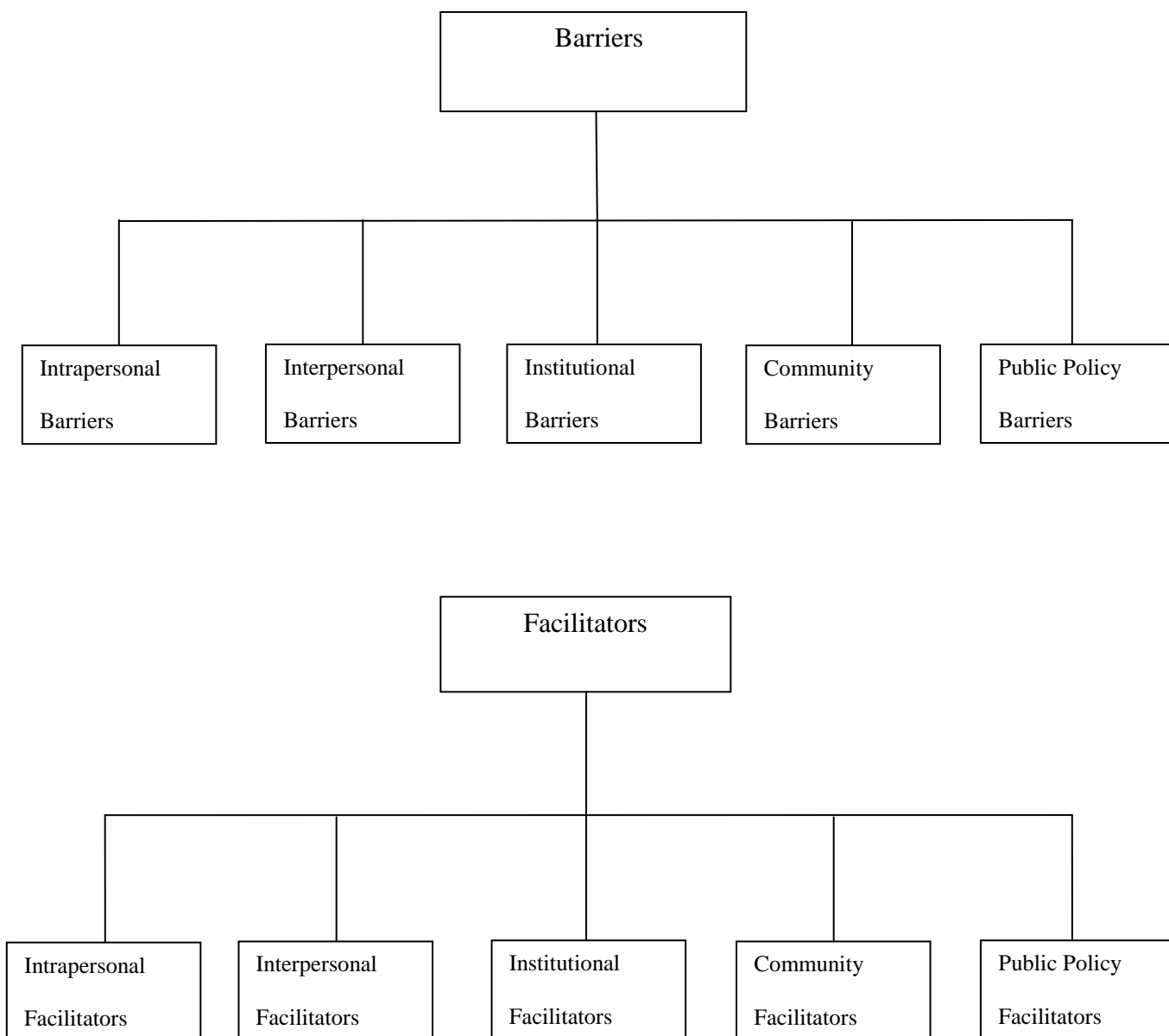


FIGURE 2. Data Coding

After categorizing the data by factor (i.e., barrier or facilitator) and ecological category, the final step of data analysis was to cluster similar barriers and facilitators together to develop themes. Supporting quotations and reflections from journal entries were selected to represent and illustrate key themes that emerged from the data (Morse & Richards, 2002). Key themes were then organized into four charts: barriers to providing physical activity opportunities, barriers to

providing healthy eating opportunities, facilitators to providing physical activity opportunities and facilitators to providing healthy eating opportunities (see Appendix F).

2.8 Quality of Results

It is widely accepted that research is sound and accurate when trustworthiness is achieved. If the data collected is applicable, consistent, and neutral then the research is considered trustworthy. Qualitative research has four general criteria that should be addressed when ensuring the truth-value of a study (Lincoln & Guba, 1985). The first construct outlined by Lincoln and Guba, (1985) is credibility. Achieving credibility ensures that participant and the setting are accurately identified and described. Credibility in qualitative research may be compared to internal validity in quantitative research. The researcher must be able to describe or understand the phenomena of interest through the eyes of the participants and the participants are the only ones who can legitimately judge the credibility of the results (Lincoln & Guba, 1985). This ensures that the reader is able visualize the research context. To achieve credibility, I carried out the interviews until I felt there was no new information to be learned and saturation had been reached. Credibility is also achieved through researcher credibility. As previously stated the researcher is the primary instrument for data collection and analysis in qualitative research. Due to my past experiences as an early years caregiver the credibility of the study was increased. Lastly, purposeful sampling was also used to increase credibility. Specifically participants were purposefully sampled through the help of care centre directors and healthcare professionals in the health region and were selected based on the criteria described in the previous section.

The second construct identified by Lincoln and Guba, (1995) is transferability. In qualitative research transferability refers to the degree to which the results can be generalized or

applied to other contexts or settings (Lincoln & Guba, 1995). Lincoln and Guba (1985), state that transferability is crucial when determining if the research findings from one study environment can be applied to other similar settings or populations. In order to support the transfer process the researcher must provide a rich description of the research context and the assumptions that guided the research (Marshall & Rossman, 2002). Transferability is a construct of qualitative research that equates to external validity in quantitative research. Establishing transferability is a necessary component of a sound research study. Ultimately the person who wishes to transfer the results is responsible for determining the transferability of the research. However the researcher can aid the reader in interpreting the results and thus transferring the findings to their own lives (Lincoln & Guba, 1985). In order to achieve transferability, a rich description of the research context, participants and settings is necessary (Thomas et al., 2005). A researcher may provide examples of how results can be transferred to a different environment. For example, the results of this study may be transferable to other rural care centres, as many rural care centres are located in similar environments. I have provided rich description of the research context and setting was documented in the methodology section. Additionally, the participants were clearly described, thus helping readers to determine if the findings in this study are applicable to their personal context and environment.

The third criterion that is related to quality of data is dependability (Lincoln & Guba, 1985). Dependability emphasizes the need for the researcher to account for changing conditions within the study, as well as changes in the research design (Marshall & Rossman, 2002). The researcher is responsible for describing the changes that occur in the setting and how these changes affected the way the researcher approached the study (Lincoln & Guba, 1985).

The semi-structured interview format allowed me to expand or make changes to my responses when necessary, thus ensuring that I was interacting appropriately with each participant and that I was sensitive to their unique experiences. This is an important process in qualitative research, as it increases the participants comfort level and in turn the accuracy of the experiences reported by the participants.

The fourth construct that should be achieved in qualitative research is confirmability. Confirmability refers to the degree to which the results of a study can be confirmed or corroborated by others (Lincoln & Guba, 1985). Lincoln and Guba (1985) emphasize the importance of having others aside from the researcher confirm the findings of a study. This will increase objectivity and address the issue of research bias (Lincoln & Guba, 1985). A number of strategies can be used to ensure confirmability. I chose to carry out member checking to enhance confirmability. This is a process whereby the participants review the data collected to determine if they support the conclusions that the researcher has made (Thomas et al., 2005). In the current study, I asked the participants to read the interview transcripts and make any necessary changes, such as adding or deleting statements. Sharing the conclusions with the participants can also enhance confirmability of analysis. Once the factors identified by caregivers were categorized as either barrier or facilitator and organized into ecological categories. When categories had been established in all of the data, they were grouped together in recurring themes. Data triangulation was used to determine if the categories and themes were consistently found in each data source (Creswell, 2002). Triangulation provides rich, detailed descriptions of the participant's perceptions, as it involves bringing together multiple sources of data to provide information about a single point (Creswell, 2002; Marshall & Rossman, 1995). Specifically the transcripts and charts were reviewed by two researchers to confirm analysis and ensure that the factors had

been appropriately categorized into the ecological categories. Additionally, journal entries were reviewed and documents were analyzed to confirm the information reported by participants during the interviews.

CHAPTER 3

3.0 RESULTS

The purpose of this study was to provide insight into the factors influencing rural caregivers in the provision of physical activity and healthy eating opportunities. McLeroy's ecological model was used to structure the interview questions and guide data analysis. Eight rural caregivers were asked questions regarding factors that made it difficult to promote physical activity and healthy eating (i.e., barriers). Additionally, caregivers were asked to identify factors that made it easier to provide these healthy opportunities to early years children (i.e., facilitators).

The factors identified by rural caregivers were organized into the five categories outlined in the ecological model. The findings from the semi-structured one-on-one interviews, my reflexive journal, and the document analysis are presented by factor (i.e., barrier/ facilitator), and ecological category (i.e., intrapersonal, interpersonal, institutional, community, and public policy). Within each ecological category, similar barriers and facilitators were then grouped together to create themes. Twelve themes emerged across the five ecological categories. Quotes have been chosen to represent the themes and provide a detailed description of the factors identified.



Figure 3. Ecological Model (McLeroy et al., 1988)

3.1 Barriers to Providing Physical Activity Opportunities

Eight rural caregivers were asked questions regarding the barriers to promoting and providing physical activity opportunities. Although participants valued the role of physical activity in the early years, caregivers also stated they often found it difficult to promote this behaviour in their care centres. Several barriers to the provision of physical activity opportunities in early years care centres were reported. These barriers were present in four of the five

categories outlined in the ecological model. The only category that barriers were not reported in was the intrapersonal ecological category.

3.1.1 Interpersonal Barriers to Physical Activity

Caregivers identified a number of interpersonal barriers that were influential in determining the physical activity opportunities provided in care centres. The themes that emerged within this category were: the low levels of physical activity of co-workers and caregiver perception of lack of knowledge among parents.

“Well I am the only who skates, so the kids really liked it when I skated with them, but it would be even better if the other staff could skate with the kids too” (C-3).

When discussing the behaviors of co-workers it was clear that the co-workers who did not engage in physical activity on a regular basis were less likely to engage in physical activities with the children. Participants explained that they suspected some of their co-workers were not active because they often sat at the side lines when they were playing with the children. This in turn, made it difficult for the caregivers to interest children in physical activities because many children would often want to sit on the sidelines with the co-worker, especially in the colder weather.

Caregivers’ perception of a lack of parental knowledge was also a theme that emerged under the category of interpersonal barriers. Participants explained that parents often failed to send the appropriate clothing for going outdoors.

“I think it would definitely make a difference for encouraging physical activity more if they (parents) had more knowledge about it. I don’t think it is something that you get parents having a whole lot of knowledge about.” (N-6)

“One of the problems that we find, especially this time of year is a lot of children don’t come with the proper clothing to take them out.”(N-5)

Caregivers felt this was an indication of a lack of parental understanding about the importance of physical activity for their children. A number of caregivers stated that they believed if parents were knowledgeable about the importance of physical activity in the early years they would be more likely to send the appropriate clothing for going outside. Additionally, participants reported that rather than being concerned with whether their children engaged in physical activity for health benefits, parents were more worried about their children burning off energy so they would not be hyper at home:

“In my conversations with parents and stuff, it seems more like they are more concerned with getting them to burn off some energy so they will behave better at home.” (N-6)

3.1.2 Institutional Barriers to Physical Activity

The institutional barriers reported were similar among all rural caregivers interviewed.

“When it is really cold we can’t get outside, it can be a challenge because we don’t really have space for an indoor gross motor facility right now.” (Z-5)

The key theme that emerged in this ecological category was a lack of space for the children to be physically active. The extreme cold in the winter and hot temperatures in the summer made it difficult for the caregivers to provide the children with opportunities to be active outside. Thus, care centre staff often had to keep children indoors and because the majority of care centres had limited space, it was very challenging for the caregivers to provide physical activity opportunities for the children. While visiting the care centres, I noted that space was limited and the rooms were not large enough for the children to engage in active play, such as running, jumping, and climbing. As well, there was a diverse age range among children in the care centre, thus making it difficult to ensure that all of the children had the opportunity to be physically active in a safe environment.

“Lots of times here it is age, the age of the children, because we are licensed for infants, 6 weeks and children to 12 years, and we are all incorporated into one, we are a licensed daycare, but we are like a family daycare, and a lot of daycares your infants are in this group and your toddlers are in this group, we are all together. So lots of times we have to work, to tweak the program a little bit to include them all, or we have to work around nap times and keep the non-napping children quite, and it’s hard when the weather doesn’t permit us to go outside, so it is the challenge to get all the children active and outdoors”. (Z-6)

3.1.3 Community Barriers to Physical Activity

It was apparent that some caregivers felt the geographic location of their community limited children’s opportunities to engage in organized sport.

“Well one thing is the isolation that comes with being in a small rural community, sometimes you don’t always have access to what the opportunities that they have in the city or the urban centers”. (Z-6)

Caregivers felt that some early years children attending their care centres lacked interest in playing sports because they were not introduced to these activities outside of the care centre. Specifically, caregivers explained that because their communities had fewer children than urban centres there were not always enough children to create teams for extracurricular sports. This lack of interest in sports made it difficult for caregivers to provide physical activity opportunities for the children. Thus, the theme that emerged from this ecological category was limited access to organized sports, as a result of geographic location.

3.1.4 Public Policy Barriers to Physical Activity

“If there was a policy (for physical activity) like in schools they have a 30 min time and so maybe that is what we should have a stipulated 30 min that we have to follow”(H-1)

The caregivers at all of the rural care centres reported there was no government legislated policy for the number of minutes per day that children must be active while they are in care. Thus, the theme that was unanimously identified among caregivers was a lack of physical activity policies for care centres. The participants explained that the nutrition policies were

effective in ensuring children were served healthy foods while in care. Therefore, they could not understand why a physical activity policy was not in place. It was clear that care centre staff felt that the development of a mandatory physical activity policy would support them in providing children with physical activity opportunities.

3.2 Barriers to Providing Healthy Eating Opportunities

Rural caregivers also reported barriers to the provision of healthy eating opportunities in early years care centres. Overall, when compared to physical activity, participants identified fewer barriers in their efforts to provide good nutrition. The barriers discussed were in three of the five categories outlined in the ecological model. As with previous physical activity section, participants did not identify any intrapersonal barriers affecting their ability to provide healthy eating opportunities in general. Additionally, caregivers did not report any public policy barriers to providing healthy eating opportunities for children in their care.

3.2.1 Interpersonal Barriers to Healthy Eating

Caregivers recognized the influence they had on determining the eating patterns of children. It was widely reported that while in care, children were easily influenced by the eating habits of both the caregivers and other children. In addition, caregivers found that the children were particularly influential in determining each other's eating habits.

“We usually eat whatever the cook makes; however I know some people [children] have personal preferences and some are not willing to eat certain things.”(N-10)

Thus, a key theme that emerged as an interpersonal barrier was the influence of others. Specifically, caregivers explained that during meal time at the care centre, it only takes one person (i.e., caregiver or another child) to say they do not like a particular food and instantly all of the children express dislike for the food:

“As soon as somebody said, Oh, I really don’t like whatever, and then nobody likes it.”(S-10)

It was difficult for caregivers to encourage children to eat healthy foods when co-workers or when other children expressed dislike for certain foods. In addition to the poor eating habits of care centre staff and other children, the other theme that became prevalent in this ecological category was caregivers’ perceptions of parental knowledge. Specifically, caregivers felt that parents did not fully understand the importance of regularly serving whole healthy foods and limiting the consumption of processed foods. Some caregivers reported that parents seemed to be too busy to take the time to learn how to prepare healthy foods for their children and this resulted in poor nutrition practices among children:

“I notice there are some kids that I see eating chocolate chip and chunky cookies and bags of chips in the morning.” (T-7)

The caregivers reported that children often ate convenience foods at home and some parents sent children with junk food for breakfast. Therefore, caregivers struggled to encourage the children to try new healthy foods. One caregiver stated that by simply watching the children at mealtime, it was clear which parents served healthy nutritional sound meals at home:

“When we bring out a new food you can just see their eating habits usually when we introduce roast and mashed potatoes they would rather have French fries and chicken nuggets so yes we see a lot of poor eating habits.”(H-7)

Many participants felt that if parents had a better of understanding of the importance of healthy eating in the early years, they would make a conscious attempt to serve healthy, unprocessed foods at home.

3.2.2 Institutional Barriers to Healthy Eating

Among all rural caregivers interviewed, the most commonly reported barrier in this category was a lack of funds for purchasing fresh fruits and vegetables.

“Our budget is limited and the cost has kind of prohibited us from buying whole wheat pastas and fresh fruits and vegetables” (N-10)

The cost of healthy foods is often higher in rural areas, as compared to urban areas. Thus, rural caregivers and cooks struggled to include these fresh foods in the menus. One caregiver reported that she often struggled with ideas for healthy, cost effective recipes. She found that it was often easier and cheaper to prepare a meal of macaroni and hot dogs. The caregiver understood that this meal had little nutritional value, but she said that with her tight budget she simply could not afford to splurge on fresh fruits and vegetables.

3.2.3 Community Barriers to Healthy Eating

“Well, it is really hard for us because we are half hour away from a large center, so we kind of have to go with whatever we can find in town and our little grocery store so we tend to make it up the week before as to what is in the flyer or what we have on hand or that kind of thing.”(S-7)

The majority of factors reported in the ecological category of community were considered facilitators. However, one key theme emerged as being a barrier to healthy eating; limited access to a variety of fresh produce as a result of geographic locale. Caregivers stated that the meals served in the care centres were primarily determined by the foods available in the local grocery. The fresh produce in many rural communities is very limited; as such caregivers did not have access to fresh fruits and vegetables. In turn they were forced serve frozen and canned vegetables.

3.3 Facilitators to Providing Physical Activity Opportunities

Although participants often found it difficult to promote physical activity in their care centres, they also reported a number of facilitators that made it easier to provide such opportunities for children. The facilitators identified by caregivers were present across four of the five categories outlined in the ecological model. The caregivers did not report any facilitators in the public policy category.

3.3.1 Intrapersonal Facilitators to Physical Activity

Rural caregivers unanimously stated that their own personal physical activity patterns made it possible for them to play actively with the children.

“Oh [physical activity] makes a world of difference especially because I am kind of a health nut and so I really encourage it, like if you can get out every day and walk you see a real difference in yourself like most of us here engage in regular physical activity, even if it yoga or Pilates. It really helps with your energy levels.” (H-7)

Furthermore, caregivers who were physically active explained that they understood the importance of regular participation. As such, these caregivers reported that whenever possible, they took the children on field trips to the local pool and skating rink. Thus, a key theme that emerged in this ecological category was personal physical activity patterns. Caregivers explained that engaging in regular physical activity allowed them to feel comfortable moving and playing with the children. One caregiver stated that the children were much more active when the caregivers were able to play with them:

“If we are not active, then how can we expect the children to be active?” (S-6)

The caregivers not only valued the role of physical activity during the early years, but participants also felt it was essential for living healthy lifestyles at their age. They explained that as early years caregivers it was their role to introduce children to a variety of physical activities

and to help them feel comfortable moving their bodies. I observed that some caregivers created a binder of gross motor activities that they did along with the children.

“I watched for a little while and she tried one and she kind of fell down and laughed and the kids laughed so they are not hesitant at all ladies, they try and then they laugh, make a joke of it.” (M-9)

3.3.2 Interpersonal Facilitators to Physical Activity

Co-worker knowledge about the importance of physical activity was a key factor facilitating caregivers in the provision of physical activity opportunities.

“We all have been here quite long so we are all on the same page and encourage the same, also we have the knowledge about what is healthy and that is really key” (H-8,9)

One caregiver explained that her co-workers were knowledgeable about the importance of physical activity and they made it a priority to incorporate physical activity into their own lives. In addition, caregivers reported that co-workers who valued physical activity were more likely to support caregivers in providing physical activity opportunities for the children. As such, the co-workers would agree to participate in physical activities with children. For example, one caregiver reported that her co-workers were always willing to go along with her on trips to the school playground or on nature hikes.

The second theme that was identified in the interpersonal ecological category was parental involvement.

“Our parents are all supportive.” (M-8)

“One of the dads was very involved in the local hockey program, and he got some of the Junior B Hockey Team to come and skate with the kids. So they [parents] help stuff happen. Also, we went out to one of the children’s family farm for a whole day and did a tour and that kind of stuff so they [parents] are just really involved.” (C-7)

Caregivers depended on and valued the support and help of parents. Parents' participation in care centre activities facilitated the caregivers' ability to provide physical activity opportunities for the children. Caregivers reported that parents, who were involved in the care centre activities, were more likely to ensure that their children had the proper clothing for going outdoors. Some caregivers felt that the actively involved parents had a positive influence on other parents who were not as active in the care centre. For example, many parents participated in community events outside of the care centre and caregivers felt this fostered good relationships among parents. As such, caregivers stated that parents encouraged one another to get involved in care centre activities (i.e. field trips), while interacting at community events.

3.3.3 Institutional Facilitators to Physical Activity

In my journal I noted that the majority of the care centre staff had been at the same care center for at least 2 years. Further, at one care centre, the staff had been there an average of 15 years.

"I have been at this daycare for many years..... we have developed a program where we actually go uptown[to a community exercise class] and it's parents and children or staff with children and we do things there too, like it is all physical activity and music and movement and things like that." (Z-4)

Many of the caregivers had grown up in or around the communities where the care centres were located. Thus, the staff members in each of the care centres were a tight knit group. Over the years, the caregivers had established and perfected many practices for providing physical activity opportunities. At one care centre a caregiver stated that since a lack of parental awareness about the importance of physical activity was a problem, the care centre staff organized activities to increase physical activity among the children's families:

"Actually we are close to another park and on father's day we get all the dads out there to have a soccer game so that is really nice and then with the mother's we like to do a tea party in the park, it is really nice and we even get grandparents to come out." (H-7)

The low turnover rate of care centre staff was also a theme that emerged in the institutional ecological category. Specifically, caregivers felt that their long-term employment at the care centre allowed them to be closely connected with their co-workers. Caregivers reported that close relationships among staff supported them in the provision of physical activity opportunities for children. Specifically, many caregivers reported that when they decided to take children outside to play, they could count on their co-workers to be enthusiastically supporting this decision.

3.3.4 Community Facilitators to Physical Activity

It was apparent that all of the care centres were able to access a number of community facilities. Access to these local facilities helped the caregivers provide the children with indoor space for physical activity when the weather was too poor to go outdoors.

“Yes, we do[access community facilities], in the summer time especially we basically can access the school whenever or holidays, like when there is not school, it is just when the school is in that it is hard to get into.” (S-5)

Regarding the provision of physical activity opportunities, one caregiver discussed the benefits of being able to access various facilities in the community, whether it was the local gym, community centre, or church. I observed that many of the care centres were in close proximity to the local schools. When I asked participants if the location of the school made it easier to access the facilities at the school the caregivers said yes, and explained they often walked across the street to use the school playground or gymnasium. As such, access to local facilities was an important factor that was reported as facilitating physical activity.

3.4 Facilitators to Providing Healthy Eating Opportunities

All participants were asked to discuss the facilitators associated with promoting and providing healthy eating opportunities for children in their care. The rural caregivers identified a

number of factors (i.e., facilitators) that aided them in facilitating healthy eating opportunities for children. Common facilitators were grouped into themes, and are presented across the five categories outlined in the ecological model.

3.4.1 Intrapersonal Facilitators to Healthy Eating

“I am always trying to incorporate healthy foods into the menu because I think eating healthy is really important.....we have things like boiled eggs and cottage cheese and as staff we always eat these healthy foods with the children” (H-8)

Caregivers emphasized the importance of eating healthy foods, not only at the care centre, but also in their personal lives. One caregiver stated that she made sure to bring healthy snacks to the care centre because the children were always interested in what caregivers were eating for their snack. The caregivers also felt that good nutrition patterns provided them with the energy they needed to be active with the children. Participants understood the role nutrition played during all stages of life. Caregivers felt that because they were aware of the benefits of healthy eating, it helped them to inform the cook about healthy foods and in turn the cook was able to prepare nutritious meals for the children. For example, one caregiver reported that she would bring healthy recipes she used at home to the care centre for the cook to try. Thus, personal healthy eating patterns were the theme that best represented the intrapersonal facilitators identified by caregivers.

3.4.2 Interpersonal Facilitators to Healthy Eating

It was apparent that the care centre cooks played a large role in determining the foods children ate while in care. In most care centres, the director and cook worked together to create the meal schedule. However, ultimately it was up to the cook to learn how to prepare the food.

“I think it is just all of us working together at it, I think, we used to have a six week one but it was too short so she added two more weeks and new food. Something when it starts to die out she just takes out the old stuff and puts in new food and new recipes and stuff which really helped.”(C-18)

All participants believed that, in order to provide nutritionally sound meals for the children, the cook must know how to cook healthy recipes and follow the Canada's Food Guide.

3.4.3 Institutional Facilitators to Healthy Eating

All care centres in Saskatchewan are required to have a kitchen for preparing meals (Government of Saskatchewan, 2009). Typically, each care centre has a cook or in some rural communities, the director does the cooking. Although government regulations are in place to ensure that children in care are receiving nutritional sound meals, it is up to the director of each care centre to enforce these rules. For example, one caregiver explained that as the care centre director, she made changes in the budget to ensure that fruits and vegetables would be purchased for the care centre meals. Additionally, she ensured that the cook used only whole wheat pastas and breads. Furthermore, the policy states that care centre meals must include one food from each of the four food groups and many caregivers reported posting Canada's Food Guide in the kitchen to provide the cook with ideas for healthy foods. Thus, compliance to nutrition regulations was the theme that emerged for the institutional ecological category.

“There are policies in place for nutrition and they work, as long as the director enforces them and ensures that the cook is following the regulations” (H-2)

Each care centre had its own set of rules that were followed during mealtime. Caregivers explained that because all care centre staff members were on the same page about mealtime routines, it was easier to encourage the children to try their healthy foods. For example, one caregiver said that it was a struggle to get the children to eat vegetables. As such, the caregivers at her care centre enforced a rule that if children wanted dessert, they had to try one bite of their vegetables.

3.4.4 Community Facilitators to Healthy Eating

Caregivers only reported one community factor that facilitated their ability to provide healthy foods to children. This facilitator was access to foods grown in the gardens of local community members, farmers, and parents. Since the care centres were located in rural areas, they were able to access fresh vegetables during the summer.

“Actually just this week we made muffins with zucchini from my garden.”(-18)

One participant explained that she knew most of the people in the community and, as such, community members often provided the care centre with fresh vegetables from their garden. Some caregivers took the opportunity to teach children about growing their own vegetables and they had started small gardens at the care centre. Although fresh vegetables from community members were a facilitator to healthy eating, this was a factor that was only present during the summer months.

3.4.5 Public Policy Facilitators to Healthy Eating

“We have had a nutritionist come and meet all the directors in the area and our consultant meets with us once a year and sees our menus and makes decisions, and gives us ideas. Also, the Early Learning and Child Care organization has been handing out resources that have ideas and so there is lots of information coming in about it [how to prepare healthy meals].”(S-8)

Caregivers reported that the health region provides support from a local nutritionist to ensure that care centre directors are following the nutritional policies legislated by the provincial government. These policies state that children must receive one food from each food group during meals and one food from two food groups for snacks (Government of Saskatchewan, 2009). Caregivers also explained that the nutrition policies helped them to understand what it meant to provide healthy meals to the children. For example, one caregiver reported that the local nutritionist used Canada’s Food Guide to teach caregivers how to prepare a variety of

healthy meals. The caregivers provided me with an opportunity to review their menus. This allowed me to analyze each menu and confirm that all care centres were following the nutrition policy developed by the Government of Saskatchewan. Additionally, the caregivers were taught the serving sizes and number of servings recommended from each food group, for early years children. Caregivers appeared to understand the importance of nutrition policies in care centres; they explained that government policies were necessary for ensuring that children were provided with opportunities for healthy eating. Participants felt nutrition regulations provided caregivers and cooks with a guide for healthy meal ideas. Thus government policies were a key theme that emerged in the public policy ecological category.

CHAPTER FOUR

4.0 DISCUSSION

Using qualitative methods, this study sought to explore factors that influenced rural caregivers in the provision of physical activity and healthy eating opportunities for early years children in their care. Specifically, the study utilized McLeroy's (1988) ecological framework to develop questions for the interview guide. Additionally, the framework was used to categorize barriers (factors that inhibit behaviour) and facilitators (factors that promote behaviour) into one of the five categories outlined in the ecological model. Identifying and understanding different factors is important since all factors do not influence behaviour in the same way. For example, intrapersonal factors relates to the characteristics of the individual, her/his knowledge, skills, life experience, attitudes, and behaviours as they interface with the environment and society (Hanson et al., 2005). Conversely, community factors influence behaviour through structural and functional aspects of the environment (Hanson et al., 2005). However, it was also apparent that some factors were interconnected among ecological categories. For instance, if a care centre did not have a large indoor space (institutional category) for active play, some community facilities, such as the school (community category) would allow care centres to use their gymnasium. The discussion on barriers and facilitators will be presented by ecological category for both physical activity and healthy eating. Key themes for physical activity and healthy eating were identified within each ecological category; as such these overarching themes will be discussed in the following sections.

4.1 Intrapersonal Factors

Caregivers identified several intrapersonal factors that influenced their ability to provide physical activity and healthy eating opportunities for children in their care. While caregivers

were asked to discuss both barriers and facilitators related to intrapersonal factors, the caregivers only reported factors that facilitated their ability to provide physical activity and healthy eating opportunities. This may be due to the fact that there were no intrapersonal barriers to the provision of healthy opportunities. However, the lack of reported intrapersonal barriers may also be attributed to downward social comparison. Specifically, social comparison theory states that individuals often assess how well they are doing by comparing themselves with others around them (Martin, Suls, & Wheeler, 2001). According to Martin and colleagues (2001) a person makes a downward comparison when comparing themselves to someone who is worse off than they are. This type of comparison generally makes one feel better about him/herself and they may be less likely to identify negative characteristics about themselves. Therefore when participants compared their physical activity and healthy eating patterns to those of their co-workers, they may have felt their co-workers had poorer physical activity and healthy eating patterns than their own. As such, participants may have perceived co-workers' behaviours to be more detrimental than their own behaviours, to the provision of healthy opportunities for the children in their care.

Although caregivers did not identify intrapersonal barriers, they did identify a number of intrapersonal facilitators and common intrapersonal factors were grouped together to create themes.

4.1.1 Physical Activity and Nutrition Patterns

Several caregivers stated that personal physical activity participation allowed them to experience the benefits of physical activity. Participants explained that when they engaged in regular physical activity they had more energy to be active with the children. In addition, caregivers found that engaging in regular physical activity helped them to feel comfortable

engaging in active play (i.e., climbing, running, rolling and jumping) with children. Additionally, confidence in their personal physical activity abilities seemed to be directly related to their decisions to provide physical activity opportunities for the children. For example, one caregiver explained that because she played on a local hockey team, she felt comfortable skating and would often take the children skating at the local rink. These caregivers reported that whenever possible, they arranged field trips to local recreation facilities. Participants explained that their mood always improved after engaging in physical activity and they felt that the children were happier and more content when they too were provided with opportunities to be physically active. Many caregivers stated that by providing opportunities for physical activity, they were supporting early years children to establish healthy physical activity patterns at a young age.

Little is known of the influence that caregiver attitudes and behaviours on the physical activity patterns of early years children. The majority of research focuses on how parents influence the physical activity patterns of their early years children. For example, a recent study by Loprizini and Trost (2010) investigated the influence of parental attitudes and parental physical activity patterns on the physical activity of early years children in Australia. The study included 156 parent-child dyads and researchers found a strong positive correlation between parental attitudes about physical activity and parental participation in physical activity. This, in turn, was positively associated with parent support for encouraging physical activity among their children. Furthermore, parent support for physical activity was positively related to increased physical activity participation among children. Thus, if parents valued physical activity and engaged in regular physical activity themselves, they were more likely to provide opportunities to support physical activity among their children. Although Loprizini and Trost (2010) did not include the influence of non-parental caregivers in their investigation, previous research does

show that early years caregivers had a significant influence on the non-physical activity behaviours of children (Bower et al., 2008; Story, Kapin hingst, & French, 2006; Temple et al., 2009). Therefore, past research is in line with the findings that physical activity behaviours and knowledge of rural caregivers influenced their decision and ability to provide physical activity opportunities for children in their care.

Personal healthy eating patterns were another intrapersonal facilitator discussed among most caregivers. Caregivers, who reported engaging in healthy eating behaviours in their personal lives, expressed their awareness and knowledge about the importance of healthy eating during all stages of life. It was evident that these caregivers were aware of what it meant to eat healthy. They described following a diet that focused on the Canada's Food Guide, which included eating a large variety of fruits and vegetables, and consuming whole grain foods and lean meats. Caregivers who followed a healthy diet explained that they made sure to model these behaviours to the children. Most literature in this area has found that parents and caregivers play a key role in establishing healthy eating behaviours among children (Needham et al., 2007; Segal & Gadola, 2008). Children learn from the behaviours modeled by their parents and caregivers. Parents and caregivers act as powerful socialization agents as they select the foods that are served and are role models for eating behaviours that children learn to emulate (Savage, Fischer, & Birch, 2007). Thus, if caregivers model healthy eating behaviours, children are more likely to develop healthy eating themselves. For example, a study by Hendy and Raudenbush (2002) found that pre-school children's intake of a novel food increased at those meals during which they observed their pre-school teacher enthusiastically consuming the food. Furthermore, many researchers support the notion that children's preference and eating patterns are largely a reflection of the foods that become familiar to them (Savage et al., 2007). This finding was also

supported in the current study. The caregivers discussed how they brought their healthy recipes to the care centre for the cook to use. As such, caregivers who engaged in healthy eating in their own lives used their knowledge to ensure that children at the care centre were provided with healthy meals. As result of introducing children to a variety of healthy foods, caregivers found that children who regularly attended the care centres became familiar with the healthy foods and ate them without any complaints. However, children that were new to the care centre or that did not attend regularly, were unfamiliar with most of the healthy foods and often refused to try them.

4.2 Interpersonal Factors

Interpersonal factors were the most commonly reported factors influencing caregivers' abilities to provide physical activity and healthy eating opportunities to children. This finding is widely supported in past research on factors influencing health promoting behaviours (Bjornstad, 2002; Needham et al., 2007; Rew, Horner, & Fouladi, 2010). Specifically, social factors, such as family, friends, and co-workers all play key roles in determining an individual's decision to engage or not to engage in healthy behaviours.

In the current study, some of themes representing the interpersonal factors that influenced caregivers were the same for the provision of physical activity and healthy eating opportunities and therefore, will be presented together. These themes included physical activity and nutrition patterns of others, and caregivers' perceptions of parental knowledge and involvement. The theme unique to healthy eating was knowledge of the care centre cook.

4.2.1 Physical Activity and Nutrition Patterns of Others

While the participants did not identify any of their own intrapersonal barriers to the provision of physical activity and healthy eating opportunities, they identified barriers related to

their actions and beliefs of co-workers. As such, these barriers were categorized as interpersonal barriers because caregivers identified that the personal behaviors of co-workers inhibited their ability to provide physical activity and healthy opportunities to children in their care.

Caregivers explained that some of their co-workers did not seem to understand the importance of physical activity and, as such, did not make incorporating physical activity into the schedule a priority. They felt the lack of understanding among co-workers was related to their inactive lifestyles. For example, one caregiver explained that her co-worker was uncomfortable engaging in active play with the children. The participant stated that her co-worker said she did not like to play soccer because she never really learned how to throw or kick a ball. Past research shows that fundamental movement skills are the building block for the development of physical literacy, and without such skills many children and youth withdraw from physical activity and sport and become more inactive in their teenage and adult years (Canadian Sport for Life, 2010). Caregivers said it was very challenging to provide physical activity opportunities for children when their co-workers were not comfortable participating. They explained that in order to successfully teach a game to a large group of early years children, they needed the support of the other adults. Furthermore, caregivers found that children quickly lost interest in activities when some caregivers were sitting on the sidelines.

Poor nutrition patterns of children's peers were also a factor that influenced caregivers' abilities to promote healthy eating among the children. Although caregivers did have an influence on children's eating habits, their peers seemed to have as much or more of an influence. Caregivers found that it only took one child to express dislike for a particular food and the entire table of children would not eat that food. However, peer influence could also facilitate caregivers' abilities to promote healthy eating among children. For example, one caregiver

explained that when a new food was served, they would tell the children how good it was and encourage the children to try the food. Most children would not try new food until another child had tried it, and if their peer liked the food, then the child would be willing to try the new food. Previous research suggests that peer influence has a stronger influence on children's eating habits (Needham et al., 2007). For example, Hendy and Raudenbush (2002) found that pre-school teachers' enthusiastic modeling of healthy eating was not as effective when children were seated with peers who exhibited dislike for the same healthy foods. Therefore, if peers exhibit healthy eating behaviours, they can help caregivers in promoting healthy eating among the other children. However, when peers dislike healthy foods this can be a large barrier as it becomes nearly impossible to encourage the other children to eat the healthy foods that their peers are refusing to eat.

4.2.2 Caregivers' Perceptions of Parental Knowledge and Involvement

A factor that made providing both physical activity and healthy eating difficult was the of caregivers' perceptions of lack of parental knowledge about the importance of these behaviors during the early years. Regarding the lack of knowledge associated with physical activity, caregivers reported that it was often a struggle to get parents to send appropriate outdoor clothing. This challenge was particularly prevalent during the winter months, when the interviews were conducted. It was suggested by one participant that parents were simply too busy and they did not make physical activity a priority for themselves or their children. In the 2010 Active Healthy Kids Canada Report Card, the family grade was a "D" to reflect low levels of activity in Canadian adults and the disconnect between what parents reported they were doing as a family and what was actually happening. This low grade has also been attributed to the fact that parents are not making physical activity a priority. Although most parents understand that

physical activity is important during all stages of life, they do not seem to realize that it is necessary for the healthy growth and development of early years children (Active Healthy Kids Canada, 2010). Specifically, it was reported that many parents assumed that physical activity during the early years occurs naturally and, thus, does not require concerted attention (Timmons et al., 2007).

Caregiver perceptions' of lack of parental knowledge was identified as an interpersonal factor that made it challenging for caregivers to promote healthy eating among early years children. The caregivers speculated that, when at home, many early years children ate convenience or fast foods with little nutritional value. Thus, when the caregivers tried to encourage children to eat unprocessed fresh foods, they refused and asked for foods like french fries and chicken fingers. Some caregivers felt parents did not understand the consequence of consuming highly processed foods on a regular basis. Literature suggests that parents' lack of knowledge about healthy eating is directly related to the poor nutritional patterns of children and to rising rates of overweight and obesity among young children (Hesketh, Waters, Green, Salmon, & Williams, 2005). To support the development of healthy eating habits among early years children, parents need to be educated. One caregiver suggested that a workshop should be held at every care centre to teach parents of early years children about the benefits of healthy eating and the consequences of poor eating patterns. Additionally, the caregiver felt that the workshop could also inform parents about how to prepare fast healthy meals. These workshops could teach parents the necessary cooking skills and provide them with ideas for affordable, nutritionally sound food.

Finally, parental involvement was identified an interpersonal factor that facilitated caregivers' ability to provide physical activity opportunities to children. The caregivers

unanimously reported that parents were very willing to volunteer their time and help with field trips. Specifically, parents helped to organize trips to the local rinks, to the swimming pool, and to nearby farms. Participants explained that without the help of parents they would not be able to provide the children with these opportunities. Conversely, recent research by Froehlich and Humbert (2009) found that parents of children attending urban care centres were uninvolved in activities at the care centre and caregivers found it very difficult to encourage parental involvement and support. Thus, high rates of parental involvement and volunteering may be associated with differences in attitude and sense of community among rural and urban individuals. Furthermore, caregivers reported that parents typically worked in or near the small community in which the care centre was located; and as such, they were able to help transport the children to and from activities during their lunch and/ or coffee break. Literature on rural-urban differences suggests the individuals in rural areas usually have a stronger sense of community. (Statistics Canada, 2005) Furthermore it has been reported that on average rural parents engage in far more volunteering than individuals in urban areas (Sun, Hobbs, & Elder, 1994). This has been attributed primarily to the fact that rural residents view schools as a central focus of community life (Herzog & Pittman, 1995). Although Herzog and Pittman (1995) did not conduct this research in care centre environments, it is likely that rural parents of early years children hold the same views.

4.2.3 Knowledge of the Cook

The knowledge of the cook at each care centre was an important factor for providing healthy eating opportunities for children. It was apparent that at each care centre, caregivers relied heavily on the knowledge and ability of the cook to prepare healthy meals that the children would enjoy. The caregivers expressed gratitude towards the care centre cooks, as they knew it

was the cook who made providing healthy eating opportunities possible. Furthermore, participants understood that preparing healthy meals took more time than preparing unhealthy convenience foods. Many caregivers explained that without the help of the cook, they simply would not have the time to prepare healthy foods for the children. Care centre cooks were required to follow the nutritional regulations enforced in all Saskatchewan care centres (Government of Saskatchewan, 2009). Caregivers stated that the cooks were dependable and they always made sure the meals served at the care centre met the nutrition regulations. Many caregivers felt that a care centre cook played a key role in ensuring that children were provided with healthy meals. Government legislation has recently been enforced that requires all care centres to be prepare one meal and two snacks over the course of an eight hour day (Government of Saskatchewan, 2009). This legislation was enforced to ensure that children were meeting nutritional recommendation while in care.

4.3 Institutional Factors

The caregivers identified a number of institutional barriers and facilitators associated with the care centre. As discussed previously, similar barriers and facilitators were grouped together to create themes. The following four themes were developed: space for active play, duration of caregiver employment, care centre finances, and compliance to nutrition regulation. These themes will be presented in the following sections.

4.3.1 Space for Active Play

All caregivers reported lack of indoor space for active play as a barrier to providing physical activity opportunities for children. Caregivers felt this barrier was most detrimental during the winter months, when the temperature was cold and the winds were strong. Caregivers explained they did their best to make room for children to be active indoors, when they could not

take them outside. Once caregiver explained that she cleared the floor and moved all of the furniture out of the play area so children had room to move around. However, the caregiver explained that although her director was very supportive in her efforts to promote physical activity, the diversity in age among children in care still made it difficult to provide physical activity opportunities indoors. Specifically, the caregiver felt that even when she made room for active play, it was unsafe to allow the older children to run and jump, when the infants and/or toddlers were napping in the adjoining rooms. Previous research by Froehlich and Humbert (2009) also reported lack of indoor play space as a barrier to physical activity in urban care centres. Urban caregivers found that during the cold winter months and the really hot summer days it was not safe to take the children outside. As a result, they would have to keep the children indoors for the entire day. Additionally, urban caregivers reported that with the large number of children at the care centre, there was simply no space for children to engage in physical activity indoors. Thus, lack of indoor space was clearly a barrier to the provision of physical activity in both rural and urban care centres. Interestingly, some rural caregivers have been able to overcome this barrier through the use of community facilities. Their experiences will be discussed in the section on community factors.

4.3.2 Duration of Caregiver Employment

A number of caregivers reported that care centre staff (including themselves) had been employed at the same care centre for many years. These participants identified duration of employment as an institutional factor that facilitated their ability to provide physical activity and healthy eating opportunities to children. Two participants had been working at the same care centre for between 10 and 20 years. One caregiver stated that the entire care centre staff had been there for over 10 years and thus it was easy to support each other because they all knew what

worked best for engaging the children in healthy behaviours. For example, one caregiver reported that during mealtime all the caregivers sat with the children and ate the meals prepared by the care centre cook. In my reflexive journal I noted that during my visit some caregivers were eating lunch with the children.

Interestingly, in past research, short duration of care centre employment was reported as barrier to the provision of physical activity and healthy eating opportunities for children in urban care centres (Froehlich & Humbert, 2009). Specifically, Froehlich and Humbert (2009) reported that caregiver turnover rates were high and many staff members did not work for even a year at the care centre. It was apparent that this posed a number of challenges for the caregivers. For example, urban caregivers reported that it was difficult to form regular meal time routines with the children because new caregivers did not want to sit and eat meals with the children. Urban caregivers also felt that children's eating habits were negatively influenced by a lack of consistency among caregivers. Specifically, differences in co-worker eating patterns, such as dislike for many vegetables, made it difficult for the experienced caregivers to encourage children to eat vegetables. New caregivers did not realize that their eating habits played a key role in influencing the eating behaviours of the children; when children saw that caregivers would not eat vegetables, they too refused to try their vegetables.

Rural caregivers in the current study stated that long-time employment at the same care centre also meant they had lived in the same community for many years. In fact, some caregivers explained that they had lived their entire lives in the same rural community. As such, many caregivers played on the community sports teams with parents of the children at the care centre. Caregivers felt these connections outside of the care centre were beneficial because it allowed them to establish regular communication with parents. In turn, this helped caregivers to develop

good relationships with the parents, and caregivers explained they felt comfortable asking parents to become involved in and provide support for care centre activities. These experiences seemed to be unique to caregivers working in rural care centres, as they have not been reported in research conducted in urban care centres (Froehlich & Humbert, 2009; Needham et al., 2007).

4.3.3 Care Centre Finances

Throughout the interviews it became apparent that rural care centres had limited funds and this became a barrier to the provision of healthy eating. A limited budget made it particularly challenging for care centre staff to purchase more expensive foods like fresh produce. Caregivers discussed the high cost of fresh fruits and vegetables and explained that frozen produce was much more affordable. As such, they were often forced to pass up fresh produce and opt for the frozen fruits and vegetables. One caregiver said that although buying frozen food was more affordable, it did not allow children to experience the taste of fresh fruits and vegetables. In addition, caregivers noted that children rarely liked the texture of cooked vegetables and fruit, thus the cook incorporated them into casseroles or baking served in the care centres. The experiences described by rural caregivers are consistent with findings from research conducted in urban care centres (Froehlich & Humbert, 2009). Caregivers in urban care centres also struggled to include fresh produce into the meals served at their care centres. They reported that the care centre budget was limited and they often could not afford the high cost of fresh fruits and vegetables. Clearly the financial resources played a key role in determining the foods served at the care centres.

4.3.4 Adherence to Nutrition Regulations

Although government legislative nutrition regulations exist for care centres in Saskatchewan, it is up to the care centre staff to follow and enforce these regulations. During

document analysis I observed that some care centres had their menus posted on a bulletin board in centre. When asked if the nutrition regulations made it easier to provide healthy eating opportunities, caregivers reported that it helped, however the care centre staff (director, caregivers, and cook) had to be willing to comply with the regulations. It was apparent that some care centres followed the regulations more strictly than others. One caregiver reported that compliance to nutrition regulations lies mainly on the shoulders of the care centre director as they have the final say in what meals are served at the care centre. Probart, Telfer, and McDonnell (2006) investigated the role of principals, teachers and, cafeteria staff in ensuring that nutrition regulations were followed in schools. The researchers compared nutrition practices in schools to determine which staff members were most influential in ensuring nutrition regulations were followed. Although it was important for teachers and cafeteria staff members to comply with and support nutrition regulations, the school principals were the most influential in enforcing compliance to nutrition regulations. It is evident that nutrition regulations were important to ensuring healthy foods are provided in institutional environments such as care centres and schools. However, these regulations were only effective if staff, cooks, and, most importantly, directors and principals complied with them.

4.4 Community Factors

Rural caregivers reported a number of community factors that influenced them in providing physical activity and healthy eating opportunities to children. There were aspects of rural communities that made it challenging to provide physical activity and healthy eating opportunities. However, caregivers also discussed facilitators that aided them in providing these opportunities. The two themes that emerged within the community category were: geographic locale and access to local facilities.

4.4.1 Geographic Locale

Some participants reported that because they were living in a small isolated community, early years children did not have access to play groups and activities for preschool children, such as learn to skate or parent and tot swimming classes. This finding was also reported in the Canadian Community Health Survey (2005), which showed that, when compared to their urban counterparts, children under the age of five living in rural areas had fewer opportunities to participate in activities for groups of children. Due to the low number of young children living in rural areas, small rural communities often did not have enough early years children to create play groups or activities (Canadian Community Health Survey, 2005).

Geographic locale was also considered a barrier to healthy eating because many caregivers reported having to travel significant distances to a larger centre if they wanted to access to a variety of fresh produce. One caregiver explained the local grocery store had a very limited selection of fruits and vegetables. She went on to explain that the grocer only brought in a small supply of fresh produce because the grocer did not want to waste money on foods that would spoil before they were sold. Limited selection of fresh produce is a commonly reported barrier to healthy eating (CPHI, 2006). Previous research suggests that rural grocers hesitate to carry a large inventory of fresh produce because the cost of transport is too high and produce often becomes rotten before it is sold (CPHI, 2006).

Interestingly, during the summer months, geographic locale was described by caregivers as a facilitator to healthy eating. Specifically, caregivers reported that because they lived in small rural communities they had large yards where they were able to grow their own vegetables, this in turn allowed cooks to serve a variety of fresh vegetables and lower food costs at the care centres during the summer months. In addition, many caregivers stated, they knew local farmers

in the community that often donated fresh vegetables from their large gardens. Therefore, geographic locale facilitated caregivers in accessing fresh locally grown vegetables during the summer months.

4.4.2 Access to Local Facilities

Access to local facilities was identified as a facilitator to promoting healthy behaviors. It was apparent that the majority of caregivers had developed good relationships with members of the community and, as such, they were able to gain access to many indoor physical activity facilities. As discussed previously, caregivers identified lack of indoor play space as a barrier to physical activity. However, caregivers who valued physical activity overcame this barrier by accessing local physical activity facilities. A similar study by Froehlich and Humbert (2009) found that urban caregivers identified lack of access to local recreation facilities as a barrier to physical activity. Urban caregivers stated that they did not have any connections with schools or churches in their area. As such, they did not feel they would be able to use these facilities to provide an indoor play space for children to be active. It is evident that rural care centres have stronger connections with local community organizations and facilities. These close relationships have facilitated caregivers in the provision of physical activity and healthy eating opportunities for children.

4.5 Public Policy Factors

It was apparent that caregivers felt strongly about enforcing both physical activity and nutrition policies in care centres. Thus, the key theme that emerged to represent public policy factors was: physical activity and nutrition policies.

4.5.1 Physical Activity and Nutrition Policies

All participants reported that the lack of a physical activity policy made it difficult for them to enforce specific regulations for physical activity in the care centres. Urban caregivers also reported lack of regulations for physical activity in care centres as a barrier to the provision of physical activity (Froehlich & Humbert, 2009). Additionally, caregivers reported that because there was no regulation, their co-workers did not feel it was necessary to incorporate physical activity into the care centre schedule on a daily basis (Froehlich & Humbert, 2009). Lack of a physical activity policy was clearly a barrier for early years caregivers. Fortunately, the Active Healthy Kids Canada Report Card (2010) has recently suggested physical activity recommendations for early years children. It is expected that a physical activity policy will be developed for care centres.

A nutrition policy has been developed by the Saskatchewan government for all licensed care centres (Government of Saskatchewan, 2009). Caregivers in the current study stated that the nutrition policy was a key factor in facilitating their ability to provide healthy eating opportunities to children. This policy provided guidance for caregivers and care centre cooks, so they understand how many food groups needed to be included in each meal and snack. Furthermore, the regulations provided caregivers with knowledge about healthy food choices and this in turn has supported the caregivers to make healthy food choices in their own lives. Research by Froehlich and Humbert (2009) found that urban caregivers were in favour of the nutrition policy enforced in the care centres and they also identified the policy as facilitating them in the provision of healthy eating among children in their care. Evidentially, both urban and rural caregivers feel it is beneficial to enforce nutrition policies in care centres.

CHAPTER FIVE

5.0 SUMMARY AND CONCLUSIONS

The overall objective of this study was to understand the factors associated with rural caregivers' decisions to engage in behaviours to provide physical activity and healthy eating opportunities to the early years children in their care. Specifically, the two main purposes of this study were: to determine the barriers and to determine the facilitators identified by caregivers in the provision of physical activity and healthy eating opportunities. Participants were asked questions regarding the factors that both inhibited and facilitated their decisions to engage in behaviours that provided physical activity and healthy eating opportunities for children in their care. An ecological framework was used to identify a wide range of factors influencing rural caregivers in the provision of physical activity and healthy eating opportunities for early years children. Similar factors within each ecological category were grouped together to create overarching themes. Caregivers identified both barriers and facilitators that influenced their decisions and abilities to provide children with opportunities for physical activity and healthy eating.

It was apparent that intrapersonal factors played a key role in facilitating caregivers in the provision of physical activity and healthy eating opportunities for children. Additionally, participants reported that behaviours of others were both inhibitors and facilitators in the provision of healthy opportunities. This finding was consistent with previous research that reported interpersonal factors as playing a key role in influencing behaviour (Needham et al., 2007; Timmons et al., 2007). Rural caregivers also identified facilitators and barriers that were associated with their institutions and communities. Caregivers identified significantly more facilitators than barriers in these categories. Conversely, a study conducted in urban care centres reported that caregivers identified significantly more barriers than facilitators in the institutional

and community categories (Froehlich & Humbert, 2009). Lastly, participants in this study unanimously reported lack of physical activity policy as a barrier to the provision of physical activity. Past research in urban care centres also determined lack of physical activity policy to be a barrier to the provision of physical activity in care centres (Froehlich & Humbert, 2009).

It is widely accepted that physical activity and healthy eating are necessary components of healthy child development (Health Canada, 2007). Research emphasizes the importance of establishing health promoting behaviors during the early years, as this stage of life sets the foundation for an individual's general health and well being (Black & Hurley, 2007; Keon, 2009). However, current research indicates that Canadian early years children are engaging in low levels of physical activity and their diets are lacking in fresh produce and high in processed foods (Active Healthy Kids Canada Report Card, 2010; Shields, 2006; Temple et al., 2009). Furthermore, research has focused on the role of parents in determining physical activity and nutrition behaviors of early years children. However, a significant number of Canadian parents rely on non-parental care for their children, thus early years caregivers are also influential in determining the physical activity and nutrition patterns of children (Bushnick, 2006; Keon, 2009).

During the weekdays, early years children attending out of home care spend the majority of their waking hours in care centres (Temple et al., 2009). As such, it is largely the responsibility of early years caregivers to provide children with opportunities for engaging in physical activity and healthy eating. To support early years caregivers in the provision of these opportunities, it is necessary to understand the factors that influence their ability to promote these healthy behaviors. However, very little research has investigated the factors influencing early years caregivers in the provision of physical activity and healthy eating opportunities.

Therefore, the current study attempted to provide insight into these factors. To enable a multiple focus on a comprehensive number of factors, an ecological model developed by McLeroy and colleagues (1988) was utilized. McLeroy's (1988) ecological model was used to uncover different levels of factors identified by caregivers. Additionally, the ecological model was used to categorize factors into one of five ecological categories: intrapersonal, interpersonal, institutional, community and public policy.

Participants identified a number barriers and facilitators and overarching themes emerged from each ecological category. In regards to intrapersonal factors, participants frequently discussed personal physical activity and nutrition behaviors as factors that facilitated their ability to provide physical activity and healthy eating opportunities for children in their care.

At the interpersonal level, participants reported that co-workers, parents, and children in care influenced their ability to provide physical activity and healthy opportunities. Co-workers and parents seemed to be particularly influential as reported among all participants. Caregivers also reported that other children were key in affecting them in the provision of healthy eating opportunities. Some caregivers reported that eating patterns of other children inhibited their ability to encourage children to eat healthy foods. Specifically, if a few children expressed dislike for certain foods, all of the children would to refuse to eat those foods. However, other caregivers reported that some children ate a variety of healthy foods, which was a facilitator to encouraging healthy eating among all the children. In the institutional category, participants reported a number of factors related to their care centres: available space for active play, duration of caregiver employment, care centre finances, and compliance with nutrition regulations. The community factors discussed by participants were unique to individuals living in rural areas: geographic locale and access to local facilities. In the public policy category participants reported

that nutrition polices facilitated their ability to provide healthy eating opportunities. Conversely, participants stated that absence of a physical activity policy made it difficult to provide regular physical activity opportunities for children.

It is interesting to note that while these rural care centers did not have a physical activity policy, they did have a “no video game policy” and this may have positively impacted the physical activity behaviours of the children in their care. During several of my visits to the care centers I noted in my journal that electronic devices such as televisions, computers and video games were not present in the play area of the care centres. Additionally, caregivers did not report the use of electronic devices at anytime during the day. In fact, one caregiver stated that they had a “no video game policy” at their care centre. These findings were not supported in my past research in urban care centres, where televisions and video games were visible in approximately half of the care centres. This may indicate that rural early years children are engaging in more active play activity than urban early years children as research shows that high amounts of screen time are associated with low levels of physical activity (Alet et al., 2010).

5.1 Limitations and Strengths

As with any research, there are limitations to this study. The most obvious limitation was the small sample size which, is a common challenge reported in qualitative studies. The findings are limited to the sample population and the care centres that participated in the current study. In order to assist the reader in transferring some aspects of the research to their personal lives, every effort was made to provide rich and detailed descriptions of the participants and the research environment (Thomas et al., 2005). In turn, these findings may be used to inform the design of physical activity and healthy eating programs, not only for the participating rural care centres, but also for similar care centres.

Secondly, although the ecological model utilized in this study provides a framework for systematically identifying and addressing factors influencing behaviour, it does not provide specific strategies for changing behaviour or overcoming obstacles. Thus, similar research would do well to incorporate a model that provides step-by-step instructions on how to overcome barriers and change behaviours.

Finally, only female caregivers were employed at the care centres that participated in the study and as such, only female participants were interviewed. Experiences of male caregivers may have been different, thus future interviews should be carried out to understand the factors identified by male caregivers.

Although the current study had limitations, a number of strengths existed. Specifically, the study addressed a number of gaps within the research. To date, no research has investigated physical activity and healthy eating practices among rural early years caregivers. Thus, the main strength of the research was the contribution to the limited literature on physical activity and healthy eating in rural care centres. Second, research in rural communities is limited and the research that does exist focuses on the barriers to living in rural areas. Therefore, this study contributes to the literature as it identifies strengths and facilitators associated with living in rural areas. Third, many early years children attend out of home care, as such it is important to understand the factors influencing caregivers' ability to provide physical activity and healthy eating opportunities (Bushnick, 2006). Past research has only identified factors inhibiting (i.e., barriers) caregivers abilities to provide of healthy opportunities (Needham et al., 2007). Along with identifying barriers, this study also identified factors that facilitated caregivers' abilities to provide physical activity and healthy eating opportunities to children. This information can be incorporated into future initiatives aimed at increasing physical activity and healthy eating in

care centres. Fourth, past research has not used an ecological framework to investigate factors influencing caregivers in the provision of both physical activity and healthy eating opportunities for children (Needham et al., 2007; Temple et al., 2009). Thus, a strength of this study was the utilization of an ecological framework that allows for the classification of barriers and facilitators into distinct categories. The classification of barriers and facilitators is important as it can aid in the design of effective, targeted interventions, aimed at alleviating barriers and incorporating facilitators within specific categories (McLeroy et al., 1988).

5.2 Future Research

It was apparent that caregivers' personal physical activity and healthy eating behaviours are influential in determining the opportunities they provided to children. Additionally, the findings of this study indicate that early years caregivers would like to receive more in-depth training about the importance of physical activity and healthy eating during the early years and how to promote these behaviours. The results could be used to inform and redesign post secondary education programs for early years caregivers. In turn, this would enhance caregiver knowledge about the importance of physical activity and healthy eating and provide caregivers with the necessary skills for creating healthy opportunities for early years children in care. This research provided preliminary findings about the facilitators and barriers influencing caregivers. However, to support caregivers in providing healthy opportunities for children, a better understanding of these factors is needed. For example, future research should investigate how personal physical activity and healthy eating practices can be improved among caregivers in a variety of care environments, such as licensed day homes, unlicensed day homes, and preschools.

The findings from this research could also be used to design a survey to identify the factors influencing parents and caregivers from various care environments in the provision of healthy opportunities for children in their care. In addition, when factors reported by rural caregivers were compared to those of urban caregivers, differences in perceived barriers and facilitators were apparent. Thus, in order to increase physical activity and healthy eating opportunities for children in a variety of geographic locations, future research should design initiatives that address factors unique to various geographic locations.

This study also provided insight into factors preventing and promoting caregivers in the provision of physical activity and healthy eating opportunities. From the findings of this study, it is clear that a number of factors inhibit caregivers in the provision of healthy opportunities. However, some caregivers explained how they overcame these same barriers and as such they no longer inhibited their ability to provide healthy opportunities for the children. For example, participants in some care centres reported that when the weather was poor, lack of indoor play space was a barrier to providing physical activity opportunities for children; whereas other participants reported that when they could not go outdoors they were able to use community facilities to provide the children with space for engaging in physical activity. Additionally, some caregivers reported that care centre finances were a barrier to serving healthy foods. Conversely, other participants explained that, although purchasing healthy foods were often more expensive, it did not inhibit them in the providing healthy foods to children because they cut back in other areas to ensure they could afford healthy foods, like fresh fruits and vegetables. The results from the current study could be used to design initiatives that support early years caregivers in establishing healthy behaviours in their personal lives and supporting their early years children to establish physical activity and healthy eating patterns. Specifically, the design of these

initiatives should consider factors and experiences reported by caregivers who were able to overcome previously identified barriers.

The information gained in this study could inform the development of a valid and reliable survey that can be used to assess factors influencing caregivers in the provision of physical activity and healthy eating opportunities for early years children. For example, the survey could be used to understand barriers and facilitators influencing caregivers across the province of Saskatchewan. The information obtained from the survey could then assist in the development of future interventions targeting specific barriers and facilitators, which in turn should increase the provision of physical activity and healthy eating opportunities in early years care centres throughout the province.

Lastly, the results of this study indicate that a multilevel approach based on an ecological framework is essential for understanding the factors influencing caregivers in the provision of physical activity and healthy eating opportunities. An intervention aimed at systematically alleviating and targeting specific factors would aid caregivers in the provision of physical activity and healthy eating opportunities in early years care centres. A number of factors were identified as being important to caregivers' ability to provide healthy opportunities for early years children. If opportunities for physical activity and healthy eating are going to be increased, initiatives must be designed to target the personal and social environmental factors that influence caregivers in the provision of these opportunities and address the findings within this study. If healthy opportunities are provided to early years children they may be more likely to adopt physical activity and healthy eating patterns, prevent obesity-related problems, and foster better health status in childhood and later in life.

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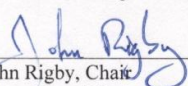
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Appendix A

REB certificate

 UNIVERSITY OF SASKATCHEWAN		Behavioural Research Ethics Board (Beh-REB) Certificate of Approval	
PRINCIPAL INVESTIGATOR Louise Humbert		DEPARTMENT Kinesiology	BEH# 09-217
INSTITUTION(S) WHERE RESEARCH WILL BE CONDUCTED University of Saskatchewan			
STUDENT RESEARCHERS Amanda Froehlich			
SPONSOR SASKATCHEWAN PULSE GROWERS			
TITLE Supporting the Healthy Development of Rural Children: An Ecologically Based Investigation of Barriers and Facilitators Perceived by Early Years Caregivers in the Promotion of Physical Activity and Health Eating			
ORIGINAL REVIEW DATE 05-Oct-2009	APPROVAL ON 26-Oct-2009	APPROVAL OF: Ethics Application Consent Protocol	EXPIRY DATE 25-Oct-2010
Full Board Meeting <input type="checkbox"/>		Date of Full Board Meeting:	
Delegated Review <input checked="" type="checkbox"/>			
CERTIFICATION The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named research project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.			
Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.			
ONGOING REVIEW REQUIREMENTS In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month of the current expiry date each year the study remains open, and upon study completion. Please refer to the following website for further instructions: http://www.usask.ca/research/ethics_review/			
 John Rigby, Chair University of Saskatchewan Behavioural Research Ethics Board			
Please send all correspondence to:		Research Ethics Office University of Saskatchewan Box 5000 RPO University, 1602-110 Gymnasium Place Saskatoon SK S7N 4J8	

APPENDIX B

Consent Form



Supporting the Healthy Development of Rural Children:

You are invited to participate in a research study entitled: Supporting the Healthy Development of Rural Children: An Ecologically Based Investigation of Barriers and Facilitators Perceived by Early Years Caregivers in the Promotion of Physical Activity and Healthy Eating

Please read this form carefully, and feel free to ask any questions you might have about the study.

Student-Researcher: Amanda Froehlich, Department of Psychology; alf263@mail.usask.ca

Supervisor: Louise Humbert, Department of Kinesiology, 966-1071; louise.humbert@usask.ca

Purpose and Procedure: The purpose of the research is to identify barriers and facilitators rural caregivers face when providing physical activity and healthy eating opportunities for children. It is essential to understand these facilitators and barriers because caregivers play a key role in the determining the physical activity and nutrition behaviours of children. This research will contribute to the development and implementation of a physical activity and nutrition strategy for children in the early years. You will be asked to participate in a one-on-one interview regarding your thoughts on factors that you, as a caregiver face when providing physical activity and healthy eating opportunities for children in your care centre. During the interview you are free to answer only the questions you are comfortable with and you may request the tape recorder be turned off at any time.

Risks: There are no known risks associated with participation in this study. Furthermore, you may receive no personal benefit from participation in the study.

Confidentiality: The results of the study will be completely anonymous as no names or means of identification will be used in any printed or published reports. If your words are used in the final report, confidentiality will be assured through the use of a pseudonym (false name). A master list of participants' names and their assigned pseudonyms will be stored separately from the audiotapes and transcripts. After the interview, you will be given the opportunity to review the transcript of your interview, and to add, alter, or delete information from the transcripts as you see fit. During the one-on-one interview, only the researcher will be present. In addition, no one from your care centre will have access to the audio recording of the interview following its completion. All the information provided through the interviews will be confidential and stored by Dr. Louise Humbert in a locked office on the University Campus for a minimum of five years after the completion of the study.

Right to withdraw: Your participation is voluntary and you may withdraw from the study for any reason, at any time, without penalty of any sort. If you withdraw from the study, any data that you have contributed will be destroyed.

Questions: If you have any questions concerning the study, please feel free to ask at any point. You are also free to contact the researchers at the numbers provided above if you have questions at a later time. The proposed research was reviewed and approved on ethical grounds by _____, on the date of _____.

Any questions regarding your rights as a participant may be addressed to the Behavioural Research Ethics Board through the Ethics Office (966-2084). Out-of-town participants may call collect. You may obtain a copy of the results of the study by contacting the student-researcher or the supervisor.

Consent to Participate: I have read and understand the description of the research study provided above. I have been provided with an opportunity to ask questions and my questions have been answered satisfactorily. I agree to participate in the study described above, understanding that I may withdraw my consent to participate at any time. A copy of this consent form has been given to me for my records. You may contact the researcher at the contact information above and one will be sent to you.

(Signature of Participant)

(Date)

(Signature of Researcher)

APPENDIX C

Debriefing Form

Supporting the Healthy Development of Rural Children: An Ecologically Based Investigation of Barriers and Facilitators Identified by Early Years Caregivers in the Promotion of Physical Activity and Healthy Eating

The purpose of our research is to identify facilitators and barriers perceived by caregivers when they are attempting to promote physical activity and healthy eating within their care centre. Our study used the facilitators and barriers questionnaire to gain knowledge about the physical activity and healthy eating behaviours and practices in rural care centres. This research will provide knowledge about the specific challenges that rural caregivers face. In addition, the information gathered during the interviews will be very helpful, as it will contribute to the development and implementation of a physical activity and nutrition strategy for children in the early years (0-6 years).

Thank you for your time and participation!

Researcher: Amanda Froehlich, alf263@mail.usask.ca

Supervisor: Louise Humbert, louise.humbert@mail.usask.ca, (306) 966-1070

APPENDIX D
Guiding Questions
I. PHYSICAL ACTIVITY

For the purpose our interview today physical activity will be defined as: Physical activity is when most of the body is moving and one's heart rate is increased, for example, riding a tricycle, running, playing tag etc. It would not include quiet play such as puzzles or drawing.

Introduction

Before we begin our interview I would like to know a little bit about you:

- a. How long have you lived in the KTHR?
- b. How long have you worked at this care centre?
- c. Have you worked in other care centres in this KTHR?
- d. What kind of caregiver training do you have?
- e. What do you enjoy about your job as an early years caregiver?
- f. What do you find most challenging about your job as a caregiver?

Section A –Physical Activity Practices

1. In general, how physically active do you think children are in their early years?

PROMPT: How physically active are they at home, in preschool, in the community and in care?

PROMPT: Do you think activity levels of children have changed over the last ten years?

PROMPT: Do you think the attitudes of parents or directors/caregivers/educators towards physical activity for their children have changed over the last ten years?

2. How much physical activity should early years children have on a daily basis?

PROMPT: Is there a standard or specific number of minutes required?

PROMPT: As long as they are somewhat active does the amount matter?

PROMPT: Does the intensity (light/vigorous) of the physical activity matter?

3. What role does physical activity play in the development of children in their early years?

PROMPT: In what way does physical activity help a child's physical development?

PROMPT: Do physical activity and play help a child's social or emotional development?

PROMPT: What examples have you seen?

PROMPT: Do physical activity and play help a child's intellectual development?

PROMPT: What happens when children are deprived of physical activity and play?

PROMPT: Are there any negative effects?

4. Do physical activity behaviours in childhood affect PA behaviours and practices later in life?

PROMPT: Do you think physically active children are more active in an adolescents and adulthood?

PROMPT: Do think there is no relationship between physical activity levels in childhood and later in life?

PROMPT: Do you think physical activity behaviours of parents or directors/caregiver/educators influence the physical activity behaviours of children later in life?

PROMPT: Does it matter how physically active children are in their early years?

5. What kinds of physical activities are children at your care centre participating in? (E.g. informal play, physical activities structured so that they can develop and learn

new skills; activities that make them huff and puff. (Intrapersonal, Institutional, Community)

PROMPT: What are they doing to be active?

PROMPT: How are you and your organization ensuring that children have opportunities to be active (structured and unstructured)?

PROMPT: How much physical activity do children receive when in care/education (structured and unstructured)?

PROMPT: Should the children be developing and learning new skills? Like what?

a. What resources/tools/equipment are currently being used in your care centre to promote physical activity?

SECTION B – Barriers and Facilitators to Physical Activity

1. What are things that make providing physical activity opportunities easy?

- a. For you in your position? (Intrapersonal)**
- b. For directors/educators? (Institutions/ Community)**
- c. For parents? (Interpersonal)**

PROMPT: What helps you get the children active?

PROMPT: How do facilities and resources make a difference?

PROMPT: How does your knowledge as a caregiver and the knowledge of directors or parents make a difference?

PROMPT: How does the health and wellness of you as a caregiver and directors or parents make a difference?

2. What are things that make providing physical activity opportunities difficult?

- a. For you in your position? (Intrapersonal)**
- b. For directors/educators? (Institutions/ Community)**
- c. For parents? (Interpersonal)**

PROMPT: Are there any barriers? (Think personal, social, environmental, communal and institutional)

PROMPT: What happens when the weather is cold, or hot?

PROMPT: How do facilities and resources make a difference?

PROMPT: How does caregiver, director or parent knowledge make a difference?

PROMPT: How does the health and wellness of you as a caregiver and directors or parents make a difference?

3. Does the weather play a role in determining whether or not the children are given an opportunity to be physically active?

- a. Does your care centre have both indoor and outdoor environments where the children have room to run around?**

4. Do you, as a caregiver, feel pressured to focus on preparing children for school rather than focusing on being active

a. Do you feel you have to justify taking time out for physical activity?

5. Do locomotive skills (run, jump, hop, skip, and throw) play a role in determining time children spend participating in physical activity?

a. As a child were you taught how to use and improve your locomotive skills, or did you develop them on your own?

b. Do you feel comfortable using your locomotive skills to move and be active?

c. Should training programs develop a portion of the curriculum aimed at educating caregivers about the importance of physical activity

d. During training do think it would it be beneficial to provide caregivers with skills and knowledge around ways to increase physical activity within care centres.

II. HEALTHY EATING

Healthy eating will be defined as: *Healthy eating is choosing healthy foods, when possible; this includes following the Canada's Food Guide when choosing daily meals and snacks and attempting to follow the four food groups.*

Section A – Nutrition Practices:

1. What do children eat? (Intrapersonal, Interpersonal, Community, Institutional)

PROMPT: How is it different at home, in preschool, in the community, in care?

PROMPT: How are you/your organization or staff ensuring they are providing healthy foods?

- a. **What resources are you currently using to promote healthy eating?**
- b. **Are locally grown foods, such as pulse crops served in your care centre?**
- c. **If yes, how do you prepare the pulse crops?**
- d. **If no, what are some barriers that make it difficult to incorporate pulse crops into the meals?**

2. What is the social environment at meal and snacks and how does it affect children's eating? (Intrapersonal)

PROMPT: What happens at meal and snack time?

PROMPT: What are the current practices around feeding children?

- a. **What role(s) do you as a caregiver have in determining children's eating habits? (Interpersonal, Interpersonal, Institutional, Community)**

PROMPT: How does children's eating change when a different caregiver is involved, such as parents, paid providers, grandparents, siblings, others?

- b. **What role(s) do children have in determining their eating habits?**

PROMPT: How does the child determine how much to eat?

3. Do eating behaviours in childhood affect eating behaviours later in life?

PROMPT: Do you think healthy eating behaviours established during childhood continue into adolescents?

PROMPT: Do you think there is no relationship between eating behaviours in childhood and later in life?

PROMPT: Do you think eating behaviours of parents or directors/caregiver/educators influence the physical activity behaviours of children later in life?

SECTION B - *Barriers and Facilitators to Healthy Eating*

1. What are things that make providing healthy eating opportunities easy?

- a. For you in your position? (Intrapersonal)**
- b. For directors/educators? (Institutional/ Community))**
- c. For parents? (Interpersonal)**

PROMPT: What makes it easy to offer healthy foods at home, in the community, in preschool, and in care?

PROMPT: How do facilities and resources make a difference?

PROMPT: How does staff or parent knowledge make a difference?

PROMPT: How does the health and wellness of staff or parents make a difference?

2. What are things that make providing healthy eating opportunities difficult?

3. What are factors that would make it easier to incorporate locally grown foods, such as pulse crops, into the meals?

- a. For you in your position? (Intrapersonal)**
- b. For directors/educators? (Institutional/ Community))**
- c. For parents? (Interpersonal)**

PROMPT: What are the challenges at home, in the community, in preschool, and in care?

PROMPT: Do facilities and resources make a difference?

PROMPT: Does staff or parent knowledge make a difference?

PROMPT: Does the health and wellness of staff or parents make a difference?

SECTION C - Developing a Strategy

1. What would you need in your current position to increase healthy eating and physical activity opportunities for early years children? (Public policy)

PROMPT: What supports are needed? (e.g., policy, procedures, programs, training, or resources)

PROMPT: What would effective supports look like?

PROMPT: How would you like to receive these supports?

5. If resources were developed for key decision makers what should they look like?

PROMPT: What would it need to contain to make sure it was used?

4. If resources were developed for caregivers what should they look like?

5. Should training programs develop a section around the importance of eating healthy locally grown foods, such as pulse crops?

6. During training do think it would it be beneficial to provide caregivers and/or care centre cooks with skills and knowledge around ways to prepare healthy meals with a specific focus on incorporating locally grown foods.

PROMPT: What would it need to contain to make sure it was used?

III. Conclusion

Thank you so much for taking the time to share your thoughts and ideas with me today.

APPENDIX E

TRANSCRIPT RELEASE



I, _____, have reviewed the complete transcript of my personal interview in this study, and have been provided with the opportunity to add, alter, and delete information from the transcript as appropriate. I acknowledge that the transcript accurately reflects what I said in my personal interview with Amanda Froehlich. I hereby authorize the release of this transcript to Dr. Louise Humbert to be used in the manner described in the Consent Form. I have received a copy of this Data/Transcript Release Form for my own records.

Name of Participant

Date

Signature of Participant

Signature of researcher

APPENDIX F

Data Analysis Charts

Facilitators to Physical Activity and Healthy Eating

<i>Intrapersonal</i>	<i>Interpersonal</i>	<i>Institutional</i>	<i>Community</i>	<i>Public Policy</i>
- Physical activity and nutrition patterns	- Parental involvement - Knowledge of care centre cook	- Duration of employment - Adherence to nutrition regulations	- Geographic Locale	- Nutrition policy

Barriers to Physical Activity and Healthy Eating

<i>Intrapersonal</i>	<i>Interpersonal</i>	<i>Institutional</i>	<i>Community</i>	<i>Public Policy</i>
	<ul style="list-style-type: none"> - Caregivers' perception of parental knowledge - Physical activity and nutrition patterns of Others 	<ul style="list-style-type: none"> - Space for active play - Care centre finances 	<ul style="list-style-type: none"> - Geographic Locale 	<ul style="list-style-type: none"> -Lack of physical activity policy