

Care Providers' Perceptions in Promoting Healthy Eating and Physical Activity
in the After-School Setting

by

Pierrette HongChi Elias

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University of Alberta

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ABSTRACT

Comprehensive school health (CSH) is an evidence-based and internationally recognized framework which has been effective in school-based health promotion interventions. Given its effectiveness in the school setting, there is a need to expand this approach into other community settings, such as the after-school setting. The after-school time period is an important time for children to engage in healthy behaviours. The critical hours of 3:00 – 6:00 p.m. provide an opportunity to promote healthy eating (HE) and physical activity (PA) among children attending after-school care (ASC). As a holistic approach, CSH recognizes the significant impact the social and physical environments have on children's health behaviours. Care providers are major influencers within the ASC setting, impacting HE and PA opportunities for children. However, little is known regarding the role care providers play in health promotion interventions in the ASC setting, specifically those using comprehensive approaches. The after-school health promotion intervention School's Out...Let's Move (SOLMo) provided this opportunity. Thus, the purpose of this research was to explore care providers' perceptions and experiences implementing the health promotion intervention SOLMo. This research utilized multiple methods to address two objectives: 1) to examine changes to care providers' perceived awareness, knowledge, confidence, behavioural control and, attitudes towards promoting HE and PA for children in comparison to usual practice care providers; 2) to explore care providers' role and their perceptions in promoting HE and PA.

The quantitative component of this research examined the changes to care providers' perceptions in their ability to promote HE and PA within the ASC setting during

the SOLMo intervention in comparison to usual practice (i.e., control) sites. Previously validated surveys, from preschool and school-based health promotion intervention projects, were modified to reflect the ASC setting. Surveys were distributed and collected from all care providers (n=57) from SOLMo intervention sites (n=4) and control sites (n=4) at pre- (September 2016) and post-intervention (March 2017). Linear regression analyses of survey questions examined changes in care providers (n=17) perceived awareness, knowledge, confidence, behavioural control, and attitude towards promoting HE and PA within the ASC setting. Results confirmed care providers' attitudes towards promoting both HE and PA were significantly higher ($p < 0.05$) in the intervention (n=10) compared to the control group (n=7) after six months delivering the intervention. Focused ethnography informed the qualitative component of this research. Semi-structured interviews with care providers (n=13) from the SOLMo intervention sites (n=4) were conducted following the intervention (May 2017). Through latent content analysis five themes emerged: 1) enhanced awareness; 2) improved programming; 3) strong relationships; 4) collaborative approach; and 5) role tension.

The close examination of the care providers' role in this research provided insight into their perspectives on promoting HE and PA within the after-school health promotion intervention SOLMo. Overall, this research confirms the critical role care providers' play in health promotion strategies within the ASC environment. Findings and recommendations from this research will aid future health promotion strategies to improve healthy lifestyles of school-age children within the ASC and other community settings.

PREFACE

This Master's thesis is original work produced by Pierrette H. Elias. The two research projects which are included in this thesis received ethics approval from the University of Alberta Human Research Ethics Board, under the project name "Evaluating the impact of School's Out...Let's Move after-school program on children's health and health equity" No. Pro00058006_AME3 (original ethics obtained on July 6, 2015; renewal expires on May 31, 2018).

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List of Abbreviations

ASC:	After-School Care
BMI:	Body Mass Index
CAASP:	Canadian Active After-School Partnership
CATCH:	Coordinated Approach To Child Health
CSH:	Comprehensive School Health
HE:	Healthy Eating
HOP:	Healthy Opportunities for Preschoolers
JCSH:	Joint Consortium for School Health
MVPA:	Moderate to Vigorous Physical Activity
PA:	Physical Activity
PHAC:	Public Health Agency of Canada
SIRCLE:	School-based Intervention Research through Changes in Lifestyles & Environments
SOLMo:	School's Out...Let's Move
TPB:	Theory of Planned Behaviour
WHO:	World Health Organization

CHAPTER 1: INTRODUCTION

1.1 Overview

Chapter one outlines and introduces the thesis. This chapter presents the rationale for the research, including the comprehensive school health (CSH) framework, health promotion in the after-school setting based on the CSH framework, and the role of care providers in promoting health in the after-school care (ASC) setting. Additionally, this chapter provides an introduction to the School's Out...Let's Move (SOLMo) project. Lastly, this chapter provides an overview of the research purpose and objectives, and thesis organization.

1.2 Comprehensive School Health and the After-School Setting

Comprehensive school health (CSH) is an effective strategy for addressing children's health (Fung et al., 2012; Stewart-Brown, 2006; Veugelers & Fitzgerald, 2005). The CSH framework is an evidence-based and internationally recognized strategy to effectively promote healthy lifestyle behaviours for children in school communities (Fung et al., 2012; World Health Organization, 2016). School-based initiatives incorporating the CSH framework have been effective in improving children's health, including diet, physical activity levels, and weight status (Fung et al., 2012; Veugelers & Fitzgerald, 2005). CSH incorporates a whole-setting approach to support improvements in students' educational outcomes while also promoting healthy behaviours for children in the school community (Pan-Canadian Joint Consortium for School Health, 2016). While CSH has been effective in schools, the approach needs to

extend beyond schools and into other settings within the community, such as the after-school setting to support creating healthy school communities more broadly.

Children spend much of their time away from home during school hours. They spend approximately one third of their time in school, making schools an important setting to promote health behaviours for children. Moreover, the vast majority of children can be reached (Sobol-Goldberg, Rabinowitz, & Gross, 2013; Story, Nanney, & Schwartz, 2009), and it is known that healthy children learn better (Faught, Gleddie, Storey, Davison, & Veugelers, 2017), which provides support for schools as ideal settings to promote healthy lifestyle behaviours for children. For some children, their day extends into the after-school hours prolonging their time away from home. Statistics on the number of current school-age children attending ASC programs in Canada is unknown. However, in 2014, a survey conducted with parents and caregivers indicated a 47.7% preference for their children to participate in quality ASC programs (Grundy & Parriag, 2014). As two-working parent homes continue to increase in Canada, demands for child care, including after-school care, also continue to rise (Lugton & Rutter, 2014; Sinha, 2014). After-school organizations and programs have supported children's needs for several decades (Mahoney, Parente, & Zigler, 2009). The ability to support working parents by providing a safe environment for their children, and provide opportunities for children to continue learning and developing skills makes the after-school setting a logical place to consider for health promotion strategies. Additionally, these strategies complement existing school-based initiatives (Afterschool Alliance, 2014; Van Acker et al., 2012).

The flexibility of taking a CSH approach to promote healthy lifestyle behaviours is complementary to the less structured, child-led programming, environment within the ASC setting. Additionally, the strength-based approach (i.e., honing in on current health strategies) allows for autonomy and is therefore beneficial for ASC organizations. Taking a CSH approach accommodates the diverse programming commonly observed in the ASC setting, and is thus recommended for promoting healthy eating (HE) and physical activity (PA) in ASC settings. Further, it serves as a complementary strategy to existing school-based initiatives which aim to improve healthy lifestyle behaviours for school-aged children.

1.3 School's Out...Let's Move Project

School's Out...Let's Move (SOLMo) was a health promotion intervention aimed to improve HE and PA opportunities for children in the after-school setting. The SOLMo intervention incorporated the elements of the CSH framework to promote and improve healthy lifestyle behaviours for children attending after-school programs.

In 2012 Ever Active Schools (Ever Active Schools, 2014), a provincial leader in creating healthy school communities, initiated an after-school pilot project, SOLMo, in five sites within the Leduc County, Alberta area. In 2015, this SOLMo intervention continued and reached four additional sites within the Edmonton and surrounding area. The 2015 SOLMo intervention had two main goals during the after-school hours of 3:00 – 6:00 p.m.: (1) to serve a healthy snack with vegetable or fruit, and milk or water as the drink; (2) to include 30 minutes of moderate to vigorous physical activity (MVPA) by encouraging movement development and promoting the love of movement. Evaluation

was an important component of the project, required to assess the effectiveness of the intervention, and to recognize the different stakeholders involved in implementing the project. The evaluation process is also critical to assess the sustainability of the project once the intervention has been implemented (Spiegelman, 2016). Evaluation of the 2015 SOLMo project was completed at pre- and post-intervention, and included both the child and site level data in both intervention and control sites. Given that the SOLMo intervention was based on a CSH approach, the evaluation of the care provider role was essential to assess the social and physical environments within the after-school setting. Implementation of SOLMo intervention activities relied primarily on the ASC providers from the sites. Understanding their role as ASC providers was thus an essential component in determining the overall success of taking a CSH approach within the ASC setting.

1.4 Rationale

Care providers within the after-school setting play a significant role in influencing the social and physical environments of children and youth. Given the lack of a standardized curriculum and programming in the after-school setting (Government of Alberta, 2016), site leaders within each organization are responsible for developing the programming offered at their site, which includes snack options and the activities. Thus, care providers have a significant influence on the healthy opportunities available for children provided through the physical environment of the site (Copeland, Kendeigh, Saelens, Kalkwarf, & Sherman, 2012; Weaver et al., 2016). Additionally, care providers work closely with children, and influence the social environment within the ASC setting.

Their interactions with children, as well as the education provided, impacts children's healthy choices (Weaver et al., 2016). The impactful role adults play within a child's learning environment has been supported in various settings, including schools, child care centres, and the community (Hesketh, van Sluijs, Blaine, Taveras, & Gillman, 2015; Roberts et al., 2015; Storey, Spitters, Cunningham, Schwartz, & Veugelers, 2011; Young, 2014). ASC providers play an essential role in implementing SOLMo. As well, they have the potential to significantly influence both the physical and social environments of the after-school sites. This in turn impacts HE and PA opportunities available for the children. Therefore, there is a need to understand the care provider's role in implementing health promotion interventions. Exploring the role of care providers' and their perspectives on promoting HE and PA opportunities for children throughout SOLMo will provide invaluable insight. Understanding their role will help to improve health promotion interventions by supporting care providers' ability to effectively promote and improve healthy lifestyle behaviours for school-age children in the ASC setting.

1.5 Research Purpose and Objectives

This thesis research employed multiple methods. Both qualitative and quantitative methods were utilized to understand the care provider role and their perspectives as part of the 2015 SOLMo intervention. The quantitative component of this thesis examined changes in care providers' perceived awareness, knowledge, confidence, behavioural control, and attitudes towards promoting HE and PA opportunities for children in comparison to usual practice care providers. Data

generation included a survey tool based on previously validated tools, Healthy Opportunities for Preschoolers (HOP) Questionnaire and School Health Facilitator Self-Efficacy Survey. The survey tool in this study was modified to reflect the context of the after-school setting and school-aged children. Focused ethnography was utilized to explore care providers' perspectives in promoting HE and PA in the after-school setting. Aligned with focused ethnography, data generation included researcher field notes, reflective journaling, and member checking with participants provided feedback and insight into the implications of the research. As such, the research objectives of this thesis were to:

1. Examine changes in SOLMo care providers' perceived awareness, knowledge, confidence, behavioural control and attitudes towards promoting HE and PA in comparison to usual practice care providers.
2. Explore SOLMo care providers' role and their perceptions in promoting HE and PA.

1.6 Thesis Organization

This paper-based thesis is organized into five chapters, with chapters three and four as stand-alone manuscripts which will individually address the above two objectives. Chapter two is a comprehensive review of the current literature relevant to this thesis. Topics covered in the literature review: childhood obesity (definition, causes, and consequences); a settings approach to health promotion; and the care provider's role in health promotion. To conclude, a final chapter in this thesis provides a summary

of the literature, research findings, and the implications and recommendations for future directions of this research. References are located at the end of the thesis.

CHAPTER 2: LITERATURE REVIEW

2.1 Childhood Obesity: Definition, Causes, and Consequences

The childhood obesity epidemic is a well-recognized public health concern at both national and global levels (Public Health Agency of Canada, 2012; World Health Organization, 2016). In 2013, the prevalence of childhood obesity in Canada was reported at 13% based on the Canadian Health Measures Survey; which is nearly triple the prevalence observed in the 1970s (Statistics Canada, 2016). This increased trend has stabilized, which is encouraging; however, almost one third (31%) of Canadian children aged 5-17 years remain overweight or obese (Rao, Kropac, Do, Roberts, & Jayaraman, 2016). While the problem is complex, childhood obesity is preventable and remains a priority (World Health Organization, 2016).

Overweight and obesity is the result of an energy imbalance. When intake is greater than expenditure, an excessive accumulation of fat tissue develops, causing detrimental effects on an individual's health (Gungor, 2014). An individual's body mass index (BMI), calculated by measuring one's weight (in kilograms) divided by their height (in centimeters) squared, is commonly used as a measure of overweight and obesity. In children, overweight and obesity is defined as a BMI-for-age greater than 1 and 2 standard deviations above the WHO Growth Reference median, respectively (World Health Organization, 2015). A high BMI is a risk factor for ill health and wellbeing, with consequences for physical, mental, social, and emotional wellbeing (Puhl & Latner, 2007; Spruijt-Metz, 2011). Overweight and obesity in children often tracks into adulthood, further impacting health with known risks for chronic diseases, including type 2 diabetes, cardiovascular disease, and some forms of cancer (Craigie, Lake, Kelly,

Adamson, & Mathers, 2011). Quality of life for those suffering from obesity and chronic diseases is also compromised (Kelsey, Zaepfel, Bjornstad, & Nadeau, 2014).

Additionally, the economic consequences of childhood obesity places a burden on the Canadian healthcare system, affecting the nation's population as a whole (Colman & Hayward, 2010).

Childhood obesity is described as a multi-faceted issue, stemming from individual, family, community, and societal factors (World Health Organization, 2016). Lifestyle behaviours, such as physical inactivity and poor dietary behaviours in children are major contributors to childhood obesity (Hruby & Hu, 2015). Physical activity (PA) is essential for good health, and important for optimal bone growth and development in children (Janssen & Leblanc, 2010; Tremblay, LeBlanc, & Janssen, 2011). Considering that only 33% of Canadian children are meeting the national PA recommendations, physical inactivity is clearly a concern among other unhealthy behaviours observed (Colley et al., 2017). Sedentary lifestyles have become more prevalent among Canadian families, contributing to increases in fat mass among children and youth. Screen time, among other sedentary activities, has played a prominent role in children's extra-curricular activities replacing time spent being physically active (Statistics Canada, 2017). Lifestyle changes related to dietary patterns among Canadian families have also incurred a trend towards unhealthy dietary habits in children (Hruby & Hu, 2015). A rise in the consumption of sugar sweetened beverages, added sugars, and convenient foods coinciding with decreased consumption of vegetables, whole grains, and lean protein sources has created nutrient deficiencies in children (Freeman, Coe, & King, 2014). With less than one-third of children aged four to eight meeting the minimum

servings for vegetables and fruit recommended by *Eating Well with Canada's Food Guide*, optimal nutrition is compromised (Garriguet, 2007). Obesity in children is complex and multifactorial, requiring comprehensive approaches in addressing the complexities of this issue. The promotion of healthy lifestyles at an early age encourages the establishment of healthy lifestyle behaviours throughout the lifespan (World Health Organization, 2016) and will improve the overall health of Canadians.

2.2 A Settings Approach to Health Promotion

2.2.1 The Ecological Model

The ecological model is widely recognized and has been used in the development and evaluation of various health promotion interventions (Sallis & Owen, 2015). The ecological model was developed by the British psychologist, Bronfenbrenner (1974), in the study of human development. The ecological perspective highlights the concept of reciprocal interaction between an individual and their environment, considering the multiple layers and sectors of influence on health behaviour. A reciprocal interaction occurs between the individual and the environment to impact one another; both the physical and social environments and an individual's behaviour are affected in creating the individual's health behaviour change. The focus on external influences of behaviour distinguishes this model from other behavioural models and theories, which emphasize the individual's role on behaviour change (McLeroy, Bibeau, Steckler, & Glanz, 1988).

The complexities of human behaviour are represented by the multiple layers of influence in the ecological model at the individual, interpersonal, organizational, and

public policy levels (McLeroy et al., 1988). An example of a child's decision to try smoking for the first time, explained by this multifactorial model, considers the following factors: the child's own personal knowledge and attitude towards smoking, influences or peer pressure felt by their circle of friends, their school's effort in raising awareness in the risks of smoking, and the public regulations or bans to sell cigarettes to children. The popularity and strength of the ecological model is due to its consideration of multiple environmental factors which influence an individual's health behaviour, in addition to the individual's control of behaviour change. Health promotion interventions based on the ecological model are effective given their comprehensive multi-layered approach. By considering the complexities of the environment, in addition to the individual, comprehensive approaches best address the multiple factors that influence health behaviours (McLeroy et al., 1988; Sallis & Owen, 2015).

2.2.2 Comprehensive School Health

Comprehensive school health (CSH) is an evidence-based framework used to support and promote a healthy school community (Pan-Canadian Joint Consortium for School Health, 2016). The CSH framework is internationally recognized and has been widely adopted as a comprehensive means to support improvements in educational outcomes while also promoting health and wellness. Informed by the Ottawa Charter for Health Promotion, CSH stems from the ecological model (Sallis & Owen, 2015), using a 'whole setting' approach to promote health. As such, CSH aims to create healthy communities through a holistic approach which addresses four distinct, yet inter-related components: (1) social and physical environments, (2) teaching and learning, (3) policy,

and (4) partnerships and services. This framework addresses multiple aspects in health promotion, and considers the impact of the social and physical environments affecting student's health behaviours (Hussain, Christou, Reid, & Freeman, 2013). Based on the ecological model, the concept of reciprocal interaction between individual and environment is recognized in the CSH framework. Environmental influences on health behaviours occur through the physical space and the social culture within a setting, created by the individuals within that setting. The interactions between individuals and the environment interact simultaneously to affect an individual's health behaviour.

The school community is an ideal setting for health promotion interventions, such as those taking a CSH approach, as the vast majority of children attend school (Evans, Albar, Vargas-Garcia, Xu, & Henry, 2015). As well, healthy children have better academic outcomes (Faught et al., 2017), providing additional rationale for addressing health in the school setting. Schools also act as a central 'hub' within the community due to the significant amount of time children spend in school (PHAC, 2012; WHO, 2012). While health education alone was historically the primary health promotion strategy in schools (Young, 2005), schools have now progressed to a more comprehensive approach, including CSH. Within CSH, holistic approaches are used to encourage health promotion, which considers how the physical and social environments can positively affect health behaviours. Health promotion based on the CSH approach has been effective in improving diet quality, increasing PA, and improving body weights in children (Fung et al., 2012).

While effective, school-based interventions alone, are not sufficient at preventing obesity trends in children (Lawlor et al., 2016). There are limits, restricted to the regular

school hours of 9:00 a.m. – 3:00 p.m., to implement health promoting activities (Amini, Djazayeri, Majdzadeh, Taghdisi, & Jazayeri, 2015; Campbell et al., 2015). Additionally, there is limited research on the effectiveness of taking a CSH approach within other community settings, specifically within the after-school care (ASC) setting. The hours of 3:00 – 6:00 p.m. are critical times that can encourage health behaviours in school-age children. As such, the ASC setting is a practical and complementary strategy to current CSH initiatives aiming to improve healthy lifestyle behaviours of school-aged children.

Health promotion interventions within the ASC setting provide a logical and complementary strategy to current school health initiatives. Research examining health promotion interventions in the ASC setting in both the US and Canada have demonstrated improvements in children’s healthy eating (HE) habits (Brill & Fred, 2015), with Canadian children meeting one fifth of the Vegetables and Fruit food group recommendations (Gilbert, Miller, Olson, & St-Pierre, 2012). Additionally, studies have shown improvements in PA levels during this time period when exposed to a health promotion intervention (Beets et al., 2015; Thaw et al., 2014). Furthermore, sedentary behaviour among school-age children during the after-school time period has been reported to be high (Arundell, Hinkley, Veitch, & Salmon, 2015), supporting the need for health promotion opportunities for children during the after-school hours (Slusser et al., 2013). Health promotion strategies during the after-school time period would complement initiatives taking place during school hours and would bridge the gap between the school and home environments. This setting provides an opportunity to address current trends in children’s health behaviours, notably children’s poor eating habits and inactivity levels.

2.2.3 After-School Programs

After-school programs have long existed in both Canada and the US with a history dating back to the early 1900s. The first club was formed in Canada in 1900. Located in St. John, NB, the first club started out as the “Boys’ Club” and was formed by concerned local community members aiming to create a safe space for underprivileged boys with no place to go during after-school hours. Formed initially during the last quarter of the nineteenth century, after-school programs responded to changes in the economy during that time. These programs emerged as the need for children’s paid labour diminished. Combined with increases in school attendance following the implementation of compulsory education laws, after-school programs became more popular (Halpern, 2002). As one of the largest licensed agencies in both Canada and the US, The Boys and Girls Clubs serves Canadian youth operating across Canada (Boys and Girls Clubs of Canada, 2016).

The after-school setting has become a unique and prominent setting for child development. After-school programs aim to prioritize and adapt to children’s current needs, especially regarding the needs of low-income children (Halpern, 2002). Apart from school and home, after-school programs are viewed as the next critical development setting for many children, notably for low- and moderate-income children (Halpern, 2002; McDaniel & Yarbrough, 2016). Historically, the ASC setting has been able to reach disadvantaged children, preventing risky behaviours resulting in injury, crime and costs to the justice systems (Fight Crime: Invest in Kids California, 2015; Mahoney et al., 2009). After-school programs have previously adapted to the varying

socio-economic climates, which has created a varied history for after-school programs types. Halpern (2002) notes this field has struggled to create a distinct identity as a child development institution, having numerous goals in their approach to serving children's needs where "[a]fter-school programs have defined themselves in terms of protection, care, opportunity for enrichment, and play while simultaneously defining themselves in terms of socialization, acculturation, training, and program remediation" (Halpern, 2002, p. 179). Although an extensive history exists, the ASC setting continues to struggle with a recognition of its importance in child development, especially for the 'middle childhood' age range. While care required for this 'middle childhood' age is rarely differentiated from the day care setting of preschool years (Eccles, 1999), distinguishing and supporting ASC settings is essential for both childhood development and health promotion (Afterschool Alliance, 2014).

In Canada, the ASC setting is identified under the child care program umbrella. Child care programs are provincially regulated, however, curriculum and programming are not mandated or standardized (Government of Alberta, 2016). Currently, ASC programs vary and range from fee-based (i.e., privately-owned) to free-for-service programs (Sinha, 2014). In Alberta, a license to operate is required, and includes general recommendations for nutrition and PA provided in the agreement. Though nutrition and PA recommendations are provided, the guidelines are brief with a focus on safety; providing a safe environment to provide food and space for children within each organization (Government of Alberta, 2016). As well, accreditation for programs is encouraged (but voluntary) to enhance program quality. Additionally, neither licensing nor accreditation for child care programs currently address HE and PA promotion

specifically (Government of Alberta, 2015); therefore opportunities for promoting healthy lifestyle behaviours are likely missed in child care settings, including ASC settings.

2.3 Health Promotion in the After-School Setting

The after-school hours have gained attention among child and youth health professionals (Annesi, Walsh, Greenwood, Mareno, & Unruh-Rewkowski, 2017; Centers for Disease Control and Prevention, 2015; Kelder et al., 2004; Pelcher & Rajan, 2016). The critical hours of 3:00 – 6:00 p.m. has recently garnered interest to improve nutrition and PA habits of school-age children (Branscum & Sharma, 2012; Wiecha, Hall, Gannett, & Roth, 2012).

In the US, health promotion in the ASC setting has increased over the past decade (Afterschool Alliance, 2015; Beets et al., 2014; Beets, Weaver, Turner-McGrievy, Beighle, et al., 2016; Branscum & Sharma, 2012; Coleman, Geller, Rosenkranz, & Dzewaltowski, 2008; Dzewaltowski et al., 2010; Kelder et al., 2004; Slusser et al., 2013), with improvements reported regarding HE (Beets, Weaver, Turner-McGrievy, Huberty, et al., 2016; Nabors, Burbage, Woodson, & Swoboda, 2015; Slusser et al., 2013) and PA (Beets et al., 2015; Coordinated Approach to Child Health (CATCH), n.d.; Dzewaltowski et al., 2010; Kelder et al., 2004) for those children attending programs promoting health behaviours. In Canada, there is support to improve the health of children attending after-school programs. Programs in the eastern provinces (i.e., Ontario, and Newfoundland and Labrador) have reported improvements in HE choices and age-appropriate nutrition knowledge when targeting HE and PA (Health Canada, 2012; E. K. Sharpe, Forrester S Fau - Mandigo, & Mandigo, 2011). In

Alberta, an environmental scan of ASC programs in 2012 reported that a majority (79%) of ASC managers identified the after-school hours as an opportunity to provide PA for children. Additionally, the scan reported 78% of ASC organizations offered 30 minutes of active play (Loitz & Lee, 2013). The Saskatchewan Parks and Recreation Association conducted an environmental scan within the After-School Time Period Report recommending support for ASC programs to improve the quality of life for children and youth (Saskatchewan Parks and Recreation Association, 2012). In British Columbia the implementation of a health promotion intervention reported improvements in HE and PA opportunities in participating after-school organizations (Dobson, Scott, & Naylor, 2012). Further, the Canadian Active Afterschool Partnership is an online resource for after-school programs across the country. This online resource is managed by the Leisure Information Network and coordinated by the Physical and Health Education of Canada. Partnerships include nine national organizations, that together are supporting and creating comprehensive resources to improve the quality of after-school programs (Canadian Active Afterschool Partnership (CAASP), n.d.).

With the current high prevalence of childhood obesity in Canada, supporting ASC programs in prioritizing the promotion of healthy lifestyle behaviours among school-age children is recommended. Health promotion strategies in the ASC setting supports the multifaceted approach required to address the childhood obesity epidemic.

2.4 The Care Provider's Role in Health Promotion

The influential role teachers, school staff, and coaches play in influencing children's health has been discussed in the literature (Roberts et al., 2015; Storey et al.,

2011; Young, 2014); however, little research has examined the role care providers play throughout health promotion interventions within the ASC setting. Care providers play a significant role in the quality of care provided within the ASC setting (Mahoney et al., 2009; Vance, 2010). Care providers are the primary decision makers within the ASC setting, and they play a significant role in program development (Vance, 2016; Weaver et al., 2016); influencing children's health behaviours through both food and activities provided. Holistic approaches to health promotion, such as CSH, recognizes the interpersonal and environmental factors care providers have on children's health behaviours. When taking a CSH approach in the ASC setting, care providers must create a physical space and social setting conducive to healthy behaviours, such as providing opportunities and encouragement for HE and PA. While the ASC provider role is unique, they share similar responsibilities to the roles of child care workers and teachers in regards to caring for, mentoring, and educating children (Afterschool Alliance, 2015). Thus, the literature on child care workers and teachers and their influences on children's health behaviours will be briefly reviewed.

ASC providers are responsible for the safety and care of children, similar the role of child care workers in daycare centres. Child care workers in daycare centres play a major role in regards to promoting healthy behaviours for preschool children (Larson, D, Neelon, & Story, 2011). As 'gatekeepers', their role directly impacts the PA opportunities provided to children through the time they designate for both indoor or outdoor active play (Copeland et al., 2012; Hesketh et al., 2015). HE practices in daycare settings also emphasize the role of child care workers. The literature indicates the importance of their role to lead positive mealtime experiences for children through their practices during

mealtimes (Mita, Gray, & Goodell, 2015). Child care workers' practices and ability to encourage HE behaviour for preschool children is based on their knowledge (or lack of) and attitudes towards promoting HE for children (Blaine et al., 2015; Tipton, 2014).

In addition to caring for children, the ASC provider role also provides education and mentorship for children, similar to the role of those in the school setting. Within the school setting, teachers, school staff, and principals have been shown to play a prominent role in influencing environments that promote healthy lifestyle behaviours. Teachers and school staff are known to be significant influencers on students' health behaviours (Jourdan, Mannix McNamara, Simar, Geary, & Pommier, 2010; Kulinna, 2016; Liu et al., 2014; Prelip, Slusser, Thai, Kinsler, & Erausquin, 2011; Roberts et al., 2015; Storey et al., 2011; Sulz, Gibbons, Naylor, & Wharf Higgins, 2016). Teachers play an invaluable role in implementing school-health initiatives, thus their role is essential to support interventions (Jourdan et al., 2010; Sulz et al., 2016; Tjomsland, Iversen, & Wold, 2009). Studies have demonstrated classroom teacher's attitudes towards health promoting behaviours having an affect on their students HE behaviours (Eather, Morgan, & Lubans, 2013), including meal and vegetable and fruit consumption (Liu et al., 2014), and students' attitudes towards HE (Prelip et al., 2015). Similarly, research indicates teachers' effects on promoting PA in schools (Kulinna, 2016; Sulz et al., 2016). Personal views and commitment to PA by the school principal and teachers were reported to affect the promotion of PA by teachers (Kulinna, 2016). Additionally, positive role modeling of healthy lifestyle behaviours by teachers and school staff influenced children's behaviours (Jourdan et al., 2010; Roberts et al., 2015; Storey et al., 2011). Within comprehensive approaches, such as CSH, the social environment is influenced

by leaders, such as teachers and the principal, to create a setting conducive to healthy lifestyle behaviours. As role models, they contribute to create a cultural shift towards a health-promoting environment within the school community (Roberts et al., 2015; Storey et al., 2011). Leadership and support by the school principal and administrative staff is essential to initiating and sustaining the health-promoting environment within comprehensive approaches (Jourdan et al., 2010; Leurs, Bessems, Schaalma, & de Vries, 2007; Middleton, Keegan, & Henderson, 2012; Roberts et al., 2015; Storey et al., 2016).

The ASC provider combines characteristics from both child minder and teacher roles, yet their role is distinct. The ASC provider role is unique to the limited program hours and less structured setting. Thus, time spent with children is less compared to both school teachers in schools or child care workers in daycare centre. While children spend less time in the ASC setting compared to schools or daycares, ASC providers govern the programs and activities for children. Without standard curriculum or programming, ASC providers play a crucial role within the ASC settings, affecting opportunities to promote healthy lifestyle behaviours for children during these critical hours. Aligning with CSH, ASC providers shape both the physical and social environments of the site. Although health research in the ASC setting is growing, little is known regarding the role of care providers play in promoting health opportunities in this setting. Understanding the role ASC providers play in promoting HE and PA in the after-school setting is essential.

2.4.1 Health Promotion based on the Theory of Planned Behaviour

In order for care providers to promote healthy lifestyles for children, they must model these behaviours accordingly (i.e., provide and promote those opportunities). Similar to other behaviours, the act of promoting HE and PA depends on numerous factors for the care provider. The Theory of Planned Behaviour (TPB) is one of many behavioural change theories, which has been frequently used in predicting health behaviours (Connor & Sparks, 2005). According to the TPB, performing a behaviour depends on three constructs: attitude, social norms, and perceived behavioural control (Ajzen, 1991). Though not specific to the TPB, studies have found teachers attitudes towards HE and PA affected their motivation to promote HE and PA within their school (Kulinna, 2016; Liu et al., 2014). Similarly, child care providers' attitudes towards their ability to effectively implement health programs in the community for preschoolers has been discussed in the literature (Freedman & Alvarez, 2010; Naylor & Temple, 2013; Song, Song, Nieves, Gonzalez, & Crockett, 2016). Confidence and self-efficacy required to effectively promote health behaviours (Ajzen, 2002), such as HE and PA, has been reported as a barrier for many health promotion interventions (Campbell et al., 2015; Zarrett, Abraczinskas, Skiles Cook, Wilson, & Ragaban, 2018), specifically those using comprehensive approaches to promote healthy lifestyles for children (Hastmann, Bopp, Fallon, Rosenkranz, & Dzewaltowski, 2013; Kulinna, 2016; Storey, Cunningham, Spitters, Schwartz, & Veugelers, 2012). Many studies have identified the need to improve knowledge, confidence, and self-efficacy for those promoting health. Using a theory, such as the TPB, provides a framework to understand how the constructs (i.e., attitudes, social norms, perceived behavioural control) impact health promotion

interventions within the ASC setting. As major influencers, examining the ASC provider role in implementing comprehensive approaches to promote HE and PA will improve the delivery of strategies to improve healthy lifestyle behaviours for school-age children attending ASC programs.

2.5 Research Setting: School's Out...Let's Move

School's Out...Let's Move (SOLMo) was an after-school health promotion intervention based on the CSH approach. As an Ever Active Schools initiative, SOLMo was first piloted in 2012 in five rural after-school sites in Leduc County, Alberta. Evaluation of the pilot study was completed after one-year of the program by a third-party evaluator. Qualitative interviews with program staff (n=10) and parents (n=3) showed positive results with participants reporting improved HE habits and PA levels in children and positive experiences with the program. However, challenges and barriers to implementation were reported, such as transportation issues and limits in funding, that may have prevented full realization of the program objectives. Evaluation of SOLMo included recommendations to scale-up the project and to assess the potential for policy development and program expansion (Ernst & Young & Ever Active Schools, 2013).

In 2015, SOLMo was introduced into new sites in Edmonton and the surrounding area through a collaboration between Ever Active Schools and the School of Public Health, University of Alberta. Four ASC sites were recruited for the 2015 SOLMo project. The 2015 intervention included HE and PA resources, two nutrition workshops, and team coaching with the project coordinator over a six-month period. A multiple methods study design was applied for SOLMo. Quantitative data was collected using a

quasi-experimental pre-post evaluation design to determine the impact of the 2015 SOLMo intervention, when compared to usual practice (i.e., control) sites (n=4). Without an ability to randomize 'real world' interventions, evaluation involved four intervention sites compared to four usual practice sites, with controls recruited to match for program size and location (rural or urban) of intervention sites.

2.6 Study Significance

CSH has been effective in improving health outcomes within school communities; however, little is known regarding the effectiveness this approach in other community settings, specifically the ASC setting. Within school settings, it has been demonstrated that teachers and school staff play a significant role, and are able to influence and promote health opportunities for children. Child care workers have also been shown to influence health opportunities, such as HE and PA for preschool children in day care centres. ASC providers, with similar roles to both school and preschool teachers, play an essential role in program development within the ASC setting, affecting HE and PA opportunities. However, only one known study has implemented a health promotion intervention within the ASC setting using a CSH approach (Dobson et al, 2012). Additionally, little is known regarding the care provider role when implementing a health promotion intervention in the ASC setting. The SOLMo intervention, which aimed to improve healthy lifestyle behaviours of children in the ASC setting, provided an opportunity to explore the role of the ASC provider in more detail.

This research will contribute to the literature on CSH implementation within a community setting, specifically the ASC setting. The research will focus on the role of

the ASC provider in promoting healthy lifestyle behaviours. The aim is to improve practices within the ASC setting to encourage healthy opportunities for children as a complementary strategy to current school-based initiatives.

CHAPTER 3: AFTER-SCHOOL CARE PROVIDERS' PERCEIVED AWARENESS, KNOWLEDGE, CONFIDENCE, BEHAVIOURAL CONTROL, AND ATTITUDES TOWARDS PROMOTING HEALTHY LIFESTYLE BEHAVIOURS

3.1 Background

Overweight and obesity among children is well recognized as a major public health issue in Canada. With its complex etiology, childhood obesity requires a multifaceted approach to address the increased prevalence (Public Health Agency of Canada, 2012; World Health Organization, 2016). Health promotion in school communities has emerged as a popular strategy as schools have the ability to reach the majority of children in the population (Evans et al., 2015), and it has been reported that healthy children learn better (Faught et al., 2017). School-based interventions, specifically those taking a comprehensive school health (CSH) approach, have been effective at improving children's diet, physical activity, and weight status (Fung et al., 2012; Veugelers & Fitzgerald, 2005). Globally, CSH is recognized as an evidence-based framework which uses a 'whole-setting' approach to address childhood obesity (Pan-Canadian Joint Consortium for School Health, 2016). While school-based health promotion interventions have been effective, constraints due to the demands of academic curriculum and time have been reported in the school environment (Amini et al., 2015; Campbell et al., 2015). Aligning with the global recommendation to end childhood obesity (World Health Organization, 2016), efforts to explore additional strategies are warranted. The after-school hours of 3:00-6:00 p.m. have garnered interest in recent years. The after-school care (ASC) setting has demonstrated the ability to encourage healthy eating (HE) (Gilbert et al., 2012) and improve physical

activity (PA) levels among school-aged children (Beets, Huberty, et al., 2013; Youngdeok & Lochbaum, 2017); thus, these critical after-school hours provide an opportunity to complement existing school-based health promotion strategies (Afterschool Alliance, 2015; Coleman et al., 2008). Specifically, health promotion strategies in the ASC setting using the ‘whole-setting’ approach (i.e., CSH) are logical and complementary to school-based interventions.

3.1.1 After-School Care Providers

Within the ASC setting, care providers are responsible for program planning and activity delivery, impacting HE and PA opportunities for children (Beets, Webster, Saunders, & Huberty, 2013; Dinkel, Huberty, Beets, & Tibbits, 2014; Dzewaltowski et al., 2010; Iachini, Bell, Lohman, Beets, & Reynolds li, 2017). Despite the critical role care providers play in the ASC environment, few studies have considered the perceptions of care providers in the implementation of health promotion interventions (Dobson et al., 2012; Hastmann et al., 2013; Huberty, Beets, Beighle, & McKenzie, 2013; Kenney et al., 2014; Weaver et al., 2016; Zarrett et al., 2018)

As major influencers within the ASC setting, care providers’ play a prominent role in promoting HE and PA. Care providers are recognized as crucial individuals in creating a health promoting environment within the ASC setting. However, there is limited research on health-promoting interventions in this setting, and specifically in regards to the perceived abilities of care providers to deliver such interventions (Dobson et al., 2012). Dobson et al. (2012) discussed an increase in awareness reported by care providers; however, the increase in awareness was reported through focus groups and

no other measures. Previous studies have discussed the importance of providing training for care providers prior to implementing health promotion interventions in order to improve HE and PA knowledge (Kenney et al., 2014; Zarrett et al., 2018).

Recommendations from other health promotion intervention studies in the community include training for care providers to improve staff skills, confidence, and competence in delivering health interventions, and to improve implementation fidelity (P. A. Sharpe, Wilcox, Kinnard, & Condrasky, 2018; Thaw et al., 2014).

Understanding care providers' perceptions regarding their ability to promote healthy lifestyle behaviours is necessary when implementing effective health promotion interventions within ASC settings. Their perceived ability to promote healthy choices for children impacts the delivery of specific health promotion intervention activities. Therefore, this study aimed to evaluate the care providers' perceived ability to implement an after-school health promotion intervention based on the CSH approach. Specifically, the purpose of this study was to examine changes in School's Out...Let's Move (SOLMo) care providers' perceived awareness, knowledge, confidence, behavioural control, and attitudes towards promoting HE and PA in comparison to usual practice care providers.

3.1.2 The School's Out...Let's Move Project

School's Out...Let's Move (SOLMo) is an after-school intervention, initially created in 2012 by Ever Active Schools (Ever Active Schools, 2014), which aimed to improve HE and PA opportunities for children. SOLMo adopted the CSH framework to guide the intervention. In 2012, SOLMo was piloted in five ASC sites in the Leduc,

Alberta area. Results of the intervention were reported positively by stakeholders, however, suggestions for additional evidence (i.e., additional evaluative measures) were made to better support and substantiate findings. Thus, the expansion of SOLMo was introduced in 2015. Recruitment for the expansion project included a total of four after-school intervention sites, which were matched to four usual practice (i.e., control) sites to allow for comparisons. This study used a quasi-experimental pre-post evaluation design and included child and site level measures at baseline (October 2015 – March 2016), and follow-up (February – March 2017). The SOLMo intervention included a needs assessment, tools, workshops, and coaching for care providers to promote HE and PA for children. Site-specific evaluation reports were provided to all sites at pre- and post-intervention time points. The intervention took place over a six-month period, September 2016 – February 2017.

3.2 Methods

3.2.1 Study Design and Population

3.2.1.1 Overview

As a subset of the larger SOLMo project, this study used a two-group pretest-posttest design to assess care providers' perceived level of awareness, knowledge, confidence, behavioural control, and attitude towards their ability to provide HE and PA opportunities for children. Surveys were collected pre- and post-intervention from all ASC providers from both intervention (i.e., SOLMo) and control sites. Surveys were provided to all ASC providers (n=57), and were collected in person or by mail. The independent variable was the SOLMo intervention. Dependent variables included

perceived knowledge, perceived confidence, perceived awareness, perceived behavioural control, and perceived attitudes of care providers in promoting HE and PA opportunities for children. This study design was critical to distinguish changes resulting from the SOLMo intervention compared to the control sites. Approval by the Health Research Ethics Board at the University of Alberta was obtained for this project, nested within the larger SOLMo study.

3.2.1.2 Site Recruitment

After-school sites were recruited through the principal investigator's connections with school communities in Edmonton and the surrounding area. Inclusion criteria were as follows: after-school programs, with operating hours of approximately 3:00 – 6:00 p.m., designed for children ages 5-12 years, and the commitment by sites to participate for the duration of the study period. A total of eight after-school sites were recruited. Half of the sites (n=4) received the intervention, and the other sites (n=4) remained as usual practice sites (i.e., control sites). Three intervention sites, from one organization, requested to receive the intervention as part of the recruitment agreement, and thus a randomization of sites was not possible. The remaining sites were designated as intervention or control to match sites, based on size and location. Location of sites included both urban (n=5) and rural (n=3), and included sites located within a school setting (n=4) and within the community (n=4). The SOLMo intervention commenced in September 2016, and ran for six months until the end of February 2017.

3.2.1.3 Participants

Care providers from all sites (i.e., SOLMo intervention and control) were invited to participate in this study via e-mail and in-person. All participants provided written consent prior to participating in this research study.

3.2.2 Instrument

A questionnaire that examined care providers perceived awareness, knowledge, confidence, behavioural control, and attitudes towards promoting HE and PA was used at both pre- and post-intervention time points. The questionnaire was adapted from previously validated questionnaires, the Healthy Opportunities for Preschoolers (HOP) questionnaire (Naylor & Temple, 2013) and the School Health Facilitator Self-Efficacy questionnaire previously used in school-based interventions (Leurs et al., 2007; School-based Intervention Research through Changes in Lifestyles & Environments (SIRCLE), 2012). The HOP questionnaire was created based on the Theory of Planned Behaviour (Ajzen, 1991) and included questions to measure two constructs of the theory: attitude and perceived behavioural control. The HOP questionnaire also included questions regarding knowledge. Self-efficacy questions were included to measure awareness, knowledge, and confidence in care providers' perceived ability to promote HE and PA (Leurs et al. 2007; SIRCLE, 2012). Perceived overall knowledge, attitude and behavioural control questions measured in the present study were adapted from the HOP questionnaire. The confidence in facilitating activities under challenged conditions question was adapted from the School Health Facilitator Self-Efficacy Survey. Awareness was an additional variable with questions added in the present study to

assess the general awareness in the importance of HE and PA promotion perceived by care providers in the ASC setting. All modifications made to the HOP and School Health Facilitator Self-Efficacy questionnaires were done to reflect the appropriate school-age range for children, and the ASC setting. As well, the original HOP only included questions on PA. In the present study, HE was also assessed. The modification of the survey questions were reviewed by three experts in the field for face validity prior conducting the study, as per the protocol by Bryrman, Bell, and Teevan (2012). The resulting questionnaire included demographic questions as well as questions examining awareness, attitude, perceived behavioural control, and confidence in facilitating activities under challenged conditions to promote either HE or PA. The same survey questionnaire was used at both pre- and post-intervention time periods. A copy of the modified questionnaire used in this study is provided in Appendix C. All participating care providers were provided with a copy of the pre-intervention survey, following the introduction and presentation of the SOLMo study to complete. Care providers were provided with the post-intervention questionnaire to complete at the end of the six-month intervention. Questionnaires were collected from sites in person or by mail.

3.3.3 Scores

The score for the variables awareness, knowledge, confidence, attitude, and perceived behavioural control were derived from a Likert-scale type items from the questionnaire that were considered to measure the respective variables (see Appendix D). The score for the variable confidence in facilitating activities under challenged conditions was obtained from the items measured on a scale from 0 - 100. The score for

each variable was derived from the sum of the responses for items in the corresponding variable divided by the number of items.

3.2.4 Data Analysis

Paired t-tests and the Fisher's exact test were used to determine characteristic differences between intervention and control groups. The score for each variable (i.e., awareness, knowledge, confidence level, attitude, perceived behavioural control, and confidence) were compared between the groups to determine the effect of the intervention regarding HE or PA promotion. Linear regression analyses were used to determine the average change in the effect of the intervention between the groups for each variable, controlling for baseline measures. Variables measured and included in the survey were the following: awareness in promoting HE and PA, knowledge in promoting HE and PA, confidence level in providing opportunities for HE and PA, perceived behavioural control in promoting HE and PA, attitudes towards promoting HE and PA, and confidence in the ability to promote HE and PA. The statistical analysis software program, Stata (Version 12, StataCorp, TX, USA) was used for analysis. The standard $p < 0.05$ indicated significance.

3.3 Results

3.3.1 Participant Characteristics

Participant demographics are presented in Table 3.1. Paired t-tests were completed to compare age, child care, ASC, and site experience between the groups. Fisher's exact test was used to compare gender and educational differences.

Characteristic comparisons indicated non-significant differences between the SOLMo intervention and control groups. A total of 36 participants completed the pre-intervention survey and a total of 38 completed the post-intervention survey. Due to changes in staffing, a total of 17 participants completed both pre- and post-intervention questionnaires used for analysis. Ten participants (59%) were from the control group, and seven (41%) were from the intervention group. The majority (94%) of the participants were female (n=16), between 19 and 60 years of age. Participants included full- and part-time staff, with varying years of experience in child care (ranging between one month to twenty years). Education level of participants ranged from high school to post-secondary.

Table 3.1. Characteristics of SOLMo and usual practice care provider participants

Characteristic	Mean \pm SD or n (%)			
	Total (n=17)	Intervention (n=7)	Control (n=10)	p-value
Male, n (%)	1 (6)	0	1 (10)	0.588
Age, (yrs)	32 \pm 13	37 \pm 16	28.5 \pm 10	0.062
Education, n (%)				0.559
Secondary	4 (24)	2 (29)	2 (20)	
Post-secondary	13 (76)	5 (71)	8 (80)	
Child care experience (yrs)	8.2 \pm 1.6	9.2 \pm 2.6	7.5 \pm 2.1	0.611
ASC experience (yrs)	5.2 \pm 0.9	5.6 \pm 1.3	4.9 \pm 1.2	0.674
Site experience (yrs)	4.8 \pm 1	6.4 \pm 2	3.6 \pm 1	0.167

3.3.2 Perceived Awareness, Knowledge, Confidence, Behavioural Control, and Attitude towards Promoting Physical Activity and Healthy Eating

Table 3.2 and 3.3 presents the mean values for care providers' perceived awareness, knowledge, confidence level, perceived behavioural control, confidence to facilitate activities, and attitudes towards promoting PA and HE, respectively, at pre- and post-intervention. Mean values were calculated from a linear regression model for each variable, controlling for baseline measures. The intervention resulted in a significant change in care providers' attitudes towards promoting PA ($p < 0.05$). The change in attitude towards promoting PA increased by 0.518 in the intervention and decreased by -0.083 in the control. The difference in the changes were statistically significant [Adjusted difference: 0.562 (0.12-1.01)]. Similarly, the change in attitude towards promoting HE increased by 0.143 in the intervention and decreased by -0.021 in the control. The difference in the changes were statistically significant [Adjusted difference: 0.407 (0.05-0.76)]. Conversely, the intervention did not have a significant effect on the other variables regarding care providers' perceived ability to promote PA or HE.

Table 3.2. The effect of SOLMo on the six-month change in care providers' perceived ability to promote physical activity from pre- to post-intervention (n=17)

Variable for Physical Activity ^a	Intervention sites (n=7)			Control sites (n=10)			Difference in the change between intervention and control groups			
	Pre-intervention Mean	Post-intervention Mean	Six month change Mean (post-pre)	Pre-intervention Mean	Post-intervention Mean	Six month change Mean (post-pre)	Unadjusted β -coefficient	Adjusted ^f		
								β -coefficient	95% CI	p-value
Awareness	4.722	4.476	-0.246	4.333	4.400	-0.033	-0.078	0.016	[-0.68, 0.71]	0.962
Knowledge	3.356	3.893	0.333	4.325	4.139	-0.194	0.552	0.240	[-0.33, 0.92]	0.332
Confidence level	3.905	4.238	0.333	4.367	4.200	-0.167	0.500	0.267	[-0.33, 0.86]	0.350
Attitude	3.911	4.429	0.518	3.986	3.903	-0.083	0.601	0.562	[0.12, 1.01]	0.017
Behavioural control	4.238	4.500	0.262	4.033	4.200	0.167	0.095	0.160	[-0.27, 0.59]	0.443
Confidence to facilitate activities	79.011	86.264	7.253	68.462	62.077	-6.385	13.637	12.823	[-2.28, 31.30]	0.962

^fAdjusted for baseline

NB: ^aScore from corresponding survey questions for each variable at pre- and post-intervention for intervention and control groups. Range for awareness, knowledge, confidence, attitude, and behavioural control = 1 to 5; range for confidence to facilitate activities = 0 to 100.

Table 3.3. The effect of SOLMo on the six-month change in care providers' perceived ability to promote healthy eating pre- to post-intervention (n=17)

Variable for Healthy eating ^a	Intervention sites (n=7)			Control sites (n=10)			Difference in the change between intervention and control groups			
	Pre-intervention Mean	Post-intervention Mean	Six month change Mean (post-pre)	Pre-intervention Mean	Post-intervention Mean	Six month change Mean (post-pre)	Unadjusted β -coefficient	Adjusted ^f		
								β -coefficient	95% CI	p-value
Awareness	4.667	4.429	-0.238	4.533	4.500	-0.033	-0.205	-0.141	[0.72,0.44]	-0.520
Knowledge	3.939	4.143	0.204	4.417	4.222	-0.195	0.500	0.099	[-0.39,0.58]	0.665
Confidence level	4.381	4.238	-0.143	4.667	4.267	-0.400	0.257	0.150	[-0.53,0.83]	0.642
Attitude	3.964	4.107	0.143	4.014	3.764	-0.250	0.393	0.407	[0.05,0.76]	0.029
Behavioural control	4.238	4.286	0.048	3.981	3.944	-0.037	0.068	0.096	[-0.55, 0.74]	0.750
Confidence to facilitate activities	75.374	76.667	1.293	69.846	61.962	-7.884	11.218	14.509	[-9.45, 35.11]	0.085

^fAdjusted for baseline
NB: ^aScore from corresponding survey questions for each variable at pre- and post-intervention for intervention and control groups. Range for awareness, knowledge, confidence, attitude, and behavioural control = 1 to 5; range for confidence to facilitate activities = 0 to 100.

3.4 Discussion

This study used the constructs of the TPB and self-efficacy to measure the effects of the SOLMo intervention on care providers' perceived ability to promote HE and PA in the after-school setting. The variables measured included: perceived awareness, knowledge, confidence, behavioural control, and attitudes towards promoting HE and PA. The aim of the SOLMo intervention was to improve the care providers' ability to promote and improve HE and PA opportunities for children in the after-school setting through a whole-setting approach. This study was the first known study to objectively measure how a health promotion intervention taking a CSH approach within an ASC setting affected care providers' perceived awareness,

knowledge, confidence, behavioural control and attitudes towards promoting HE and PA.

The results demonstrated the six-month health promotion intervention, SOLMo, had a significant effect on care providers' attitudes towards promoting both HE and PA when compared to usual practice care providers, after adjusting for baseline. These results are consistent with other studies in the literature reporting on the relationship between teacher, parent, and care provider attitudes towards health and children's health behaviours (Andrews, Silk, & Eneli, 2010; Liu et al., 2014; Prelip et al., 2011; Tipton, 2014). Consistent with the TPB, attitude is one of three constructs which determines behavioural intentions, and is essential to performing a behaviour. Attitudes regarding health from the care providers' perspective is thus an important consideration when implementing health promotion interventions within the ASC setting. Based on our research, designing interventions which improve care providers' attitudes to be positive towards health will be more effective in improving health behaviours of children within the after-school setting. Though not significant, small positive changes were found in the perceived knowledge to promote PA and HE, confidence level to implement PA opportunities, perceived behavioural control to promote PA and HE, and confidence to facilitate PA and HE activities. These subtle positive changes suggest a need to increase efforts to influence and support these factors among care providers, as they contribute to ASC providers' ability to promote PA and HE for children.

The non-significant changes found for the awareness, knowledge, confidence, and perceived behavioural control in care providers' ability to promote PA and HE may be due to a number of reasons. One reason may be due to the high score reported by

care providers at pre-intervention on their perceived awareness, knowledge, confidence, and behavioural control. This would explain the unexpected negative change observed in this study regarding the awareness to promote both PA and HE. Additionally, implementation fidelity may also explain the lack of significance. Challenges of taking a CSH approach within the school setting has been discussed in the literature. Storey et al. (2016) reported challenges due to community support, professional development, time, and readiness for the intervention, which also may have contributed to implementation fidelity of the SOLMo intervention. Time constraints have been commonly reported as an obstacle observed in school-based interventions using a multi-component study design (Griffin et al., 2017; Mclsaac et al., 2017; Storey et al., 2016). While attitude and enthusiasm have been reported as significant components to the effectiveness of taking a CSH approach (Griffin et al., 2017; Storey et al., 2016), it is unlikely that attitude had an effect on implementation fidelity based on our results.

3.4.1 Strengths and Limitations

Strengths of this study include the use of a previously validated questionnaires and the review of modified questions by three experts in the field for face validity. This study had some limitations, however, and these will be discussed. First, the sample size was small and likely limited the ability to detect significant differences in the variables resulting in no significant differences. Additionally, the small sample size was not an accurate representation of the population; therefore, the results of this study are not generalizable. Also, in order to match the participants' pre- and post-intervention survey,

participants were asked to identify their names, which may have introduced response bias. The primary researcher for this study was also the project coordinator for the SOLMo project, which may have further resulted in a response bias. Lastly, intervention fidelity may have had an impact on the ability of the intervention to effectively impact care providers' ability to change over the intervention period. While the intervention implementation was similar for sites, it was tailored to suit the needs of each after-school site. Thus, intervention activities were slightly different between the intervention sites. Additionally, two of the four intervention sites experienced a temporary closure during the intervention, and were therefore not exposed to the full six-months of intervention. The shortened intervention period may have impacted the ability to detect a significant difference in the overall results.

3.5 Conclusion

Our results demonstrated the ability of an after-school health promotion intervention, based on the CSH approach, to significantly impact the attitudes of ASC providers. Given the essential role ASC providers play, and limited research on factors affecting their ability to promote health behaviours in the ASC setting, more research is recommended. There is a need to better understand the support required by care providers to implement health promotion interventions in the ASC setting.

CHAPTER 4: SOLMO CARE PROVIDERS' ROLE AND PERCEPTIONS IN PROMOTING HEALTHY EATING AND PHYSICAL ACTIVITY

4.1 Background

Overweight and obesity in children continues to be a public health concern (World Health Organization, 2016). Recent data shows the prevalence of childhood obesity has stabilized this past decade in Canada (Rao et al., 2016). However, with nearly one-third (31%) of children aged 5-11 years considered overweight or obese, this prevalence remains high at 17% and 9%, respectively. Risk factors for childhood obesity are well-recognized and include overweight and obesity in adulthood, chronic illnesses, poor mental health, and reduced quality of life (Gungor, 2014; Kelsey et al., 2014; Spruijt-Metz, 2011). Thus, effective strategies to promote healthy lifestyles and weight status of Canadian children remains a priority.

The etiology of childhood obesity is complex, requiring a multifaceted approach to understand the numerous factors influencing the prevalence of overweight and obesity in children (World Health Organization, 2016). Lifestyle factors, such as unhealthy diets and sedentary behaviours, are known causes of unhealthy weights in children (Public Health Agency of Canada, 2012; Spruijt-Metz, 2011; World Health Organization, 2015). Cultural shifts to consuming high fat, high sugar, and calorically dense foods, along with increases in sedentary activities has created unhealthy lifestyles for children and families in Canada (Hruby & Hu, 2015). Consequently, Canadian children are not meeting national guidelines for nutrition and physical activity for optimal health (Colley et al., 2017; Freeman et al., 2014; Garriguet, 2007).

Schools, with their ability to reach the vast majority of children, are an ideal setting for health promotion initiatives (Public Health Agency of Canada, 2012; World Health Organization, 2012). As well, it has shown that healthy students learn better (Faught et al., 2017). Education is an important social determinant of health and children's academic success is strong predictor of future health and well-being (Mikkonen & Raphael, 2010). School-based interventions have proven to be effective in improving healthy eating, physical activity, and weight status of children, specifically interventions taking a comprehensive school health (CSH) approach (Fung et al., 2012; Veugelers & Fitzgerald, 2005). The CSH framework is an evidence-based, and internationally recognized, health promotion strategy for improving children's health and well-being while promoting academic achievement. Informed by the Ottawa Charter for Health Promotion (World Health Organization, 1997), CSH is an all-encompassing framework comprising of four distinct, but interrelated components: (1) social and physical environment; (2) teaching and learning; (3) policy; and (4) partnerships and services (JCSH, 2016). While CSH has been shown to be effective, it is necessary that this approach reach other settings beyond the school walls. As such, the guiding principles of CSH are ideal for other settings in the community, such as the after-school care (ASC) setting.

The after-school hours of 3:00-6:00 p.m. have garnered interest in recent years (Afterschool Alliance, 2015; Annesi et al., 2017; Beets, Webster, et al., 2013; King, Ogletree, Fetro, Brown, & Partridge, 2011). These critical hours provide opportunities to promote health behaviours such as improving healthy eating (HE) (Gilbert et al., 2012), and physical activity (PA) (King et al., 2011; Trost, Rosenkranz, & Dzewaltowski, 2008)

for children attending ASC programs (Beets et al., 2014; Choudhry et al., 2011; Hastmann et al., 2013; Messiah et al., 2015; Slusser et al., 2013). While health promotion interventions in the ASC setting have demonstrated improvements in HE and PA levels in children, few interventions have used comprehensive approaches similar to the evidence-based CSH framework.

Dobson, Scott and Naylor (2012) implemented a comprehensive approach to promoting healthy lifestyle behaviours within the ASC setting. This study used the CSH framework to promote HE and PA within participating ASC programs in the province of British Columbia and reported improvements in increasing PA levels among children, and more healthful choices offered by sites (i.e., fruits, vegetables, and whole grains). Dobson and colleagues (2012) also reported on the significant role of ASC providers, stating that staff were an important component to the success of the intervention. While the ASC providers are regarded as individuals who have an impactful role in the ASC setting, little is known regarding their role in promoting healthy behaviours, specifically within those interventions taking a CSH approach. After-school, and out-of-school, care programs in Canada are not currently regulated in regards to the promotion of HE and PA opportunities (Government of Alberta, 2016). As such, sites rely on the knowledge and expertise of staff to develop programming, resulting in widely diverse programs among after-school sites. The ASC setting is a logical setting for the promotion of HE and PA for children, complementing school-based initiatives. However, little research has been done on comprehensive approaches to health promotion in the ASC setting.

Given the critical role care providers play in the ASC setting, and the effective approach of CSH in school settings, the role of the care provider needs to be

considered within any health promotion initiative, including comprehensive approaches (i.e., CSH) in the ASC setting. In this study, the after-school health-promoting project, School's Out...Let's Move (SOLMo), provided an opportunity to explore the role of the care provider in promoting HE and PA in the ASC setting. The purpose of this study was thus to explore ASC providers' role and their perceptions in promoting HE and PA for children in the ASC setting.

4.1.1 Setting: School's Out...Let's Move

School's Out...Let's Move (SOLMo) was an after-school intervention, initially created by Ever Active Schools (Ever Active Schools, 2014), which aimed to improve HE and PA opportunities for children attending ASC programs. SOLMo adopted the evidence-based CSH framework to guide the intervention. In 2012, SOLMo was piloted in five ASC sites in the Leduc, Alberta area. Qualitative evaluation of this pilot study suggested positive program results; however, suggestions for additional evidence (i.e., additional evaluative measures) was made to better support and substantiate findings. Thus, the expansion of SOLMo was introduced in 2015. Recruitment for the expansion project included a total of four after-school SOLMo intervention sites and four usual practice (i.e., control) sites to allow for comparisons. This study used a quasi-experimental pre-post evaluation design and included child and site level measures at baseline (October 2015-March 2016), and follow-up (February-March 2017). The SOLMo intervention included a needs assessment, tools, workshops, and coaching for care providers to promote HE and PA for children. Site-specific evaluation reports were

provided to all sites at pre- and post-intervention time points. The intervention took place over a six-month period, September 2016 – February 2017.

4.2 Methods

To address this gap in the literature, qualitative methods were employed to explore the role of care providers in promoting HE and PA for children attending ASC. The study contributes to the understanding of the ASC setting as one strategy used to improve obesity trends in Canadian children. The use of qualitative inquiry adds depth to the investigation on how a health promotion intervention, such as SOLMo, impacts the care providers' role. Focused ethnography was utilized as the guiding method (Stahlke Wall, 2014). Focused ethnography, also known as mini- or micro-ethnographies, rapid ethnographic appraisals and the “quick and dirty” ethnographies, stem from the traditional ethnographic method, which is fundamental to the understanding of a particular group or culture. Focused ethnography, “is more targeted...led by a specific research question, conducted within a particular context or organization around a small group of people to inform decision-making regarding a distinct problem” (Mayan, 2009, p.39). The context-specific nature of this study led to focused ethnography being the best method suited to inform the purpose of this study (Knoblauch, 2005; Mayan, 2009; Stahlke Wall, 2014).

4.2.1 Research Paradigm and Theoretical Perspective

A researcher's paradigm is integral to consider as it reveals the perspective and assumptions one has regarding their worldview. The worldview of the researcher

ultimately impacts the approach taken in the research design, methods, and techniques in one's process to gaining new knowledge. This process is formed by the researcher's theoretical perspective, based on their ontological and epistemological positions, where the ontology relates to "what we know" and epistemology is "how can we know it" (Mayan, 2009, p. 24). Together, the ontological and epistemological perspectives direct the methodology, which ultimately guides the research process. The congruency between the ontology, epistemology, and methodology ensures methodological coherence in the research process (Mayan, 2009). Qualitative inquiry, a common approach for social science research, guides the method applied in this research study. Qualitative research takes a "naturalistic, interpretive, and inductive" approach to understanding a research question by allowing for a thick description of the phenomenon of interest (Mayan, 2009, pg. 11). The researcher's theoretical position for this study includes a constructivist perspective; comprised of the relativist ontology, the belief in multiple realities, and a subjectivist epistemology, to mean for the co-creation of data generation by researchers and participants. Together these perspectives create the foundation of a constructivist perspective, and informed the research process in its entirety (Cohen & Crabtree, 2006).

4.2.2 Participants

Access to after-school sites was previously established through the larger SOLMo study which began in September 2016. A total of eight ASC sites (both intervention and control) were recruited. This study focused on the four SOLMo intervention sites, and through both convenience and purposeful sampling, all care

providers from the intervention sites were invited to participate in interviews via in-person meetings and through e-mail. The remaining participants from the four control sites were not included in interviews. However, data generated through participant observation, informal interviews, and field work for all eight sites aided in the overall data generation and iterative analytic approach used in this research.

Both convenience and purposeful sampling was utilized for this study. The challenges in recruitment for the larger SOLMo study resulted in a limited number of participants available. With small staff numbers (two to eight) at the four intervention sites, purposeful sampling (Mayan, 2009) was used to ensure a sufficient number of participants to reach saturation (Luborsky & Rubinstein, 1995). The goal of qualitative inquiry is to gain an in-depth understanding of a phenomenon, rather than generalizability (Mayan, 2009). Therefore, this study aimed to recruit at least one leader/director and one additional ASC staff member per intervention site to allow for diversity in perceptions from the various care providers.

4.2.3 Ethical Considerations

Approval by the Health Research Ethics Board at the University of Alberta was obtained for this project, nested within the larger SOLMo project. Information letters were provided to each intervention site participating in the SOLMo project to invite all ASC providers to participate in this research study. All participants provided written consent at the start of the study and verbal consent prior to interviews. On-going consent was obtained to ensure participants' awareness in their ability to withdraw at any point throughout the study period up until the point of data analysis. Pseudonyms

for participant and after-school sites were used to ensure confidentiality of all participants. A small honorarium of \$20 was offered to individuals participating in interviews as a gesture of gratitude for their time.

4.2.4 Data Generating Strategies

Multiple data generating strategies were utilized in this study to aid in generating a rich understanding of the phenomenon (Denzin & Lincoln, 2007). All strategies were in alignment with the focused ethnography method (Knoblauch, 2005).

4.2.4.1 Interviews

Interview data was the predominant source of data for this study, critical to the ethnographic method (Fetterman, 2010). One-on-one semi-structured interviews were conducted and audio recorded during the late intervention phase of SOLMo. Having a semi-structured interview guide prompted relevant questions, while allowing for additional questions to emerge which elicited detailed and in-depth descriptions from participants' experiences (Richards & Morse, 2007). Questions were specific to care providers' experiences with the SOLMo intervention, and their perceptions of their ability to improve HE and PA opportunities for children in the after-school setting. The interview guide is provided in Appendix E. The semi-structured nature of the interviews as well as the previously established relationships developed by the primary researcher with participants allowed responses and additional questions to form naturally. Relationships with each participant was intentionally established by the researcher and allowed for authentic responses from participants, and thus the generation of rich data.

4.2.4.2 Participant Observation and Field Notes

Participant observations were completed by the researcher in the field-observer role. Participant observation, commonly used in ethnographic studies (Mayan, 2009; Richards & Morse, 2007), contributed to understanding the role of ASC staff by providing direct observation of care providers' ability to facilitate HE and PA activities within the ASC setting. Field work allowed for informal interactions and conversations with care providers and others (e.g., volunteers, school principal, and teachers) and provided the researcher with insight regarding the daily routines and general practices involving HE and PA promotion within the ASC setting. Extensive field notes were taken throughout each site visit over the SOLMo study period. Initially, field notes in the form of "jottings" were used during the observation of ASC care providers to assist with the prevention of memory loss (Mulhall, 2002). Field visits and participant engagement by the researcher were consistent throughout the two-year duration of SOLMo. Having established relationships prior to interviewing participants contributed to the overall process for both data collection and analysis for this study (Patton, 2015). Additionally, field work provided additional information on the available HE and PA opportunities available within the ASC setting.

4.2.4.3 Reflexivity and Journaling

Reflective journaling followed each site visit or meeting with participants to document the researcher's thoughts, feelings, interpretations or reflections on what was observed or discussed. The practice of reflexivity was considered throughout the study

period. As an instrument in qualitative inquiry, the researcher's ability to be reflexive is crucial to both data collection and analysis. Reflexivity implies the researcher's ability to reflect at a deep, in-depth, level to experience and interpret the data. It involves the researcher maintaining self-awareness in their role as a researcher and outsider, while taking into consideration the views of the participants (Patton, 2015).

4.2.5 Data Analysis

Data analysis was iterative and concurrent throughout data generation process. The iterative nature of this process was crucial to the inductive approach of the qualitative inquiry (Mayan, 2009). Field work and participant observation assisted in the development of the interview guide; initial interviews informed subsequent interviews with adjustments and revisions made based on participant responses. All interviews were transcribed verbatim and organized using the NVivo v11 software program (NVivo QSR International Pty Ltd., 2016). Upon completion of the transcription of interviews, transcripts were read multiple times prior to the coding process to ensure accuracy and assist the researcher in immersion with the data. Latent content analysis was utilized to identify, code, categorize, and ultimately develop themes (Mayan, 2009). This process supported and encouraged the emergence of patterns within the context of the data generated (Fetterman, 2010).

4.2.6 Rigour

Rigour ensured findings were representative of the data generated (Mayan, 2009). To implement a rigorous design for this study, the criteria of trustworthiness

described by Lincoln and Guba (1985) was applied. To enhance *credibility*, multiple data generating strategies were used for triangulation including interviews, participant observation, and field notes. Prolonged engagement was carried out by the researcher, being actively engaged as the project coordinator, during the two-year duration of the larger SOLMo study (i.e., from the initial recruitment to the end of the project). The ongoing interactions with participants throughout SOLMo aided in establishing relationships, and building rapport and trust, which was crucial to generating rich data through informal conversations and formal interviews. Persistent observation was possible through prolonged engagement and assisted the researcher in better understanding the unfamiliar setting, activities of the ASC programs, and role of the care provider within the setting. Peer (i.e., critical friend) and team debriefings took place throughout analysis to prevent bias throughout the analytic process. Negative cases were explored throughout the analysis to enhance credibility. Member checking was part of the interview guide, completed at the end of interviews, in the form of summary questions. Member checking was also conducted with participants during the final SOLMo meeting, when the researcher presented the final themes developed to ensure accuracy of the results (Creswell, 2014). *Dependability* was demonstrated with the extensive use of field notes and memos, creating an audit trail to account for decisions made throughout the research process. To ensure *confirmability*, researcher reflexivity and journaling throughout the process was completed. The crucial role of the researcher as an instrument in the research process should not be underestimated (Mayan, 2009), and researcher responsiveness, critical judgement, and flexibility throughout data generation and analysis processes was implemented to ensure fluidity

and congruence throughout the research process (Day, 2012). And lastly, *transferability* was addressed with the use of field notes taken to detail the setting and participants within during and immediately following field visits, participant observations, and participant interviews (Guba & Lincoln, 1985; Mayan, 2009).

4.3 Results

Recruitment of care providers resulted in 13 participants for interviews from the intervention sites during the late-intervention phase. The number of participants allowed for saturation and was in alignment with the range generally observed for focused ethnographies, with as few as seven and as many as 45 (Ensign & Bell, 2004; Smallwood, 2009). Participants included: site leaders (n=5); full-time staff (n=7); and part-time staff (n=4). The majority of the participants were female (n=11), and ranged in age from 19 to 60 years old. The education level of the participants ranged from secondary to postsecondary, and work experience ranged from 6 months to 28 years in working within the child care industry. Five of the participants did not participate in the SOLMo intervention for the entire 6 months due to a temporary closure of two of the intervention sites (one of the sites relocated), and changes to staffing. Interviews were conducted at the ASC site and ranged from 35-90 minutes.

Data analysis from both the qualitative interviews and observations resulted in five major themes: (1) enhanced awareness, (2) improved program planning, (3) strong relationships, (4) collaborative approach, and (5) role tension. Overall, interviews with ASC providers and site observations indicated their understanding and support for the

use of a multifaceted approach (i.e., CSH) to ensure the well-being and health of children in the ASC setting.

4.3.1. Enhanced Awareness

Interviews with ASC directors and staff revealed the impact the project had on their ability to promote HE and PA opportunities for children attending their programs. All care providers felt that by participating in the SOLMo project, their awareness for HE and PA opportunities improved and that the project was beneficial for their site. The enhanced awareness reported by care providers was through their involvement in the SOLMo project activities, including meetings with the SOLMo team and data collection. Two subthemes emerged including (1) re-prioritizing HE and PA, and (2) research as an implementation tool. Both subthemes are described in more detail below.

4.3.1.1 Re-Prioritizing HE and PA

By participating in SOLMo, care providers perceived an enhanced awareness of the importance of providing HE and PA opportunities for children in their care. Care providers described how the project acted as a frequent reminder to promote healthy behaviours and encouraged care providers to be “more aware” as evidenced by the following quote: “Like definitely more conscious about what we were having for snack...And physical activity, too.” Participants reported a general understanding regarding the importance of encouraging healthy behaviours as care providers; however, participants stated these priorities were often overlooked during program time due to the hectic nature of the ASC environment. This was described by one participant:

“[the SOLMo] program...got the ball rolling in things that I used to do that I had forgotten to do... it planted the seed for me to then expand the branches to figure out what’s next.” Similarly, another care provider described how the project increased their awareness to improve HE and PA opportunities by designating a staff member to lead initiatives: “... the main thing that I noticed with the program...[it] led me to realizing that we need someone to initiate...for healthy lifestyles, healthy eating and healthy activity with the kids...[it] sparked an idea with my planning with the health club...” Additionally, one participant spoke of their increased awareness resulting from SOLMo in leading to a re-prioritizing of HE opportunities: “Well, I think it has made us, like I said, more aware of the menu planning, trying healthier [recipes]... I know when I’m looking for recipes now, I’m looking for healthier recipes.”

There was an increased awareness by site leaders in promoting HE and PA, which was recognized by other care providers as significant. Many felt that through the SOLMo intervention, site leaders re-prioritized the need to encourage HE and PA for children, creating awareness for their team as a whole. Having site leaders emphasize and prioritize HE and PA opportunities made it easier for ASC providers to also prioritize HE and PA. As one ASC provider indicated: “I would say it’s directly from the leader of the organization itself. If your supervisor’s a supervisor or director who puts a lot of emphasis on art, you’re probably going to draw...you want to make your boss happy, right?” The enhanced awareness for HE and PA promotion was demonstrated by site leaders through team meetings and conversations amongst staff members. These conversations helped to trigger ideas to offer additional HE and PA opportunities for children, as described by one participant:

...it was School's Out Let's Move that got us in the direction of talking about it more openly because I think individually we all thought those things...But we didn't sit and talk about it and School's Out got us to the point of sitting and talking about it and, "Okay, so we're doing this. What else could we offer? What else could we do? ...it [SOLMo] made us talk about it more.

Care providers discussed how the enhanced awareness facilitated conversations with children, as well as encouraged staff to openly communicate ideas for activities to promote HE and PA.

4.3.1.2 Research as an Implementation Tool

ASC providers perceived that SOLMo research activities enhanced their awareness for implementing HE and PA opportunities for children. Multiple research activities acted as frequent reminders for the project goals (i.e., provide a healthy snack and to increase moderate-to-vigorous PA) and therefore enhanced awareness for care providers to improve HE and PA opportunities during program time. For example, pedometers worn by children for data collection were a reminder for care providers to encourage PA opportunities and helped the staff to promote additional steps: "I thought that the pedometers were great...we did it use like... 'Well, you want to get more steps, right?' So and then kids would be more likely to want to participate." ASC providers also discussed how being part of SOLMo helped encourage them to promote HE and PA by "telling them [the children] what it's [SOLMo] about...Showing them the resources we

were given. Just keeping a mindset that is geared towards really emphasizing the physical activity and nutrition part of it.”

Notably, part-time staff participants specifically commented on how the research activities enhanced their awareness of the SOLMo project, including their awareness for promoting HE and PA at their site. As result of being part-time and not being at the centre daily, staff reported communication issues, specifically for new programs or initiatives. Therefore, part-time staff were not initially aware of the SOLMo project being implemented at their site until research activities, such as baseline data collection, took place. Researcher presence improved the awareness of HE and PA opportunities for part-time staff at sites, as described by one participant:

...by seeing you guys here I was thinking oh I was wondering if this is a healthy snack to eat...it [SOLMo] made me think about healthy eating a little bit more and...physical activity too, because I just thought it brought awareness to them and even to myself too, just make sure you get the steps.

Care providers perceived their ability to incorporate the daily opportunities for HE and PA through their improved awareness from their participation and research activities of the intervention. Participants reported an improvement in their ability to promote and offer HE and PA for children throughout the intervention time period.

4.3.2 Improved Program Planning

While programs differed between ASC sites, care providers agreed on the need to provide quality programs and shared a common goal of ensuring the well-being of

children as a priority in their programs. Two subthemes of (1) knowledge and (2) resources emerged. Care providers reported on an improvement in their program planning process through the knowledge gained and resources provided by the SOLMo project. Participants described their program planning process with aims to provide a physically, emotionally, and socially safe environment for children. Some sites also offered informal education, such as leadership skills, as well as supporting academic needs with tutoring to help with homework and reading. With the wide range of activities aimed to support children in various areas, challenges were demonstrated given the unstructured and hectic nature of the ASC environment. The efforts required to plan activities that pertained to the interests of the children combined with the disordered environment made planning for HE and PA opportunities difficult at times. The two subthemes of (1) knowledge and (2) resources are described in detail below and summarized by the following quote: “my experience has been great in that the knowledge that you shared and the resources you guys provided were very helpful.”

4.3.2.1 Knowledge

Participants spoke of an increase in knowledge gained from participating in the SOLMo intervention and discussed how the impact of how this knowledge allowed them to intentionally plan activities which regularly included HE and PA opportunities. Care providers mentioned program planning being a significant component of their role. The program planning process for each site varied (i.e., some daily, weekly, or monthly), however, program planning was important as it provided a loose structure for the daily operation of sites. While many care providers were aware of the importance of PA, they

were not aware of the recommendations for moderate to vigorous PA (MVPA). The knowledge gained regarding MVPA recommendations encouraged care providers to incorporate MVPA in the activities offered. One participant spoke of their ability to increase the PA intensity for children during regular programming time:

I was really honing on the...vigorous. So we started to do a little bit more baseball. Now, baseball is obviously a slow game, but I was changing it up, getting them to do different things with it. So what was happening was I was just taking a regular activity, not reinventing the wheel, just making sure it had a little bit more...vigorous activity.

Another participant described how even though their organization encourages PA, her knowledge regarding PA recommendations for children improved due to being a part of the SOLMo intervention: "I would say what has changed is just my perspective. I did know that it's important, but I didn't think every day had to incorporate at least 60 minutes of exercising or of [moderate-to-vigorous] physical activity." Participants spoke of how the information received from the intervention, training, and conversations with the project coordinator all helped to improve the program planning for HE and PA opportunities. As described by one participant regarding HE opportunities: "I would also say it was really great in the sense that all the information you gave me...was helpful for me to be able to plan out the healthy eating and the healthy programming for the kids."

4.3.2.2 Resources

Care providers recognized the physical environment impacted their ability to promote healthy lifestyle behaviours. Care providers indicated opportunities to promote

HE and PA were challenging given their limited access to resources. The additional resources provided by the SOLMo intervention were regarded as beneficial for care providers to improve their ability to incorporate HE and PA opportunities into programming offered at their sites. Participants reported the SOLMo resources (i.e., ideas, supplies) allowed them to make changes to the environment to improve HE and PA opportunities for children. As described by one participant: “we used all of them [the resources]. Sometimes you've got to work with what's in front of you, but if you have extra stuff in front of you it's a lot easier.” This was particularly relevant when providing PA opportunities within small spaces, as one participant illustrated: “that [daily physical activity] bin in particular allows us to do things in a smaller space, which is really useful.” As well, another participant indicated how the resources specifically enhanced the ease of program planning for HE and PA opportunities.

...incorporating [HE and PA] into our planning more, because now...there's actually something that we have right there in front of us now instead of thinking, 'Okay, well, I'm going to look this up. Or I'm going to research it,' or whatever. No, it's actually right there. So we can just do it.

4.3.3 Strong Relationships

Care providers identified themselves as being effective health promoters. They attributed their ability to effectively promote health through the strong relationships they had established over time with the children. The importance of building a relationship with each child was reported as a main priority for care providers; participants spoke of how the relationship with each child needs to be established before promoting health.

As described by a participant: “I think from a care provider perspective, the number one is getting a relationship with the kid before you really push them into that direction.”

Participants discussed the importance of ensuring children felt comfortable and safe in their care. The familial feel of the ASC setting was mentioned and many felt, as care providers, they were very influential to children in their care. ASC providers described themselves as being akin to parents and felt responsible in providing the same level of care as parents would for their children. Trust and established relationships with the children was discussed as a crucial component of their role. By creating a positive social environment, open communication, and conversations between the care provider and children promoting HE and PA was made easier. Through their strong relationships with children, care providers perceived they had a significant ability to impact children’s health behaviours, as described by one participant: “I think it’s [role modeling] just as essential. You’re in loco parentis...you’re much more akin to like an auntie or something...it’s more familial...so perhaps it’s even more important that you model good choices...” Two subthemes emerged within the context of ‘Strong Relationships’ (1) unique role as ASC providers and (2) role modelling, which are described in detail below.

4.3.3.1 Unique Role as ASC Providers

Care providers perceived their strong relationship with children was established through their unique role as ASC providers. Care providers interact daily with children, and sometimes these interactions occur over long a period of time, lasting years for some children. This continued interaction in a less structured environment, combined

with an emphasis on forming strong relationships, fosters a strong relationship between the care provider and children. Through their unique role and strong relationships formed with children, care providers perceived their role as significantly influential, even more so compared to other influencers, such as teachers. As stated by one participant:

...we benefit because a teacher has a child from September until June and then for lack of better words, they're done with that child. We get them for years. Years. Like I've worked with some of the children since they were 1-years-old to now 9. So, I have years to become that incredibly important person to them...like we have a very special situation.

Once a relationship is formed with a child and trust is established, care providers perceived this bond as advantageous in their ability to influence children's behaviours. While hectic at times, the less structured nature of ASC programs allowed for meaningful connections between care providers and children: "The way our programs are laid out, it makes it easier to be able to connect with kids because it's not too structured. And I find that kids, when you're doing activities with them, you can easily connect with them." Care providers spoke of the importance in creating a safe and relaxed environment in the ASC setting. Participants viewed their emphasis on social and emotional well-being encouraged children to voice concerns and opinions in order for care providers to support their needs.

The relationship care providers developed with children was reported as unique to their role as ASC providers, and perceived as significant in their ability to influence and promote health behaviours in the ASC setting. The connection care providers have with each child in the ASC setting was seen as an impactful approach to promote HE

and PA. Forming relationships, building trust, and creating mutual respect with children supported care providers in their ability to promote health because “once that respect is established and that relationship is built...it makes a difference ...they’re super respectful and wanting to be here. And so I feel like what I [the care provider] say to them matters.”

4.3.3.2 Role Modelling

Many care providers recognized the importance of their indirect influence through role modelling. Participants commented on the responsibility of care providers to exhibit health behaviours (i.e., role modelling HE and PA activities) and the importance of ‘practicing what you preach’ to encourage and positively influence children’s behaviours because “[t]hey notice everything. They pick up on everything, so role modelling ... is number one...” Participants recognized their ability to influence children through their own thoughts and actions, and the need to be conscious of their behaviours exhibited during program time, as described by one participant:

We are really big influencers on them... we’re role models. You might not realize how your lifestyle will affect the kids, but it’s kind of – it’s what bases your thoughts and it’s how you act. So, you might not expect the kids to act any differently.

Role modeling was viewed as an effective approach to promoting health behaviours through interactions with children during activities, and by bringing energy and excitement to an activity as positive role models. Activities were generally not

mandatory in the ASC setting due to the nature of child-led programming, and role modelling by care providers was reported to improve children's participation, especially those children who were less likely to participate. For the less active children, care providers perceived a lack of participation was due to inexperience and/or low confidence children had in trying new activities. Care providers described the importance of their role in encouraging children to overcome these challenges through role modelling, and actively participating with children. While participants did discuss some challenges in participating in activities due to the need to oversee the entire program or other activities, care providers agreed that their engagement improved participation levels. As described by the following participants:

I think participating in the activities make a difference...If you're excited about it they're more likely to be excited about it. If you're participating and encouraging them to continue trying they're more likely to...keep trying versus giving up. So, I think that there's a lot to be done by staff in terms of role modelling to encourage positive choices.

...by talking to them and bringing a lot of energy... because if there was no energy I don't think they would be willing to do it. And they see us doing it...they'll see us having fun and just making sure we are having fun with the kids...they see that and then they want to play.

Building relationships with children was regarded as a significant part of a care provider's role. Care providers felt their unique role within the ASC setting helped them form strong relationships with children. ASC providers perceived these strong

relationships gave them an advantage in their ability to role model to promote HE and PA opportunities, which positively influenced healthy lifestyle behaviours for children.

4.3.4 Collaborative Approach

Care providers discussed the importance of a collaborative approach in their ability to successfully promote HE and PA within the ASC setting. Participants described the significance of connections formed within their community. Partnerships with schools were discussed as impactful; however, participants revealed challenges they commonly encountered in establishing these relationships. Though, once a partnership was established, care providers reported a reliance on the schools in their ability to improve HE and PA opportunities. Many ASC sites had limited resources, and thus care providers indicated a collaborative approach was required to improve HE and PA opportunities in ASC. Two subthemes were revealed: (1) school partnerships and (2) community support, and are described below.

4.3.4.1 School Partnerships

Many ASC sites participating in SOLMo were located near, if not within, a school building. The location of ASC sites helped to form a natural school community for children and their families. Of the eight participating sites (intervention and control), five were located within the school building. With sites being located in close proximity to schools, interactions between ASC sites and schools were expected. For some of the SOLMo intervention sites, the relationship with the school and school staff was significant and positive. Sites located within schools, in particular, reported on how the

sharing of resources from the school contributed towards the HE and PA opportunities they were able to offer. Unfortunately, this partnership and 'fundamental' support between the school and ASC site was not observed with other sites, and was recognized as atypical by most care providers. Participants noted a lack of support their programs received from the school. With the exception of one new care provider, all participants reported current or previous challenges in the establishment of positive relationships and partnerships with the school community. For ASC sites located within or near the school, access to school resources was presumed convenient for care providers to promote and offer HE and PA opportunities. Throughout the SOLMo intervention, conversations with care providers revealed challenges in establishing relationships with the school. This included challenges in gaining access to the school gymnasium space (including requests for the open gym space without the use of any equipment), a story of teachers from the school speaking disrespectfully to the ASC staff, unwillingness of the school to communicate school events with the ASC site, and excluding the ASC site during school events.

In comparison to ASC sites, schools are generally better equipped with resources. Participants agreed there were benefits in having the support of the school, such that a partnership with the local school improved care providers' ability to promote HE and PA opportunities through their access to resources. Participants from sites with established partnerships spoke of their reliance on the school for resources including access to school gymnasium, sports equipment, outdoor play space, kitchen space, and food donations which often came as leftovers from school events. A participant described the use of space and equipment shared with the school:

...we're lucky in that we're in this classroom and we're in this setting, and we have access to whatever it is we need... [I've] asked what is it we can take outside as far as equipment, because kids of course want to take things...[and] the school's really flexible with that.

While not all SOLMo sites had strong relationships with the local school, ASC providers perceived access to shared resources through partnerships with the school would significantly improve their ability to promote HE and PA for children attending their programs.

4.3.4.2 Community Support

Care providers also spoke of the connections made with the community as necessary in their ability to offer HE and PA opportunities. This was especially true in the context of the financial constraints faced for sites offering a service-fee free program. Due to budgetary challenges, community support for food donations was essential, as described by one participant: "...we have limited resources as far as our budget's set out for the year. And we do rely on the food bank. And that dictates basically what it is we can offer." For sites that relied heavily on community donations for food sources, difficulties with providing healthy snack choices resulted at times: "With the healthy food, we're really limited. Often times we'll use food [donations]. So, whatever they [really] give to us we take, and sometimes it's not really like the healthiest choices." Community partnerships were also invaluable in improving PA opportunities for ASC sites. Access to resources in the community was described as significant in the

care provider's ability to plan PA opportunities without adding additional financial costs or time. One care provider spoke of the connections made with the community as a result of the SOLMo intervention, and how the support of the community improved PA opportunities for the ASC site: "...physical activity, I found, has been easy just in terms of how much networking each of us has. Like in different communities and knowing people it's been really easy to bring people in and give the kids different opportunities." Connecting with other sites within the ASC community was also viewed as an opportunity to improve HE and PA opportunities. Care providers discussed how SOLMo encouraged them to connect with other sites to share ideas. A participant described how their site partnered with other ASC sites within their community to improve opportunities for PA by creating friendly competition between the sites.

The support from parents and families was also regarded as beneficial. Care providers described how conversations regarding HE and PA with parents were initiated as a result of SOLMo. These conversations helped encourage parental involvement and support for their ASC programming. One participant described how their participation in SOLMo created a conversation with a parent, which prompted fruit donations and initiated a new program at their site created as a result of SOLMo.

We talked with one parent...She asked what exactly we needed for the fruit for...[it was for] The Chef Smoothie day. And the reason we did that was because of the project. She had seen that on the calendar, or maybe we talked about it. She said, "What is it you need? I'll provide it for that day." And of course, another day is another day that helps us just a little bit, you know, spread it a little bit longer.

Community volunteers were also viewed as essential. Volunteers were especially helpful during times of high staff turnover as volunteers supported care providers by leading and facilitating activities during program time. The ‘extra bodies’ assisted care providers in improving HE and PA promotion by engaging with children to encourage participation. The following quote illustrates a care provider’s views on the need for volunteers to support their role in promoting and encouraging children’s participation: “...sometimes we will have a day where it’s two staff, like we’re short-staffed...so our volunteers are very important, especially at the gym, because they’re able to be with those kids who have a little bit more difficult time participating.”

Care providers viewed the support and additional resources provided by the school and the broader community as essential. While there were reported on challenges in forming partnerships with the school community, care providers recognized the benefits of these partnerships. Community partnerships were also viewed as important and contributed to care provider’s ability to improve access to HE and PA opportunities for children.

4.3.5 Role Tension

The role of an ASC provider is unique as they play a role in providing overall care as well as supporting the educational needs for children within the ASC setting. Throughout the SOLMo intervention, the responsibilities of the care provider as being both a child minder and educator was observed, and challenges of this dual role were revealed. While care providers embraced their dual role, participants experienced an internal tension, with many describing this tension related to the dynamic day-to-day

operations, less structured nature of the ASC setting, and the perceived lack of support within their community. Care providers recognized their ability to influence children's health behaviours and aimed to plan programs that incorporated HE and PA opportunities for children. However, observations and discussions with participants exposed the reality of the care provider's role, which predominantly prioritized safety (i.e., managing and ensuring the physical and emotional safety of children during program time). A significant amount of time was spent managing large groups of children, which left little time to educate or facilitate planned activities during ASC hours.

The loosely structured and frequently chaotic environment of the ASC setting required care providers to multi-task. Their role in managing children, entering and leaving the program at various times, and overseeing various program activities presented challenges to facilitate HE or PA opportunities. Additionally, handling behavioural issues among the children was reported as a frequent deterrence. These challenges experienced by care providers in the less structured ASC setting is described in the following quote:

You're doing children's supervision... Obviously we have a different ratio, and so that can make our jobs easier. However, when you talk about food preparation, you've already hit on something gigantic. We don't have a curriculum here... So, there's things about it that make what we do way harder [compared to school settings].

Participants spoke of the role tension experienced within the school community. Care providers shared their perceptions of feeling undervalued by members of the school, notably teachers. Comparisons between the role of ASC providers and teachers

emerged at various points throughout the SOLMo intervention, which appeared natural since both stakeholders work closely with school-age children. A perceived hierarchy within the school community was described, with some participants perceiving their role as inferior compared to other staff members within the school. There was a lack of respect ASC providers perceived compared to teachers in the school setting.

Participants perceived their unique role, the dual role of both a child minder and educator, was unrecognized by most. The perceived low regard for the ASC provider role by the public is described by one site leader in the following quote:

...people just think all you do is play battleship and you know, that you're actually overpaid...Because we don't have all that stuff that we have...to adhere to, with all the measurable outcomes. Well, clearly our job is easier. But you know...This one actually makes it harder...Because it's like draining. It's love. And it's compassion, and it's all these things. It's not just doo doo doo...write A, B, C, D...Here's the answer key and whatever...

The perceived low regard for the ASC provider role came from the school community, families, and the general public. This perceived lack of a sense of community or belonging, and value and professionalism in their role affected the quality of care provided by care providers. The negative perception was reported as challenging for care providers to feel confident and competent in their role, impacting their ability to provide quality care for children, including their ability to promote health behaviours. As stated by one participant: "...the perception that we're just child care workers sometimes lays on people pretty hard...sometimes that actually weighs on staff. 'Well why am I doing it? The family just views me as a babysitter.'"

4.4 Discussion

Emerging research suggests a multi-faceted approach is needed to address the multiple environmental factors influencing children's health behaviours. As such, taking a CSH approach in the ASC setting is warranted. While it is anticipated that the ASC provider plays a crucial role in providing HE and PA opportunities in the ASC setting, limited research is available regarding their role specifically. The goal of this research was to explore the role of the care provider and their perceived ability to promote HE and PA opportunities within ASC sites participating in the SOLMo intervention. Five themes resulted from this study, revealing care providers' perceptions and experiences of the SOLMo intervention and how they perceived it influenced their ability to promote HE and PA. Generally, a positive experience was reported by participants.

Participants perceived an improved awareness of HE and PA as a result of the intervention. An enhanced awareness was also seen in the after-school intervention reported by Dobson et al. (2012). The authors concluded that care providers showed increases in knowledge and confidence levels in offering HE and PA opportunities (Dobson et al., 2012). Through focus groups, ASC providers participating in the intervention reported "feeling empowered and excited" in their role as ASC providers as a result of the intervention (Dobson et al., 2012, p. 14). The enhanced awareness in the present study was reported through the re-prioritization of HE and PA, with site leaders as key individuals in leading the change within sites. The significant role of the site leader in implementing health interventions for children has also been reported by other studies (Middleton et al., 2012; Roberts et al., 2015). Beets et al. (2015) found changes

made to improve HE and PA opportunities at ASC sites were primarily driven by the ASC leader, despite a lack of formal or routine changes to site programs observed at post-intervention. As the leader of a school, principals are viewed as essential to successfully implementing school-based interventions (Roberts et al., 2015; Storey et al., 2011).

Although ASC sites are non-curriculum based, program planning is an important component. Participants reported improvements to program planning as a result of the SOLMo intervention. While care providers acknowledged a general understanding of HE and PA recommendations, an increase in their knowledge was reported. This may be related to the limited training child care providers receive regarding HE and PA recommendations, which has also been reported in other studies with this population (Hesketh et al., 2015). Studies on HE and PA interventions implemented in schools and child care centres suggest teachers, care providers, or the persons implementing the program need on-going training and support in order to feel confident and competent in their ability to implement changes (Adebayo & Onadeko, 2015; Hicks-Hoste, Carlson, & Tiret, 2015; Storey, Montemurro, Schwartz, Farmer, & Veugelers, 2015; Weaver et al., 2016). A common challenge ASC programs experience is low attendance and participation (Leos-Urbel, 2015; Vance, 2016). As a strategy, care providers use child-led programming to improve participation and thus aimed to change activities frequently to tailor to the interests of the children. Limited access to equipment and a limited budget made planning for PA or HE programs challenging for SOLMo care providers and is a challenge ASC programs regularly face (King et al., 2011; Zarrett et al., 2018). Resources from the intervention were essential for participants to improve the

programming offered. Improving healthy opportunities within an ASC setting by providing additional equipment was also reported in other after-school interventions (Huberty et al., 2013; Zarrett et al., 2018). Huberty et al. (2013) found an increase in MVPA participation for both boys and girls with the presence of equipment (e.g., balls, jump-ropes, hula-hoop). The increase in variety of activities, with the addition of resources from an intervention, helps to increase interest and participation in PA among children in the ASC setting (Huberty et al., 2013; Trost et al., 2008).

Care providers were able to influence children's HE and PA behaviours as a result of the strong relationships they had formed with the children. The unique bond ASC providers share with children built trust and encouraged open communication with care providers. This unique bond was similarly identified by Leos-Urbel (2015). Leos-Urbel described how the interactions between care providers and children were associated with higher reading scores and academic success within an ASC setting. In addition to strong relationships, role modeling was also viewed as imperative in the present study. Role modeling of positive health behaviours, such as participating and actively engaging with children during activities, was recognized as a significant component of the care provider role within the ASC setting. The effects of role modelling to influence children's health behaviours have been reported in other ASC settings (Huberty et al., 2013), and were also found in other contexts, such as teachers within a school (Eather et al., 2013; Liu et al., 2014; Prelip et al., 2011; Storey et al., 2011), and mentors within the community (Agmon, Zlotnick, & Finkelstein, 2015; Jourdan et al., 2010; Young, 2014). Additionally, regular exercise among teachers had a positive association with vegetable intake among children in the study by Liu et al. (2013). Liu

and colleagues demonstrated the need for teachers to have healthy attitudes and be positive role models because of the considerable time they spend with children. Similar to the findings of the present study, Zarrett et al. (2018) reported on the impact of care provider's facilitation style; the importance of care providers actively engaging with children to improve PA participation through verbal encouragement and participation in the activity.

The ability to collaborate with the school and community was perceived as essential for care providers to improve HE and PA opportunities in the ASC setting. Care providers viewed partnerships with the school and community as crucial in their ability to access resources they would not have otherwise had. The collaborative approach required is consistent with findings in the literature, including after-school (Beets, Webster, et al., 2013; Vance, Salvaterra, Michelsen, & Newhouse, 2016), community (Ganter et al., 2016), and school settings (Jourdan et al., 2010; Middleton et al., 2012). The conflicts with the school community identified by ASC providers in this study were unexpected. Participants revealed the challenges care providers experienced in their efforts to work collaboratively with schools. To our knowledge, the relational conflicts ASC providers experience with schools or partnerships within the community has not been investigated. This may be due to the current limited research on the care providers' role in promoting HE and PA within the ASC setting.

Role tension was commonly experienced by care providers in this study. Their unique role as both care provider and educator in the ASC setting was embraced by participants, however, challenging at times. There are multiple responsibilities by ASC providers face which have been similarly described as work related stress by child care

workers in daycare centres (Faulkner, Gerstenblatt, Lee, Vallejo, & Travis, 2016). The challenges of the ASC providers' dual role of providing overall care and educating school-age children combined with the hectic nature of the ASC environment was perceived to create the role tension care providers discussed. Furthermore, the perceived lack of support, in particular the relationship with the school, was discussed as a trigger for the tension experienced. A perceived lack of respect by the community was also mentioned. The misconception of their role as 'babysitter' by parents or the general public was found to be discouraging. Participants indicated this misconception affected their ability to feel a sense of pride in their role and to provide quality programming and care.

4.4.1 Strengths and Limitations

Strengths of this research include the consistent and prolonged engagement with participants. Frequent field visits by the primary researcher over the two-year period of the SOLMo project provided background knowledge regarding the after-school setting and allowed for the development of strong relationships with participants (Fetterman, 2010; Mayan, 2009). Additionally, a diverse range of care providers participated in this research; participants varied in age and child care experience. Also, participants included site leaders, as well as full-time and part-time staff. Intervention fidelity may have impacted the results of this study. The SOLMo intervention was delayed due to recruitment challenges and thus the intervention period was reduced from one year to six months. Moreover, while the CSH framework is effective, it is complex and challenging to fully implement. Comprehensive approaches in health promotion require

time to implement (Kulinna, 2016; Storey et al., 2012). Furthermore, the primary researcher was also the project coordinator for the SOLMo project, which had the potential to create a social desirability bias by participants. The topic of this research, however, was not sensitive. The researcher was mindful in establishing a relationship with participants to gain trust prior to conducting interviews to encourage participants to speak freely. Moreover, social desirability bias has been reported as rare in qualitative interviews within a similar culture (Collins, Shattell, & Thomas, 2005).

4.5 Conclusion

Childhood obesity remains a major public health concern in Canada. Effective approaches continue to address this concern; however, additional strategies are required to curb this epidemic. The ASC setting is a logical and ideal setting that is complementary in supporting school-health interventions. The critical hours of 3:00 – 6:00 p.m. are gaining interest as a ‘window of opportunity’ to promote healthy lifestyle behaviours among school-aged children. By adopting the CSH framework, the SOLMo after-school intervention used a whole-setting approach to promote and improve HE and PA opportunities for children attending ASC programs. Recognized as critical influencers, the care providers’ role and their experiences in participating in SOLMo was explored in this study. Guided by the qualitative focused ethnography method, five themes were revealed including: (1) enhanced awareness; (2) improved programming; (3) strong relationship; (4) collaborative approach; and (5) role tension. Findings of this study highlight the role of care providers and contribute to the literature on comprehensive approaches to health promotion within ASC settings. Results will

improve best practice guidelines to support care providers in promoting healthy lifestyle behaviours for school-aged children in ASC settings.

CHAPTER 5: CONCLUSIONS

5.1 Summary of Findings

The aim of this study was to explore care providers' perceptions and their role in promoting healthy lifestyle behaviours as part of the after-school health promotion intervention, School's Out...Let's Move (SOLMo). Additionally, the purpose was to evaluate the changes to care providers' perceived awareness, knowledge, confidence, behavioural control, and attitudes in promoting HE and PA as a result of the SOLMo intervention. The role of the care provider within the ASC setting is well recognized as central to the quality of ASC programs (Mahoney et al., 2009; Vance, 2016). As major influencers, through their responsibilities in planning and delivery of programs and activities, care providers impact the health behaviours of children attending ASC programs. CSH, a whole-setting approach to health promotion, acknowledges the significant impact of the physical and social environments on children's health behaviours and was the guiding framework for the SOLMo intervention. Health promotion interventions which aim to improve HE and PA of children in the ASC setting have grown in recent years (Afterschool Alliance, 2014). However, few studies have examined the role of care providers in the evaluation of such interventions (Beets, Weaver, Turner-McGrievy, Beighle, et al., 2016; Coleman et al., 2008; Dinkel et al., 2014; Dobson et al., 2012; Huberty et al., 2013). Furthermore, only one known study applied the CSH framework to promote HE and PA in the ASC setting (Dobson et al., 2012). Therefore, this study addressed the following two objectives:

1. To examine changes in SOLMo care providers' perceived awareness, knowledge, confidence, behavioural control, and attitudes towards promoting HE and PA in comparison to usual practice care providers.
2. To explore SOLMo care providers' perceptions and experiences in promoting HE and PA.

5.1.1 Objective 1 Summary

The purpose of objective 1 was to examine the effects of the SOLMo intervention on care providers' perceived awareness, knowledge, confidence, behavioural control and attitudes towards promoting HE and PA. The previously validated Healthy Opportunities for Preschoolers tool was modified to reflect the ASC setting and school-aged range. A total of 17 care providers completed the survey at both pre- and post-intervention time periods from both intervention (n=7) and control (n=10) groups. Paired t-tests and the Fisher's exact tests indicated non-statistically significant differences between the groups. Linear regression was used to analyze each dependent variable. A statistically significant increase in the intervention group was found in care providers' attitudes towards promoting both PA and HE compared to the control group ($p < 0.05$). Non-statistically significant differences were found for the other dependent variables: perceived awareness, knowledge, confidence and behavioural control.

The use of a validated tool was major strength in this study. Although randomization of groups was not possible, differences in care provider characteristics were non-significant between the two groups. The small sample, however, was a limitation and thus generalizability was not possible. Furthermore, comprehensive

approaches to health promotion are challenging and implementation fidelity may have impacted the dependent variables where no significant changes were detected (Storey et al., 2016). Similar to the SOLMo six-month intervention period, Wang, Stewart, and Chang (2016) discussed how a short, six-month, intervention period was a possible explanation for non-significant findings regarding the effects of a holistic school-based intervention on teacher's knowledge, attitudes and behaviour.

5.1.2 Objective 2 Summary

The purpose of the second objective was to explore SOLMo care providers' role and their perceptions in promoting HE and PA for children in the ASC setting. Semi-structured interviews with care providers were conducted to gain insight into care providers' perceptions and experiences. An overall positive experience was reported by the care providers that participated. Key findings resulted in five themes: enhanced awareness, improved program planning, strong relationships, collaborative approach, and role tension.

Care providers perceived an enhanced awareness in the importance of promoting healthy lifestyle behaviours for children in the ASC setting. This awareness was enhanced and was described through two subthemes: (1) re-prioritizing HE and PA and (2) research as an implementation tool. The importance of HE and PA for children was generally recognized by care providers in the ASC setting, however, due to the multiple responsibilities of their role and the less structured setting, opportunities to promote HE and PA were often not prioritized and missed. Care providers perceived that the SOLMo project re-prioritized the importance of offering HE and PA

opportunities. Research activities, including data collection and the presence of the research team, acted as ongoing reminders of the SOLMo intervention. The research project was a tool in the implementation of the intervention for care providers; it enhanced care provider's awareness. Re-prioritizing HE and PA and research as an implementation tool enhanced care providers' awareness for promoting HE and PA for children to achieve the goals of SOLMo.

Improved program planning was reported by care providers as a result of their participation in the SOLMo project. Without standard curriculum or programming, care providers were responsible for developing daily activities. The theme of 'improved program planning' and its subthemes, knowledge and resources, confirmed the scarce resources ASC organizations face (MacFarlane, Wharf Higgins, & Naylor, 2018; Thaw et al., 2014; Vance, 2010). Care providers reported that SOLMo improved their ability to provide HE and PA opportunities due to knowledge gained and resources provided. Care providers specifically gained knowledge regarding recommendations for MVPA for children, which helped care providers plan for ways to incorporate or increase MVPA opportunities. The HE and PA resources allowed care providers to incorporate new ideas into programming.

The theme of strong relationships was revealed, with care providers identifying their role as effective health promoters through the relationships they form with children in their care. Care providers perceived their role to be influential based on their previously established trusting relationships with children. As care providers, building relationships in order to ensure children's wellbeing, was a main priority. Through SOLMo, care providers perceived their unique role as advantageous in their ability to

positively influence children's healthy lifestyle behaviours by serving as positive role models.

The importance of a collaborative approach to promote HE and PA within the ASC setting was discussed by care providers. The theme of 'collaborative approach' supported the partnerships and services component of the CSH framework. The partnerships formed with the local school and the community were described as important connections; however, care providers revealed a common challenge of establishing these partnerships. Partnerships with schools was perceived by participants as greatly beneficial and as 'fundamental' by some. Additionally, connections within the community was perceived as valuable in their ability to effectively promote HE and PA. ASC sites have limited funding and resources, and these partnerships provided additional information, resources, and space without additional costs. This in turn improved care providers' ability to incorporate and improve HE and PA opportunities for children.

The last theme revealed was role tension. Care providers discussed the role tension they experienced given their dual role of care provider and educator. Care providers in the ASC setting differentiated their role from child care workers in a daycare setting (i.e., child minding role). However, they perceived that this unique dual role was not recognized or valued by the community. The negative perception of their profession as ASC providers was also mentioned, where they perceived their role as inferior and not respected in comparison to others in the school community. A general recognition by the community and public for the role ASC providers play was voiced as important in

ASC providers' ability to promote healthy lifestyle behaviours for children attending ASC programs.

5.1.3 Summary of Objectives 1 and 2

This research used multiple methods to investigate the care provider role in implementing a health promotion intervention based on the CSH approach within the ASC setting. A validated tool was used to objectively measure the impact of SOLMo on care providers perceived awareness, knowledge, confidence, behavioural control and attitudes towards promoting HE and PA for children. Significant findings were found on the effect of the SOLMo intervention to change care providers' attitudes towards promoting both HE and PA in the intervention group compared to the control group. Qualitative methods and researcher field notes were used to further investigate care providers' perceptions and experiences with SOLMo. Semi-structured interviews with intervention site care providers provided insight on their perspectives and experiences. The quantitative survey and qualitative approach were complementary to one another. While awareness and knowledge was not found to be significantly different between the intervention and control groups, the interview data resulted in the theme of enhanced awareness. The addition of qualitative interviews allowed care providers to elaborate on their experiences in their own words, allowing for an in-depth understanding of their experience with SOLMo. Similarly, the dependent variable for knowledge did not prove to be significantly different between care provider groups, however, an increase in knowledge was also found as a subtheme, as part of the 'improve program planning' theme, within the qualitative findings. Because the sample size of the survey

participants was small, utilizing interviews allowed for a better understanding of care provider perceptions that was not otherwise indicated through survey data. Moreover, qualitative interviews revealed additional information that was not assessed in the survey tool. Allowing care providers to speak openly regarding their experiences improved our understanding, capturing significant information that was novel to us as outsiders. Both the objective survey tool and subjective interview data were beneficial; the use of multi-methods improved the overall understanding of the care provider's role in implementing an after-school health promotion intervention based on the CSH approach.

5.2 Strengths and Limitations

Strengths of this project include the participation of care providers. Despite the limited number of ASC sites participating in the SOLMo study, a large majority of care providers from sites participated in this research. Of the 41 available care providers at pre-intervention, 36 completed the surveys, and 38 of the 42 available care providers completed the surveys at post-intervention. Thirteen of the 15 available care providers participated in interviews. As well, participants were diverse, including working in rural and urban sites, site leaders and non-leaders, full- and part-time staff, with a wide range of experiences in child care, and with varying ages. An additional strength was utilizing the previously validated survey tools to measure the effects of the intervention on care providers' perceptions in promoting HE and PA. Moreover, the researcher's prolonged engagement with care providers throughout the SOLMo study period allowed time to form strong relationships prior to interviews. This contributed to an improved

understanding of the care providers' role within the ASC setting, purposeful sampling, and to the quality of the interview data.

Limitations of this research include the small sample size for the survey data. The small size was due to the high staff turnover rate from pre- to post-intervention, in addition to the limited availability of care providers participating in SOLMo project. Additionally, participants were solely from the SOLMo study, which took place in the Edmonton and surrounding area in Alberta; therefore, results are not generalizable. Self-reported data from surveys is subject to error and thus is also a limitation. The primary researcher was also the SOLMo project coordinator, which may have introduced social desirability bias. As the project coordinator, however, the researcher gained valuable time and experience working with care providers through prolonged engagement allowing for quality data. The challenges with intervention implementation within the SOLMo project also needs to be considered. Implementation fidelity has been discussed in the ASC setting (Rajan & Basch, 2012) and in comprehensive approaches in school communities (Storey et al., 2016). Implementation fidelity likely impacted care providers from at least two ASC sites, with temporary closure of these sites, and may have also had an impact on other sites.

5.3 Recommendations for Further Research

Comprehensive approaches to improving children's well-being within the ASC setting have been previously implemented, however studies using the CSH framework to influence health behaviours, such as HE and PA, in community settings are limited. Additional research examining the implementation of a whole-settings approach of the

CSH framework within community settings, such as the ASC setting, is needed. As acknowledged within CSH, the influential role of teachers and educators, including care providers in the ASC setting, is a critical and essential component of interventions. As an intervention based on the CSH approach, SOLMo is an ideal and a natural extension to support existing school-based health promotion interventions. The role of a health champion, which has been effective in comprehensive school-based health interventions (Stolp, Wilkins, & Raine, 2015; Storey et al., 2011), is recommended in the ASC setting to lead and support health interventions. The current study demonstrates the critical role care providers have within the ASC, which is supported by the literature, and recommends that their role be considered when implementing health interventions in the ASC setting (Zarrett et al., 2018). Consulting with care providers to understand their role and collaboratively form strategies to implement health promotion opportunities in the ASC setting will improve the effectiveness of study designs. Additionally, comprehensive approaches to health promotion are challenging. Time is required to implement and evaluate interventions (Storey et al., 2016); thus, ASC settings taking a CSH approach may benefit from longer intervention periods in future studies.

5.4 Recommendations for Practice

As health promotion strategies continue to emerge in ASC settings, findings from this study will contribute to improving the implementation of such interventions in the ASC setting. CSH recognizes both the physical and social environments, and the role care providers play in the implementation of health promotion strategies within the ASC

setting. Care providers play a critical role and thus require consideration when implementing health promotion interventions in the ASC setting. In this study, care providers' perceived awareness, knowledge, and attitudes were affected by the implementation of the SOLMo intervention, and should therefore be considered when planning interventions similar to SOLMo. As major influencers, support for care providers needs consideration; support and training for care providers could improve the effectiveness of health interventions in the ASC setting. As awareness for health promotion in the ASC setting continues to grow, ASC organizations need to provide opportunities for care providers to improve and effectively promote healthy lifestyle behaviours within the ASC setting.

Care providers voiced challenges regarding the lack of resources provided to ASC sites to promote HE and PA. Since many of the ASC sites were located within the school community, or within the school building, partnerships with the school and community were invaluable. Shared resources and social support received from schools impacted and improved care providers' ability to provide HE and PA opportunities. In addition to the sharing of resources, the school community can encourage a supportive social network for ASC providers. The social support received by the school and community was reported as essential for care providers. Creating a supportive community, through physical resources and social networks, is within the holistic approach of CSH (Freeman, Hussein, & Reid, 2016). Supporting the role of care providers aligns with the holistic approach recommended in supporting healthy settings. Partnerships with schools, however, were perceived as a challenge. Practical strategies to improve the ASC site and school partnerships are needed for effective

implementation. Within the ASC setting, recognizing the impactful role of care providers in promoting healthy behaviours for children requires support from within the setting, as well as between the ASC, school, and community settings. School communities could consider how they can support ASC providers through partnerships and connections with programs in their community. Further, the Alberta Government and governing bodies for child care need to address the lack of policy regarding health promotion in ASC settings. Specific policies or programming to promote health behaviours could be standardized to improve HE and PA in order to meet current national recommendations.

While not always recognized, care providers play a significant role in shaping children's health behaviours (including HE and PA) through the programming they offer within ASC programs. With increasing demands for ASC programs, this setting offers a logical venue to support existing school-based health promotion strategies. As an evidence-based strategy, taking a CSH approach is recommended. CSH recognizes the need for a holistic approach, with recommendations to improve in the areas of teaching and learning, the social and physical environments, policy, and partnerships and services. Care providers, much like teachers within the school setting, have a significant impact on the healthy choices of children attending ASC programs. Government, school, community, and ASC organizations need to improve the supportive networks care providers require to effectively promote HE and PA. As major influencers, care providers are important health promoters; capable of improving healthy lifestyle behaviours for school-age children in the ASC setting.

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APPENDIX A: INFORMATION LETTER



SCHOOL OF PUBLIC HEALTH

3-50 University Terrace
8303 – 112 Street
Edmonton, Alberta
Canada T6G 2T4
Fax: 780.492.5521



School's Out...Let's Move Overview for After-School Care Providers

PURPOSE

After-school childcare programs are becoming more commonly recognized as a setting of choice for health promotion strategies where children are the target audience. The after-school hours (3:00-6:00 p.m.) contribute substantially to children's overall daily physical activity (PA) and dietary intake. Thus, these hours are a prime window for PA and healthy eating (HE) interventions. In Canada, research on after-school interventions is minimal. While we currently understand the PA levels and eating habits of children in the after-school time period, there is a paucity of evidence of regarding the PA and dietary intake of children during the after-school time period that are in after-school care. Therefore, there is a need to understand the current environment of after-school care facilities in Canada.

Your after-school site was identified as an after-school program that provides care to children ages 5-12. You are invited to participate in this study, which aims to increase our understanding of health behaviours among youth in Canada in the after-school time period. Findings from this study will be used to influence policy and inform after-school health programs.

Following data collection, we will provide each participating after-school site with a site-specific report of results, as well as an aggregate report of results for all study after-school sites.

Your site will be or has already been identified as either an intervention (Schools' Out...Let's Move expansion) or control site. All sites will receive resources approved for School's Out...Let's Move by Ever Active Schools (listed below). Intervention sites will receive the resources and professional development/support during the 2015-2016 school year and control sites will receive the resources (including access to professional development) during the 2016-2017 school year.

Resources Include:

1. Ever Active Schools Daily Physical Activity Bins
2. Ever Active Schools Recipe Card Lesson Plans
3. Ever Active Schools Snack and Activity Bites
4. Be Fit for Life Move & Play Through Physical Literacy Playing Cards
5. Be Fit for Life Move & Play Through Traditional Games Playing Cards
6. Alberta Health Services Cooking Club Manual

Evaluation Protocol:

- The Research Coordinator or an Evaluation Assistant (EA) (employed by the University of Alberta) will contact the care providers to discuss the study.
- The Research Coordinator or Evaluation Assistant will arrange with the care providers for a convenient date when the Home Booklets will be given to the students to take home to their parent/guardian(s), and when the measurements can be conducted with the children. The total after-school time needed for administration of the measurements is anticipated to be about 1 hour.
- On the arranged date the care provider will give each child a Home Booklet and Introduction letter to take home to his/her parent/guardian(s).
- A few days before the scheduled visit, the care provider will remind children to return Home Booklets.
- The care provider will collect the returned parent/guardian(s) envelopes with the consent forms and home surveys brought back by the children.
- The evaluation team (Evaluation Assistants) will return approximately one week later to collect the parent/guardian(s) consent forms and home booklets to determine which students will participate in the evaluation. They will return to the after-school site at the appointed time to administer the student surveys to participating children.
- The students will have their height and weight measurements taken behind a screen to ensure privacy.
- The Evaluation Assistants will provide instructions on pedometer wear and distribute them as required. They will return at the end of the pedometer study to collect the devices and distribute summative printouts.

CONSENT AND CONFIDENTIALITY

Participation in this evaluation is voluntary. The parent/guardian(s) consent form will be sent home with the child in the Home Booklet. Parent/guardian(s) must complete, sign and return the consent form before their child can participate in the evaluation.

Along with parent/guardian consent the child will also be asked for their assent. The evaluation assistants will verbally administer the student's assent.

All information collected will be anonymous and kept confidential and will not be shared with anyone including the child's after-school site. Individual after-school sites will not be identified when the findings are produced. We will treat the data with the highest level of respect and use it for evaluation purposes only. The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

WHO IS INVOLVED IN THE EVALUATION?

Dr. Kate Storey, Assistant Professor in the School of Public Health, at the University of Alberta is the Principal Investigator of this project. Dr. Storey's main areas of research are related to the importance of nutrition, healthy lifestyle, socio-economic factors, intervention programs and policies in relation to overweight and chronic disease prevention. Dr. Storey has extensive experience with school-based evaluation. Dr. Kate Storey may be reached at kate.storey@ualberta.ca. If you have questions about the project, please contact Pierrette Elias, Research Assistant at pierrett@ualberta.ca.

APPENDIX B: INFORMED CONSENT FORM



SCHOOL OF PUBLIC HEALTH

Title of Study: Evaluating the impact of School's Out...Let's Move after-school program on children's health and health equity

3-50 University Terrace
8303 – 112 Street
Edmonton, Alberta
Canada T6G 2T4
Fax: 780.492.5521

Principal Investigator
Dr. Kate Storey
Assistant Professor
School of Public Health
University of Alberta
Tel: (780) 492-9609
E-mail: kate.storey@ualberta.ca

- | | | |
|--|-----|----|
| Do you understand that you have been asked to participate in a research study? | Yes | No |
| Have you read and received a copy of the attached Information Sheet | Yes | No |
| Do you understand the benefits and risks involved in taking part in this research study? | Yes | No |
| Have you had an opportunity to ask questions and discuss this study? | Yes | No |
| Do you understand that you are free to refuse to participate, or to withdraw from the study at any time, without consequence, and that your information will be withdrawn at your request? | Yes | No |
| Has the issue of confidentiality been explained to you? Do you understand who will have access to your information? | Yes | No |

This study was explained to me by: _____

I agree to take part in this study:

Signature of Research Participant	Date	Witness
-----------------------------------	------	---------

Printed Name	Printed Name
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I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate.

Signature of Investigator or Designee	Date
---------------------------------------	------

Contact Information:

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

APPENDIX C: SURVEY BOOKLET



Care Provider Booklet 2017

Purpose:

This survey is designed to gather information about your knowledge and attitudes related to promoting physical activity and healthy eating for children in an after-school care setting. Information in this evaluation will help us understand your role as a care provider in promoting healthy behaviours to children attending your after-school care site.

You can participate by completing the attached *Care Provider Survey* in this booklet, which will take about 10 minutes of your time.

Section 1: About you

1. Are you...

- Male
- Female

2. What is your age?

_____ years old

3. What is the highest level of education that you have attained?

- No schooling
- Elementary
- Secondary
- Community/Technical College
- University
- Graduate University
- Prefer not to answer

4. How long have you been working in childcare?

Months: _____ Years: _____

5. How long have you been working in after-school care?

Months: _____ Years: _____

6. How long have you been working at this site?

Months: _____ Years: _____

7. What is the name of your site?

8. Your name is _____

Section 2: Survey questions

Please check the box that best corresponds to your answer for each question below.

1. After-school hours (3pm-6pm) provide an important time...

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
...for children to be physically active					
...to promote physical activity opportunities					
...to help children meet their daily recommendations for physical activity					
...for children to consume healthy snacks (i.e, vegetable or fruit with milk or water)					
... to promote healthy snack choices with vegetable or fruit with water or milk					
...to help children meet their daily nutritional needs according to Canada's Food Guide recommendations					
...to learn about safety					
...to do homework					

2. Please rate your level of knowledge in the following areas:

	No knowledge (1)	Very little knowledge (2)	Some knowledge (3)	Quite a bit of knowledge (4)	A lot of knowledge (5)
The Physical Activity Guidelines for Children and Youth					
Engaging and promoting physical activity for children					
Activities that promote moderate-to-vigorous intensity for children					
Leading and facilitating physical activities					
Eating Well with Canada's Food Guide					
Healthy snack ideas and choices that include vegetable or fruit with milk or water					
Ways to promote healthy food choices that include vegetable or fruit					
Ways to promote healthy beverage choices (i.e., milk or water)					

3. Please rate your level of confidence in your ability to provide activities and experiences to children in the following areas:

	No at all confident (1)	Not very confident (2)	Somewhat confident (3)	Confident (4)	Very confident (5)
Engaging and promoting physical activity					
Promoting 30 minutes of moderate-to-vigorous intensity physical activity					
Leading and facilitating physical activities					
Providing healthy snack choices that include vegetable or fruit with milk or water					
Promoting healthy food choices that include vegetable or fruit					
Promoting healthy beverage choices (i.e., milk or water)					

The following questions ask you to rate **how you feel about promoting physical activity** for children in your care. Promoting physical activity is defined as ensuring children participate in unstructured and structured activities in which some planning is required to achieve the recommended moderate-to-vigorous intensity physical activity level. Regular moderate-to-vigorous physical activity is important to improve muscle strength and bone health in children. *Pay careful attention to the words at each end of the scales and circle the number that best represents how you feel about promoting physical activity for children in your care.*

4. For me, promoting moderate-to-vigorous physical activity over the next 2 weeks would be:

1 definitely not enjoyable	2 not enjoyable	3 neutral	4 quite enjoyable	5 extremely enjoyable
1 extremely useless	2 quite useless	3 neutral	4 quite useful	5 extremely useful
1 extremely unpleasant	2 quite unpleasant	3 neutral	4 quite pleasant	5 extremely pleasant
1 extremely unwise	2 quite unwise	3 neutral	4 quite wise	5 extremely wise
1 extremely boring	2 quite boring	3 neutral	4 quite exciting	5 extremely exciting
1 extremely bad	2 quite bad	3 neutral	4 quite good	5 extremely good
1 extremely relaxing	2 quite relaxing	3 neutral	4 quite stressful	5 extremely stressful
1 extremely harmful	2 quite harmful	3 neutral	4 quite beneficial	5 extremely beneficial

The following questions ask you to rate **how you feel about promoting healthy snacks** for children in your care. Promoting healthy snacks is defined as providing vegetable(s) and or fruit(s) with milk or water. Providing healthy snacks options aims at encouraging and promoting healthy eating habits for optimal growth and healthy weights in children. *Pay careful attention to the words at each end of the scales and circle the number that best represents how you feel about promoting healthy snacks to children in your care.*

5. For me, **promoting healthy snacks** over the next 2 weeks would be:

1 definitely not enjoyable	2 not enjoyable	3 neutral	4 quite enjoyable	5 extremely enjoyable
1 extremely useless	2 quite useless	3 neutral	4 quite useful	5 extremely useful
1 extremely unpleasant	2 quite unpleasant	3 neutral	4 quite pleasant	5 extremely pleasant
1 extremely unwise	2 quite unwise	3 neutral	4 quite wise	5 extremely wise
1 extremely boring	2 quite boring	3 neutral	4 quite exciting	5 extremely exciting
1 extremely bad	2 quite bad	3 neutral	4 quite good	5 extremely good
1 extremely relaxing	2 quite relaxing	3 neutral	4 quite stressful	5 extremely stressful
1 extremely harmful	2 quite harmful	3 neutral	4 quite beneficial	5 extremely beneficial

6. The following questions concern **how much control you believe you have** over providing physical activity opportunities regularly and your intentions to promote physical activity in the next two weeks. *Please read the questions carefully and mark the number that best represents your beliefs.*

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Over the next 2 weeks, promoting moderate-to-vigorous physical activity for children in my care is under my personal control if I really wanted to.					
I am confident I can promote physical activity for children in my care over the next 2 weeks if I wanted to.					
It would be difficult for me to promote physical activity for children in my care over the next 2 weeks even if I wanted to					
I am determined to promote physical activity for children in my care over the next 2 weeks.					
I intend to promote physical activity for children in my care over the next 2 weeks.					
I am motivated to promote physical activity for children in my care over the next 2 weeks.					

7. The following questions concern **how much control you believe you have** over providing healthy snack opportunities (fruit or vegetable with water or milk) regularly and your intentions to promote healthy snacks (fruit or vegetable and water or milk) in the next two weeks. *Please read the questions carefully and mark the number that best represents your beliefs.*

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Over the next 2 weeks, promoting healthy snacks for children in my care is under my personal control if I really wanted to.					
I am confident I can promote healthy snacks for children in my care over the next 2 weeks if I wanted to.					
It would be difficult for me to promote healthy snacks for children in my care over the next 2 weeks even if I wanted to					
I am determined to promote healthy snacks for children in my care over the next 2 weeks.					
I intend to promote healthy snacks for children in my care over the next 2 weeks.					
I am motivated to promote healthy snacks for children in my care over the next 2 weeks.					

8. How confident do you feel in your ability to facilitate *healthy eating* activities for children in your after-school care site under the following conditions? (Indicate your confidence with any number between 0 and 100 from the confidence scale shown below)

0	10	20	30	40	50	60	70	80	90	100
I can't do it					Moderately certain I can do it					Completely certain I can do it

I am able to facilitate healthy eating activities for children in my after-school care site...

Confidence Rating
(please provide your rating between 0 and 100 for each item listed below)

**We recognize that implementing the School's Out...Let's Move project should not be any one individual's responsibility and involves multiple partners. However, this survey is meant to gain an understanding of how you feel (your perspective) about implementation.*

1. ...when other site staff disagree with its importance.	
2. ...when site administration disagree with its importance.	
3. ...when parents/guardians disagree with its importance.	
4. ...when children disagree with its importance.	
5. ...when children are not engaged.	
6. ...when parents/guardians are not involved.	
7. ...when community stakeholders are not involved.	
8. ...when lacking supporting materials (e.g., access to healthy food, kitchen space and equipment, etc.).	
9. ...when supportive policies are not in place.	
10. ...when the children find the concepts difficult.	
11. ...when I find the concepts difficult (e.g., nutrition recommendations)	
12. ...when the overall workload is high (e.g., daily routine of after-school care program, meetings, etc.).	
13. ...when site staff turnover is high.	

9. How confident do you feel in your ability to facilitate **physical activity** activities for children in your after-school care site under the following conditions? (Indicate your confidence with any number between 0 and 100 from the confidence scale shown below)

0	10	20	30	40	50	60	70	80	90	100
I can't do it					Moderately certain I can do it					Completely certain I can do it

I am able to facilitate **moderate-to-vigorous physical activities** for children in my after-school care site...

Confidence Rating
(please provide your rating between 0 and 100 for each item listed below)

**We recognize that implementing the School's Out...Let's Move project should not be any one individual's responsibility and involves multiple partners. However, this survey is meant to gain an understanding of how you feel (your perspective) about implementation.*

1. ...when other site staff disagree with its importance.	
2. ...when site administration disagrees with its importance.	
3. ...when parents/guardians disagree with its importance.	
4. ...when the children disagree with its importance.	
5. ...when the children are not engaged.	
6. ...when parents/guardians are not involved.	
7. ...when community stakeholders are not involved.	
8. ...when lacking supporting materials (e.g. sports /game equipment and appropriate facilities, etc.)	
9. ...when supportive policies are not in place.	
10. ...when the children find the concepts difficult.	
11. ...when I find the concepts difficult (e.g., physical activity recommendations)	
12. ...when the overall workload is high (e.g., daily routine of after-school care program, meetings, etc.).	
13. ...when site staff turnover is high.	

Please use this area to give us any additional comments, suggestions or information

Thank you for completing this survey! Your input is greatly appreciated.

Please put this booklet into the return envelope, seal the envelope, and give it to the project research coordinator.

APPENDIX D: SCORING OF VARIABLES

Variables regarding care providers' perceived ability to promote PHYSICAL ACTIVITY. *Items for variables were on a scale of 1-5. Scale was reversed for negative questions.*

AWARENESS

After-school hours (3pm-6pm) provide an important time...

- 1) ...for children to be physically active
- 2) ... time to promote physical activity opportunities
- 3) ... to help children meet their daily recommendations for physical activity

KNOWLEDGE

Please rate your knowledge in the following areas:

- 1) The Physical Activity Guidelines for Children and Youth
- 2) Engaging and promoting physical activity for children
- 3) Activities that promote moderate-to-vigorous intensity for children
- 4) Leading and facilitating physical activities

CONFIDENCE

Please rate your level of confidence in your ability to provide activities and experiences to children in the following areas:

- 1) Engaging in promoting physical activity
- 2) Promoting 30 minutes of moderate-to-vigorous intensity physical activity
- 3) Leading and facilitating physical activities

ATTITUDE

For me, promoting moderate-to-vigorous physical activity over the next 2 weeks would be:

- 1) Definitely not enjoyable, not enjoyable, neutral, quite enjoyable extremely enjoyable
- 2) Extremely useless, quite useless, neutral, quite useful, extremely useful
- 3) Extremely unpleasant, quite unpleasant, neutral, quite pleasant, extremely pleasant
- 4) Extremely unwise, quite unwise, neutral, quite wise, extremely wise
- 5) Extremely boring, quite boring, neutral, quite exciting, extremely exciting
- 6) Extremely bad, quite bad, neutral, quite good, extremely good
- 7) Extremely relaxing, quite relaxing, neutral, quite stressful, extremely stressful
- 8) Extremely harmful, quite harmful, neutral, quite beneficial, extremely beneficial

PERCEIVED BEHAVIOURAL CONTROL

Over the next 2 weeks, promoting moderate-to-vigorous physical activity for children in my care is under my personal control if I really wanted to.

- 1) I am confident I can promote physical activity for children in my care over the next 2 weeks if I wanted to.
- 2) It would be difficult for me to promote physical activity for children in my care over the next 2 weeks even if I wanted to.
- 3) I am determined to promote physical activity for children in my care over the next 2 weeks.
- 4) I intend to promote physical activity for children in my care over the next 2 weeks.
- 5) I am motivated to promote physical activity for children in my care over the next 2 weeks.

CONFIDENCE IN FACILITATING PHYSICAL ACTIVITY UNDER CHALLENGED CONDITIONS. *Items for this variable were on a scale from 0-100.*

I am able to facilitate moderate-to-vigorous physical activities for children in my after-school care site...

- 1) ...when other site staff disagree with its importance.
- 2) ...when site administration disagrees with its importance.
- 3) ...when parents/guardians disagree with its importance.
- 4) ...when the children disagree with its importance.
- 5) ...when the children are not engaged.
- 6) ...when parents/guardians are not involved.
- 7) ...when community stakeholders are not involved.
- 8) ...when lacking supporting materials (e.g., sports / game equipment and appropriate facilities, etc.)
- 9) ...when supportive policies are not in place.
- 10) ...when the children find the concepts difficult.
- 11) ...when I find the concepts difficult (e.g., physical activity recommendations)
- 12) ...when the overall workload is high (e.g., daily routine or after-school care program, meetings, etc.)
- 13) ...when site staff turnover is high.

Variables regarding care providers' perceived ability to promote HEALTHY EATING. *Items for variables were on a scale of 1-5. Scale was reversed for negative questions.*

AWARENESS

After-school hours (3pm-6pm) provide an important time...

- 1) ...for children to consume healthy snacks (i.e., vegetable or fruit with milk or water)
- 2) ...to promote healthy snack choices with vegetable or fruit with water or milk
- 3) ...to help children meet their daily nutritional needs according to Canada's Food Guide recommendations

KNOWLEDGE

Please rate your knowledge in the following areas:

- 1) Eating Well with Canada's Food Guide
- 2) Health snack ideas and choices that include vegetable or fruit with milk or water
- 3) Ways to promote healthy food choices that include vegetable or fruit
- 4) Ways to promote healthy beverage choices (i.e., milk or water)

CONFIDENCE

Please rate your level of confidence in your ability to provide activities and experiences to children in the following areas:

- 1) Providing healthy snack choices that include vegetable or fruit with milk or water
- 2) Promoting healthy food choices that include vegetable or fruit
- 3) Promoting healthy beverage choices (i.e., milk or water)

ATTITUDE

For me, promoting healthy snacks over the next 2 weeks would be:

- 1) Definitely not enjoyable, not enjoyable, neutral, quite enjoyable extremely enjoyable
- 2) Extremely useless, quite useless, neutral, quite useful, extremely useful
- 3) Extremely unpleasant, quite unpleasant, neutral, quite pleasant, extremely pleasant
- 4) Extremely unwise, quite unwise, neutral, quite wise, extremely wise
- 5) Extremely boring, quite boring, neutral, quite exciting, extremely exciting
- 6) Extremely bad, quite bad, neutral, quite good, extremely good
- 7) Extremely relaxing, quite relaxing, neutral, quite stressful, extremely stressful
- 8) Extremely harmful, quite harmful, neutral, quite beneficial, extremely beneficial

PERCEIVED BEHAVIOURAL CONTROL

- 1) Over the next 2 weeks, promoting healthy snacks for children in my care is under my personal control if I really wanted to.
- 2) I am confident I can promote healthy snacks for children in my care over the next 2 weeks if I wanted to.
- 3) It would be difficult for me to promote healthy snacks for children in my care over the next 2 weeks even if I wanted to.
- 4) I am determined to promote healthy snacks for children in my care over the next 2 weeks.
- 5) I intend to promote healthy snacks for children in my care over the next 2 weeks.
- 6) I am motivated to promote healthy snacks for children in my care over the next 2 weeks.

CONFIDENCE IN FACILITATING HEALTHY EATING UNDER CHALLENGED CONDITIONS. *Items for this variable were on a scale from 0-100.*

I am able to facilitate healthy eating activities for children in my after-school care site...

- 1) ...when other site staff disagree with its importance.
- 2) ...when site administration disagrees with its importance.
- 3) ...when parents/guardians disagree with its importance.
- 4) ...when the children disagree with its importance.
- 5) ...when the children are not engaged.
- 6) ...when parents/guardians are not involved.
- 7) ...when community stakeholders are not involved.
- 8) ...when lacking supporting materials (e.g., access to healthy food, kitchen space and equipment, etc.)
- 9) ...when supportive policies are not in place.
- 10) ...when the children find the concepts difficult.
- 11) ...when I find the concepts difficult (e.g., nutrition recommendations)
- 12) ...when the overall workload is high (e.g., daily routine or after-school care program, meetings, etc.)
- 13) ...when site staff turnover is high.

APPENDIX E: INTERVIEW GUIDE



Background Information:

- Thank them first
- Ensure read and reviewed information letter and have consent (double check before interview)
- Reiterate that this is confidential – data only shared with research team (Dr. Storey’s team) – not shared with site managers/supervisors
 - o NEVER will identify your site individually! – Findings at group level!
- Discuss purpose of the interview
 - o Experiences of **their role** in implementing the School’s Out...Let’s Move project and to understand how **SOLMo affected their ability to facilitate healthy eating and physical activity opportunities** for children in the after-school care setting
- Logistics of the interview
 - o Recorded – ask if they are okay being recorded; let them know when you are turning on and off the recorders and can pause if needed
 - o How long it will take
 - o Informal conversation – feel free to go back to anything
 - o May feel that some questions are quite similar
- Do you have any questions before we begin?
- A few demographic questions before we start the interview questions:

P#	Name	
	Site Name	
	Age range of kids at site (e.g., K-6)	
	Number of students registered at site	
	How long have you been at this site?	
	How long have you been working as a care provider in an after-school care setting?	
	Are there any other programs (besides SOLMo) being run in your after-school site at this time (i.e. Leader In Me)?	
	Demographics for Publication:	
	What is your level of education? What degree(s) do you have?	
	Male / Female	

Interview Guide

1. To start, would you be able to describe your role at the after-school care site here at *(site name)*?
 - a. Are you here at the program everyday?

2. **Currently, what are some of the HE and PA opportunities you provide for the children at your site?**

3. **Can you tell me what makes it easy for you to offer opportunities for healthy eating and physical activity for the kids at your site? *CSH**
 - a. What makes your role as a care provider fun?

4. **Can you tell me what it makes it hard for you to offer opportunities for healthy eating and physical activity for the kids at your site?**
 - a. What makes your role difficult as a care provider?

5. **Can you tell me about your experience with the School's Out...Let's Move project that was implemented at your site this past year? (good/bad)**

Probing Qs:

 - a. Were you aware of the implementation of the project?

 - b. Were you aware of the resources, such as the DPA bin, PA recipe cards, AHS Healthy Eating Manual or Healthy Smoothie Blender Package, provided for the project?

 - c. Did you have any opportunities to use the resources provided?

6. **How was your experience of the SOLMo project and did it lead to any changes in how you ran the program at your site?**

Probing Qs:

 - a. For PA and/or HE opportunities...In what way? Are you able to provide some examples?

(facilitation style? Eg. From other staff during observations- leading, participating, supervising)

7. What are some key factors that have helped you in implementing the School's Out...Let's Move project?

- a. Probes: (ask individually) resources, meetings with SOLMo team, people (relationships)
- b. Was your site and staff supportive of the project? What does this "support" look like?
 - i. Probe: from the beginning, after some time, etc.?

8. What are some barriers that have hindered you in implementing the School's Out...Let's Move project?

- a. *Responses could include: resistance with parents/staff, building trust with key stakeholders (including parents), staff turnover, buy-in, etc.*

9. If you had to give advice to a care provider new to implementing the School's Out...Let's Move project, what would it be?

- a. Or advice on how to improve in promoting HE and PA opportunities for children at your site

10. Is there anything you would like to add? Or do you think there is anything else I should ask in future interviews?

Conclude interview by thanking them again for their time.