Canadian Healthy After School Environments (CHASE): Validity and Reliability Study

by

Tosha Lobsinger
BSc, Queen's University, 2010
BPHE, Queen's University, 2010

A Thesis Submitted in Partial Fulfillment
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Supervisory Committee

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Abstract

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The present study aimed to assess the current affordances for physical activity (PA) and healthy eating (HE) in after-school child care. The primary purpose of this study was to develop a valid and reliable online survey to assess the affordance of PA and HE in Canadian after-school childcare settings. A two-stage instrument validation procedure was implemented. Stage 1 was an instrument review (n=5) to create the Canadian Healthy After School Environments (CHASE) survey and an expert review (n=7) to establish logical validity of its items and components. Stage 2 was a comparison of the self-administered CHASE survey with existing observation tools to establish concurrent validity and test retest to establish its reliability in 20 after-school child care programs on Vancouver Island (n=20). Observation tools included the Environment and Policy Assessment and Observation (EPAO), an audit of the facility environment, staff behaviours, and snacks and activities observed, and the Physical Activity Observation Recording Sheet (PAORS), a scan of the physical activity intensity and facilitation of each child during each minute of activity. Pearson correlations were calculated for subscales and items on CHASE, EPAO and PAORS to establish validity. Percent agreement and intra-class correlations (ICCs) between CHASE T1 and T2 scores were calculated to establish reliability. The results indicated that CHASE T1 Social HE Environment subscale significantly correlated with 5 objective measures: EPAO-measured proportion of time in PA ($r=0.715$, $p<.001$); total PA minutes ($r=0.680$, $p=.001$); total outdoor PA ($r=0.521$, $p=.018$); total sedentary behaviour ($r=-0.580$, $p=.009$); and PAORS-measured total PA minutes ($r=0.631$, $p=.003$). CHASE T1 HE Total subscale also significantly correlated with these objective measures: EPAO-measured proportion of time in PA ($r=0.450$, $p=.047$); total PA minutes ($r=0.565$, $p=.009$); total outdoor PA ($r=0.517$, $p=.020$); total sedentary behaviour ($r=-0.577$, $p=.010$); and PAORS-measured total PA minutes ($r=0.514$, $p=.020$). Other significant correlations were found between EPAO total outdoor PA and CHASE T1 Physical HE Environment subscale ($r=0.501$, $p=.024$), as well as EPAO total minutes of television and CHASE T1 PA Practices subscale ($r=-0.459$, $p=.042$). Other CHASE subscales were not significantly correlated with objective PA measures. Significant correlations between CHASE and EPAO subscales were found for Social PA Environment ($r=0.664$, $p=.001$) and HE Total ($r=0.553$, $p=.040$). The remaining correlations between CHASE and EPAO subscales were not significant. ICCs indicated strong reliability for all CHASE subscales, excluding Social PA Environment, Social HE Environment, PA Practices. ICCs indicated strong reliability for all CHASE sections, excluding HE Environment and Policies. Average percent agreement calculations indicated high reliability for CHASE Environment Total (Mean=84.42, SD=7.02), PA Total (Mean=75.43, SD=10.29), HE

Total (Mean=83.70, SD=3.42) and Overall Total section scores (Mean= 81.18, SD=5.56). The CHASE survey has the potential to increase the feasibility of assessing the physical activity and healthy eating environment in after-school child-care programs in many sites across Canada. These findings highlight that it is reliable and that some of the subscales and items have concurrent validity. More work has to be done to explore why certain subscales and items lacked validity and to compare CHASE to directly measured physical activity using accelerometers.

Table of Contents

List of Tables

List of Figures

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Chapter 1

Introduction

Childhood overweight and obesity rates are high and increasing substantially (Shields, 2006) due to environments that promote poor eating habits (Beech et al., 2003; Story, Neumark-Sztainer & French, 2002; Kumanyika, 2008) and physical inactivity among children and youth (Colley et al., 2011; Garriguet, 2007). Schools and other organizations that serve children are important settings as they reach a large number of children. However HE and PA interventions in schools compete with other demands and schedules (Kolbe, 2002; Naylor & McKay, 2009) and thus their impact is modest (van Sluijs et al 2008; Naylor & McKay, 2009). These barriers plus the small to modest effect of school interventions highlight the need to supplement school-based efforts with additional PA and HE interventions in other settings and time periods.

After school childcare may be an important setting for PA and HE interventions for children as it has the potential to reach a large number of children. After-school child care programs reach over half a million Canadian children (Friendly, Beach & Turiano, 2002) and have also been described as providing a structured environment for teaching children healthy lifestyle regimes, an ideal time for movement, and a safe environment for engaging in PA (Huberty et al., 2009). Interventions in the after-school environment have resulted in improvements in both PA (Farley et al., 2007; Lubans & Morgan, 2008; Robinson et al., 2003; Weintraub et al., 2008) and HE (Carson & Reiboldt, 2011; Beech et al., 2003). Although most of these after school studies were not focused on childcare

per se and have been conducted in the United States; highlighting a need for similar research in Canada.

Dooris and colleagues (2007) explain that "the place and context are themselves important and modifiable determinants of health and wellbeing" (p. 328). Interventions that specifically target environmental affordance for health are important, as a clear relationship between opportunities and engagement in health behaviours by young children in child care has been demonstrated (Bower et al., 2008). These authors highlighted specific facets of the physical and social environment that act as affordances for PA behaviour, including active opportunities, portable and fixed play equipment, sedentary environment, and PA training and education (Bower et al., 2008). A review of literature indicated a need to improve our understanding of environmental interventions and their impact (Van Sluijs et al., 2007) in order to understand the settings or contexts (Beets et al., 2013) in which children spend time.

Purpose of the Study

Understanding the current affordances for physical activity and healthy eating in the settings where children live, learn and play is critical to planning interventions as well as enhancing stakeholder support for action. There appears to be no valid and reliable measure developed specifically for after school child care, nor one that reflects the Canadian context. Thus the primary purpose of this study was to develop a valid and reliable online survey to assess the affordance of PA and HE that was appropriate for Canadian after-school childcare settings.

Research Questions

1. What constructs and related questions are important to include when assessing the affordances for PA and HE in the after-school child care setting generally and for applicability to the Canadian context specifically?
2. How valid and reliable will a self-administered online survey, Canadian Healthy After School Environments (CHASE), be for assessing the environmental affordances for PA and HE in after-school child care?
    2a. What is the concurrent validity between the CHASE instrument and the environment as assessed by researcher observation using the EPAO as well as directly measured PA and leader behavior using a Physical Activity Observation and Recording Sheet (PAORS)?
    2b. What is the test-retest reliability of the online CHASE instrument developed for the Canadian context?

Operational Definitions

Physical Activity (PA)- any movement of a child's body requiring energy expenditure, including active transportation, exercise, play, and recreational activities as measured by observation using the Environment and Policy Assessment and Observation (EPAO) and the Physical Activity Observation and Recording Sheet (PAORS) indicators and subscales. (World Health Organization, 2013).

Healthy Eating (HE)- consumption of after-school snack that emphasizes fruits, vegetables, legumes, whole grains and nuts and limits fats, sugars, and sodium (World Health Organization, 2013) as measured by EPAO indicators and subscales.

Children- Boys and girls enrolled in Kindergarten through grade six in the Canadian elementary school system.

After-school care settings- Registered, accredited or provincial-regulated after-school care organizations, identified through child care licensing branches in regional public health units and the School Age Child Care Association of British Columbia.

Affordance for physical activity and healthy eating- Opportunities to be active and eat healthy in a given environment resulting from physical activity and healthy eating supporting policies and practices, as measured by six subscales: Physical PA Environment (spaces and equipment); Social PA Environment (staff facilitation and encouragement of PA); Physical HE Environment (water, vending machines, HE visuals); Social HE Environment (staff encouragement and modeling of HE); PA Practices (provision of time in outdoor play, television viewing and video games); HE Practices (snacks served and consumed). See Table 1 for the full list of items included in each subscale.

Logical Validity- the degree to which experts identified that the CHASE measures assessed the affordances for physical activity and healthy eating in the after-school child care environment (Thomas & Nelson, 2005)

Concurrent Validity- the degree to which the CHASE tool correlates with established observation tools measuring of physical activity and healthy eating affordances in the child care environment. Specifically, the degree to which CHASE correlates with the EPAO and PAORS indicators and subscales.

Test-Retest Reliability- the degree to which the CHASE subscale and section scores are repeatable over time.

Chapter 2

Review of Literature

Background and Rationale

In Canada, approximately 26 percent of children between the ages of 2 and 17 are overweight or obese (Shields, 2006). This has increased exponentially over the last three decades (Shields, 2006). Overweight and obese children are predisposed to adverse health outcomes like type II diabetes, hypertension, dyslipidemia, sleep apnea, asthma, and a shortened life span (American Academy of Pediatrics, 2002). A reduction in physical activity (PA) has been implicated as a contributing factor to excess weight (Institute of Medicine, 2007). Likewise, excess caloric intake (Beech et al., 2003), increased consumption of foods with high sugar and fat (Story, Neumark-Sztainer, & French, 2002), and decreased fruits, vegetables, fiber and calcium in the diet (Kumanyika, 2008) have also been implicated. An increase in Canadian children's PA levels, combined with improvements in their dietary behaviours, could address this public health challenge.

Current Public Health Agency of Canada (PHAC) guidelines for children and adolescents recommend 60 minutes of PA per day (Canadian Society for Exercise Physiology, 2012). Given the rates of childhood overweight and obesity it is perhaps not surprising that the Canadian Health Measures Survey showed that only 7 percent of children across Canada were meeting the recommended 60 minutes of daily PA and that this percentage decreased with increasing age (Colley et al., 2011). Colley and others also found that Canadian children engaged in over 8 hours of sedentary activity daily. This level of sedentary behaviour is a concern as it has been linked with health problems. For

instance, the Canadian Community Health Survey showed that children engaging in two or more hours of screen time per day were twice as likely to be overweight or obese (35%) than those watching 1 hour or less (18%) (St-Pierre & Beland, 2004). Similar to the situation with physical inactivity, dietary behaviour is also an issue with only 30 percent of children aged four to eight, and less than 40 percent of children aged nine to 13 meeting the recommended 5 daily servings of fruits and vegetables (Garriguet, 2007). Interventions to improve PA and healthy eating (HE) in order to support children in achieving and maintaining healthy weights are crucial in Canada.

Many previous studies have addressed school-based strategies to improve PA and HE; finding small to modest significant effects on improving these behaviours (Naylor and McKay, 2009; van Sluijs et al., 2008; Knai et al., 2006). However, others have identified many systemic barriers to implementation of health-based programs in schools (Kelder et al., 2005), including lack of time to devote to PA or health education (Naylor et al., 2006; Kolbe, 2002). Consistent with these findings, there has been a decline in the time spent in PA during the school day (Dale, Corbin, & Dale, 2000) and focus groups with youth have identified many factors that discourage HE in schools, including: easy access to unhealthy food; snack food and beverages in vending machines; short lunch periods; poor role modeling by teachers; and proximity of fast-food restaurants, gas stations, convenience and liquor stores, and food vendors near schools (Yoshinda et al., 2011). These barriers plus the small to modest effect of school interventions highlight the need to supplement school-based efforts with additional PA and HE interventions in other settings and time periods.

After School Childcare as a Setting for Intervention

Given the barriers to implementing PA- and HE-promoting programs in schools, after school childcare may be an important setting for PA and HE interventions for children. Child care programs represent another venue that has the potential to reach a large number of children. Over 600,000 Canadian children between 0 and 12 years of age attend regulated child care programs (Friendly, Beach, & Turiano, 2002). Recent statistics show that 200,000 children use after-school and out-of school care provided by the Boys and Girls Club of Canada (2013) and that 55,400 children attend child care at the YMCA (2013). Other children attend smaller community and private programs.

Children in single parent families, and those in which both parents work full time, are most reliant on before- and after- school child care services (Capizzano, Tout, & Adams, 2000). Among six to nine year olds, children living with a full-time employed single parent are most likely to attend before- and after-school care programs (18 percent), followed by children living with two parents who both work full-time (11 percent), and children living with one or two parents working part-time (4 percent each). Within 10 to 12 year olds, children living with a full-time employed single parent are most likely to attend before- and after-school care programs (36 percent), followed by children living with two parents who both work full-time (24 percent), and children living with one or two parents working part-time (21 and 9 percent, respectively; Capizzano et al., 2000). Given the number of single parent families and families where both parents work, the need for after-school health programs is expected to continue to rise (Kolbe, 2002).

Child care programs may also be valuable options for parents who currently leave their children unsupervised at home during the after-school hours. Between-meal snacking and sedentary activities like television viewing, computer usage and video games tend to occur during unsupervised, free-time situations (Coleman et al., 2008). After-school programs can provide children with opportunities to replace sedentary after-school activities that also promote unhealthy eating with PA. Specifically, after-school settings are supportive of PA because they address the neighbourhood safety concerns of parents that often keep children inside and inactive (Lumeng et al., 2006). Parents have identified after-school programs as accessible and safe and children viewed them as fun in comparison to being in class (Coleman et al., 2008). The after-school child care setting has been described as having the potential to offer a structured environment to afford healthy lifestyle habits, an opportune time for movement, and a safe environment for PA (Huberty et al., 2009). Given that the after-school hours are important to physical activity and healthy eating and that the reach of after-school childcare programs is substantive, after-school childcare appears to be an important setting for health interventions.

Furthermore, recent studies have investigated the effectiveness of various after-school PA interventions with promising results. After-school PA interventions have been shown to have positive effects on children's health directly through increased PA (Farley et al., 2007; Lubans & Morgan, 2008; Robinson et al., 2003; Weintraub et al., 2008), improved fitness (Barbeau et al., 2007; Gutin et al., 2008; Slawta et al., 2008; Annesi et al., 2009), improved body composition (Slawta et al., 2008; Melnyk et al., 2007; Annesi et al., 2009; Barbeau et al., 2007, Robinson et al., 2003; Weintraub et al., 2008;

Robinson et al., 2003; Vizcaíno et al., 2008) and improved blood lipid profiles (Aguilar et al., 2010; Slawta et al., 2008; Agulair et al., 2010).

After-school physical activity interventions have also resulted in indirect effects on children's health through increased self-efficacy (Annesi et al., 2009), lowered concern with weight loss, reduced screen time and even improved school grades (Robinson et al., 2003). Despite the overall consensus that after-school PA interventions are able to improve health, this research has predominantly been conducted in the United States (Barbeau et al., 2007; Farley et al., 2007; Gutin et al., 2008; Huberty et al., 2009; Kelder et al., 2005; Melnyk et al., 2007; Robinson et al., 2003; Slawta et al., 2008; Story et al., 2003; Weintraub et al., 2008) where the after school context may differ from other countries. Further while the research has been carried out in the after school period (e.g. PA and health programs), not all of it has been carried out in a generic after school childcare setting.

Interventions targeting nutrition through after school programs have also shown improvements in children's HE behaviours. A particular study that illustrated HE improvements through an after-school program intervention is the Food & Fitness Fun Education Program (FFFEP). Post-intervention results indicated that both children and parents benefited from the children's participation in FFFEP. Children and parents reported healthier eating and increased PA. The percentage of children that improved their HE scores, from pre-intervention to post-intervention, ranged from 78 to 98 percent (Carson & Reiboldt, 2011). Another after-school program intervention to increase fruit and vegetable intake indicated that children derived HE benefits (Beech et al., 2003).

Results from after-school program HE interventions suggest that they also have positive health benefits for children.

Environmental Affordances

It appears that the settings where children spend time may influence their health behaviours. As previously discussed many children spend time in after-school care (Boys and Girls Club, 2013; YMCA, 2013) and thus it is a key "setting for health", which has been defined as a "place or social context in which people engage in daily activities in which environmental, organizational and personal factors interact to affect health and wellbeing" (World Health Organization, 1998, p.19).

Dooris et al. (2007) suggested that "the place and context are themselves important and modifiable determinants of health and wellbeing" (p. 328). This relates to the concept of affordances, which have been defined as "the functionally significant properties of the environment that are perceived through the active detection of information (Kytta, 2002, p.109). The potential of setting-based PA and HE interventions depends on many factors, including environmental affordances. In fact, the Centers for Disease Control and Prevention (CDC) encouraged health organizations to "work to create environments, systems and policies that serve as passive inducements to being physically active" (CDC, 2003, p.13). Further recommendations included eliminating barriers to PA, providing support and reinforcement for making healthy choices and providing opportunities to engage in PA behaviours. The provision of support, reinforcement and opportunities for PA and HE can also be considered part of the environment and measured.

The CDC recommendations are consistent with findings in studies assessing how environmental opportunities can influence PA behaviour. Bower et al. (2008) demonstrated a clear relationship between opportunities for PA in childcare and engagement in PA by children. Specifically, the study found that children attending child care programs with supportive environments had increased MVPA, decreased sedentary activities, and increased mean PA levels, in comparison to children in those centers with less supportive environments (Bower et al., 2008). Bower and colleagues highlighted specific facets of the physical and social environment that influenced PA behaviour, including opportunities for activity, the availability of portable and fixed play equipment, the sedentary environment, and PA training and education for staff. Similarly, Davidson and Lauson (2006) explored the impact of community environments and found that living near parks, playgrounds, and recreation areas was consistently related to children's total PA. Other studies have shown that proximity of sidewalks was positively associated with PA and walking among children (Bauman & Bull, 2007; Sallis & Kerr, 2006).

Research has also illustrated that small changes to an existing PA environment can improve PA behaviour in children. For instance, Ridgers and colleagues (2007) found that marking elementary school playgrounds with designs that stimulated PA was associated with long-term PA improvements. A review by Van Sluijs and colleagues (2007) found "evidence of an effect for environmental interventions" (p. 11) in schools but highlighted that the evidence-base was limited and that there was a need for more research on the impact of environmental strategies on children's health behaviours. The authors suggested that structural environmental changes may be needed to change children's PA behaviour (Van Sluijs et al., 2007).

Beets and colleagues (2013) presented a conceptual framework for reducing obesity in children in after school programs and one of their concluding recommendations for successful implementation of obesity prevention policies in after-school programs was to "understand the setting or context including capacity" (p. 235). This framework outlines the factors contributing to children's health behaviours in after-school programs, indicating a web of influencers including the child, the staff, the site and larger organizations and communities (see Figure 1; Beets et al., 2013). This paper highlights the need to target policies in order to improve environments: "through well-defined policies and enforceable rules, the possibility exists to substantially alter the after-school program environment to one that contributes significantly to children's daily PA and nutritional intake" (Beets et al., 2013, p. 229).

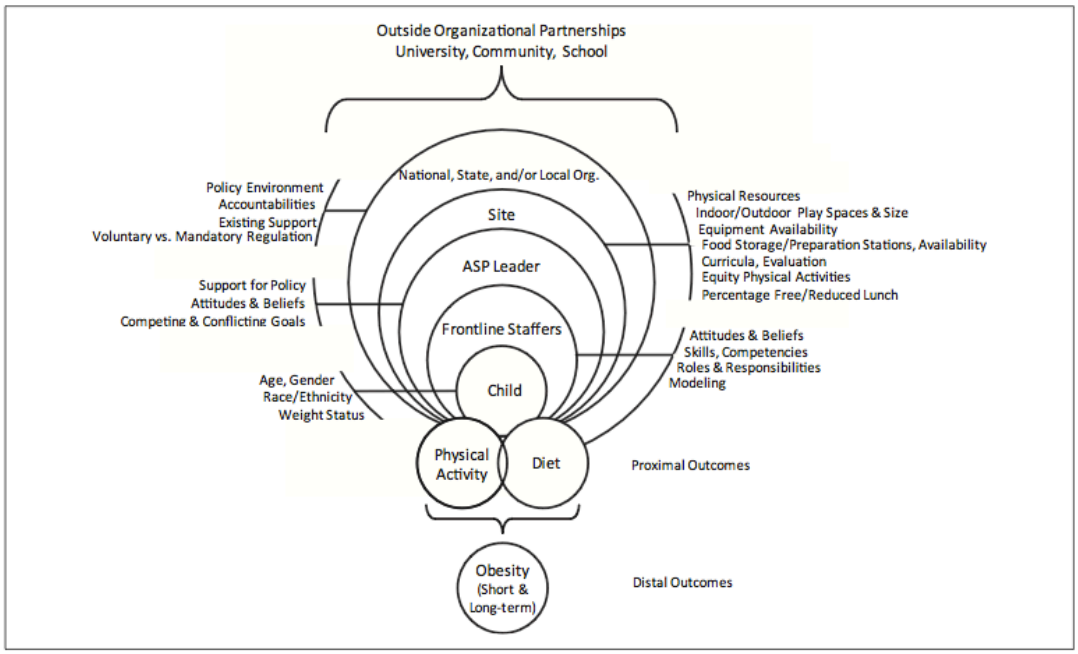

FIGURE 1 Conceptual Framework to Prevent Childhood Obesity Through Policy-Level Initiatives in Afterschool Programs

Figure 1. **Conceptual Framework to Prevent Childhood Obesity Through Policy-Level Initiatives in Afterschool Programs (Beets et al., 2013)**

A review of opportunities and barriers to PA in 36 diverse schools conducted by Young and colleagues (2007) highlighted many of the factors outlined in the Beets et al. 2013 framework. They found that although the schools had some PA-supporting policies and practices in place, there were also many unfavourable practices and barriers. Specifically, PA supportive policies/practices they found included affordances such as having required daily PE, offering intramural sports and space for free play, improvements to play spaces and allowing access to environments. Schools serving a population with higher socio-economic status (SES) also had more opportunities for PA. The barriers to PA that this study identified were that PE was not a school priority, there was lack of funding, equipment and facilities indoors, PA staff development and district support was insufficient, and class sizes were inappropriate (Young et al., 2007).

There is a growing body of evidence showing that policies and practices strongly influence children's PA in preschool (Dooris et al., 2007) and that preschool characteristics actually exert a greater influence on children's PA than their demographic characteristics (Pate et al., 2008). There is a paucity of information however about policies and practices in the after-school child care environment. Understanding the after-school care environment, such as policies about daily PA and its priority, offerings for sports, activities and games, space for free play, physical structures supporting PA, funding, equipment and facilities for PA, staff PA development, support and ratio of children to care providers may be important to planning interventions.

It appears that environmental affordances are important to consider in interventions aimed at improving children's PA and HE behaviours. Moreover, following

a framework similar to that designed by Beets and colleagues (2013; Figure 1), it appears to be crucial to target policies, practices and the physical environment (affordances) in after school programs in order to achieve individual-level improvements in health behaviours. More specifically, the emerging literature indicates a need to improve our understanding of environmental interventions and their impact on children (Van Sluijs et al., 2007). Dooris and colleagues (2007) stated that "the settings approach asserts the importance of physical and social contexts to programme design, implementation, and evaluation" (p. 330). Thus it is important to explore the provision of PA and HE in a variety of after school childcare settings and international contexts.

Measurement of Affordances

A measurement instrument is important to the exploration of the provision of PA and HE in settings. In keeping with this notion and with the understanding of the importance of the policies, practices and environments within settings highlighted previously, a number of instruments have been developed and tested. For instance instruments have been developed to measure environmental affordances for PA and HE in childcare centers (Benjamin et al., 2007; Ward et al., 2008), schools (Kyle et al., 2007), homes (Rodrigues, Saraiva, & Gabbard, 2005) and work sites (Oldenberg at al., 2002). An intensive literature review found no instruments that measured the affordances for PA and HE in after-school childcare through self-assessment. Creating a context specific instrument to measure these could underpin further research and interventions in this setting.

A number of tools developed to measure affordances in other settings were reviewed to determine the relevance of their indicators and components to the after

school childcare setting including: the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC), the Environment and Policy Assessment and Observation (EPAO), the Self-Reported Affordances in the Home Environment for Motor Skill Development (SR-AHMED), the Checklist of Health Promotion Environments at Worksites (CHEW), and the School Health Policies and Programs Study (SHPPS) questionnaires.

Nutrition and Physical Activity Self-Assessment for Child Care

The NAP SACC tool was developed to allow child-care staff that served the early years (2-5 year olds) to self-assess their nutrition and PA environments (see Appendix A). The NAP SACC tool included 54 items relating to Nutrition (n=37) and PA (n=17). The tool was comprised of 9 nutrition categories (Fruits & Vegetables; Meats, Fats & Grains; Beverages; Menus & Variety; Feeding Practices; Food Offered Outside of Regular Meals & Snacks; Supporting HE; Nutrition Education for Staff, Children & Parents; Nutrition Policy) and 5 PA categories (Active Play & Inactive Time; Play Environment; Supporting PA; PA Education for Staff, Children & Parents; PA Policy).

Validity and reliability testing of NAP SACC included inter-rater reliability, test-retest reliability, and criterion validity (Benjamin et al., 2007). NAP SACC was completed by multiple child care staff, independently and concurrently to test inter-rater reliability, and a subsample repeated the test three weeks later to assess test-retest reliability. Criterion validity was evaluated by assessing agreement between a researcher-administered observation and rating tool called the Environmental and Policy Assessment and Observation (EPAO, see Appendix B) and the child care director-administered NAP SACC. Kappa statistics (Cohen, 1960) were rated following standards set by Munoz and

Bandiwala (1997) and kappa statistics showing at least moderate agreement (greater than 0.20) were included. The majority of kappa statistics for items showed at least moderate agreement (kappa of 0.20 or greater). Specifically, NAP SACC resulted in 100 percent inter-rater reliability, 89 percent test-retest reliability, and 52 percent of item scores with moderate, substantial or almost perfect agreement with EPAO items scores (Benjamin et al., 2007). Benjamin and colleagues (2007) found that questions assessing less tangible aspects like staff behaviours had lower agreement than questions examining more concrete outcomes like fixed aspects of the environment.

It appeared that NAP SACC was a reliable and valid measure of the health environment in child care; nevertheless the tool had some limitations. Specifically, on more than two-thirds of the questions used to compare for validity, child care staff-administered NAP SACC scores were higher than researcher-administered EPAO scores, suggesting that self-report lead to social desirability bias. Secondly, given that inter-rater reliability was higher than test-reset reliability, the authors suggested that raters from the same child care centers may have worked together to answer questions concurrently, despite instructions to work independently (Benjamin et al., 2007). The authors did highlight that although independent ratings may be beneficial for quality assessment of the tool itself, joint administration of NAP SACC may lead to questions being answered more accurately if one respondent is unsure about a certain policy or practice. The authors suggested that a more robust, less subjective tool would be more appropriate for an outcome measure to assess intervention impact.

Environment and Policy Assessment and Observation

The EPAO tool (Ward et al., 2008) was specifically developed to objectively evaluate the NAP SACC intervention, which included a self-assessment component. The EPAO tool consists of 102 items for observation and 90 items for document review. The observational tool assesses the following categories: Eating Occasions- Foods; Eating Occasions- Beverages; Sedentary Activities- Child; Physical Activity- Staff Behaviours; and Center Environment. The tool was tested for reliability by measuring inter-observer agreement (IOA). Seventeen observer pairs conducted the survey. For each observer pair, IOA was calculated by the proportion of all items scored identically. The IOAs were then averaged to assess mean agreement. Proportion of observer pairs in perfect agreement was also measured for each item. Items scoring below 75% agreement were identified and adjusted. Mean agreement was 87.28% for observation and 79.29% for document review. The authors concluded that the mean EPAO IOA was good and that reliable observation data could be obtained with a single trained observer (Ward et al., 2008). Unfortunately the EPAO was developed to assess validity of the NAP SACC tool and was not tested against any other previously validated measure to establish its own validity; however there was agreement between the EPAO and the self-reported NAP SACC scores.

Self-Reported Affordances in the Home Environment for Motor Skill Development

The SR-AHMED tool (Rodrigues, Gabbard, & Saraviva, 2003) assesses the quality and quantity of affordances for motor development for children between the ages of 18 and 42 months in the home environment (see Appendix C). The tool addresses three categories, including physical environment, play materials, and variety-of-stimulation.

Validity of the SR-AHMED was assessed in a sample of youth through factor analysis and internal consistency of the tool in evaluating affordances for motor development (Rodrigues et al., 2003). Specifically, the scale reliability coefficient was reported to be 0.85 (Rodrigues et al., 2005). The SR-AHMED tool has valuable items for the measurement of environmental affordances, as it was the only tool that specifically focused on how well the physical environment afforded movement. The specific categories within the tool, Physical spaces in the home, Daily activities in the home, and Play materials in the home, could be directly translated to the child care environment. Therefore, although SR-AHMED was developed for the home environment, the documentation of play materials, physical environment and variety of stimulation appears to be relevant for the after school care setting.

The Checklist of Health Promotion Environments at Worksites

The CHEW (Oldenberg et al., 2002) is a direct observational tool used to assess worksite characteristics associated with PA, healthy eating, alcohol consumption and smoking (see Appendix D). The CHEW consists of 112 items that assess three environmental domains: physical characteristics of the worksite and the immediate surrounding neighbourhood, and features of the information environment. Oldenberg and colleagues (2002) measured CHEW reliability by having two independent and trained raters complete the survey for 12 worksites, on separate occasions within one week. Evaluation of the tool illustrated that it had high inter-rater reliability, with intra-class correlation coefficients ranging from .80 to 1.00 for the large majority (92%) of items addressing the physical and information environment (Oldenberg et al., 2002). The study did not include a validation assessment. Although the CHEW assesses worksite

environments in general, some questions from the CHEW tool, in particular those assessing the physical and information environment, could be useful in cross-sectional and longitudinal assessment of the health environment in Canadian after school child care facilities.

School Health Policies and Programs Study (SHPSS)

SHPSS (Kann, Brener, & Wechsler, 2007) is the largest and most comprehensive assessment of school health environments (policies and programs) conducted by the United States Center for Disease Control CDC every six years. Publications from the most recent version of the SHPPS (2012) are not yet out in the literature. This review highlights the work done up to 2012 to establish the validity and reliability of the 2006 SHPPS. To create the surveys used in the SHPPS 2006 study, the SHPPS 2000 documents were reviewed, item-by-item, by content experts at the CDC. The draft questionnaires were then distributed to nationwide reviewers representing federal agencies, national associations, foundations and universities. The questionnaires were then split into separate modules if completion time was longer than 30 minutes or if the range of topics covered was too broad for a single respondent (Kyle et al., 2007).

SHPPS 2006 consisted of 23 questionnaires, each assessing different health program components and each designed specifically for a different level (state, district, school and classroom). SHPPS 2006 assessed eight essential elements of an effective school health program: (1) health education; (2) physical education and activity; (3) health services; (4) mental health and social services; (5) nutrition services; (6) healthy and safe school environment; (7) faculty and staff health promotion; (8) and family and community involvement (Kann et al., 2007).

Validity testing for the SHPPS 2006 surveys has not been reported; however the CDC conducted validity and reliability testing for the SHPPS 2000 questionnaires, which the 2006 questionnaires were built from (Brener, Kann, & Smith, 2003). Of the SHPPS 2000 study participants, a subsample also completed follow-up telephone interviews to measure validity and computer-assisted repeat interviews to measure reliability, within 10 to 20 days of their initial testing. Kappa statistics were calculated for categorical and ordinal response items and Pearson Product Moment correlation coefficients were calculated for interval and continuous response items. Weighted kappa was used to analyze ordinal items, where less weight was assigned to disagreements between adjacent categories (e.g. never and rarely) in comparison to distant categories (e.g. never and always). The standards used for SHPPS 2000 reliability testing differed from those used in NAP SACC testing: kappa statistic percentages greater than 80 indicated almost perfect reliability, those between 60 and 80 indicated substantial reliability, those between 40 and 60 indicated moderate reliability, and those below 40 indicated poor reliability; Pearson correlations above 0.80 were considered good, those between 0.6 and 0.80 were considered acceptable, and those below 0.6 were considered poor (Brener et al., 2003). Reliability testing resulted in mostly substantial or moderate ratings for categorical and ordinal questions and all acceptable or poor ratings for continuous and interval questions.

The authors suggested that the poor ratings should be interpreted with caution, as high and low scores adversely affect the kappa statistic (Brener et al., 2003). For instance, a certain question was answered “yes” 99.1% of the time in initial testing and 95.6% of the time in repeat testing. Due to only four respondents having different answers for this

question on the repeat test, the kappa statistic was 32.3 percent and thus the reliability rating was poor. Outliers, a few respondents who drastically changed their answers from the first to the second test, were also identified as a source of some poor reliability ratings. Removing these outliers resulted in changes in kappa scores that were large enough to improve ratings from poor to moderate or good (Brener et al., 2003).

Brener and colleagues (2003) concluded that SHPPS 2000 questionnaires were generally reliable, but also that the subjective nature of the questions was a limitation. The SHPPS 2000 questionnaires were all print version; however telephone interviews, as used in the SHPPS 2000 reliability testing, were offered for SHPPS 2006 initial tests (Kyle et al., 2007). The interview administration of the SHPPS 2006 questionnaires offered respondents the opportunity to clarify questions and therefore alleviate some of the subjectivity that was seen in the SHPPS 2000 questionnaires. Brener et al. (2003) noted that increased knowledge about some policies and practices between testing could have resulted in varying answers. This illustrates the importance of administering test and retest within a period of time shorter than 10 to 20 days. A final limitation of SHPPS 2000 was that most respondents answered questions based on knowledge rather than referring to documentation (Brener et al., 2003). For rigorous testing of policies and practices, reference to documents may be necessary.

Despite the moderate results found in the SHPPS 2000 reliability and validity study (Brener et al., 2003), some topics covered by the SHPPS survey, namely health and physical education, nutrition services, healthy and safe school environment and faculty and staff health promotion are applicable to the after-school care environment (refer to Appendix E).

Although there were several similarities across instruments, they were developed to measure environmental affordances and they reflected the specific context of different, mostly the US, settings, these tools do highlight key components and questions that should be included in an assessment for the after-school childcare including: foods served, feeding practices, active play, inactive time, play environment, supporting PA and HE, PA and HE education and policy (NAP SACC); eating occasions, sedentary and physical activities and center environment (EPAO); physical spaces, play materials (AHMED); PA and HE posters, vending machines, lunch room and neighbourhood assessment (CHEW); physical school environment, PA, food and beverages sold and meal programs (SHPPS). NAPSACC and the EPAO instrument were developed for a context that shared the most similarities with the after-school environment and thus a majority of questions on these instruments could be adapted for both after-school care and the Canadian environment.

Chapter 3

Methods

Research Design

The CHASE study was a two-stage instrument validation study. Stage 1 was the development of a new instrument (The Canadian After-School Environments [CHASE] Survey). The development process consisted of an instrument review, expert review of indicators/questions and components to establish the logical validity of the content, and a pilot test by a childcare provider to check for instrument readability and clarity. Stage 2 tested the concurrent validity of the CHASE survey using both the EPAO (which assesses both affordances and time spent in PA) and directly observed physical activity and teacher facilitation using and instrument modified from System for Observing Play and Leisure Activity in Youth (SOPLAY) and Teacher Monitoring Analysis System (TMAS; which assess time spent in PA and leader facilitation of PA). This stage also included measurement of test-retest reliability. The study was approved by the Human Research Ethics Office at the University of Victoria.

Stage 1. Development of the CHASE Survey

Participants

Experts in the field of child care, physical activity and healthy eating measurement in schools or childcare and health-supporting environments were identified from: a) recent publications relating to; healthy after-school behaviours, PA and HE in childcare, healthy lifestyles for children and/or survey validation studies in the area of

interest and b) research team knowledge of Canadian researchers and policy-makers involved in these areas of research or programming. Twenty-three content experts were identified. These experts varied in their job titles, including researcher, author, professor, journal reviewer, chair, sport consultant, practitioner, and government employee in various fields, including public health, child health, population health, sport psychology, early years policy, human nutrition, and family medicine. Most of the experts who were invited to participate, and a large majority of those who agreed to participate (85.71%), were Canadian. All twenty-three content experts were invited by email to provide logical validity, which is also known as face validity and can be defined as "the degree to which a measure obviously involves the performance being measured" (Thomas, Nelson & Silverman, 2005, p. 193), ratings on the CHASE Survey. Of the 23 invited content experts, 7 agreed to participate in the logical validity testing (response rate= 30.43%).

Methods

To generate a preliminary list of survey questions for the experts to review, five existing tools that measured environmental affordances were examined for key concepts/dimensions and questions relevant to the after school childcare setting. These tools were the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC; Benjamin et al., 2007), the Environment and Policy Assessment and Observation (EPAO; Ward et al., 2008), the Self-Reported Affordances in the Home Environment for Motor Skill Development (SR-AHMED; Rodrigues et al., 2005), the Checklist of Health Promotion Environments at Worksites (CHEW; Oldenberg et al., 2002), and the school-level School Health Policies and Programs Study (SHPPS; Kann et al., 2007) questionnaires. Models of PA and HE determinants were created (refer to Appendix G,

pages 3 and 4 to view these models) through a literature review (Wharf-Higgins, Begoray & MacDonald, 2009; Sallis, Prochaska & Taylor, 2000; Sallis et al., 1999; McCormack et al., 2011; Glanz et al., 2005; Taylor, Evers & McKenna, 2005) and were used as a references for inclusion of items from the relevant tools aforementioned.

The majority of the questions included in the preliminary survey were from the NAP SACC, EPAO and SHPPS questionnaires as they assessed settings that served children and had similar operational structures and roles. Questions and subscales with previously reported validity and reliability were prioritized (Benjamin et al., 2007; Rodrigues et al., 2003; Oldenberg et al., 2002 and Brener et al., 2003). From these 5 surveys, all questions that applied to children and the after-school care setting were grouped into concepts (PA, nutrition, environment) and overlapping questions were combined.

The draft list of 75 questions was organized into more specific concepts (facility environment, neighbourhood environment, PA practices, PA environment and policies, nutrition practices, nutrition environment and policies) and was sent to participating content experts to establish the logical validity of questions (refer to Appendix G, pages 6 through 21, for the list of items included in this version of CHASE). The majority of CHASE items were categorical; with the most common response format an ordinal scale (more than 1 time per day; 1 time per day; 3-4 times per week; 1-2 times per week; less than 1 time per week; rarely or never). Some items were dichotomous (yes; no) and some were open-ended (fill in the blank). The online survey was constructed using an on-line survey tool called Fluid Surveys (http://fluidsurveys.com/; see Appendix F). The experts were asked to rate each item on a 7-point Likert scale 1 to 7) for relevancy (1= not

relevant and 7= very relevant) and clarity (1= not clear and 7= very clear). Experts were also asked to write comments for each item, each section, and for the overall survey (see Appendix G for rating and commenting protocol).

The draft of the online survey was then sent to a consenting after-school program manager in Victoria for pilot testing. The manager was asked to complete the survey and make notes about questions that needed revision due to unclear wording, errors in the online survey set-up, redundancy, etc. She was also asked to keep a record of the time it took her to complete the survey.

Data Analysis

Scores and comments from all logical validity raters were organized in a spreadsheet. Item scores were averaged across reviewers for both relevancy and clarity. Scores were reviewed to exclude items with ratings of 3 (out of 7) or lower.

Results

Minor question wording and online survey set-up adjustments were made from pilot testing feedback. The logical validity testing resulted in some rewording of questions (e.g. clarifying vague terms like ‘active play’ and ‘accessible’), addition of new questions (for instance a question asked ‘which types of milk are served at your facility?’ and expert reviewers commented that the question ‘Is milk served at your facility?’ needed to be asked first). The first draft of the CHASE survey, which went through logical validity testing, consisted of 75 items, whereas the revisions from expert reviews resulted in a 111-item survey. See Appendices H and M for the two versions of the survey (version 1 that was sent to experts for logical validity testing and version 2 that was sent to participants for CHASE T1 and T2 testing, respectively). The average rating

across all items and raters was high for clarity (mean=6.00) and relevance (mean=6.41). All questions were kept in the survey, as there were not any questions that were rated 3 or lower on both clarity and relevance.

The structure of the survey into sections (Environment, PA, and Nutrition) was not changed in the logical validity phase. The pilot test indicated that the 111-item survey needed a few minor wording adjustments (n=3 questions) and survey set-up adjustments (n=2 questions) and that the survey took about 60 minutes to complete. Thus the survey structure and question concepts remained the same. The final CHASE survey can be viewed in Appendix L.

Stage 2. Validity and Reliability of the CHASE Survey

Participants

Following development of the survey all child care facilities from Victoria, British Columbia, and surrounding communities that were identified on the Vancouver Island Health Authority (VIHA) lower and central region contact list (which was publically available) were invited to participate in the validation study. The information included on the VIHA mailing lists was name, address and phone number of program, as well as manager name. During initial phone calls, the manager identified on the contact list, or the new site manager when applicable, was provided with a brief overview of and invitation to participate in the CHASE study. Interested care providers were sent further study information (CHASE Letter of Information for Implied Consent and Letter to Parents) by email where possible or by mail. For facilities that did not have valid phone numbers listed, the study information was sent via mail. When the site manager was not available, his or her email was requested and the study information was sent by email. Up

to 4 follow-up phone calls were made to facilities that did not respond to the initial recruitment phone call, email or mail package. All child care programs that agreed to participate were included in the CHASE study.

Figure 2 shows the breakdown of the recruitment of participants from the VIHA mailing lists. Of the 177 facilities listed on both the Victoria and Duncan regional mailing lists, 12 facilities were not eligible to participate (n=5 preschool centers; n=3 facilities were no longer open; n=3 facilities were located too far away for an observation trip; n=1 facility was unable to reach by phone or mail). Of the 165 facilities that were eligible to participate, 63 were invited by phone (manager was available at recruitment phone call, or manager returned recruitment call voicemail or message), 96 were invited by email (manager was not available at recruitment phone call and manager email was requested), and 6 were invited by mail (these facilities had invalid phone numbers listed). Of the 165 facilities that were invited to participate, 22 responded no and 143 facilities did not respond (a sample of the reasons, when given, are listed in Figure 2. The facility response rate was 12.1 percent (20 of the 165 eligible facilities agreed to participate).

Methods

The twenty after-school child care managers that consented to participate (n=20 female) were sent a link to the online CHASE survey (piloted in Phase I) prior to the scheduled on-site observation date and were asked to complete it before the site observation visit (CHASE T1). To establish the reliability of the CHASE instrument, care providers were asked to complete the online survey for a second time one week after the observation (CHASE T2). To assess the concurrent validity of the CHASE tool, two researchers, the principal investigator and a trained assistant, attended the participating

program on the scheduled observation date and completed the EPAO and Physical Activity Observation Recording Sheet (PAORS) tools (shown in Appendices B and J, respectively).

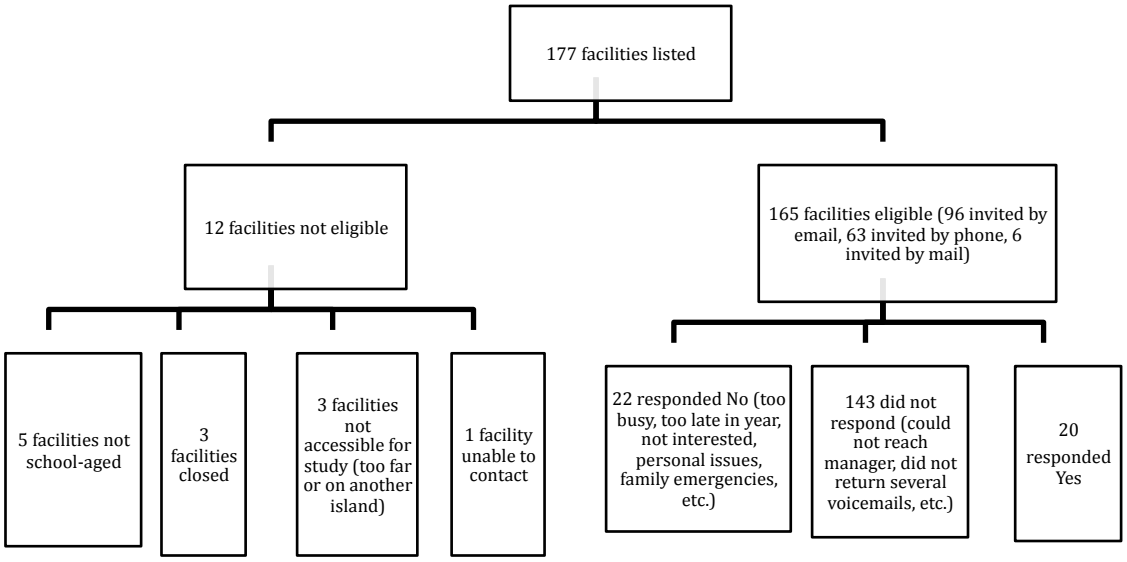

Figure 2. Recruitment of participants from the Vancouver Island Health Authority mailing list for Victoria and Duncan areas.

EPAO measures 7 different constructs: eating occasions – foods; eating occasions – beverages; eating occasions – staff behaviour; physical activity – child behaviours; sedentary activity – child; physical activity – staff behaviour; center environment. The PAORS is a modified version of the Teacher Monitoring Analysis System (TMAS; van der Mars, 1989; see Appendix I) combined with SOPLAY (McKenzie, 2002; see Appendix J) observation categories and protocols. The PAORS assessed both leader facilitation of activities (M= model, L= lead F= facilitate, E= encourage, U= unstructured) and the PA intensity achieved by each child, each minute (1 = sedentary level, 2 = walking level, 3 = running level; see Appendix H for the definitions used in

PAORS and the set-up of the tool). Procedures for scanning the PA area were implemented according to the SOPLAY procedures (McKenzie, 2002). A very similar method and sample size was used a recent environmental assessment among preschool care. The study, titled 'The Childcare Environment and Children's Physical Activity' used both the EPAO alongside a tool similar to PAORS, the Observation System for Recording Activity in Preschools (OSRAP) tool, to assess the PA environment and children's PA behaviours in 20 child care programs (Bower et al., 2008).

Data Analysis

CHASE Scoring

CHASE T1 and T2 item responses were coded with values between 0 and 1, depending on the number of responses for the given item. For instance, items with 2 response choices (e.g. yes or no) were be coded with scores of 0 and 1 and items with 3 response choices (e.g. never, sometimes, always), were coded with scores of 0, 0.5 and 1. For each item, the score of 0 was assigned to the least ideal response choice (least supportive of healthy behaviour) and 1 was assigned to the most ideal response choice (most supportive of healthy behaviour). For instance, for the question "Is fixed play equipment available at your facility", yes was given a score of 1 and no was given a score of 0. Contrarily, for the question "Is treat food used to encourage/reward positive behaviour in children", yes was given a score of 0 and no was given a score of 1.

CHASE structure-based sections (referring to the sectional organization of the survey) were scored by summing all of the quantitative item scores within each section: Facility Environment (2); Neighbourhood Environment (9); PA Practices (9); PA Environment and Policies (15); HE Practices (20); HE Environment and Policies (18).

CHASE concept-based subscales were also created in order to directly compare concepts with EPAO data. Items that directly matched in concept from CHASE T1 and EPAO were organized into 6 subscales (Physical PA Environment, Social PA Environment, Physical HE Environment, Social HE Environment, PA Practices, HE Practices). Table 1 shows the CHASE and EPAO items included in each subscale. Given that the concepts were not always addressed in a single question, the number of items included in the CHASE subscales did not exactly match with the number included in the EPAO subscales. For this reason, CHASE and EPAO subscale scores were calculated as a percentage of total possible scores (sum of weighted item scores divided by the total possible score within each subscale) as opposed to sums. The total possible score for each subscale is defined by the number of items within that subscale; this information is also given in Table 1. Subscales were also combined to create scores for CHASE PA Subscale Total (comprised of Physical PA Environment, Social PA Environment, PA Practices; total possible score=3), CHASE HE Subscale Total (comprised of Physical HE Environment, Social HE Environment, HE Practices; total possible score=3) and CHASE Overall Subscale Total (comprised of all 6 subscales; total possible score=6).

EPAO Scoring

EPAO was coded using the coding recommended by the EPAO authors (Ward et al., 2008) Following the EPAO scoring protocol (see Appendix K), each question was given a score of 0, 1 or 2. Each section was comprised of 10 questions and was scored out of a total possible 20 points. EPAO Nutrition and PA sections scores were each out of a possible 20 points. Facilities that did not serve snack were not scored for nutrition subscales. Percentage of total possible points (20 possible points for facilities that did not

serve snack; 40 for those that did) was used to calculate EPAO total score. As previously highlighted, EPAO subscales were created in order to directly compare concepts with CHASE data. The matching subscales that comprise the subscales, as well as the total possible scores for each subscale, are illustrated in Table 1. Similar to CHASE subscale scoring, EPAO subscales were scored as a percentage of possible scores. An objective measurement of PA behaviour assessed using the EPAO tool, proportion of time spent in PA, was scored by dividing the number of minutes the children spent engaged in PA by the total number of minutes the children spent in the program.

PAORS Scoring

PAORS facilitation data was coded as 0 (not facilitated/unstructured) or 1 (facilitated/modeled/encouraged/lead) for each minute PA was observed. PAORS facilitation scores were averaged across all physically active minutes, resulting in a value between 0 and 1 that also represented the proportion of time spent in facilitated PA. PAOPRS PA intensity data was coded using the protocol outlined by McKenzie (2006) as 1 (sedentary-level), 2 (walking-level), or 3 (vigorous/running-level) for each child during each PA minute. PA intensity was averaged across all children for each physically active minute. Mean PA intensity per facility was then calculated by taking the average PA intensity across all minutes observed for each site.

Concurrent Validity

To assess the survey's concurrent validity, Pearson Product Moment correlations were computed for objective measures of PA behaviour using EPAO (proportion of time spent in PA; number of PA occasions; total minutes of active play; total minutes of structured PA; total minutes of outdoor active play; total minutes of sedentary behaviour;

total minutes of TV viewing) and PAORS (total minutes of PA; average PA intensity; proportion of time in PA facilitation) with CHASE T1 subscale scores (Physical PA Environment, Social PA Environment, Physical HE Environment, Social HE Environment, PA Practices, HE Practices, PA Subscale Total, HE Subscale Total, Overall Subscale Total) using SPSS Version 20.0 (2012). All correlations at the $p<0.05$ level were considered significant.

Table 1. Items Comprising the EPAO and CHASE Subscales

Subscale	Concept	CHASE Items (Tot.)	EPAO Items (Tot.)
Physical PA Env.	Availability of rooms for active play	S1A10a-f	E59
	Outdoor play space	S2B1	E57
	Fixed play equip. availability & type	S2B2, S2B2a, S2B5	E55a-k
	Portable play equip. variety & sufficiency	S2B3, S2B4	E56a-k
	PA visual materials	S2B10	E60a
	Video game equip. availability	S2A6a	E44
		(9)	(6)
Social PA Env.	Staff encouragement of PA	S2B7	E49, E50a
	Staff participation in PA	S2B9	E48
		(2)	(3)
Physical HE Env.	Drinking water availability & accessibility	S3A14a, S3A14b	E20, E38
	Vending machine availability & rating	S317a,b,c	E54
	HE visual materials	S3B13	E61a
		(6)	(4)
Social HE Env.	Staff encouragement to try new foods	S3B6	E28
	Method of food/snack service	S3B9	E26, E27, E4
	Staff eating same food as children	S3B10, S3B11	E31
		(4)	(5)
PA Practices	Outdoor play	S2A5	E36
	PA optional or mandatory S2A3	E35c	
	TV viewing	S2A6tv	E42
	Video game usage & type S2A6c,b	E46	
		(5)	(4)
HE Practices	Snacks brought & served	S3B2a,b, S1A9	PMsnack
	Type of fruit served	S3A1, S3A2	E5, E6, E7
	Type of vegetables served S3A3, S3A4	E8, E9, E10	
		(7)	(7)

Note: CHASE item codes are determined by section (S1-Environment, S2-Physical Activity, S3-Nutrition; parts A and B diving each) and item number. EPAO item codes are determined by survey (E) and item number. Abbreviations used are: Total # of Items (Tot.); Physical Activity (PA); Environment (Env.); Equipment (Equip.); Healthy Eating (HE).

Test-Retest Reliability

Test-retest reliability was assessed in two ways: the first by intra-class correlations (ICCs) calculated using SPSS (Version 20.0, 2012; Rankin & Stokes, 1998) and the second using percent agreement calculated by hand (Stemler & Tsai, 2008). Although the kappa statistic has been used to evaluate agreement in similar studies (Benjamin et al., 2007, Ajja et al., 2012), the statistic was not appropriate for the CHASE T1 to T2 comparison because it assumes independent raters and can be influenced by memory and familiarization. Given that the same staff members completed both CHASE T1 and T2, ICCs and percent agreement were used instead of kappa. Moreover, it has been recommended that ICCs and percent agreement be used in combination when calculating the degree of intra-rater reliability (Kottner & Dassen, 2008).

ICCs were calculated to measure agreement between CHASE T1 and T2 on the subscales and the total scores (Rankin and Stokes, 1998). To measure percent agreement, the responses for each quantitative question from CHASE T1 and CHASE T2 were compared and manually assigned agreement ratings of either 0 (responses do not agree) or 1 (responses agree). Qualitative questions were reviewed and rated where possible into the same categories (responses agree or disagree). Percent agreement was calculated for each CHASE section (Environment, PA and Nutrition) and for the overall total by calculating the percentage of response pairs that agree (number of items rated 1 divided by the total number of items in section, multiplied by 100%; Stemler & Tsai, 2008).

Chapter 4

Results

Concurrent Validity for the CHASE, EPAO and PAORS Tools

Pearson Product Moment correlations for objectively measured PA behaviour and CHASE subscale scores are shown in Table 2 for EPAO- and Table 3 for PAORS-derived objective PA measures.

CHASE HE subscales were correlated with objective PA measurements. The following objective measurements of PA were significantly correlated with scores from both the CHASE Social HE Environment Subscale and the CHASE HE Subscale Total: EPAO proportion of time spent in PA, total minutes of active play, and total minutes of sedentary behaviour (Table 2), as well as PAORS total minutes of PA (Table 3). Moreover, the measure EPAO total minutes of outdoor active play was found to be significantly correlated with CHASE Physical and Social HE Environment subscales, as well as CHASE HE subscale total (Table 2). There was only one significant correlation between the EPAO measure -television viewing time and the CHASE PA practices sub-scale. No other significant correlations were found between the CHASE PA subscale scores and objective measures of PA (see Tables 2 and 3).

Total minutes of physical activity measured using EPAO by the principal investigator (Mean = 74.90, *SD* = 36.44) and measured using PAORS by a research assistant (Mean = 74.20, *SD* = 40.23) were strongly and significantly correlated ($r = .896$, $p < .001$). Similarly, the proportion of active time spent in structured physical activity measured by the principal investigator using EPAO (Mean = 0.455, SD = .373) and percent of active time spent in facilitated PA measured using PAORS by a research

assistant (Mean= 43.059, SD= 27.04) were strongly and significantly correlated (r = 0.718, p < .001).

Table 2. Pearson Correlations of Objective PA Behaviour Measured by EPAO and CHASE T1 Subscales

Item	Mean (s.d.)	Pearson Correlation	Sig. (2-tailed)
EPAO Proportion of Time spent in PA	0.47 (0.23)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	-0.132	.578
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	0.043	.858
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	0.033	.890
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	0.715	.000
CHASE T1 PA Practices Subscale	0.69 (0.14)	-0.024	.921
CHASE T1 HE Practices Subscale	0.45 (0.13)	-0.014	.955
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	-0.59	-.804
CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	0.450	.047
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	0.229	.331
EPAO Number of PA Occasions	1.50 (0.89)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	-0.249	.290
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	0.226	.337
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	0.124	.603
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	0.192	.416
CHASE T1 PA Practices Subscale	0.69 (0.14)	-0.337	.146
CHASE T1 HE Practices Subscale	0.45 (0.13)	0.305	.191
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	-0.169	.477
CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	0.315	.176
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	0.065	.784
EPAO Total Minutes of Active Play	74.20 (40.23)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	-0.101	.672
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	0.715	.460
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	0.211	.371
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	0.680	.001
CHASE T1 PA Practices Subscale	0.69 (0.14)	0.127	.594
CHASE T1 HE Practices Subscale	0.45 (0.13)	0.114	.631
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	0.083	.728
CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	0.565	.009
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	0.406	.076
EPAO Total Minutes of Structured PA	25.20 (20.52)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	-0.237	.314
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	0.352	.128
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	-0.144	.544
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	-0.075	.752
CHASE T1 PA Practices Subscale	0.69 (0.14)	-0.300	.199
CHASE T1 HE Practices Subscale	0.45 (0.13)	0.237	.315
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	-0.088	.712

CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	0.001	.997
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	0.065	.785
EPAO Total Minutes Outdoor Active Play	59.30 (42.42)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	-0.308	.187
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	0.153	.519
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	0.501	.024
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	0.517	.020
CHASE T1 PA Practices Subscale	0.69 (0.14)	0.282	.228
CHASE T1 HE Practices Subscale	0.45 (0.13)	-0.034	.887
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	0.031	.898
CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	0.521	.018
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	0.340	.143
EPAO Total Minutes Sedentary Behaviour	55.68 (42.67)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	0.044	.858
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	-0.072	.771
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	-0.272	.259
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	-0.577	.010
CHASE T1 PA Practices Subscale	0.69 (0.14)	-0.275	.254
CHASE T1 HE Practices Subscale	0.45 (0.13)	-0.186	.447
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	-0.123	.616
CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	-0.580	.009
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	-0.440	.059
EPAO Total Minutes of TV Viewing	3.25 (14.53)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	-0.234	.321
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	0.090	.706
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	0.019	.936
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	-0.285	.223
CHASE T1 PA Practices Subscale	0.69 (0.14)	-0.459	.042
CHASE T1 HE Practices Subscale	0.45 (0.13)	-0.349	.132
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	-0.276	.238
CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	-0.330	.155
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	-0.407	.075

Note: Subscale scores are reported as the proportion of possible scores (total scores divided by total possible scores per section). PA Total score is the sum of scores from all 3 PA subscales (Physical PA Env.; Social PA Env.; PA Practices). HE Total score is the sum of scores from all 3 HE subscales (Physical HE Env.; Social HE Env.; HE Practices). Overall Total score is the sum of scores from all 6 subscales (Physical PA Env.; Social PA Env.; PA Practices; Physical HE Env.; Social HE Env.; HE Practices). Abbreviations used are: Environment (Env.); Neighbourhood (Neighb.); Physical Activity (PA); Healthy Eating (HE).

The Pearson Product Moment Correlations for observed (EPAO) and self-reported (CHASE) subscales is shown in Table 4. Significant correlations were found between the EPAO and CHASE instrument for the Social PA Environment ($r=0.664$, $p=0.001$) and HE Subscale Total scores ($r=0.553$, $p=0.040$).

Table 3. Pearson Correlations of Objective PA Behaviour Measured by PAORS and CHASE T1 Subscales

Item	Mean (s.d.)	Pearson Correlation	Sig. (2-tailed)
PAORS Total Minutes of Physical Activity	74.90 (36.44)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	-0.196	.406
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	0.188	.429
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	0.175	.462
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	0.631	.003
CHASE T1 PA Practices Subscale	0.69 (0.14)	-0.018	.939
CHASE T1 HE Practices Subscale	0.45 (0.13)	0.103	.666
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	-0.023	.923
CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	0.514	.020
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	0.295	.207
Average PA Intensity	1.74 (0.46)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	-0.013	.957
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	0.417	.068
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	-0.076	.751
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	0.150	.529
CHASE T1 PA Practices Subscale	0.69 (0.14)	-0.030	.900
CHASE T1 HE Practices Subscale	0.45 (0.13)	-0.084	.725
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	0.175	.461
CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	0.020	.932
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	0.143	.548
Proportion of Time in PA Facilitation	0.43 (0.28)		
CHASE T1 Physical PA Env. Subscale	0.63 (0.18)	0.014	.955
CHASE T1 Social PA Env. Subscale	0.84 (0.16)	0.149	.530
CHASE T1 Physical HE Env. Subscale	0.78 (0.12)	0.050	.833
CHASE T1 Social HE Env. Subscale	0.56 (0.17)	-0.242	.304
CHASE T1 PA Practices Subscale	0.69 (0.14)	0.052	.828
CHASE T1 HE Practices Subscale	0.45 (0.13)	0.315	.572
CHASE T1 PA Subscale Total (/3)	2.16 (0.37)	0.099	.679
CHASE T1 HE Subscale Total (/3)	1.75 (0.21)	-0.065	.785
CHASE T1 Overall Subscale Total (/6)	3.91 (0.45)	0.034	.886

Note: Subscale scores are reported as the proportion of possible scores (total scores divided by total possible scores per section). PA Total score is the sum of scores from all 3 PA subscales (Physical PA Env.; Social PA Env.; PA Practices). HE Total score is the sum of scores from all 3 HE subscales (Physical HE Env.; Social HE Env.; HE Practices). Overall Total score is the sum of scores from all 6 subscales (Physical PA Env.; Social PA Env.; PA Practices; Physical HE Env.; Social HE Env.; HE Practices). Abbreviations used are: Environment (Env.); Neighbourhood (Neighb.); Physical Activity (PA); Healthy Eating (HE).

Table 4. Pearson Correlation Coefficients Between Matching CHASE T1 and EPAO Subscales

Subscale	CHASE Mean (s.d.)	EPAO Mean (s.d.)	Pearson Correlation	Sig. (2-tailed)
Physical PA Env.	0.63 (0.18)	0.61 (0.12)	0.376	.102
Social PA Env.	0.84 (0.16)	0.63 (0.33)	0.664	.001
Physical HE Env.	0.78 (0.12)	0.48 (0.18)	0.272	.246
Social HE Env.	0.56 (0.17)	0.61 (0.14)	0.440	.116
PA Practices	0.69 (0.14)	0.71 (0.14)	0.111	.641
HE Practices	0.45 (0.13)	0.32 (0.16)	-0.215	.460
PA Total (/3)	2.16 (0.37)	1.94 (0.42)	0.438	.053
HE Total (/3)	1.78 (0.27)	1.60 (0.42)	0.553	.040
Overall Total (/6)	3.95 (0.45)	3.59 (0.78)	0.461	.097

Note: Subscale scores are reported as the proportion of possible scores (total scores divided by total possible scores per section). PA Total score is the sum of scores from all 3 PA subscales (Physical PA Env.; Social PA Env.; PA Practices). HE Total score is the sum of scores from all 3 HE subscales (Physical HE Env.; Social HE Env.; HE Practices). Overall Total score is the sum of scores from all 6 subscales (Physical PA Env.; Social PA Env.; PA Practices; Physical HE Env.; Social HE Env.; HE Practices). Abbreviations used are: Environment (Env.); Physical Activity (PA); Healthy Eating (HE).

Reliability of the CHASE Tool

Table 5 shows the ICCs between CHASE concept-based subscales measured in T1 and T2. Correlations between CHASE T1 and T2 were strong ($p < .05$) for 3 of the 6 subscales, namely Physical PA Environment Physical HE Environment and HE Practices. Correlations between CHASE T1 and T2 were weak for 3 of the 6 subscales, specifically the PA Practices subscale and those relating to the social environment, Social PA Environment and Social HE Environment. CHASE T1 and T2 subscale totals scores were also strongly correlated. Overall total scores were not significantly correlated from T1 to T2.

Table 6 shows the ICCs between CHASE structure-based sections measured in T1 and T2. Correlations between CHASE T1 and T2 were strong ($p < .01$) for the majority of sections (4 out of 6) as well as for all 3 section total scores and the overall scores. HE

Environment and Policies section was the only one to illustrate a correlation between T1 and T2 that was not significant (r=0.420, p=.076).

Table 5. Intra-Class Correlations Between CHASE T1 and T2 Subscales and Total Scores

Subscale	T1 Mean (s.d.)	T2 Mean (s.d.)	ICC (95% CI)	Sig. (p)
Physical PA Env.	0.67 (0.18)	0.66 (0.20)	0.964 (0.882, 0.990)	.000
Social PA Env.	0.84 (0.13)	0.87 (0.14)	0.128 (-0.457, 0.636)	.338
Physical HE Env.	0.77 (0.11)	0.75 (0.14)	0.875 (0.624, 0.962)	.000
Social HE Env.	0.54 (0.12)	0.55 (0.15)	0.433 (-0.158, 0.796)	.070
PA Practices	0.65 (0.15)	0.75 (0.13)	0.136 (-0.450, 0.641)	.328
HE Practices	0.44 (0.13)	-0.55 (0.25)	0.644 (0.141, 0.883)	.009
PA Total (/3)	2.16 (0.37)	2.28 (0.31)	0.700 (0.261, 0.902)	.003
HE Total (/3)	1.75 (0.21)	1.85 (0.36)	0.631 (0.142, 0.876)	.008
Overall Total (/6)	3.91 (0.45)	4.13 (0.43)	0.497 (-0.054, 0.822)	.037

Note: PA Total score is the sum of scores from all 3 PA subscales (Physical PA Env.; Social PA Env.; PA Practices). HE Total score is the sum of scores from all 3 HE subscales (Physical HE Env.; Social HE Env.; HE Practices). Overall Total score is the sum of scores from all 6 subscales (Physical PA Env.; Social PA Env.; PA Practices; Physical HE Env.; Social HE Env.; HE Practices). Abbreviations used are: Standard Deviation (s.d.); Intra-class Correlation (ICC); Significance (Sig.); Environment (Env.); Physical Activity (PA); Healthy Eating (HE).

Table 6. Intra-Class Correlations Between CHASE T1 and T2 Sections and Total Scores

Subscale	T1 Mean (s.d.)	T2 Mean (s.d.)	ICC (95% CI)	Sig. (p)
Facility Env. (/2)	1.48 (0.48)	1.48 (0.48)	0.945 (0.820, 0.984)	0.000
Neighb. Env. (/9)	6.46 (0.82)	6.25 (1.15)	0.780 (0.400, 0.931)	0.001
PA Practices (/9)	6.23 (0.99)	6.48 (1.15)	0.794 (0.430, 0.936)	0.001
PA Env. & Pols. (/5)	9.68 (2.70)	9.63 (2.59)	0.938 (0.799, 0.982)	0.000
HE Practices (/20)	13.22 (1.79)	13.22 (1.79)	1.000 (1.000, 1.000)	.[a]
HE Env. & Pols. (/18)	9.03 (1.55)	9.39 (1.78)	0.420 (-0.173, 0.790)	0.076
Env. Total (/11)	7.94 (0.78)	7.62 (1.07)	0.700 (0.240, 0.903)	0.004
PA Total (/24)	19.91 (3.49)	16.10 (3.44)	0.916 (0.735, 0.975)	0.000
HE Total (/38)	22.25 (2.40)	22.61 (2.91)	0.775 (0.388, 0.929)	0.001
Overall Total (/73)	46.10 (4.78)	46.34 (5.54)	0.830 (0.513, 0.948)	0.000

Note: [a]. The estimator is the same, whether the interaction effect is present or not. Abbreviations used are: Standard Deviation (s.d.); Intraclass Correlation (ICC); Significance (Sig.); Environment (Env.); Neighbourhood (Neighb.); Physical Activity (PA); Healthy Eating (HE); Policies (Pols.).

Table 7 shows the CHASE percent agreement scores by facility and structure-based section (Environment, PA and Nutrition) and overall. Overall percent agreement

scores ranged from 70.08 to 89.80 (mean= 81.18%). Average percent agreement scores were: Section 1: Environment = 84.42%, Section 2: Physical Activity = 75.43%, and Section 3: Nutrition = 83.70%.

Table 7. CHASE Percent Agreement Reliability Scores

	Percent Agreement by CHASE Survey Section			
Facility	Env. Total	PA Total	HE Total	Overall Total
1	85.72	60.00	84.48	76.73
2	81.82	71.43	80.00	77.75
3	80.00	67.65	80.00	77.75
4	90.00	91.67	87.72	89.80
5	90.91	76.47	80.36	82.58
6	83.33	85.71	89.29	86.11
7	91.67	83.78	79.66	85.04
8	72.22	67.65	86.21	75.36
9	83.33	81.08	82.46	82.29
10	n/a	n/a	n/a	n/a
11	71.43	58.82	80.00	70.08
12	95.00	70.59	86.44	84.01
13	86.36	80.00	85.00	83.79
14	n/a	n/a	n/a	n/a
15	85.71	85.71	86.44	85.95
16	n/a	n/a	n/a	n/a
17	n/a	n/a	n/a	n/a
18	n/a	n/a	n/a	n/a
19	n/a	n/a	n/a	n/a
20	n/a	n/a	n/a	n/a
Average	84.42 (7.02)	75.43 (10.29)	83.70 (3.42)	81.18 (5.56)

Note. Facilities 10, 14, and 16-20 did not complete CHASE T2 and therefore reliability scores are not applicable for these facilities. Abbreviations used are: Environment (Env.); Physical Activity (PA); Healthy Eating (HE).

Chapter 5

Discussion

The primary aim of this study was to develop and establish the validity and reliability of an instrument to assess the environmental affordances for physical activity and healthy eating in after-school childcare facilities and to ensure that the assessment tool specifically reflected the Canadian context. The evidence for the validity of the Canadian Healthy After School Environments (CHASE) tool was mixed but the tool was reliable.

Logical Validity

Stage 1 of this study (development of the CHASE tool) began with the construction of a 75-question survey using items addressing children's health behaviours and after-school environments from 5 relevant tools (NAP SACC, EPAO, CHEW, SR-AHMED, and SHPPS). In comparison to the 5 tools that already existed, the draft CHASE survey was more specific to after-school child care (irrelevant items, such as those assessing preschool aged youth or school-related concepts like classroom and recess, were not included). Most questions from the NAP SACC and EPAO instruments were similar to each other and also most relevant to after-school child care and thus were incorporated in the construction of CHASE. The items from NAP SACC and EPAO were not altered in content; however their wording was altered to reflect the after school time period and the response categories were altered to construct a clear and consistent flow of questions throughout the CHASE survey.

THE SR-AHMED, CHEW and SHPPS tools were not as appropriate because of their target population, setting or scope but each contributed some key items. For instance, physical activity equipment/toys that were relevant to school aged youth were included from the SR-AHMED. There were some specific questions about health and physical education, nutrition services, healthy and safe school environment and faculty and staff health promotion from the SHPPS and CHEW instruments that were unique and applicable. Further, question structure and response categories were adopted where appropriate.

The first phase of validity testing showed that the concepts and items on the CHASE had logical validity. No items from the draft survey were removed through the expert review process but some preliminary questions were added to enhance clarity (e.g. first ask if milk is served and then ask number of times) and some terms were clarified (e.g. define active play). The final CHASE instrument was a 111-item survey, organized into 3 sections (Environment, PA, and Nutrition). Minor question wording and online survey set-up adjustments were then made after piloting the instrument with an after school childcare provider.

Concurrent Validity

The second stage of validity testing involved establishing the concurrent validity by comparing the measures obtained from the CHASE self-assessment tool with those from direct observation tools: the EPAO and PAORS. This method has been used in previous studies, such as in the HAAND study, in which the Healthy Afterschool Program Index for Physical Activity (HAPI-PA) tool was validated through comparison with a direct measure of pedometer steps (Ajja et al., 2012). The comparison with

objective measures is important, as studies developing and validating environmental audits previous to the HAAND study have not used objective measurements of PA (Ward et al., 2008; Benjamin et al., 2007).

The results indicated that the CHASE survey, represented by the subscale scores, was only strongly correlated with some of the EPAO subscales and the following objectively-measured PA indicators: proportion of time spent in PA, PA occasions, time spent in structured PA, outdoor PA, and PA intensity, as well as total minuets of PA and PA facilitation as measured by two instruments. The only PA-based subscale to demonstrate adequate validity was the PA practices score, which was negatively but significantly associated with the EPAO measure of television viewing. Given that the items within the CHASE PA-based subscales assessed opportunities for PA and that such opportunities have been previously shown to correlate with PA in a childcare setting (Ridgers et al., 2007; Pate et al., 2008), it was expected that the subscales would be related to objectively measured PA and this was not the case.

Rather unexpected was the finding that two CHASE HE subscales, Social HE Environment and HE Total subscales, were significantly correlated with several objective PA measures including: total PA minutes (as measured by both EPAO and PAORS), proportion of time spent in PA (which contains total PA minutes), total minutes of outdoor active play and total minutes of sedentary behaviour. It should be noted that the two HE measures were directly related to each other as the HE Total subscale included the Social HE Environment score. It is hard to explain this relationship, but perhaps a more positive approach to health (represented as providing a better HE environment

socially and overall) also represented an attitude or approach to health that extended to providing more opportunities for PA.

Another possible explanation for the findings is that the number of items included in subscales was higher for those relating to HE (n=16) in comparison to those relating to PA (n=13). A subscale with fewer items would be more affected by each difference in scores within the subscale. For instance, a single response (item) that did not agree with a specific PA behaviour would alter the subscale score more and thus the correlation more on a subscale with fewer items (affecting 1/13 of the PA total subscale score) in comparison to those with more items (affecting 1/16 of the HE total subscale score). Perhaps in order to compare subscales to one another, they should comprise the same number of items and that number should be larger to allow for correlations to be detected. Similar to the way in which EPAO and CHASE tools were searched for matching items, it may be beneficial to investigate the HAAND tools to see if more items could be matched with CHASE items and thus larger subscales could be created.

A possible reason for the lack strength in some correlations is that a ceiling or floor effect could have been operating in some subscales. For instance, Temple and colleagues (2009) showed that physical environments affording movement did not significantly associate with greater levels of PA in an early childcare setting. These researchers suggested that there may be a base level of equipment and other environmental affordances needed and that beyond this level, the environment does not appear to influence PA levels. Similarly, external environments like paths and fields may also have this limited effect where increases over and above a certain level make no difference to the outcome variable.

Similar to validity results for CHASE and objective measures of PA, only some subscale-level comparisons between the EPAO and CHASE instruments resulted in significant correlations. In particular, the PA Social Environment subscale and the HE Total subscale score were significantly correlated with the concept-matched subscales on the EPAO, indicating the concurrent validity of the self-report tool when compared to a previously validated tool (Ward et al., 2008). The agreement across instruments on these subscales, which measured matching items, indicates that the wording of these CHASE items is sufficient for self-report of accurate information. It should also be noted that the associations between the EPAO subscales and the CHASE PA Total and the Overall Total scores approached significance. It appeared that the CHASE tool could approximate some of the observed measures from the EPAO tool. Further research is needed to assess whether these correlations would be stronger if the subscales contained additional or different items. Given that EPAO has previously been shown to be a valid indicator of child care health environments (Ward et al., 2008), and that comparison of CHASE to EPAO subscales illustrated strong correlations for both Social HE Environment and the HE Total, these subscales could provide a valid assessment of the PA and HE child care environment in these domains as well.

Finally, the objective measures of PA minutes and proportion of time spent active represented in both the EPAO tool and the PAORS tool were strongly correlated with each other indicating their feasibility for future validation studies.

Reliability

The results from test-retest assessment using both ICCs and percent agreement found significant correlations between T1 and T2 for almost all subscale and section scores. Two subscales produced weak test-retest correlations, in particular Social PA Environment and PA Practices, and thus they may need revision and further investigation.

CHASE T1 and T2 ICCs showed strong correlations for 6 of the 9 subscales scores and for 9 of the 10 section scores. Specifically, ICCs illustrated strong associations for all but Social PA Environment, Social HE Environment and PA Practices subscales, and all but the HE Environment and Policies section. The correlation for the Social HE Environment subscale and the HE Environment and Policies section were moderate whereas those for Social PA Environment and PA Practices were weak. The reliability of the Social PA Environment subscale may have been limited because it was comprised of only 2 items. In comparison to a subscale containing more items, variability on only one item within the two-item subscale would account for much more (half) of the total score differences. Although the PA Practices subscale contains more items (x=5) than does the Social HE Environment subscale (x=4), it contains less than others (e.g. Physical PA Environment, x=9) and slight variations in responses from T1 to T2 would similarly impede the detection of significance. This is supported by the data where all total subscale scores, which include combinations of subscales and thus more item scores within, produced significant correlations. However, the HE Environment and Policies section, one of the largest sections, containing 18 items did not show this same pattern as the association was weak.

CHASE reliability item scores were above 75 percent agreement for all survey sections, and were above 80 percent for most sections as well as for the overall score. The mean agreement between CHASE executions (81.18%) was comparable to the mean agreement between observer pairs in the EPAO study (87.26%; Ward et al., 2008) as well as the HAAND study (ranging from 80-100% on all measures; Ajja et al., 2012). The high reliability indicates that CHASE items were clear and well understood by respondents and thus consistency could be expected.

Given that it has been recommended to use both ICC and percent agreement in combination to calculate the intrarater reliability (Kottner & Dassen, 2008), and that both analyses resulted in high overall agreement, the degree of intrarater reliability within the CHASE tool can be interpreted as high.

The first phase of CHASE logical validity and pilot testing likely contributed to the reliability of the tool. The HAAND study, like the CHASE study, used pilot testing followed by revisions in the early stages of tool design (Ajja et al., 2012). For establishing instrument reliabilities, the agreement computations protocol mirrored the EPAO study, where agreement for each item was calculated as the percentage of observer pairs (similar to reporter pairs for CHASE) in perfect agreement (Ward et al., 2008).

The percent agreement and ICC calculation should be interpreted with the fundamentals about each statistical method in mind. In comparison to ICC, which detects responses that are similar but do not necessarily match, the percent agreement method is conservative because it only scores for agreement if responses are exactly matching. Therefore any agreement claimed to be strong using this method is due to exact matches from T1 to T2. The percent agreement method however does not account for responses

that may match due to chance and doesn't work well with interval level scoring as is used in the sub-scales.

Limitations and Delimitations

The results of the CHASE study should be considered in light of a number of limitations, including: self-report and expectation biases; the low response rate and thus potentially biased sample; the use of multiple field observers; the PAORS which represented a modification of existing tools (TMAS and SOPLAY) had not been previously tested for validity and reliability; and finally the short time frame in which the EPAO was administered.

Self-report tools leave interpretation to the respondent and therefore answers to certain questions can be subjective. Given that NAP SACC, AHMED, CHEW and SHPPS assess the existence but not the quality of the environment, policies and practices, the online CHASE survey, which used questions from these tools would be vulnerable to the same issue. This could limit the study if, for instance, a question asks if a certain policy exists (yes or no) and it does, but the policy is not implemented with high enough quality to improve PA and HE affordance in a particular facility. In such a case, the respondent would likely answer 'yes' to the question, which would result in a high rating for that question and contribute to a higher overall survey score, implying a high degree of PA affordance that may not be there. Moreover, for questions that are subjective in nature, respondents may be inclined to answer in accordance with expectations. This could limit the study if, for instance, a question asks how often a certain practice is exhibited (never, not often, sometimes, often, or always) and the respondent knows the

practice is exhibited sometimes or often. In such a case, the respondent may choose the more ideal response of the two (often) if they feel that the practice is highly valued and expected of them. The subjective nature of questions like these could result in variability in answers and could impact the internal validity of the findings.

The use of the PAORS could have further limited the study results, as it represented a modification of two existing instruments (TMAS and SOPLAY) and the PAORS itself was not previously validated. In comparison the EPAO tool was pilot tested by 3 field observers before the audit tool was finalized (Ward et al., 2008). Although the CHASE tool was audited and piloted by a total of 8 individuals before finalization and the EPAO and SOPLAY tools used for observation have been shown to be valid and reliable (Ward et al., 2008; McKenzie, 2002), the results from the PAORS tool should be interpreted with this in mind. The present study highlighted some results that indicated the validity of the PAORS tool (through significant correlation with the EPAO tool) in measuring PA minutes and PA facilitation, but more research is needed to test its validity in measuring PA intensity.

The CHASE tool would benefit from testing against other types of objective measures of PA and HE. For instance, pedometers have been used to objectively measure PA in a similar study (Ajja et al., 2012). Further directly measured PA using pedometers or accelerometers to assess the CHASE tool may produce more precise measures of child engagement in PA and overcome any bias introduced by the respondent. It is important to emphasize that these types of devices do not offer the same advantages of observation, which allows for a description of not only the PA minutes and intensity, but also the context and facilitation style.

The EPAO study consisted of one full-day visit to each child care centre with observation using the EPAO tool across the whole day (Ward et al., 2008), whereas the current study had a much shorter observation window due to the shorter after-school time period. The shorter observation time could have limited the study. Some EPAO measurements, such as the number of servings of fruit and vegetables per day and the number of PA occasions, are likely to result in lower numbers with shorter observation times, and therefore the range across facilities would also be smaller. This could limit variability in scores and decrease the strength of correlations. A recent study by Bower and colleagues (2008) similarly assessed the environmental opportunities and PA behaviours in child cares; however they did so over a three-day observation period. Moreover, in the EPAO study, two or three observers each conducted the EPAO tool on the same day to ensure accuracy (Ward et al., 2008) and this may have enhanced the EPAO study results.

Observation bias could have also limited the present findings. Given that the child care staff received information about the study purposes and objectives relating to health behaviour prior to observation, it is possible that usual behaviour was altered to meet expectations. Specifically, it is possible that staff members from participating facilities planned more active games and opportunities, healthier snacks and reduced sedentary activities on observation dates.

The sample size is a limitation to this study. Although recent studies in the area have used sample sizes similar to that in the CHASE study (Bower et al., 2008, Ajja et al., 2013), they have also mentioned these numbers in discussion of limitations. A larger

sample size would increase the power and potentially the number of significant correlations between items and tools (Thomas, Nelson & Silverman, 2005).

The delimitations of the CHASE study were the ages of the children and the locations they were recruited from. The sample included boys and girls in grades kindergarten to six in the Canadian elementary school system, attending lower and middle Vancouver Island after-school child care facilities (registered, accredited or province-regulated after-school child care organizations) identified through child care licensing branches in regional public health units and the School Age Child Care Association of British Columbia.

Conclusion

The CHASE tool has mixed validity but appears to be a very reliable self-report tool for measuring the PA and HE environment of after-school child care programs. The Social HE Environment and HE Total subscales appeared to be valid having the only significant associations with the observed PA criterion measures, with the exception of PA Practices and Physical HE Environment, which each had a strong correlation with one of the criterion measures, television viewing and outdoor active play, respectively. However, the EPAO tool has been proven valid and reliable (Ward et al., 2008) and two of the CHASE subscales, namely Social PA Environment and HE Total, were strongly correlated with the matching EPAO subscales. Thus, the Social HE Environment, HE Total, PA Practices, Physical HE Environment and Social PA Environment subscales appear to be valid for use in the assessment of the after-school child care environment without modification. The Physical PA Environment, HE Practices, PA Total subscales

may be valid with some adjustments as well. Nevertheless, given that all subscales did not strongly correlate with all PA measures and EPAO subscale scores, further investigation into the survey as a whole is needed.

More formative work with stakeholders, including childcare practitioners should explore the disconnect between the self-report subscales and objective measures. Practitioners and experts should review the items contained in these three subscales to address why the items may not be representing the intended outcome behaviours.

Further testing of the CHASE tool could also be conducted to gain a better understanding of the degree of correlation with newly developed after school childcare assessment tools, specifically the HAAND tool (Ajja et al., 2012). Future studies may also benefit from comparing the CHASE survey responses with a multi-day or weeklong observation protocol child care programs.

Significance of the Study

The CHASE survey is one of the first self-administered tools created to assess the health environment of after-school care programs in Canada. Due to its online and self-administered nature, it could be easily distributed to child care facilities across Canada to collect information about programs in different areas. Once validity of the CHASE tool is confirmed, widespread distribution of the CHASE survey could yield important information on the policies, practices and environments in Canadian after-school child care programs. This, in turn, would allow researchers and practitioners to tailor interventions to meet different program needs and to improve the health environments at Canadian after-school child care programs.

Summary and Recommendations for Future Research

The CHASE tool appears to be a reliable tool for measuring after-school PA and HE environments, but improvements are needed to enhance its validity. Subsections that were significant should be included in a refined tool and this tool should be retested. CHASE HE subscales appeared to be valid when correlated with objective measures of PA behaviour; however further investigation with more extensive objective measurement of snack-time are needed to conclude that CHASE HE subscales are valid for measurement of HE as well. Future studies should use a greater sample size and should focus on more extensive objective PA and HE assessment of the validity of the CHASE tool. Future studies may also want to examine the environment and assess PA and HE behaviours according to the age of the children, as older groups may need more facilitation and structure when it comes to health behaviours at after-school child care. Despite limitations, the CHASE tool highlighted low scores on both PA and HE affordance, indicating that children are not being exposed to high enough levels of PA or HE while attending after-school child care. The results from the CHASE study indicate that it may be beneficial to implement PA and HE interventions targeting the after-school child care health environment.

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Appendix

Appendix A
Nutrition and Physical Activity Self-Assessment for Child Care

Nutrition and Physical Activity Self-Assessment for Child Care

Your Name: _____ Date: _____

Child Care Facility Name: _____

Please read each statement or question carefully and check the response that best fits your child care facility. Refer to the instruction sheet for clarification of question, examples, and definitions.

SECTION I: NUTRITION

(N1) Fruits and Vegetables				
A. Fruit (not juice) is offered:	☐ 3 times per week or less	☐ 4 times per week	☐ 1 time per day	☐ 2 or more times per day
B. Fruit is offered canned **in own juice** (no syrups), fresh, or frozen:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
C. Vegetables (not including French fries, tater tots, hash browns, or dried beans) are offered:	☐ 2 times per week or less	☐ 3-4 times per week	☐ 1 time per day	☐ 2 or more times per day
D. Vegetables, other than potatoes, corn, and green beans, are offered:	☐ Less than 1 time per week	☐ 1-2 times per week	☐ 3-4 times per week	☐ 1 or more times per day
E. Cooked vegetables are prepared with added meat fat, margarine or butter:	☐ All of the time	☐ Most of the time	☐ Some of the time	☐ Rarely or never
(N2) Meats, Fats, and Grains				
A. Fried or pre-fried potatoes (French fries, tater tots, hash browns) are offered:	☐ 3 or more times per week	☐ 2 times per week	☐ 1 time per week	☐ Less than once a week or never
B. Fried or pre-fried (frozen and breaded) meats (chicken nuggets) or fish (fish sticks) are offered:	☐ 3 or more times per week	☐ 2 times per week	☐ 1 time per week	☐ Less than once a week or never
C. High fat meats (sausage, bacon, hot dogs, bologna, ground beef) are offered:	☐ 3 or more times per week	☐ 2 times per week	☐ 1 time per week	☐ Less than once a week or never

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D. Beans or lean meats (baked or broiled chicken, turkey, or fish) are offered:	☐ Less than 1 time per week	☐ 1-2 times per week	☐ 3-4 times per week	☐ 1 or more times per day
E. High fiber, whole grain foods (whole wheat bread, oatmeal, brown rice, Cheerios®, etc) are offered:	☐ 1 time per week or less	☐ 2-4 times per week	☐ 1 times per day	☐ 2 or more times per day
F. Sweets or salty foods (cookies, cakes, muffins, chips, etc) are offered:	☐ 1 or more times per day	☐ 3-4 times per week	☐ 1-2 times per week	☐ Less than once a week or never
(N3) Beverages				
A. Drinking water outside is:	☐ Not visible	☐ Visible, but only available during designated water breaks	☐ Easily visible and available on request	☐ Easily visible and available for self-serve
B. Drinking water inside is:	☐ Not visible	☐ Visible, but only available during designated water breaks	☐ Easily visible and available on request	☐ Easily visible and available for self-serve
C. 100% fruit juice is offered:	☐ 2 or more times per day	☐ 1 time per day	☐ 3-4 times per week	☐ 2 times per week or less
D. Sugary drinks (Kool-Aid™, sports drinks, sweet tea, punches, soda) other than 100% juice are offered:	☐ 1 or more times per week	☐ Less than 1 time per week	☐ Less than 1 time per month	☐ Rarely or never
E. Milk served to children ages 2 years and older is usually:	☐ Whole or regular	☐ 2% reduced fat	☐ 1% low-fat	☐ Skim or non-fat
F. Soda and other vending machines are located:	☐ In entrance or front of building	☐ In public areas, but not entrance	☐ Out of sight of parents and children	☐ No vending machines on site
(N4) Menus and Variety				
A. Menus used are:	☐ 1-week cycle	☐ 2-week cycle	☐ 3-week cycle or more without seasonal change	☐ 3-week cycle or more with seasonal change
B. Weekly menus include a combination of both new and familiar foods:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time

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C. Weekly menus include foods from a variety of cultures:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
(N5) Feeding Practices				
A. When children eat less than half of a meal or snack, the staff help determine if they are full before removing the plate:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
B. When children request seconds, staff help determine if they are still hungry before serving additional food:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
C. Children are encouraged by staff to try a new or less favorite food:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
D. Food is used to encourage positive behavior:	☐ All of the time	☐ Most of the time	☐ Some of the time	☐ Rarely or never
(N6) Foods Offered Outside of Regular Meals and Snacks				
A. Guidelines provided to parents for food brought in for holidays or celebrations are:	☐ Not available	☐ Loose guidelines with healthier options encouraged	☐ Written guidelines for healthier options that are not always enforced	☐ Written guidelines for healthier options that are usually enforced
B. Holidays are celebrated with mostly healthy foods or with non-food treats like stickers:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
C. Fundraising consists of selling only non-food items (like wrapping paper, coupon books or magazines):	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
(N7) Supporting Healthy Eating				
A. Staff join children at the table for meals:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
B. Meals are served family style (children serve themselves with limited help):	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
C. Staff consume the same food and drinks as the children:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time

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D. Staff eat or drink less healthy foods (especially sweets, soda and fast food) in front of the children:	☐ All of the time	☐ Most of the time	☐ Some of the time	☐ Rarely or never
E. Staff talk informally with children about trying and enjoying healthy foods:	☐ Rarely or never	☐ Some of the time	☐ Most of the time	☐ All of the time
F. Support for good nutrition is visibly displayed in 2 to 5 year old classrooms and common areas by:	☐ No posters, pictures, or books about healthy food displayed	☐ A few posters, pictures, or books about healthy food displayed in a few rooms	☐ Posters, pictures, or books about healthy food displayed in most rooms	☐ Posters, pictures, or books about healthy food displayed in every room
(N8) Nutrition Education for Staff, Children, and Parents				
A. Training opportunities on nutrition (other than food safety and food program guidelines) are provided for staff:	☐ Rarely or never	☐ Less than 1 time per year	☐ 1 time per year	☐ 2 times per year or more
B. Nutrition education is provided for children through a standardized curriculum:	☐ Rarely or never	☐ 1 time per month	☐ 2-3 times per month	☐ 1 time per week or more
C. Nutrition education opportunities are offered to parents (workshops, activities and take home materials):	☐ Rarely or never	☐ Less than 1 time per year	☐ 1 time per year	☐ 2 times per year or more
(N9) Nutrition Policy				
A. A written policy on nutrition and food service that covers most of the above topics:	☐ Does not exist	☐ Exists informally, but is not written or followed	☐ Is written, but not always followed	☐ Is written, available and followed

SECTION II: PHYSICAL ACTIVITY

(PA1) Active Play and Inactive Time				
A. Active play time is provided to all children:	☐ 45 minutes or less each day	☐ 46-90 minutes each day	☐ 91-120 minutes each day	☐ More than 120 minutes each day
B. Teacher-led physical activity is provided to all children:	☐ 1 time per week or less	☐ 2-4 times per week	☐ 1 time per day	☐ 2 or more times per day

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C. Outdoor active play is provided for all children:	☐ 1 time per week or less	☐ 2-4 times per week	☐ 1 time per day	☐ 2 or more times per day
D. Active play time is withheld for children who misbehave:	☐ Often	☐ Sometimes	☐ Never	☐ Never and we provide more active play time for good behavior
E. Children are seated (excluding naps and meals) more than 30 minutes at a time:	☐ 1 or more times per day	☐ 3-4 times per week	☐ 1-2 times per week	☐ Less than once a week or never
F. Television and video use consists of the:	☐ TV turned on for 5 or more hours per week	☐ TV turned on for 3-4 hours per week	☐ TV turned on 2 hours per week or less	☐ TV used rarely or never
(PA2) Play Environment				
A. Fixed play equipment (tunnels, balancing equipment, climbing equipment, overhead ladders) is:	☐ Unavailable at our site	☐ Only one type of equipment is available	☐ Different equipment available that suits most children	☐ Wide variety of equipment available and accommodates needs of all children
B. Portable play equipment (wheel toys, balls, hoops, ribbons) consists of:	☐ Little variety and children must take turns	☐ Some variety but children must take turns	☐ Good variety but children must take turns	☐ Lots of variety for children to use at the same time
C. Outdoor portable play equipment is:	☐ Available during special times only	☐ Located out of child sight and reach, staff must access	☐ Available on request	☐ Freely available by children at all times
D. Outdoor play space includes:	☐ No open running spaces or track/path for wheeled toys	☐ Very limited open running space, no track/path for wheeled toys	☐ Plenty of open running space, no track/path for wheeled toys	☐ Plenty of open running spaces and a track/path for wheeled toys
E. Indoor play space is available:	☐ For quiet play only	☐ For very limited movement (jumping and rolling)	☐ For some active play (jumping, rolling and skipping)	☐ For all activities, including running

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(PA3) Supporting Physical Activity				
A. During active play time staff:	☐ Supervise play only (mostly sit or stand)	☐ Sometimes encourage children to be active	☐ Sometimes encourage children to be active and join children in active play	☐ Often encourage children to be active and join children in active play
B. Support for physical activity is visibly displayed in 2 to 5 year old classrooms and common areas by:	☐ No posters, pictures, or books about physical activity displayed	☐ A few posters, pictures, or books about physical activity displayed in a few rooms	☐ Posters, pictures, or books about physical activity are displayed in most rooms	☐ Posters, pictures, or books about physical activity are displayed in every room
(PA4) Physical Activity Education for Staff, Children, and Parents				
A. Training opportunities are provided for staff in physical activity (not including playground safety):	☐ Rarely or never	☐ Less than 1 time per year	☐ 1 time per year	☐ 2 times per year or more
B. Physical activity education (motor-skill development) is provided for children through a standardized curriculum:	☐ Rarely or never	☐ 1 time per month	☐ 2-3 times per month	☐ 1 time per week or more
C. Physical activity education is offered to parents (workshops, activities and take home materials):	☐ Rarely or never	☐ Less than 1 time per year	☐ 1 time per year	☐ 2 times per year or more
(PA5) Physical Activity Policy				
A. A written policy on physical activity that covers most of the above topics:	☐ Does not exist	☐ Exists informally, but is not written or followed	☐ Is written, but not always followed	☐ Is written, available and followed

For more information about this self-assessment instrument and the NAP SACC project, please visit www.napsacc.org.

Please use the following citation when referencing this instrument: Ammerman, AS, Benjamin, SE, Sommers, JK, Ward, DS. 2004. The Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) environmental self-assessment instrument. Division of Public Health, NC DHHS, Raleigh, NC, and the Center for Health Promotion and Disease Prevention, University of North Carolina at Chapel Hill. Revised May 2007.

Appendix B
Environmental and Policy Assessment and Observation

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EPAO Observation

Center Name

Date of Observation: ☐☐ / ☐☐ / ☐☐☐☐ (month / day / year)

Observer ID#: ☐☐

Start time: ☐☐ : ☐☐

Number of children in classroom: ☐☐

Ages of children: *[Mark all that apply]*
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6

Eating Occasions Observed: *[Mark all that apply]*
- ○ Breakfast
- ○ AM Snack
- ○ Lunch
- ○ PM Snack

Total Physical Activity occasions observed: ☐☐

End time: ☐☐ : ☐☐

_____
Initials of Teacher Observed

Weather:

Eating Occasions - Foods

1. How was **breakfast** served? *[Choose one.]*
   - ○ family style
   - ○ delivered and served in prepared portions
   - ○ delivered in bulk and portioned by staff
   - ○ N/A

2. How was **a.m. snack** served? *[Choose one.]*
   - ○ family style
   - ○ delivered and served in prepared portions
   - ○ delivered in bulk and portioned by staff
   - ○ N/A

3. How was **lunch** served? *[Choose one.]*
   - ○ family style
   - ○ delivered and served in prepared portions
   - ○ delivered in bulk and portioned by staff
   - ○ N/A

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EPAO Observation

4. How was **p.m. snack** served? *[Choose one.]*

- ○ family style
- ○ delivered and served in prepared portions
- ○ delivered in bulk and portioned by staff
- ○ N/A

5. How many times was **fruit** served the day of observation?

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

6. How many times was **fruit** served fresh, frozed or canned in own juice the day of observation?

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

7. How many times was **100% fruit juice** served the day of observation?

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

8. How many times were **vegetables** (not including French fries or fried vegetables) served the day of observation?

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

9. How many times were **dark green, red, orange or yellow vegetables** served the day of observation?

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

10. Was **margarine, butter, or meat fat** visible on vegetables?

- ○ yes
- ○ no → 10a. According to staff, during the day of observation were vegetables prepared with added fat? ○ yes ○ no ○ unsure
- ○ no vegetables served

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EPAO Observation

11. Are vegetables **typically** served with added fat? (ask classroom staff or cook) ○ yes ○ no ○ unsure

12. How many times were **fried or pre-fried vegetables** (e.g., tator tots, french fries, fried okra, fried zucchini and hashbrowns) served the day of observation? ○ 0 ○ 1 ○ 2 ○ 3 ○ other → ☐☐

13. How many times were **fried or pre-fried meats** (e.g., chicken nuggets, fish sticks) served the day of observation? ○ 0 ○ 1 ○ 2 ○ 3 ○ other → ☐☐

14. How many times were **high fat meats** (e.g., ground beef, bologna, hotdogs, ham) served the day of observation? ○ 0 ○ 1 ○ 2 ○ 3 ○ other → ☐☐

15. How many times were **lean meats/fish** (e.g., baked chicken or turkey breasts, baked fish, deli turkey, tuna and salmon) served the day of observation? ○ 0 ○ 1 ○ 2 ○ 3 ○ other → ☐☐

16. How many times were **beans/lentils** served the day of observation? ○ 0 ○ 1 ○ 2 ○ 3 ○ other → ☐☐

17. How many times were **high sugar and/or high fat foods(not condiments)** served the day of observation? ○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

18. How many times were **high sugar and/or high fat condiments** served the day of observation? ○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

19. How many times were **high fiber grains** served the day of observation? ○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

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EPAO Observation

Eating Occasions - Beverages

20. Was drinking water for children visible in the classroom?

- ○ yes ➔ 20a. How accessible was drinking water to children in the classroom?
  - ○ available for self-serve (child-level fountain or pitcher/cups on table)
  - ○ available by request only
- ○ no

20b. If no, is there a water fountain in a nearby hallway?

- ○ yes ➔ 20b_1. How accessible is this fountain to children?
  - ○ available by request only (must ask permission to leave classroom)
  - ○ during teacher-designated water breaks
- ○ no

21. Did you witness teachers prompting children throughout the day to drink water?

- ○ yes, regularly (multiple times throughout the day, not just specific occasions such as coming in from outdoor play)
- ○ yes, at specific times only (such as coming in from outdoor play)
- ○ no

22. How many times were **sugar drinks** (Kool-aid, sports drinks, sweet tea, punch, sodas) served the day of observation?

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ➔ ☐☐

23. How many times was **milk** served the day of observation?

○ 0 ○ 1 ○ 2 ○ 3 ○ other ➔ ☐☐

24. What type of **milk** was served **to the majority** of children at a majority of meals?
[Mark only one.]

○ Whole	○ Skim	○ Rice milk
○ 2%	○ Whole, flavored	○ Soy milk
○ 1%	○ Lower fat, flavored (2%, 1%, skim)	○ Lactaid

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EPAO Observation

25. Note other types of **milk** served to **selected** children: *[Mark all that apply.]*

○ Whole	○ Skim	○ Rice milk
○ 2%	○ Whole, flavored	○ Soy milk
○ 1%	○ Lower fat, flavored (2%, 1%, skim)	○ Lactaid

Eating Occasions - Staff Behavior

26. Did staff push children to eat more than they want to (e.g., clean your plate, you won't get dessert until you finish lunch)?

○ yes → 26a. How many eating occasions was the behavior observed?
○ no ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

27. Did staff serve children second helpings without being asked for more by the child (see an empty plate and add food without request by child)?

○ yes → 27a. How many eating occasions was the behavior observed?
○ no ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

28. Did staff positively and gently encourage children to try new or less favorite foods?

○ yes → 28a. How many eating occasions was the behavior observed?
○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐
○ no (children resisted eating but were not encouraged)
○ no children resisting eating observed

29. Was food used to control behavior?

○ yes → 29a. How many eating occasions was the behavior observed?
○ no ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

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EPAO Observation

30. Did staff sit with children during lunch?

○ yes → 30a. Did staff consume the same food as children? → ○ yes ○ no

○ no

31. Did staff eat and/or drink less healthy foods in front of children?

○ yes → 31a. How many meals? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

○ no

○ did not observe staff eating

32. Did staff talk with children about healthy foods?

○ yes → 32a. How many separate times did you observe staff talking to chilcren about healthy foods? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

○ no

33. Was any **formal** nutrition education for children observed?

○ yes ○ no

Physical Activity - Child Behaviors

34. How many minutes of total active play time was observed (includes indoor, outdoor, structured and unstructured)?

☐☐☐ *minutes*

35. Was structured physical activity observed?

○ no

○ yes ↓

35a. How many occasions? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ↓

35b. Total minutes of structured PA observed: ☐☐☐ *minutes* ☐☐

35c. Was the structured PA optional for children? ○ yes ○ no

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EPAO Observation

36. Did you observe any outdoor active play?

○ yes ➔ 36a. How many times/day? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ➔ ☐☐

○ no ➔ 36b. Was it due to weather (too hot, too cold, rain/snow)?

○ yes ○ no ○ unsure

37. How many total minutes of outdoor active play (structured and unstructured) was observed?

☐☐☐ *minutes*

38. Was drinking water for children available outdoors?

○ yes ○ no ○ no outdoor time observed ➔ 38a. Did you see a drinking fountain located in the outdoor play area? ○ yes ○ no

39. While outdoors, did you witness teachers prompting children to drink water?

○ yes ○ no ○ no outdoor time observed

Sedentary Activities - Child

40. Did you observe children seated for more than 30 minutes at a time (excluding nap and meal times)?

○ yes ➔ 40a. How many times/day? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ➔ ☐☐

○ no

40b. How many total minutes of seated activity (majority of the class seated) was observed?

☐☐☐ *minutes*

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EPAO Observation

41. Was a TV present in the room? ○ yes ○ no

42. Was TV viewing observed?

○ yes → 42a. Total minutes TV was on: ☐☐☐ *minutes*

○ no

42b. Was it on during meals? ○ yes → 42b_1. If yes, how many meals? ○ 1 ○ 2 ○ 3 or more

○ no

42c. Was the TV used only for viewing educational programs? ○ yes ○ no

43. Was a VCR/DVD present in the room? ○ yes ○ no

44. Was there a video game system present in the room? ○ yes ○ no

45. Was a computer present in the room for use by children? ○ yes ○ no

46. Was video game or computer game playing observed?

○ yes → 46a. Total number of minutes computer/video game playing was observed: ☐☐☐ *minutes*

○ no

46b. Was it being used for educational purposes only? ○ yes ○ no

46c. How many total children participated in computer/video game playing during the entire day? ☐☐ *# of children*

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EPAO Observation

Physical Activity - Staff Behaviors

47. Did you observe restricting active play as punishment?

○ yes ➔ 47a. How many times/day? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ➔ ☐☐

○ no

48. Did staff join in active play?

○ yes ➔ 48a. How many times/day? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ➔ ☐☐

○ no

49. How many positive statements were made about physical activity (e.g., Good throw!, Running is fun!, I like the way you threw that ball!)?

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ➔ ☐☐

50. Did staff provide prompts to **increase** physical activity (e.g., Can you jump higher?, Can you hop on one foot?)?

○ yes ➔ 50a. How many times/day? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ➔ ☐☐

○ no

51. Did staff provide prompts to **decrease** physical activity (e.g., Slow down!, Give it a rest! Don't climb on the slide!)?

○ yes ➔ 51a. How many times/day? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ➔ ☐☐

○ no

52. Were any **formal** physical education lessons for children observed? ○ yes ○ no

53. Were any extra-curricular (special) physical activity programs provided to children on a fee basis (e.g., Tumbling Tots, Tumble Bus)?

○ yes ➔ 53a. Were any active alternatives provided for those children that did not participate? ➔ ○ yes ○ no

○ no

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EPAO Observation

Center Environment

54. Where were soda and other vending machines located?

- ○ in entrance or front
- ○ in public areas, but not the entrance → 54a. Did they contain only healthy options (e.g., water, milk, 100% fruit juice, granola bars, pretzels, nuts)? → ○ yes ○ no
- ○ out of sight of parents and kids
- ○ no vending machines on site

Please indicate where these pieces of physical activity equipment (both fixed and portable) were located:

55. Fixed Play Equipment	***indoors only***	***outdoors only***	***both indoors & outdoors***	***not present***
a. balancing surfaces (balance beams, boards, etc.)	○	○	○	○
b. basketball hoop	○	○	○	○
c. climbing structures (jungle gyms, ladders, etc.)	○	○	○	○
d. merry-go-round	○	○	○	○
e. pool	○	○	○	○
f. sandbox	○	○	○	○
g. see-saw	○	○	○	○
h. slides	○	○	○	○
i. swinging equipment (swings, rope, etc.)	○	○	○	○
j. tricycle track	○	○	○	○
k. tunnels	○	○	○	○

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EPAO Observation

56. Portable Play Equipment	***indoors only***	***outdoors only***	***both indoors & outdoors***	***not present***
a. ball play equipment	○	○	○	○
b. climbing structures (ladders, jumble gyms, etc.)	○	○	○	○
c. floor play equipment (tumbling mats, carpet squares, etc.)	○	○	○	○
d. jumping play equipment (jump ropes, hula hoops)	○	○	○	○
e. parachute	○	○	○	○
f. push/pull toys (wagon, scooters, etc.)	○	○	○	○
g. riding toys (tricycles, cars, etc.)	○	○	○	○
h. rocking & twisting toys (rocking horse, sit-n-spin, etc.)	○	○	○	○
i. sand/water play toys (buckets, scoops, shovels, etc.)	○	○	○	○
j. slides	○	○	○	○
k. twirling play equipment (ribbons, scarves, batons, etc.)	○	○	○	○

57. Was outdoor running space . . .

- ○ unobstructed with plenty of space for groups games (tag, red rover, etc.)
- ○ some obstruction, but space was adequate for individual play (running, skipping, etc.)
- ○ plenty of space for play, but obstructed with play equipment
- ○ little running space or completely obstructed

58. Did staff limit or restrict outdoor play area in a way that substantially affect active play (more than 1/3 of total play space or quipment)?

○ yes → 57a. How many outdoor play occasions? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other → ☐☐

○ no

59. Was indoor play space suitable for . . .

- ○ quiet play (classroom is small and not a lot of room for movement)
- ○ limited movement/some active play (able to translocate by walking, skipping, hopping, jumping, etc.)
- ○ all activities (easily able to perform all gross motor activities)

60. Were any posters, pictures or displayed books about **physical activity** present in the observation room?

○ yes ➔ 60a. How many were present? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ☐☐

○ no

61. Were any posters, pictures or displayed books about **nutrition** present in the observation room?

○ yes ➔ 61a. How many were present? ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ other ☐☐

○ no

Appendix C
Affordances in the Home Environment for Gross Motor Development

1

affordances in the home environment motor development

AHEMD (18-42 months)

Child Characterization

Child's Name: _____ **Code:** **Date:**

Male ☐ Female ☐ Birth Date: ____/____/____ Birth Weight: _____ lbs

How long has your child attended childcare?	Never	Less 6 month	6 to 12 months	More 12 months
	☐	☐	☐	☐

Ethnicity: White ☐ Black or African-American ☐ Hispanic or Latino ☐ Asian ☐
American Indian or Alaska Native ☐ Native Hawaiian or other Pacific Islander ☐

Family Characterization

1. How many adults live in the family house?	1 ☐	2 ☐	3 ☐	4 ☐	5 or more ☐
2. How many children live in the family house?	1 ☐	2 ☐	3 ☐	4 ☐	5 or more ☐
3. How many rooms do you have in your house? *(please do not count the bathrooms)*	1 ☐	2 ☐	3 ☐	4 ☐	5 or more ☐
4. How long has your child lived at this house?	Less 6 month ☐		6 to 12 months ☐		More 12 months ☐

	Elementary School	Middle School	High School	College	Master	PhD
5. What's the child's father's education ?	☐	☐	☐	☐	☐	☐
6. What's the child's mother's education ?	☐	☐	☐	☐	☐	☐

	Under $10,000	$10,000 to $15,000	$15,000 to 25,000	$25,000 to $35,000	$35,000 to $50,000	$50,000 and over
7. What's the annual household income ?	☐	☐	☐	☐	☐	☐

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Physical space in the home

Please read carefully each question and mark the box respective to your answer (Yes or No)

		YES	NO
8	Outside your house (but associated with it) is there ample space for your child to play or move around freely? *(backyard, front yard, garden, etc)*	☐	☐

If you answered YES please proceed with the next question, if you answered NO please go to question number 15

In the outside space is (are) there:		YES	NO
9	more than one type of ground texture? *(grass, dirt, concrete, wood, sand, etc).*	☐	☐
10	one or more sloped surfaces? *(varied degrees and types of inclines or gradual slopes and slopes).*	☐	☐
11	any apparatus (man made or natural) that your children can grasp and hang from ?	☐	☐
12	any stairs*? (at least two (2) or more steps)*	☐	☐
13	any apparatus or platform that permits your child to climb on/off and step or jump from. *(It must be about eight-inches or more)*	☐	☐
14	a play area *(playground)* designed for your young children ?	☐	☐

Inside your house is (are) there:		YES	NO
15.	enough space for your child to play or move around freely?	☐	☐
16.	more than one type of ground texture? *(carpet, wood, tile, linoleum, etc).*	☐	☐
17.	material for your child to fall safely on*? (carpet with padding, one-inch mat,, etc)*	☐	☐
18.	any furniture or apparatus that your children can grasp and hang from safely?	☐	☐
19.	any stairs*? (at least two (2) or more steps)*	☐	☐
20.	any furniture or apparatus that permits your child to climb on/off and step or fall from? *(Examples are sofas, small tables, chair, etc).*	☐	☐
21.	any furniture or apparatus with a platform eight-inches (8") tall or more, the child can use to jump from?	☐	☐
22.	a playroom? *(room used **only** for kids to play)*	☐	☐
23.	a special place for toys that is accessible to the child so that she/he may choose when and with what to play? *(toy bins, drawers, or shelves)*	☐	☐

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Daily activities in the home

During the day (but only referring to the time spent in your house):	YES	NO
24. My child plays with other children as a usual and ordinary every day event.	☐	☐
25. I (or my husband/wife) usually have a daily special time for playing with my child.	☐	☐
26. Other adults, rather than parents, regularly play with my child.	☐	☐
27. When playing, my child is always allowed to choose the toys or physical activities by herself / himself.	☐	☐
28. My child usually wears clothes that allow freedom to move and explore.	☐	☐
29. My child is often barefoot in the house.	☐	☐
30. I (or my husband/wife) usually try to encourage my child to reach and grasp objects.	☐	☐
31. I (or my husband/wife) usually try to engage my child in movements, games or actions in order to teach her/him parts of the body.	☐	☐
32. I (or my husband/wife) regularly try to teach my child movement or action words as "stop", "run", "walk", "crawl", etc.	☐	☐

On a typical day, how would you describe the amount of awake time your child spends in each of the situations below? *(Read carefully each question and mark the box respective to your answer)*

33. Carried in adult arms, attached to caregiver's body or in some carrying device.

No time ☐ *Very little time* ☐ *Some time* ☐ *A long time* ☐

34. In a seating device (high chair, stroller, car seat, sofa, or any other type of seating devices)

No time ☐ *Very little time* ☐ *Some time* ☐ *A long time* ☐

35. In a Playpen or some other similar equipment.

No time ☐ *Very little time* ☐ *Some time* ☐ *A long time* ☐

36. On the bed or crib (while awake).

No time ☐ *Very little time* ☐ *Some time* ☐ *A long time* ☐

37. Restrained to a specific space in the floor

No time ☐ *Very little time* ☐ *Some time* ☐ *A long time* ☐

38. Free to move in any space of the house

No time ☐ *Very little time* ☐ *Some time* ☐ *A long time* ☐

39. How do you consider the living space inside your house?

Very small ☐ *Reasonable, moderate* ☐ *Small* ☐ *Ample, Big* ☐

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Play materials in the home

On each toy group listed below please check the box for the number of toys you have in your house. Please read carefully each group general descriptions for deciding if you have this type of toy in your house.

Figures are only examples to help you better understand the description. You do not need to have the exact toy represented to count it in the group. ***Similar toys should be counted***

40	Stuffed toys
Examples are: 	
How many of these toys do you have in your house?	
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐	

41	Dolls and other play figures and respective equipment.
Examples are: 	
How many of these toys do you have in your house?	
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐	

42	All kind of puppets (small hand puppets)
Examples are: 	
How many of these toys do you have in your house?	
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐	

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43. House equipment, telephone, cooking play material, play tools, and other play materials that simulate adult home activities.

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

44 Vehicles, animals or other toys to be pushed and rolled

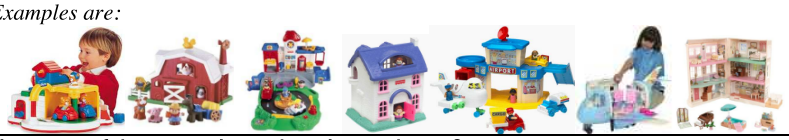
Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

45. Familiar play scenes (farm, doll house, airport, garage, etc) with people/animal figures, vehicles, and simple supported material

Examples are:



How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

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46	Puzzles (4-5 pieces) and Shape sorters
Examples are:	
How many of these toys do you have in your house?	
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐	

47	Stacking (6-12 pieces) and Nesting toys
Examples are:	
How many of these toys do you have in your house?	
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐	

48	Lacing cubes or boards and large colored beads
Examples are:	
How many of these toys do you have in your house?	
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐	

49	Peg boards
Examples are:	
How many of these toys do you have in your house?	
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐	

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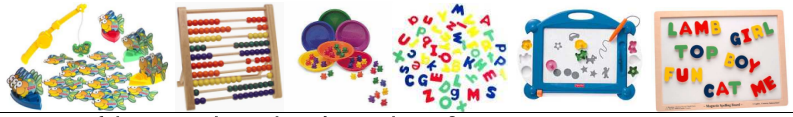
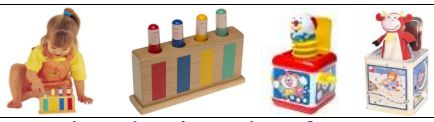
50. Simple matching toys, Simple number counting toys, Magnetic boards w/ shapes, animals, letters, Color forms.
Examples are: 
How many of these toys do you have in your house?
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

51 Pop-up-toys and Jack-in-the-box toys.
Examples are: 
How many of these toys do you have in your house?
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

52 Multi-activities tables and apparatus.
Examples are: 
How many of these toys do you have in your house?
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

53 Small Blocks, Lego type bricks, small play construction sets.
Examples are: 
How many of these toys do you have in your house?
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

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54 Large plastic bricks to put together on construction settings
Examples are: 
How many of these toys do you have in your house?
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

55. Books (picture, stories with repetition, pop-up, hidden pictures, dressing, etc)
Examples are: 
How many of these toys do you have in your house?
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

56. Sand boxes, Sand play toys, Water play toys (floating, funnels, colanders, containers, etc)
Examples are: 
How many of these toys do you have in your house?
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

57. Materials for designing and coloring: Large crayons, Large Paper, Non-toxic paints (finger, tempera) and short handled brushes w/ blunt ends, Clay or dough, Large, sturdy markers, Blunt-end scissors, Large Chalk
Examples are: 
How many of these toys do you have in your house?
None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

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58. Simple games, Simple matching and lotto material, Color, picture dominoes, Board games based on chance *(only a few large pieces)*

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

59 Musical toys (music box – hand-cranked by child)

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

60. Musical materials, All rhythm instruments (bells, rattles, cymbals, drums, triangle, rhythm stick, xylophones), Horns and whistles

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

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61. Play materials used for gross movements with the arm and legs (throwing, catching, kicking, rebounding, striking, etc). Balls of different sizes and colors, Bats, Baseball Gloves, Throwing Targets, etc.

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

62. Play materials used with upright locomotion. Examples are Pull or push toys, Little horses to ride on, Scooters, etc

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

63. Play materials used for gross movement exploration (sliding, creeping, climbing, rolling, etc). Examples are Slides, Stairs, Tunnels, Climbing apparatus, Exercise mattresses, Pools, Parachutes, etc.

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

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64. Auto propelled play materials used for riding on, all types of ride-on toys (propelled by bouncing or pushing) and tricycles.

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

65 Swings, rocking and twisting toys.

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

66. Mirror (full-length) that can be used by the children in their motor activities.

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

67. Audio equipment (CD or tape Players and children's music CD's or Tapes)

Examples are:

How many of these toys do you have in your house?

None ☐ *One* ☐ *Two* ☐ *Three* ☐ *Four* ☐ *Five* ☐ *More than 5* ☐

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Appendix D
Checklist of Health Promotion Environments at Worksites

Version 5

CHECKLIST OF HEALTH PROMOTION ENVIRONMENTS AT WORKSITES

(CHEW)

V ERSION: 2001

OBSERVATION

Worksite:_____

Building/Address:_____

Date:_____Time:_____Observer:_____

BUILDING ASSESSMENT

1.	Number of buildings at worksite	No. = _____
2.	Number of Floors	No. = _____
3.	Worksite is on how many floors?	No. = _____
4.	Freestanding or connected to other buildings?	1. Freestanding
		2. Connected
5.	Is worksite all or part of building?	1. All
		2. Part
6.	Number of bicycles seen stored inside building:	
	Tally:_____	Total no. = _____
7.	Number of male changing rooms:	
	Tally:_____	Total no. = _____
8.	Number of female changing rooms:	
	Tally:_____	Total no. = _____
9.	Number of unisex changing rooms:	
	Tally:_____	Total no. = _____
10.	Number of male showers:	
	Tally:_____	Total no. = _____
11.	Number of female showers:	
	Tally:_____	Total no. = _____
12.	Number of unisex showers:	
	Tally:_____	Total no. = _____

SIGNS AND BULLETIN BOARDS (the information environment)

13.	Number of bulletin boards at the worksite	
	Tally:_____	Total no. = _____

Physical Activity:

14. Number of signs/posters generally encouraging physical activity (other than related to stairs):
    Tally:_____ Total no. = _____
15. Number of notices about onsite exercise classes
    Tally:_____ Total no. = _____
16. Number of notices about offsite physical activity/ sports sponsored by the specific worksite
    Tally:_____ Total no. = _____
17. Number of notices about offsite physical activity/ sports sponsored by other organizations (this can include the parent company):
    Tally:_____ Total no. = _____
18. Number of other notices about physical activity/ sports
    Tally:_____ Total no. = _____

Nutrition:

19. Number of signs/posters encouraging dietary fat reduction or promoting programs
    Tally:_____ Total no. = _____
20. Number of signs/posters encouraging more fruits and vegetables or promoting programs
    Tally:_____ Total no. = _____
21. Number of notices on bulletin board about dietary information
    Tally:_____ Total no. = _____
22. Number of notices on bulletin board about weight loss
    Tally:_____ Total no. = _____

Smoking:

23. Number of entrances to building
    Tally:_____ Total no.= _____
24. Number of signs about smoking restrictions on or around entrance doors
    Tally:_____ Total no.= _____
25. Number of notices on bulletin board about smoking

cessation programs or smoking policies

Tally:_____ Total no. = _____

26. Number of signs/posters about smoking

Tally:_____ Total no. = _____

Alcohol:

27. Number of signs/posters about responsible drinking

Tally:_____ Total no. = _____

28. Number of notices on bulletin boards about responsible drinking or alcohol policies

Tally:_____ Total no. = _____

Health Promotion:

29. Number of bulletin boards dedicated to health promotion

Tally:_____ Total no. = _____

30. Number of postings related to combination of diet, physical activity, smoking, or alcohol

Tally:_____ Total no. = _____

ELEVATOR CHECKLIST

(tick if yes or present)	Entrance 1	Entrance 2	Entrance 3
Elevator (or sign) visible from major employee entrance	31. ❑	33. ❑	35. ❑
Sign encouraging use of stairs at elevators	32. ❑	34. ❑	36. ❑

37. Total number of elevators Total No. = _____

STAIR CHECKLIST

	Stairwell Number					
(tick if yes or present)	#1	#2	#3	#4	#5	#6
Staircase not enclosed in stairwell	38.	50.	62.	74.	86.	98.
Able to see stairs from entrance	39.	51.	63.	75.	87.	99.
Carpeted	40.	52.	64.	76.	88.	100.
Painted/decorated/finished walls	41.	53.	65.	77.	89.	101.
Utilities not visible in stairwell (e.g., gas pipes, elec wires)	42.	54.	66.	78.	90.	102.

Door is ajar on most or all floors	43.	55.	67.	79.	91.	103.
Door is unlocked on most floors	44.	56.	68.	80.	92.	104.
Door marked "stairs" (not just exit)	45.	57.	69.	81.	93.	105.
No warnings or cautions on door	46.	58.	70.	82.	94	106.
Floor number labelled inside of stairway	47.	59.	71.	83.	95.	107.
No restricted exit (locked from inside)	48.	60.	72.	84.	96.	108.
Signs encouraging use of stairs	49.	61.	73.	85.	97.	109.

FITNESS CENTRE ASSESSMENT

Workout room 1	Workout room 2
110. In worksite or on grounds?	123. In worksite or on grounds?
1. Worksite	1. Worksite
2. Grounds	2. Grounds
111. Area for aerobics/dance/ other activities	124. Area for aerobics/dance/ other activities
1. No area	1. No area
2. Part time	2. Part time
3. Permanent	3. Permanent
Size of workout area: 112_____m X 113_____m	125._____m X 126._____m
Treadmills 114. No. =_____	127. No. =_____
Bikes 115. No. =_____	128. No. =_____
Rowing machines 116. No. =_____	129. No. =_____
Stepper machines 117. No. =_____	130. No. =_____
Free weights 118. No. =_____	131. No. =_____
Resistance Equipment 119. No. =_____	132. No. =_____
Other Machines 120. No. =_____	133. No. =_____
TV in workout area 121.	134.
Music in workout area 122.	135.

Other Facilities: *(tick if present)*

136.	Table Tennis Tables	137. In worksite or on grounds?	1. Worksite
			2. Grounds
138.	Billiard Tables	139. In worksite or on grounds?	1. Worksite
			2. Grounds
140.	Sauna	141. In worksite or on grounds?	1. Worksite
			2. Grounds
142.	Spa	143. In worksite or on grounds?	1. Worksite
			2. Grounds
144.	TV Lounge	145. In worksite or on grounds?	1. Worksite
			2. Grounds

ASSESSMENT OF THE NUTRITION ENVIRONMENT AT WORK

Canteen assessment - Canteen 1

146. In worksite or on grounds? 1. Worksite
2. Grounds

(For the following tick if present)

147. Fresh fruit
148. Green salads
149. Lowfat milk or yogurt
150. Number of other low/reduced fat items on menu or on notices No. = _____
151. Number of NHF ticks displayed or other labelling of lowfat items No. = _____
152. Number of items with easily visible nutrition information signs (fat grams, cals) No. = _____
153. Number of signs/prompts to choose low fat items No. = _____
154. Number of signs/prompts to choose fruits and vegetables No. = _____

Canteen assessment - Canteen 2

155. In worksite or on grounds? 1. Worksite
2. Grounds

(*For the following tick of present)*

156. Fresh fruit
157. Green salads
158. Lowfat milk or yogurt
159. Number of other low/reduced fat items on menu or on notices No. = _____
160. Number of NHF ticks displayed or other labelling of low fat items No. = _____
161. Number of items with easily visible nutrition information signs (fat grams, cals) No. = _____

162. Number of signs/prompts to choose low fat items No. = _____

163. Number of signs/prompts to choose fruits and vegetables No. = _____

Vending Machine Assessment

	Vending Machine Number					
	#1	#2	#3	#4	#5	#6
1. In worksite	164. 1	176. 1	188. 1	200. 1	212. 1	224. 1
2. On grounds	2	2	2	2	2	2
Type of machine:						
1. Snack machine	165. 1	177. 1	189. 1	201. 1	213. 1	225. 1
2. Soft drink machine	2	2	2	2	2	2
3. Hot drink machine	3	3	3	3	3	3
(*Please write NA if not applicable)*						
Total number of items that machine holds	166.	178.	190.	202.	214.	226.
Number of slots with low fat/sugar snacks	167.	179.	191.	203.	215.	227.
Number of slots with fresh fruit	168.	180.	192.	204.	216.	228.
Number of slots with fresh green salads	169.	181.	193.	205.	217.	229.
Number of slots with items with heart tick	170.	182.	194.	206.	218.	230.
Number of slots with fruit juice or mineral water (can be mineral water with some fruit juice)	171.	183.	195.	207.	219.	231.
Number of slots with diet soft drink	172.	184.	196.	208.	220.	232.
Numberof slots with coffee/tea with no milk and no sugar	173.	185.	197.	209.	221.	233.
Please tick if there is an option for using lowfat milk for coffee/tea	174.	186.	198.	210.	222.	234.
Please tick if there is a sign encouraging selection of low fat items	175.	187.	199.	211.	223.	235.

Vending Machine Assessment

	Vending Machine Number					
	#7	#8	#9	#10	#11	#12
1. In worksite	236. 1	248. 1	260. 1	272. 1	284. 1	296. 1
2. On grounds	2	2	2	2	2	2
Type of machine:						
1. Snack machine	237. 1	249. 1	261. 1	273. 1	285. 1	297. 1
2. Soft drink machine	2	2	2	2	2	2
3. Hot drink machine	3	3	3	3	3	3

(*Please write NA if not applicable)*

Total number of items that machine holds	238.	250.	262.	274.	286.	298.
Number of slots with low fat/sugar snacks	239.	251.	263.	275.	287.	299.
Number of slots with fresh fruit	240.	252.	264.	276.	288.	300.
Number of slots with fresh green salads	241.	253.	265.	277.	289.	301.
Number of slots with items with heart tick	242.	254.	266.	278.	290.	302.
Number of slots with fruit juice or mineral water (can be mineral water with some fruit juice)	243.	255.	267.	279.	291.	303.
Number of slots with diet soft drink	244.	256.	268.	280.	292.	304.
Numberof slots with coffee/tea with no milk and no sugar	245.	257.	269.	281.	293.	305.
Please tick if there is an option for using lowfat milk for coffee/tea	246.	258.	270.	282.	294.	306.
Please tick if there is a sign encouraging selection of low fat items	247.	259.	271.	283.	295.	307.

Lunch Room Assessment - Lunch room 1

308. In worksite or on grounds? 1. Worksite
2. Grounds

309. Number of signs/posters encouraging dietary fat reduction Total No. = _____

310. Number of signs/posters encouraging more fruits and vegetables Total No. = _____

311. Number of notices about dietary information or weight loss Total No. = _____

(*For the following tick if present)*

312. Microwave

313. Other oven or toaster

314. Fridge

315. Seating in or near food preparation area

Lunch Room Assessment - Lunch room 2

316. In worksite or on grounds? 1. Worksite
2. Grounds

317. Number of signs/posters encouraging dietary fat reduction Total No. = _____

318. Number of signs/posters encouraging more fruits and vegetables Total No. = _____

319. Number of notices about dietary information or weight loss Total No. = _____

(*For the following tick if present)*

320. Microwave

321. Other oven or toaster

322. Fridge

323. Seating in or near food preparation area

ASSESSMENT OF THE SMOKING ENVIRONMENT AT WORK

324. Number of cigarette vending machines in building

Tally:_____ Total No. = _____

ASSESSMENT OF THE ALCOHOL ENVIRONMENT AT WORK

325. Is there an observed area where alcohol is served? (*tick if yes)*

PARKING ASSESSMENT

326. Number of signs in parking lot encouraging drivers to park farther Total No. = _____

327. Number of bike rack spaces on grounds

Tally:_____ Total No. = _____

328. Number of bikes parked outside

Tally:_____ Total No. = _____

329. Number of bike lockers Total No. = _____

330. Other lock up facilities for bikes (*tick if yes)*

GROUNDS ASSESSMENT

331. Are grounds exclusive for target worksite or shared?

1. Exclusive
2. Shared

(*For the following tick if present)*

332. Volleyball court

333. Basketball goal

334. Walking path on or adjacent to grounds

335. Open space/grassy area large enough for physical activity

Size of open space/grassy areas 336._____m X 337._____m

338. Other outdoor fitness or sport facilities (*tick if yes)*

339. Please specify:_____

340. _____

341. _____

342. _____

Version 5

NEIGHBOURHOOD ASSESSMENT

Nearest access road(s): name	343._____	349._____
(*For the following tick if yes or present)*	344. Level of traffic: 1. Light 2. Medium 3. Heavy	350. Level of traffic 1. Light 2. Medium 3. Light
Sidewalk adjacent to road	345.	351.
Sidewalk separated from road (more than 3 m)	346.	352.
Bike lanes on road	347.	353.
Bike lanes separate from road (more than 3 m)	348.	354.

(*For the following please tick if yes)*

355. Is a fitness facility visible from worksite grounds?
356. Is a park/open space visible from worksite grounds?
357. Is the park/open space large enough for physical activity?
358. Is a pool visible from worksite grounds?
359. Are tennis courts visible from worksite grounds?
360. Are squash courts visible from worksite grounds?
361. Is a major shopping centre visible from worksite grounds?
362. Are shops that sell cigarettes visible from worksite?
363. Is pub or bar visible from worksite grounds?
364. Is liquor/beer store visible from worksite grounds?

<u>Food Shops Visible From Grounds</u>

	Food shop 1	Food shop 2	Food shop 3
Name of shop	365._____	371._____	377._____
Type of shop	366._____	372._____	378._____
(*The following questions are optional)*			
Number of signs about low fat items	367.	373.	379.
Visible nutrition labelling of items (fat grams, cals)	368.	374.	380.
Fresh fruit	369.	375.	381.
Fresh green salads	370.	376.	382.

Limits of Workplace Grounds

383. Sketch the limits you considered when completing this checklist.

384. Name and title of employee who accompanied you on tour of the worksite:

_____

Other comments:

385. _____

386. _____

387. _____

388. _____

Appendix E
The School Health Policies and Programs Study

(sample of the first 50 questions from the School-level Questionnaire)

School Policy and Environment
School Questionnaire

	Questions
General School Environment	1 - 12
Violence Prevention	13 - 42
Tobacco Use Prevention	43 - 76
Alcohol Use Prevention	77 - 87
Illegal Drug Use Prevention	88 - 108
Injury Prevention and Safety	109 - 117
Physical School Environment	118 - 134
Crisis Preparedness, Response, and Recovery	135 - 145
School Climate	146 - 155
Physical Activity	156 – 165
Food and Beverages Sold Outside of the School Meal Program	166 – 194
School Health Councils	195 - 201

1. What is your job title at the school? (In which role do you spend more time?)

1) Principal
2) Asst. Principal/Other School Administrator
3) School Secretary
4) Physical Ed Teacher
5) Athletic Director
6) Health Ed Teacher
7) Other Teacher
8) Food Service Manager
9) Commercial Food Service Provider
10) Other School Food Service Staff
11) School Counselor
12) Social Worker
13) Psychologist
14) Other Mental Health/Social Services Provider
15) Nurse
16) Health Aide
17) Physician
18) Other Health Services Provider
19) SBHC Health Services Staff
20) SBHC Mental Health/Social Services Staff
50) Other Staff

2. How many students are currently enrolled in...

Kindergarten? _____ Students
1ST Grade? _____ Students
2ND Grade? _____ Students
3RD Grade? _____ Students
4TH Grade? _____ Students

5TH Grade? _____ Students
6TH Grade? _____ Students
7TH Grade? _____ Students
8TH Grade? _____ Students
9TH Grade? _____ Students
10TH Grade? _____ Students
11TH Grade? _____ Students
12TH Grade? _____ Students

3. Must visitors to this school report to the main office or reception area upon arrival?

Yes 1
No 2

4. Is this school a "closed campus," meaning that students are not allowed to leave school during the school day, including during lunchtime?

Yes 1
No 2

5. During the school day, are staff or adult volunteers assigned to monitor...

		Yes	No
a.	School halls during classes?	1	2
b.	School halls between classes?	1	2
c.	Bathrooms?	1	2
d.	School grounds?	1	2
e.	Playgrounds, while they are in use?	1	2

6. Does this school routinely conduct locker searches?

Yes 1
No 2

7. Are students at this school required to wear school uniforms?

Yes 1
No 2

8. Is there a dress code at your school?

Yes 1
No 2

9a. Are students at your school required to wear identification badges?

Yes 1
No 2

9b. What about visitors to your school?

Yes 1
No 2

9c. What about school faculty and staff?

Yes 1
No 2

10. During the school day, does your school use...

		Yes	No
a.	Security or surveillance cameras, either inside or outside the building?	1	2
b.	Metal detectors, including wands?	1	2
c.	Communication devices such as cell-phones, 2-way radios, walkie-talkies, or intercoms?	1	2

11. I'm going to ask about different types of security staff that this school might use. During the regular school day, does your school use...

		Yes	No
a.	Police or school resource officers?	1	2
b.	Security guards?	1	2

12. Are any of the security staff at your school armed?

Yes 1
No 2

13. Has this school adopted a policy prohibiting physical fighting by students on school property?

Yes 1
No 2

14. Has this school adopted a policy prohibiting physical fighting by students at off-campus, school-sponsored events?

Yes 1
No 2

15. Does your school's policy include guidelines on what actions the school should take when students are caught fighting?

Yes 1
No 2

16. During the 2004-05 school year, about how many times were students caught fighting?

_____ Times

17. Which of the things listed on this card helped determine what actions the school took when students were caught fighting?
MARK ALL THAT APPLY

Zero-tolerance	1
Effect or severity of the violation	2
Grade level of student	3
Victim versus perpetrator status	4
Repeat offender status	5
None	6

18. When students were caught fighting, how often were they...

Never	1
Rarely	2
Sometimes	3
Almost always or always	4
N/A	5

a. Referred to a school counselor?
1 2 3 4 5

b. Referred to a school administrator?
1 2 3 4

c. Referred to peer mediation?
1 2 3 4 5

d. Encouraged, but not required, to participate in an assistance program?
1 2 3 4 5

e. Required to participate in an assistance program?
1 2 3 4 5

f. Referred to legal authorities?
1 2 3 4

g. Placed in detention?
1 2 3 4 5

h. Given in-school suspension?
1 2 3 4 5

i. Not allowed to participate in extracurricular activities or interscholastic sports?
1 2 3 4

j. Suspended from school?
1 2 3 4

k. Expelled from school?
1 2 3 4

l. Reassigned to an alternative school?
1 2 3 4 5

19. When students were caught fighting, how often were students' families notified?

Never	1

Rarely 2
Sometimes 3
Almost always or always 4

20. Has this school adopted a policy prohibiting weapon use by students on school property?

Yes 1
No 2

21. Has this school adopted a policy prohibiting weapon use at off_campus, school_sponsored events?

Yes 1
No 2

22. Does your school's policy include guidelines on what actions the school should take
when students are caught using a weapon?

Yes 1
No 2

23. Has this school adopted a policy prohibiting weapon possession by students on school
property?

Yes 1
No 2

24. Has this school adopted a policy prohibiting weapon possession at off_campus,school_sponsored events?

Yes 1
No 2

25. Does your school's policy include guidelines on what actions the school should take
when students are caught possessing a weapon?

Yes 1
No 2

26. During the 2004-05 school year, about how many times were students caught...

		Times
a.	Using a weapon?	_____
b.	Possessing a weapon?	_____

27. Which of the things listed on this card helped determine what actions the school took
when students were caught possessing a weapon?
MARK ALL THAT APPLY

Zero-tolerance 1

Effect or severity of the violation 2
Grade level of student 3
Repeat offender status 4
Type of weapon 5
None 6

28. When students were caught possessing a weapon, how often were they...

a. Referred to a school counselor?
1 2 3 4 5
b. Referred to a school administrator?
1 2 3 4
c. Encouraged, but not required, to participate in an assistance program?
1 2 3 4 5
d. Required to participate in an assistance program?
1 2 3 4 5
e. Referred to legal authorities?
1 2 3 4
f. Placed in detention?
1 2 3 4 5
g. Given in-school suspension?
1 2 3 4 5
h. Not allowed to participate in extracurricular activities or interscholastic sports?
1 2 3 4
i. Suspended from school?
1 2 3 4
j. Expelled from school?
1 2 3 4
k. Reassigned to an alternative school?
1 2 3 4 5

29. When students were caught possessing a weapon, how often were students' families notified?

Never 1
Rarely 2
Sometimes 3
Almost always or always 4

30. Which of the things listed on this card helped determine what actions the school took when students were caught using a weapon?
MARK ALL THAT APPLY

Zero-tolerance 1
Effect or severity of the violation 2
Grade level of student 3
Repeat offender status 4
Type of weapon 5
None 6

31. When students were caught using a weapon, how often were they...

a. Referred to a school counselor?
1 2 3 4 5

b. Referred to a school administrator?
1 2 3 4

c. Encouraged, but not required, to participate in an assistance program?
1 2 3 4 5

d. Required to participate in an assistance program?
1 2 3 4 5

e. Referred to legal authorities?
1 2 3 4

f. Placed in detention?
1 2 3 4 5

g. Given in-school suspension?
1 2 3 4 5

h. Not allowed to participate in extracurricular activities or interscholastic sports?
1 2 3 4

i. Suspended from school?
1 2 3 4

j. Expelled from school?
1 2 3 4

k. Reassigned to an alternative school?
1 2 3 4 5

32. When students were caught using a weapon, how often were students' families notified?

Never 1
Rarely 2
Sometimes 3
Almost always or always 4

33. Has this school adopted a policy prohibiting gang activity, such as recruiting or wearing gang colors, symbols, or other gang attire?

Yes 1
No 2

34. During the past two years, have...

		Yes	No
a.	Students helped develop, communicate, or implement violence prevention policies or activities?	1	2
b.	Students' families helped develop, communicate, or implement violence prevention policies or activities?	1	2
c.	Community members helped develop, communicate, or implement violence prevention policies or activities?		

1 2

35. Does your school have procedures to inform all students...

		Yes	No
a.	About violence-related rules?	1	2
b.	About what happens if they break the rules?	1	2

36. Does your school have procedures to inform the families of all students...

		Yes	No
a.	About violence-related rules?	1	2
b.	About what happens if students break the rules?	1	2

37. Does your school post signs marking a weapons-free school zone, that is, a specified distance from school grounds where weapons are not allowed?

Yes 1
No 2

38. Has this school adopted a policy prohibiting bullying on school property?

Yes 1
No 2

39. Has this school adopted a policy prohibiting bullying at off-campus, school-sponsored events?

Yes 1
No 2

40. Does your school have or participate in...

		Yes	No
a.	A peer mediation program?	1	2
b.	A safe-passages to school program?	1	2
c.	A program to prevent gang violence?	1	2
d.	A program to prevent bullying	1	2

41. Does this school have a plan for the actions to be taken when a student at risk for suicide is identified?

Yes 1
No 2

42. Does this plan require that...

		Yes	No
a.	The student's family will be informed?	1	2
b.	The student will be referred to a mental health provider?		

		1	2
c.	A visit with a mental health provider will be documented before the student returns to school?	1	2

43. Has this school adopted a policy prohibiting cigarette smoking by students?

Yes 1
No 2

44. Does your school's policy specifically prohibit cigarette smoking by students...

		Yes	No
a.	In school buildings?	1	2
b.	Outside on school grounds, including parking lots and playing fields?	1	2
c.	On school buses or other vehicles used to transport students?	1	2
d.	At off-campus, school-sponsored events?	1	2

45. Does your school's policy include guidelines on what actions the school should take when students are caught smoking cigarettes?

Yes 1
No 2

46. During the 2004-05 school year, about how many times were students caught smoking cigarettes?

_____Times

47. Which of the things listed on this card helped determine what actions the school took when students were caught smoking cigarettes? MARK ALL THAT APPLY

Zero-tolerance	1
Effect or severity of the violation	2
Grade level of student	3
Repeat offender status	4
None	5

48. When students were caught smoking cigarettes, how often were they...

a.	Referred to a school counselor?	1	2	3	4 5
b.	Referred to a school administrator?	1	2	3	4
c.	Encouraged, but not required, to participate in an assistance, education, or cessation program?	1	2	3	4 5

d. Required to participate in an assistance, education, or cessation program?

1 2 3 4 5

e. Referred to legal authorities?

1 2 3 4

f. Placed in detention?

1 2 3 4 5

g. Given in-school suspension?

1 2 3 4 5

h. Not allowed to participate in extracurricular activities or interscholastic sports?

1 2 3 4

i. Suspended from school?

1 2 3 4

j. Expelled from school?

1 2 3 4

k. Reassigned to an alternative school?

1 2 3 4 5

49. When students were caught smoking cigarettes, how often were students' families notified?

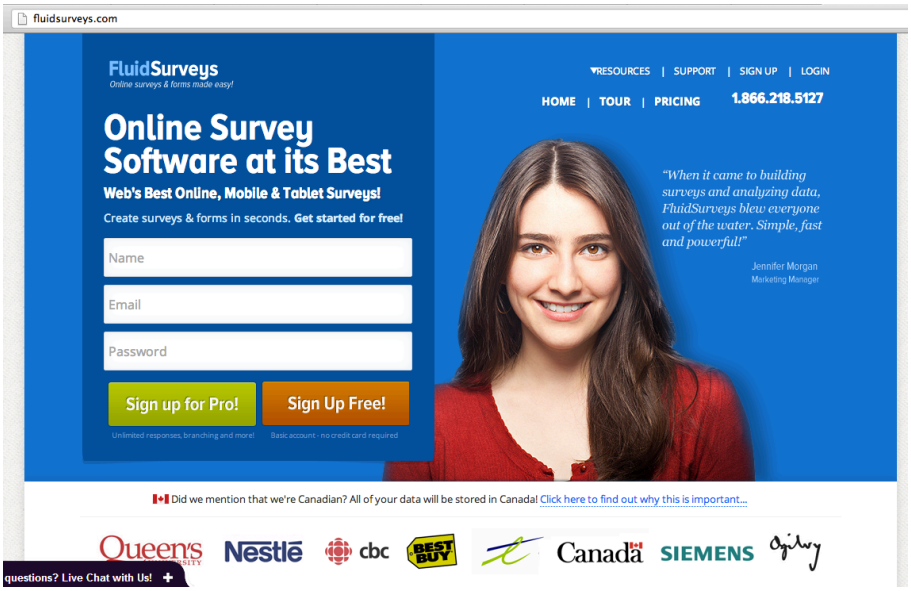
Never	1
Rarely	2
Sometimes	3
Almost always or always	4

50. Has this school adopted a policy prohibiting cigar or pipe smoking by students?

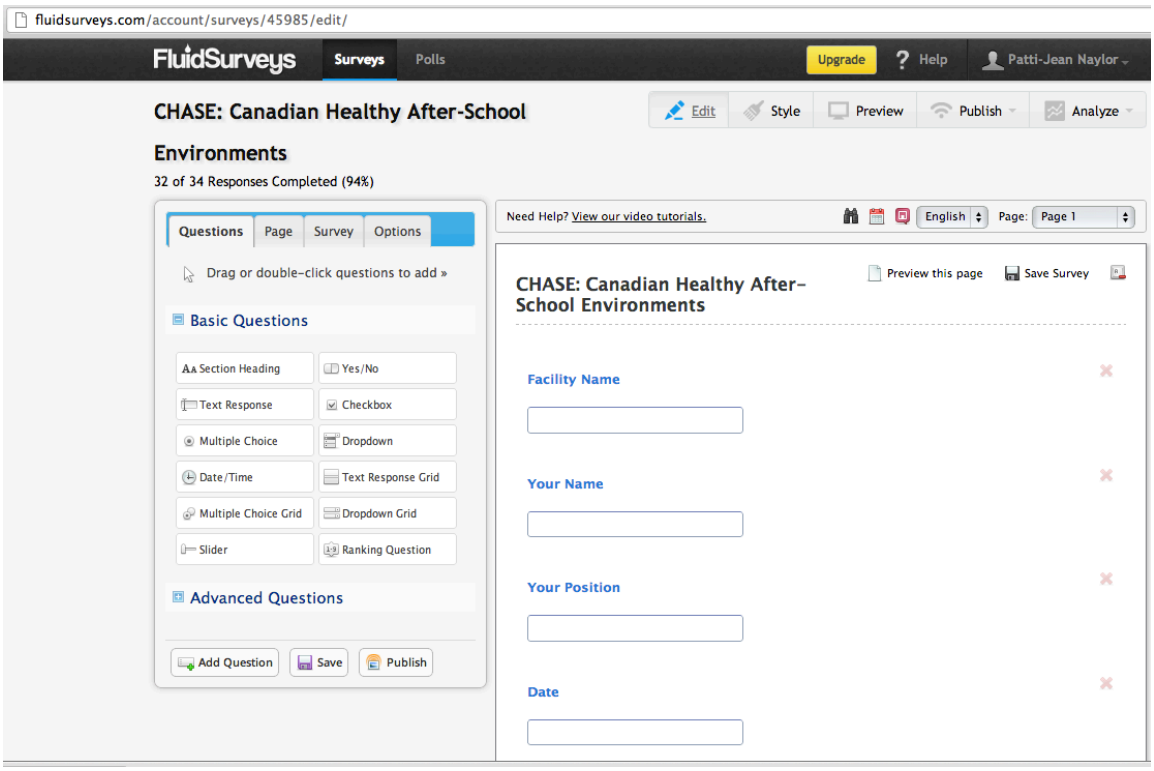
Yes	1
No	2

Appendix F
Fluid Surveys

1. Screen shot of Fluid Surveys home page



2. Screen shot of CHASE survey open in edit screen



Appendix G
CHASE Logical Validity Testing

Invitation Letter, Overview of Objectives and Design, and Rating Forms

The Canadian Healthy After-School Environments (CHASE) Survey

Logical Validity Testing

Dear expert,

My name is Tosha Lobsinger and I am a Masters student in the School of Exercise Science, Physical and Health Education at the University of Victoria under the supervision of Dr. Patti-Jean Naylor. I am currently working on the development of a questionnaire to assess the healthy eating and physical activity environments for children in Canadian after-school care facilities.

I am contacting you as an expert in physical activity or nutrition and health research and/or in the childcare setting. I would like you to comment on the logical validity of the Canadian Healthy After-School Environments (CHASE) Survey. There is no tool specific to after school care nor the Canadian setting and thus we have developed a 'draft instrument'. The instrument was based substantially on the EPAO (Ward, 2008) and NAP SACC (Benjamin et al., 2007) tools developed in the United States that were designed for daycare settings and the 0-5 age group. Patti-Jean, Viviene and I have also reviewed the literature to identify models and important determinants that should be addressed in the survey. These determinants can be found in Table 1 (see background literature and project overview document).

I have attached a document that presents the CHASE survey items and a rating scale for you to comment on the relevance and clarity of each item. Items are categorized by facility environment, neighbourhood environment, current physical activity practices, physical activity environment and policies, current nutrition practices, and food environment and policies. In addition, there is a space to provide any additional feedback you feel is necessary for each item and space is provided at the end of each section and the end of the survey for you to make further comments and/or additions. Please refer to the attached copy of the CHASE survey for reference to the scaling of questions.

Please respond using the word document and email your responses back to me (tosha14@uvic.ca). If you could complete this and send it to me by **August 31, 2011** that would be greatly appreciated. Thank you very much for your time and assistance in this project. I look forward to viewing your responses.

Sincerely,

Tosha Lobsinger, MSc (Candidate), **Patti-Jean Naylor,** PhD, **Viviene Temple,** PhD
School of Exercise Science, Physical and Health Education
University of Victoria, British Columbia

Overview of CHASE Study Objectives & Design

The overall objective of this study is to develop a valid and reliable tool to assess the health environments of Canadian after-school child care. Specific objectives of the tool are to: 1) assess the support for physical activity for children offered by the structured environment, facility policies and practices of the facility staff; and 2) assess the support for healthy eating for children offered by the structured environment, facility policies, and practices of the facility staff.

The validity study will survey and collect observations and accelerometry data from a sample of child care facilities in lower Vancouver Island (approximately 30 facilities). The sampling frame is the Vancouver Island Health Authority mailing list of child care facilities. All identified child care facilities will be mailed a recruitment package and consenting facilities will comprise the sample. The survey, Canadian Healthy After-School Environments (CHASE), will be conducted online; accordingly, the sample will be drawn from facilities with internet access. The final draft of the CHASE survey will consist of roughly 60 questions and will thus be expected to take about 60 minutes to complete. The CHASE survey will assess: 1) The environment in general (children, staff, facility hours, typical activities); 2) The physical activity environment (current physical activity practices and policies); and 3) The nutrition environment (current nutrition practices and policies).

Table 1. Determinants of physical activity and eating behaviour in childhood.

Determinants of Physical Activity Behaviour	
MICRO	**Source**
age, gender, SES	(Wharf-Higgins, Begoray & MacDonald, 2009)
beliefs, values, experiences, knowledge, attitudes	(Wharf-Higgins, Begoray & MacDonald, 2009)
sex, ethnicity, age	(Sallis, Prochaska & Taylor, 2000)
PA preferences	(Sallis, Prochaska & Taylor, 2000)
intention to be active	(Sallis, Prochaska & Taylor, 2000)
perceived barriers	(Sallis, Prochaska & Taylor, 2000)
previous PA	(Sallis, Prochaska & Taylor, 2000)
perceived PA competence	(Sallis, Prochaska & Taylor, 2000)
sensation seeking	(Sallis, Prochaska & Taylor, 2000)
enjoyment of PE	(Sallis et al., 1999)
MESO	
family, peers	(Wharf-Higgins, Begoray & MacDonald, 2009)
curriculum	(Wharf-Higgins, Begoray & MacDonald, 2009)
parental overweight status	(Sallis, Prochaska & Taylor, 2000)
parental support, direct help from parents	(Sallis, Prochaska & Taylor, 2000)
support from others	(Sallis, Prochaska & Taylor, 2000)
sibling PA	(Sallis, Prochaska & Taylor, 2000)
family support for PA	(Sallis et al., 1999)
MACRO	
community & neighbourhood factors	(Wharf-Higgins, Begoray & MacDonald, 2009)
media	(Wharf-Higgins, Begoray & MacDonald, 2009)
government policies	(Wharf-Higgins, Begoray & MacDonald, 2009)
program/facility access	(Sallis, Prochaska & Taylor, 2000)
opportunities to exercise	(Sallis, Prochaska & Taylor, 2000)
community sports	(Sallis, Prochaska & Taylor, 2000)
# destinations in neighbourhood	(McCormack et al., 2011)
neighbourhood SES	(McCormack et al., 2011)
OTHER	
time spent after school and on weekends	(Sallis, Prochaska & Taylor, 2000)
time spent outdoors	(Sallis, Prochaska & Taylor, 2000)
use of afternoon time for sports and PA	(Sallis et al., 1999)
screen-time participation	(McCormack et al., 2011)
transportation to school	(McCormack et al., 2011)
healthy diet	(Sallis, Prochaska & Taylor, 2000)

Determinants of Healthy Eating Behaviour	
MICRO	**Source**
age, gender, SES	(Wharf-Higgins, Begoray & MacDonald, 2009)
beliefs, values, experiences, knowledge, attitudes	(Wharf-Higgins, Begoray & MacDonald, 2009)

eating patterns	(Glanz et al., 2005)
Socio-demographics	(Glanz et al., 2005)
psychosocial factors	(Glanz et al., 2005)
perceived nutrition environment	(Glanz et al., 2005)
eating patterns	(Glanz et al., 2005)
knowledge, attitudes, food preferences	(Taylor, Evers & McKenna, 2005)
sex, age	(Taylor, Evers & McKenna, 2005)
healthy eating capacity	(Taylor, Evers & McKenna, 2005)
income, SES, education, employment	(Taylor, Evers & McKenna, 2005)
MESO	
family, peers	(Wharf-Higgins, Begoray & MacDonald, 2009)
curriculum	(Wharf-Higgins, Begoray & MacDonald, 2009)
familial factors	(Taylor, Evers & McKenna, 2005)
cultural factors	(Taylor, Evers & McKenna, 2005)
peers	(Taylor, Evers & McKenna, 2005)
food exposure & food availability in family	(Taylor, Evers & McKenna, 2005)
parental modeling	(Taylor, Evers & McKenna, 2005)
meal structure	(Taylor, Evers & McKenna, 2005)
parenting style & food socialization practices	(Taylor, Evers & McKenna, 2005)
teacher & peer modeling	(Taylor, Evers & McKenna, 2005)
MACRO	
community & neighbourhood factors	(Wharf-Higgins, Begoray & MacDonald, 2009)
media	(Wharf-Higgins, Begoray & MacDonald, 2009)
government policies	(Wharf-Higgins, Begoray & MacDonald, 2009)
government & industry policies	(Glanz et al., 2005)
type & location of food outlets	(Glanz et al., 2005)
accessibility of food outlets	(Glanz et al., 2005)
organizational nutrition environments (home, school, work, etc.)	(Glanz et al., 2005)
availability of healthy options	(Glanz et al., 2005)
price, promotion & placement	(Glanz et al., 2005)
media, advertising	(Glanz et al., 2005)
nature of foods available in the physical environment	(Taylor, Evers & McKenna, 2005)
TV	(Taylor, Evers & McKenna, 2005)
product marketing, mass media	(Taylor, Evers & McKenna, 2005)
nutrition policies	(Taylor, Evers & McKenna, 2005)
OTHER	
nutrition information	(Glanz et al., 2005)
portion sizes	(Glanz et al., 2005)
food prices	(Taylor, Evers & McKenna, 2005)
ready availability of unhealthy foods, especially in vending machines	(Taylor, Evers & McKenna, 2005)

1A) Facility Environment

Item	Relevance	Clarity	Comments
1. On average, how many children from the following age categories are cared for each week at your after school care program/facility?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
2. How many staff work in your facility during the after-school hours?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
3. What is the staff to child ratio?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
4. Please list your staff and indicate how many years they have worked as an after-school care provider and list any certifications they hold.	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
5. What are your hours of operation?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
6. Do you operate during Pro-D Days and holidays?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
7. How many hours do children in care typically spend with you after school?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

8. On a 'typical day', how much time would be spent in the following activities?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
9. At what times does your facility provide food for the children?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
10. Draw/map the spaces (inside and outside) you have to work with children in and label the activities that go on in that space.	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

Overall Comments for Facility Environment Items:

1B) Neighbourhood Environment

Item	Relevance	Clarity	Comments
1. How many parks (no equipment) or playgrounds (with equipment) are within walking distance (with children) from your facility?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
2. Tick the description that most closely describes the walking environment in your neighbourhood.	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
3. How convenient is access to public parks and playgrounds in your neighbourhood?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
4. What is the level of traffic on the main access roads to your child care facility?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
5. Are there sidewalks adjacent to the main access roads?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
6. Are there bike lanes on the main access roads?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
7. Check all that are within walking distance of your child care facility:	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

4

Overall Comments for Neighbourhood Environment Items:

_____

_____

_____

_____

_____

5

2A) Current Physical Activity Practices

Item	Relevance	Clarity	Comments
1. How often is active playtime provided to all children?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
2. For each day active playtime is provided, how long are children active for?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very C lear	
3. How often does staff lead structured physical activity (activities and games) for children?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very C lear	
4. How often is outdoor active play provided for all children?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very C lear	
5. How much television and video time do your children watch?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very R elevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
6. Do you have videogame equipment? If yes, how often is it used? If yes, what type of games are offered?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very C lear	
7. How often do you take the children for a walk in the neighbourhood or to a nearby park for physical activity?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat C lear — Very C lear	
8. How often do you take the children on fieldtrips that involve some sort of physical activity?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — V ery Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat C lear — Very C lear	

Overall Comments for Physical Activity Practices Items:

2B) Physical Activity Environment and Policies

Item	Relevance	Clarity	Comments
1. Check the option that most closely describes your outdoor play space.	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
2. Is fixed play equipment available your facility (tunnels, balancing equipment, climbing equipment, overhead ladders)? If yes, what type of equipment is available?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
3. How would you describe your portable play equipment (wheel toys, balls, hoops, ribbons, skipping ropes, bands)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
4. How much portable play equipment do you have at your facility?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
5. Check the option that most closely describes your indoor play space.	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
6. Check all play equipment that is available for children to use at your site.	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
7. Is there a place where children can help themselves to equipment for 'active play' (ie. a shelf, cupboard or bin)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

8. During active play time, how often does staff verbally encourage games/activities?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
9. During active play time, how often does staff facilitate games/activities (by demonstrating, laying out equipment, etc.)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
10. How often does staff participate in games/activities?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
11. How is support for physical activity displayed?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
12. How often is training provided for staff in physical activity (not including playground safety)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
13. How often is physical activity education (motor-skill development) provided for children (e.g. teaching how to throw a ball or skip)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
14. Is physical activity information offered to parents (workshops, activities and take home materials)? If yes, how do you interact with the parents about physical activity (tick all of the methods used)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

15. Do you have a written policy on physical activity?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
16. Check all topics that are covered by your policy:	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

Overall Comments for Current Physical Activity Environment and Policies Items:

3A) Current Nutrition Practices

Item	Relevance	Clarity	Comments
1. How often is fruit (not juice) offered?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
2. How often is fresh, frozen or canned fruit **in own juice** (no syrups) offered?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
3. How often are vegetables offered (not including potatoes, fries, tater tots, corn and green beans)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
4. How often are fried or pre-fried foods (frozen and breaded) offered (chicken nuggets, fish sticks, fries, hash browns)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
5. How often are meats offered (sausage, bacon, hot dogs, bologna, ground beef)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
6. How often are beans or lean meats offered (baked or broiled chicken, turkey or fish)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
7. How often are whole grain foods offered (whole wheat bread, oatmeal, brown rice, Cheerios, etc.)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
8. How often are cookies, cakes, muffins or other sweets offered?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

9. How often are chips, crackers or other salty foods offered?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
10. Is there drinking water available to children? If yes, how accessible is it?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
11. How often is 100% fruit juice offered?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
12. How often are sugary drinks other than 100% fruit juice offered (Kool-aid, sports drinks, sweet tea, punches, soda)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
13. What type of milk is usually served?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
14. Are there vending machines on site? If yes, how often are children allowed to purchase snacks from vending machines?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
15. Check all foods that you have provided to your children in the past week.	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

Overall Comments for Current Nutrition Practices Items:

3B) Nutrition Environment and Policies

Item	Relevance	Clarity	Comments
1. Check all items that exist in your facility's cooking area:	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
2. Do children bring their own snacks? If yes, is there a policy regarding food brought in?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
3. Do you have a snack menu cycle? If yes, what is the cycle?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
4. How often do snacks include a combination of both new and familiar foods?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
5. How often do snacks include foods from a variety of cultures?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
6. How often are children encouraged by staff to try new or less favourite food?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
7. How often is 'treat' food used to encourage positive behaviour?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
8. There are guidelines available for parents when bringing in food for holidays or celebrations:	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

9. Holidays/special events are celebrated by offering the following (check all that apply):	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
10. At snack time, how often do children serve themselves with limited help?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
11. How often does staff consume the same food and drinks as the children?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
12. How often does staff eat or drink less healthy foods in front of the children (especially sweets, soda and fast food)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
13. How often does staff talk with children about trying and enjoying healthy foods?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
14. How is support for good nutrition displayed?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
15. How often is training on nutrition provided to staff (other than food safety and food program guidelines)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
16. Are children involved in food-related activities? If yes, what type of activities?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

17. Is nutrition information offered to parents (workshops, activities and take-home materials)? If yes, how is the information offered (tick all that apply)?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
18. Do you have a written policy on nutrition and food service that covers most of the topics above?	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	
19. Check all topics that are covered by your policy:	1 2 3 4 5 6 7 Not at all Relevant — Somewhat Relevant — Very Relevant	1 2 3 4 5 6 7 Not at all Clear — Somewhat Clear — Very Clear	

Overall Comments for Nutrition Environment and Policies Items:

Overall Comments for the CHASE Survey (please discuss whether the survey addresses its objectives, as stated in the introduction):

Thank You!

Appendix H
Physical Activity Observation Recording Sheet

1. Page 1- Recording Protocol

CHASE - Physical Activity Obsevation Recording Sheet

Site _____	# Participants at start of session (M/F) _____
Care Provider _____	Weather conditions _____
Observer _____	Recording time start _____
Date _____	Recording time finish _____

Recording Protocol

Begin recording as soon as a leader starts to supervise the outdoor area. Observe the outdoor area for 45 minutes or if children don't go outside for rain – observe one of the indoor spaces where physical activity is likely for 45 minutes.

To record data, coding will occur over one-minute time intervals. The observer will record location, facilitation style, activity type and intensity information utilizing labels for each variable. The observer will utilize each one-minute interval by: (1) observing and recording location, facilitation and activity type for the group(s); and (2) scanning the area from left to right giving an intensity code for every child. Intensity of children will be recorded for as many children participating in the session as possible before the next interval begins. When the second minute starts, the recorder will repeat these 2 steps.

Record any new facilitation styles or games introduced by the after-school care staff (activity facilitation leader) during any 1-minute observation period. If they use multiple techniques per variable (ie. facilitate by putting out equipment **(F)** and verbally encourage the children **(E)** write down both **F** and **E** in the recording table.

*Intensity ratings and scanning protocols based on SOPARC/SOPLAY and facilitation modified from TMAS.)

Facilitation	Context	Activity Description	Intensity
(L) Lead It! The leader takes control and sets up a game/activity **(E) Encourage It!** Verbal encouragement to students to participate **(F) Facilitate It!** Leader puts out active equipment **(M) Model It!** Leader participates in the activity **(U) Unstructured.** No facilitation - just supervision	**IN**door / **OUT**door (circle one) **(G) Gymnasium** **(F) Field** **(P) Playground** **(M) Multi-purpose room** with space for activity **(N) No-space room** with no space for activity **(O) Other**	Write down any activities/games you see the children involved in	**(1) Sedentary.** Individuals are lying down, sitting or standing. **(2) Walking.** Individuals are walking at a casual pace. **(3) Vigorous.** Individuals are currently engaged in an activity more vigorous than an ordinary walk (e.g., increasing heart rate causing them to sweat, such as jogging, running, chasing, swinging, doing cart wheels, jumping).

2. Pages 2-10 – PA Observation Recording Sheets (pages 3-10 only differ from page 2 in the minute numbers, which continue through 45, listed along the left side of the Facilitation column).

CHASE - Physical Activity Obsevation Recording Sheet

Facilitation	Context	Activity Description	Intensity
(L) Lead It! **(E) Encourage It! (F) Facilitate It! (M) Model It! (U) Unstructured**	**IN / OUT (F) Field (G) Gym (P) Playground (M) Multi-purpose room (N) No-space room (O) Other**	Write down any activities/games you see the children involved in	**(1) Sedentary (2) Walking (3) Vigorous**

Facilitation	Context	Activity Description	Intensity
1	**IN / OUT**		
2	**IN / OUT**		
3	**IN / OUT**		
4	**IN / OUT**		
5	**IN / OUT**		

Appendix I
After School Modification of the Teacher Monitoring Analysis System

After School Modification of the Teacher Monitoring Analysis System (TMAS)

Site _____ Provider _____

Observer _____ Date_____ # of Participants (M & F) _____

Time Started _____ Time Ended _____ Weather Conditions _____

Table 1: Observation Recording Sheet

	1	2	3	4	5	6
Student Grouping						
Location						
Facilitation Style						
Activity Involvement						
Intensity						

Facilitation

- Integrate It! **(I)**
- Encourage It! **(E)**
- Lead It! **(L)**
- Vary It! **(V)**
- Adapt It! **(A)**
- See It! **(S)**
- Modify It! **(M)**
- Create it **(C)**

Intensity

- Motionless **(1)**
- Sedentary **(2)**
- Light **(3)**
- Moderate **(4)**
- Vigorous **(5)**

Context

Student Grouping

- Whole **(w)**
- Subgroup **(s)**
- Partners **(p)**
- Individual **(i)**
- Disperse **(d)**
- Converge **(c)**
- Nonstructured **(n)**

Location

- Indoor **(Ind)**
- Gymnasium **(Gym)**
- Outdoors **(Out)**
- Other **(O)**

Activity Involvement

- Healthy Bones **(HB)**
- Healthy Heart **(HH)**
- Healthy Muscles **(HM)**
- Healthy Self **(HS)**
- Fundamental Movement Skills **(FMS)**
- Sedentary **(SD)**
- Other **(O)**

How many activities were included in 30 minutes? _____

What activities were implemented? (List in order)

_____

Field Observations & Commentary:

Sample

Appendix J
System for Observing Play and Leisure Activity in Youth

School ID : ___ ___
Date: / /
D8 D9 D10 D11

SOPLAY

(System for Observing Play and Leisure Activity in Youth)

Obs. ID #: ___ ___ Reliability: 0. No 1. Yes Temp: ___ ___F Period: **1.** BS **2.** L1s1 L1s2 **3.** L2s1 L2s2 **4.** L3s1 L3s2 **5.** AS1 **6.** AS2 **7.** AS3

START TIME	AREA	CONDITION					GIRLS				BOYS			
		A	U	S	O	E	S	W	V	Act.	S	W	V	Act.
__ __: __ __	**1**	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	____	____	____	____	____	____	____	____
__ __: __ __	**2**	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	____	____	____	____	____	____	____	____
__ __: __ __	**3**	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	____	____	____	____	____	____	____	____
__ __: __ __	**4**	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	____	____	____	____	____	____	____	____
__ __: __ __	**5**	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	____	____	____	____	____	____	____	____
__ __: __ __	**6**	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	____	____	____	____	____	____	____	____
__ __: __ __	**7**	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	____	____	____	____	____	____	____	____
__ __: __ __	**8**	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	0. N 1. Y	____	____	____	____	____	____	____	____

Activity Codes: 0=No identifiable activity 1=Aerobics 2=Baseball/Softball 3=Basketball 4=Dance 5=Football 6=Gymnastics 7=Martial Arts
8=Racquet sports 9=Soccer 10=Swimming 11=Volleyball 12=Weight Training 13=Other playground games 14=None of the above

SOPLAY Recording Form 1/16/06 SJM

Appendix K
EPAO Scoring Protocol

Derived Variables Needed

1. Fruits and Vegetables = FV
2. Whole grains and low fat meats = Grains
3. High sugar/high fat foods = HSHF
4. Beverages = Bev
5. Nutrition Environment = NutrEnv
6. Staff Behaviors-Nutrition = SBnutr
7. Nutrition Training and Education = NutrTE
8. Nutrition Policy = NutrPol
9. NutrTot = (FV+ Grains+HSHF+ Bev+ NutrEnv+SBnutr+ NutrTE+NutrPol)/8
10. Active Play = Act
11. Sedentary Behaviors = Sed
12. Sedentary Environment = SedEnv
13. Portable Play Environment = PortEnv
14. Fixed Play Environment = FixEnv
15. Staff Behaviors-physical activity = SBpa
16. Physical activity training and education = PaTE
17. Physical activity policy = PaPol
18. PaTot = (Act+ Sed+ SedEnv+ PortEnv + Fix Env + PaTE +SBpa+ PaPol)/8

1. FV = (sum of question scores/10) x 10

Variable	Question	Answer	Dataset Variable	Score (0, 1, or 2)
ORF5	How many times was fruit served the day of observation?	0	0	0
		1	1	1
		2	2	2
		3	3	2
		4	4	2
		5	5	2
DRV1c	How many total times does fruit appear on the menu for that full week	Write in box for answer	0-3	0
			4-6	1
			7-10	2
ORF6	How many times was fruit served fresh, frozen or canned in own juice the day of observation	0	0	0
		1	1	1
		2	2	2
		3	3	2
		4	4	2
		5	5	2

ORF8	How many times were vegetables (not including French fries or fried vegetables) served the day of observation	0	0	0
		1	1	1
		2	2	2
		3	3	2
		4	4	2
		5	5	2
DRV2c	How many total times do vegetables appear on the menu for that full week	Write in box for answer	0-3	0
			4-6	1
			7-10	2
ORF9	How many times were dark green, red, orange or yellow vegetables served the day of observation	0	0	0
		1	1	2
		2	2	2
		3	3	2
		4	4	2
		5	5	2
DRV3c	How many total times do dark vegetables appear on the menu for that full week	Write in box for answer	0-3	0
			4-10	2
ORF10	Was margarine, butter, or meat fat visible on vegetables	No	0	2
		Yes	1	0
		No vegetables served	2	2
ORF11	Are vegetables typically served with added fat?	no	0	2
		Yes	1	0
		unsure	2	2
DRV4a	Is added meat fat, margarine, or butter specified on the menu for cooked vegetables	No	0	2
		Yes	2	2

2. Grains = (sum of question scores/6) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF14	How many times were lean meats/fish served the day of observation	0	0	0
		1	1	2
		2	2	2

		3	3	2
DRV8c	How many total times do lean meats/fish appear on the menu for that full week	Write in box for answer	0	0
			1 or greater	2
ORF16	How many times were beans/lentils served the day of observation	0	0	0
		1	1	2
		2	2	2
		3	3	2
DRV9c	How many total times do beans/lentils appear on the menu for that full week	Write in box for answer	0	0
			≥ 1	2
ORF19	How many times were high fiber grains served the day of observation	0	0	0
		1	1	2
		2	2	2
		3	3	2
DRV13c	How many total times do whole grains appear on the menu for that full week	Write in box for answer	0	0
			1-3	1
			4-10	2

3. HFHS = (sum of question scores/10) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF12	How many times were fried or pre-fried vegetables served the day of observation	0	0	2
		1	1	1
		2	2	0
		3	3	0
DRV6c	How many total times do fried or pre-fried vegetables appear on the menu for that full week	Write in box for answer	0	2
			1-3	1
			4-10	0
ORF13	How many times were fried or pre-fried meats served the day of observation	0	0	2
		1	1	1
		2	2	0
		3	3	0

DRV5c	How many total times do fried or pre-fried meats appear on the menu for that full week	Write in box for answer	0	2
			1	1
			≥ 2	0
ORF14	How many times were high fat meats served the day of observation	0	0	2
		1	1	1
		2	2	0
		3	3	0
DRV7c	How many total times do high fat meats appear on the menu for that full week	Write in box for answer	0	2
			1	1
			≥ 2	0
ORF17	How many times were high sugar and/or high fat foods (not condiments) served the day of observation	0	0	2
		1	1	1
		2	2	0
		3	3	0
		4	4	0
		5	5	0
DRV14c	How many total times do high sugar and/or high fat foods (not condiments) appear on the menu for that full week	Write in box for answer	0	2
			1-3	1
			4-10	0
ORF18	How many times were high sugar and/or high fat condiments served the day of observation	0	0	2
		1	1	1
		2	2	0
		3	3	0
		4	4	0
		5	5	0
DRV15c	How many total times do high sugar and/or high fat condiments appear on the menu for that full week		0	2
			1-3	1
			4-10	0

4. Bev = (sum of question scores/11) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF7	How many times was 100%	0	0	2

	fruit juice served the day of observation	1	1	1
		2	2	0
		3	3	0
		4	4	0
		5	5	0
DRV10c	How many total times does100% fruit juice appear on the menu for that full week	Write in box for answer	0-1	2
			2	1
			≥ 3	0
ORF20	Was drinking water for children visible in the classroom?	No	0	0
		yes	1	0
ORF20a	How accessible was drinking water to children in the classroom?	Available for self-serve	1	2
		Available by request only	2	1
ORF20b	If no, is there a water fountain in a nearby hallway?	Yes	1	1
		no	0	0
**ORF20, 20a, and 20b are combined questions and should be scored as one question.				
ORF21	Did you witness teachers prompting children throughout the day to drink water?	Yes, regularly	1	2
		Yes, at specific times only	2	1
		No	0	0
ORF38	Was drinking water for children available outdoors?	Yes	1	2
		No	0	0
		No outdoor time observed	2	0
ORF38a	Did you see a drinking fountain located in the outdoor play area?	Yes	1	2
		No	0	0
**ORF38 and 38a are combined questions and should be scored as one question				
ORF39	While outdoors, did you witness teachers prompting children to drink water?	Yes	1	2
		No	0	0
		No outdoor time observed	2	Do not score
ORF22	How many times were sugar drinks served the day of observation	0	0	2
		1	1	0
		2	2	0
		3	3	0

		4	4	0
		5	5	0
DRV11c	How many total times do sugar drinks appear on the menu for that full week	Write in box for answer	0	2
			≥ 1	0
ORF23	How many times was milk served the day of observation	0	0	0
		1	1	1
		2	2	2
		3	3	2
ORF24	What type of milk was served to the majority of children at a majority of meals	Whole	1	0
		2%	2	1
		1%	3	2
		Skim	4	2
		Whole, flavored	5	0
		Lower fat, flavored	6	1
		Rice milk	7	2
		Soy milk	8	2
		Lactaid	9	2
DRV12c	How many total times does milk appear on the menu for that full week	Write in box for answer	0-3	0
			4-6	1
			7-10	2

5. SBnutr = (sum of question scores/6) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF26	Did staff push children to eat more than they wanted to?	Yes	1	0
		No	0	2
ORF27	Did staff serve children second helpings without being asked for more by the child?	Yes	1	0
		No	0	2
ORF28	Did staff positively and gently encourage children to try new or less favorite foods	Yes	1	2
		No	0	0
		No children resisted eating	2	Do not score

ORF29	Was food used to control behavior	Yes	1	0
		No	0	2
ORF30	Did staff sit with children during lunch	Yes	1	0
		No	0	0
ORF30a	Did staff consume the same food as children	Yes	1	2
		No	0	1
**ORF30 and 30a are combined questions and should be scored as one question				
ORF31	Did staff eat and/or drink less healthy foods in front of children	Yes	1	0
		No	0	2
		Did not observe staff eating	2	1

6. NutrEnv (sum of question scores/3) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF3	How was lunch served?	Family style	1	2
		Delivered and served in prepared portions	2	0
		Delivered in bulk and portioned by staff	3	0
		N/A	4	0
ORF54	Where were soda and other vending machines located	In entrance or front	1	0
		In public areas, but not front	2	0
		Out of sight of parents and kids	3	0
		No vending machines on sight	4	2
ORF54a	Did they contain only healthy options?	Yes	1	2
		No	0	0
**ORF54 and 54a are combined questions and should be scored as one question				
ORF61	Are any posters, pictures or books about nutrition displayed in observation room	No	0	0
		Yes	1	2

7. NutrTE = (sum of question scores/5) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF32	Did staff talk with children about healthy foods	No	0	0
		yes	1	2
ORF33	Was any formal nutrition education for kids observed	No	0	0
		Yes	1	2
DRV23	Does the center have a documented nutrition curriculum for kids?	No	0	0
		Yes	1	2
DRV24	Does the center have documentation of parent nutrition education/workshop materials?	No	0	0
		Yes	1	2
DRV22	Does the center provide nutrition training for staff?	No	0	0
		Yes	1	0
		No documents received	2	0
DRV22a	If yes, how often	2 times/year or more	0	0
		1x/year	1	0
		Less than 1x/yr	3	0
**DRV22 and DRV22a are combined questions and should be scored as one question.				

8. NutrPol = (sum of question scores/3) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
DRV17	Does the center have written guidelines addressing holiday/celebration foods?	No	0	0
		Yes	1	0
		No documents received	2	Set as missing
DRV17a	Healthier items encouraged	No	0	0
		Yes	1	2
**DRV17a and DRV17a1 are combined questions and should be scored as one question.				
DRV18	Did you review past/future fundraising projects or guidelines?	No	0	0
		Yes	2	2
		Center doesn't do fundraising	2	2
DRV18a	If yes, how many were non-food only	All	1	2
		More than half	2	2

		Half	3	1
		Less than half	4	0
		none		0
**DRV18a and DRV18a1 are combined questions and should be scored as one question.				
DRV19	Does the center have a written policy on nutrition and food service?	No	0	0
		Yes	1	0
		No documents received	2	Set as missing
DRV19a1	*These are filled/not filled questions. If one of 19a1-19a9 is filled (1) then score as 1, if more than one are filled (1) then score as 2. If DRV19a=1, but none of the 19a1-19a9 is filled then score as a 0.			
DRV19a2				
DRV19a3				
DRV19a4				
DRV19a5				
DRV19a6				
DRV19a7				
DRV19a8				
DRV19a9				

9. Act = (sum of question scores/4) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF34	How many minutes of total active play time was observed?	Write in box for exact number	0-30 min	0
			31-60	1
			>60	2
ORF35	Was structured physical activity observed	No	0	0
		Yes	1	0
ORF35a	How many occasions	1	1	1
		2	2	2
		3	3	2
		4	4	2
		5	5	2
**ORF35 and 35a are combined questions and should be counted as one question.				
ORF36	Did you observe any outdoor active play	No	0	0
		Yes	1	0
ORF36a	How many times/day	1	1	1
		2	2	2
		3	3	2
		4	4	2

		5	5	2
**ORF36 and 36a are combined questions and should be counted as one question. If ORF36 =1 and 36a is blank score as a 1.				
ORF37	How many total minutes of outdoor active play was observed?	Write in box for exact number	0-60	0
			61-120	1
			>120	2

10. Sed =(sum of question scores/3) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF40	Did you observe children seated for more than 30 minutes at a time (excluding nap and meals)	No	0	2
		Yes	1	0
ORF42	Is TV Viewing observed	No	0	2
		Yes	1	0
ORF42a	Total minutes TV was on	Write in box for exact number	0-30 min	1
			>30	0
**ORF42 and 42a are combined questions and should be counted as one question.				
ORF46	Is video game playing observed	No	0	2
		Yes	1	0

11. SedEnv =(sum of question scores/3) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF41	Is a TV present in the room	No	0	2
		Yes	1	0
ORF45	Is a computer visible in the room for use by children	No	0	2
		Yes	1	0
ORF60	Are any posters, pictures or books about physical activity displayed in observation room	No	0	0
		Yes	1	2

12. PortEnv =(sum of question scores/7) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF55b	Is a basketball hoop present at site	Indoors only	1	2
		Outdoors only	2	2
		Both indoors and outdoors	3	2
		Not present	4	0
ORF55d	Is a merry-go-round present at site	Indoors only	1	2
		Outdoors only	2	2
		Both indoors and outdoors	3	2
		Not present	4	0
ORF55g	Is a see-saw present at site	Indoors only	1	2
		Outdoors only	2	2
		Both indoors and outdoors	3	2
		Not present	4	0
ORF55i	Are swinging equipment present at site	Indoors only	1	2
		Outdoors only	2	2
		Both indoors and outdoors	3	2
		Not present	4	0
ORF55k	Are tunnels present at site	Indoors only	1	2
		Outdoors only	2	2
		Both indoors and outdoors	3	2
		Not present	4	0
ORF57	Was outdoor running space…	Unobstructed with plenty of space for group games	1	2
		Some obstruction, but space was adequate for individual play	2	1
		Plenty of space for play, but obstructed with play equipment	3	1
		Little running space or completely obstructed	4	0
ORF58	Did staff limit or restrict outdoor play area in any way that affected active play?	Yes	1	2
		No	0	0

ORF59	Was indoor play space suitable for…	Quiet play	1	0
		Limited movement/some active play	2	1
		All activities	3	2

14. SBpa = (sum of question scores/3) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF47	Did you observe restricting active play as punishment	No	0	2
		Yes	1	0
ORF48	Did staff join in active play	No	0	0
		Yes	1	2
ORF49	How many positive statements were made about physical activity	0 (write in box)	6	0
		1	1	1
		2	2	1
		3	3	2
		4	4	2
		5	5	2

15. PaTE = (sum of question scores/4) x 10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
ORF52	Was any physical activity education for kids observed	No	0	0
		Yes	1	2
ORF53	Were any extra-curricular physical activity programs provided to children on a fee basis?	No	0	0
		Yes	1	0
ORF53a	Were any active alternatives provided for those children that did not participate?	No	0	1
		Yes	1	2
**ORF53 and 53a are combined questions and should be counted as one question.				
DRV25	Does the center provide physical activity training for staff?	No	0	0
		Yes	1	0
		No documents received	2	0
DRV25a	If yes, how often	2 times/year or more	1	2
		1x/year	2	2

		Less than 1x/yr	3	0
**ORF25 and 25a are combined questions and should be scored as one question.				
DRV26	Does the center have a documented physical activity curriculum for kids?	No	0	0
		Yes	1	2
DRV27	Does the center have documentation of physical activity education/workshop materials?	No	0	0
		Yes	1	2

16. PaPol=scorex10

Variable Name	Variable Label	Answer	Dataset Variable	Score (0, 1, or 2)
DRV21	Does the center have a written policy on physical activity?	No	0	0
		Yes	1	0
		No documents received	2	Set as missing
DRV21a1	*These are filled/not filled questions. If one of 21a1-21a6 is filled (1) then score as 1, if more than one are filled (1) then score as 2. If DRV21a=1, but non of the 21a1-21a6 is filled then score as a 0.			
DRV21a2				
DRV21a3				
DRV21a4				
DRV21a5				

Appendix L
The Canadian Healthy After School Environments (CHASE) Tool

CHASE: Canadian Healthy After-School Environments 0%

Facility Name

Your Name

Your Position

Date

SECTION 1: YOUR ENVIRONMENT

A. Tell us about your facility

1. Where is your facility located?

- Home
- Private Facility
- School Building
- Recreation Center
- Leased/Rented Space (e.g. inactive school, community hall)

2. How many children from the following age categories are cared for each day (on average) at your after school care program/facility?

For each age group, please indicate:
1. Average # of children that are cared for per day
2. # Staff working with these children (not including administrative staff)

5-6 years

7-9 years

10-12 years

3. For each staff member that works at your facility, please indicate their:
1. Job title
2. Age
3. Years of experience
4. Certification/ qualifications/ training

EXAMPLE:

Staff 1

1. Care provider
2. 19 years old
3. 1 year of experience
4. High school diploma, level 1 coaching

Staff 2

1. Administrator
2. 30 years old
3. 10 years of experience
4. ECE degree

Staff 1

Staff 2

Staff 3

Staff 4

Staff 5

Staff 6

Staff 7

Staff 8

Staff 9

Staff 10

4. What are your hours of operation?

Before School

After School

5. Is your child care facility open during school professional development days (Pro-D Days), holidays (e.g. Christmas, Easter) and summer?

Please answer YES or NO for each.

Pro-D Days

Holidays

Summer

6. On average, how much time do children typically spend in your child care facility each day (in after-school care only)?

7. On average, how many days per week do children typically spend in your child care facility (after-school care only)?

8. On a typical day, how much time do children spend in the following activities?

For each activity, please indicate:
1. The number of periods per day children spend in the specified activity
2. Total minutes per day of the activity
3. Any comments you have about the activity

EXAMPLE:

Indoor Free Play (child initiated)

1. 2 periods per day
2. 60 minutes total per day
3. The children are supervised but staff do not facilitate activities during this time

Indoor Free Play (child initiated)	
Indoor Structured (some guidance from staff) physically active play (e.g. musical chairs)	
Indoor sedentary play	
Screen time (TV, video or computer games)	
Outside Free Play (child initiated)	

Outdoor Structured (some guidance from staff) physically active Play (e.g. tag)	
Outdoor sedentary play	
Eating	
Quiet Time	
Travel time walking	

9. Does your facility provide food for children after school?

- Yes
- No

→ <u>If yes,</u> please check which of the following are provided:

- After-school snack
- After-school meal
- Both
- Other

10. For each room in your child care facility, please tell us which option most closely describes the indoor play space for that room:

- **A. Not available for the children to play in or available for quiet play only**
- **B. available for limited movement (e.g. jumping on the spot, moving side to side)**
- **C. available for some active play (e.g. jumping, rolling, skipping)**
- **D. available for all activities, including running**

Room 1 ☐
Room 2 ☐
Room 3 ☐
Room 4 ☐
Room 5 ☐
Room 6 ☐
Room 7 ☐
Room 8 ☐
Room 9 ☐
Room 10 ☐

B. Tell us about your neighbourhood

1. How many public parks (without equipment), playgrounds (with equipment), pools, courts and trails are within walking distance (takes 15 minutes or less to walk there with children) from your facility?

Parks (without equipment) ☐
Playgrounds (with equipment) ☐
Pools ☐
Sport courts (e.g. tennis, basketball) ☐
Walking paths and nature trails ☐

2. Tick the description that most closely describes the walking environment in your facility's neighbourhood (select one only).

- ○ There are walking paths or trails with little exposure to the road and traffic
- ○ There are sidewalks on residential streets that have a low volume of traffic
- ○ There are sidewalks on residential streets that have a high volume of traffic
- ○ The children must walk along sidewalks on main thoroughfares
- ○ There are no sidewalks and children must walk on the side of the road

3. What is the typical level of traffic on the main access roads to your child care facility during the after school hours?

- Heavy
- Medium
- Light

4. Are there sidewalks next to the main access roads to your child care facility?

- Yes
- No

5. Are there bike lanes on the main access roads to your child care facility?

- Yes
- No

SECTION 2: PHYSICAL ACTIVITY

A. Tell us about your current physical activity practices

1. How often is active playtime (any activity requiring large muscle group movement e.g. running, jumping, climbing) scheduled for all children (include all indoor and outdoor activity)?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

2. How much time per day is active playtime for children typically scheduled (include both indoor and outdoor activity)?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

3. Is participation in scheduled physical activity option for the children?

- Yes
- No
- Sometimes

4. How often do staff members lead structured physical activity (activities and games) for children?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

5. How often is outdoor active play provided for all children?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

6. How much television (including movies & DVDs) do the children watch while at your facility?

- 5 or more hours per week
- 3-4 hours per week
- 2 hours per week or less
- Rarely or never

6. Do you have videogame equipment?

- Yes
- No

→ If yes, how often is it used?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

→ If yes, what type of games are offered?

- Mostly sedentary game systems and games (e.g. Xbox, Nintendo)
- Some sedentary and some active game systems and games (e.g. Wii, Kinects)
- All active game systems and games

→ If yes, how long do children use video games per day (include total time playing and watching others play)

- 0-15 minutes
- 16-30 minutes
- 31-45 minutes
- More than 45 minutes

7. How often do staff members take the children for a walk in the neighbourhood or to a nearby park or playground for physical activity?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

8. How often do staff members take the children on fieldtrips that involve some sort of physical activity (not including walks in the neighbourhood, e.g. trips to go skating, rock climbing, skiing)?

- 1 time per week or more
- 2-3 times per month
- 1 time per month
- Rarely or never

B. Tell us about your physical activity environment and policies

1. Check the option that most closely describes your outdoor play space.

- ○ Unavailable
- ○ Only one type of play area (e.g. grass, dirt, concrete, wood, sand)
- ○ More than 1 type of play area
- ○ More than 1 type of play area with varied sloped surfaces (e.g. hills)

2. Is fixed play equipment available at your facility (e.g. tunnels, balancing equipment, climbing equipment, overhead ladders)?

- ○ Yes
- ○ No

→ If yes, what type of equipment is available?

- ○ Only one type of equipment
- ○ Variety of equipment accommodating the needs of most children
- ○ Wide variety of equipment accommodating the needs of all children

3. How would you describe your portable play equipment (e.g. wheel toys, balls, hoops, ribbons, skipping ropes, bands)?

- ○ Little variety
- ○ Some variety
- ○ Good variety
- ○ Wide variety

4. Please check the option that best describes the sufficiency of your portable play equipment:

- ○ Not enough equipment for all children
- ○ Enough equipment for most children to play at the same time
- ○ Enough equipment for all children to play at the same time

5. Is the following play equipment available for children to use at your site?

	Yes	No
Sports equipment (e.g. hoola hoops, balls, jump ropes, bats, gloves)	○	○
Push and roll toys (e.g. vehicles, animals)	○	○
Block and brick toys (e.g. Lego, play construction sets)	○	○
Sand boxes and toys, water toys (e.g. floating toys, funnels, buckets)	○	○
Play materials used for throwing, catching, kicking, striking, etc. (e.g. balls, bats, baseball gloves, throwing targets)	○	○
Play materials used for sliding, creeping, climbing, rolling, etc. (e.g. slides, stairs, tunnels, climbing apparatus, pools, parachutes)	○	○
Ride-on toys (propelled by bouncing or pushing) and tricycles	○	○
Swinging, rocking and twisting toys	○	○
Multi-activity tables	○	○
Full-length mirror that can be used in motor activities	○	○
Audio equipment and children's music	○	○

6. Is there a place where children can help themselves to equipment for active play (e.g. a shelf, cupboard or bin)?

- Yes
- No

7. During active play time (indoor and outdoor), how often does staff verbally encourage physically active games/activities (e.g. by using prompts, providing positive comments, suggestions or encouragement, but not facilitation)?

- More than 1 time per day
- Choice 2
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

8. During active play time (indoor and outdoor), how often do staff members facilitate physically active games/activities (by demonstrating, laying out equipment, etc.)?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than one time per week
- Rarely or never

9. How often do staff members participate with children in physically active games/activities?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

10. What visual materials encouraging physical activity are displayed at your facility?

- No display, there is limited poster space
- No display for a reason other than limited poster space

- A few posters, pictures, or books about physical activity displayed in a few rooms
- Posters, pictures, or books about physical activity displayed in most rooms
- Posters, pictures, or books about physical activity displayed in all rooms

11. How often is training provided that teaches staff how to verbally encourage, facilitate and participate in physically active games/activities with children (not including playground safety)?

- Rarely or never
- Less than 1 time per year
- 1 time per year
- 2 times per year or more

12. How often is physical activity education/coaching on motor-skill development provided for children (e.g. providing instruction on how to do a motor skill like throwing a ball or skipping)?

- Rarely or never
- Less than 1 time per year
- 1 time per year
- 2 times per year or more

13. Is physical activity information offered to parents (e.g. workshops, activities and take home materials)?

- Yes
- No

→ If yes, how often you provide the following methods of physical activity education/training to parents?

Workshops	
Interactive activities or events	
Take-home materials	
Other (please describe and indicate how often)	

14. Do you have a written policy (a contract of procedures) on physical activity?

- ○ Yes
- ○ No

→ <u>If yes</u>, please check the option that best describes the policy:

- ○ The policy is informal and is rarely followed
- ○ The policy is informal and is usually followed
- ○ The policy is written and is rarely followed
- ○ The policy is written and is usually followed
- ○ Other

→ <u>If no</u>, would an externally generated policy be well received by the staff at your facility?

- ○ Yes
- ○ No

15. Are the following topics covered by your policy?

	Yes	No
Active time	○	○
Sedentary play time	○	○
Supporting physical activity through encouragement/facilitation	○	○
Providing fundamental movement skills through activities in structured play time	○	○
Staff training in physical activity	○	○
Provision and use of equipment/facilities for physical activity	○	○
Supporting active transport to/from child care	○	○
Education of children about physical activity	○	○

SECTION 3: NUTRITION

A. Tell us about your current nutrition practices

1. How often is fresh fruit in own juice (including frozen fruit and 100% fruit juice, but not including fruit in syrups) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

2. How often is frozen or canned fruit (including those in syrups) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

3. How often are fresh vegetables offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

4. How often are canned vegetables (including corn, green beans, frozen peas, but not including potatoes and potato products like fries and tater tots) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day

- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

5. How often are potatoes and potato products (e.g. fries and tater tots) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

6. How often are fried or pre-fried foods (frozen and breaded, e.g. chicken nuggets, fish sticks, fries, hash browns) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

7. How often are processed meats (e.g. sausage, bacon, hot dogs, bologna, ground beef) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

8. How often are lean meats (e.g. baked or broiled chicken, turkey and fish) or vegetarian alternatives (e.g. beans and lentils) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day

- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

9. How often are whole grain foods offered (e.g. whole wheat bread, oatmeal, brown rice, plain Cheerios, etc.) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

10. How often are whole, unprocessed, unrefined foods (e.g. brown rice, quinoa, chick peas, and fresh fruits and vegetables) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

11. How often are baked sweets (e.g. cookies, cakes and muffins) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

12. How often are sugary candies (e.g. chocolate, Sweet Tarts, Swedish Berries, and Gummy Bears) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

13. How often are salty foods (e.g. chips, crackers, and salted nuts) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

14. Is there drinking water available to children?

- Yes
- No

→ <u>If yes,</u> how easy is it for children to drink the water?

- The drinking water is not visible to children
- The drinking water is visible to children, but is only available during designated water breaks
- The drinking water is easily visibly and available on request
- The drinking water is easily visible and available for self-serve
- Other

15. How often are sugary drinks (e.g. Kool-aid, sports drinks, sweet tea, punch and soda, but <u>not</u> including 100% fruit juice) offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week

- Rarely or never

16. Is milk served to children at your facility?

- Yes
- No

→ If yes, how often is milk offered by your facility to children in after-school care?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

→ If yes, Are the following types of milk served at your facility?

	Yes	No
Whole or full-fat	○	○
2% reduced fat	○	○
1% low fat	○	○
Skim or non-fat	○	○
Flavoured milk (e.g. vanilla, chocolate, strawberry)	○	○
Non-dairy milk (e.g. soy, rice and almond)	○	○

17. Are there vending machines on site?

- Yes
- No

→ If yes, how often are children allowed to purchase snacks from vending machines?

- More than 1 time per day

- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

→ <u>If yes,</u> what foods are sold in your vending machines? (please check all that are sold)

- Salty snacks (e.g. chips, crackers and salted nuts)
- Sugary snacks (e.g. Chocolate, Sweet Tarts, Swedish Berries and Gummy Bears)
- Sugary drinks (e.g. Kool-aid, sports drinks and sodas)
- 100% fruit or vegetable drinks
- Milk
- Bottled water
- Other

B. Tell us about your nutrition environment and policies

1. Do the following items exist in your facility's cooking area?

	Yes	No
Microwave	○	○
Stovetop	○	○
Oven	○	○
Electric frying pan or cooker	○	○
Toaster or toaster oven	○	○
Fridge	○	○
Freezer	○	○
Eating area with tables and chairs	○	○
Storage area for food	○	○
No cooking facilities exist	○	○

2. Do children bring their own snacks to your facility?

- ○ Yes
- ○ No

→ If yes, how often do children bring their own snacks to your facility?

- ○ Every day
- ○ Most days
- ○ Some days
- ○ Only on special occasions
- ○ Never

→ If yes, is there a policy regarding food brought in?

- ○ Yes (please describe it)
- ○ No

3. Do the snacks you serve to children repeat weekly or monthly following a predetermined cycle?

- ○ Yes
- ○ No

→ If yes, what is the cycle?

- ○ 1-week cycle
- ○ 2-week cycle
- ○ 3-week cycle
- ○ Monthly cycle
- ○ Other

4. How often do snacks include a combination of new foods (foods that your facility has never before introduced to the children) and familiar foods (foods that are regularly offered to the children)?

- ○ More than 1 time per day
- ○ 1 time per day
- ○ 3-4 times per week
- ○ 1-2 times per week
- ○ Less than 1 time per week
- ○ Rarely or never

5. How often do snacks include foods from a variety of cultures?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

6. How often are children encouraged by staff to try new or less favourite foods?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

7. Is treat food used to encourage/reward positive behaviour in children?

- Yes
- No

→ If yes, how often is treat food used to encourage/reward positive behaviour in children?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

→ If yes, what treat foods are used to encourage/reward positive behaviour in children?

- Salty snacks (e.g. chips, crackers and salted nuts)
- Sugary snacks (e.g. chocolate, Sweet Tarts, Swedish Berries and Gummy Bears)
- Other

8. What foods are offered when celebrating holidays and special events? (check all that apply)

- Baked goods (e.g. cupcakes, cookies)
- Sweets (e.g. candy, chocolate)
- Salty snacks (e.g. chips, salted nuts)
- Healthy snacks (e.g. fruits, vegetables, yogurt)
- Non-food rewards (e.g. stickers, prizes)
- Non-food recognition (e.g. awards likes 'leader of the day')

9. At snack time, how often do children serve themselves without the help of staff (children choose what foods and how much they eat)?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

10. How often does staff consume the same food and drinks as the children?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

11. How often does staff eat or drink less healthy foods in front of the children (e.g. sweets, soda and fast food)?

- More than 1 time per day
- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

12. How often does staff talk with children about trying and enjoying healthy foods?

- More than 1 time per day

- 1 time per day
- 3-4 times per week
- 1-2 times per week
- Less than 1 time per week
- Rarely or never

13. What visual materials encouraging healthy eating are displayed for children?

- No display, there is limited poster space
- No display for a reason other than limited poster space
- A few posters, pictures, or books about healthy food displayed in a few rooms
- Posters, pictures, or books about healthy food displayed in most rooms
- Posters, pictures, or books about healthy food displayed in all rooms

14. Is nutritional training offered to staff (not including training on food safety and food program guidelines training)?

- Yes
- No

→ If yes, how often is nutritional training offered to staff (not including food safety and food program guidelines training)?

- Less than 1 time per year
- 1 time per year
- 2-4 times per year
- 5 or more times per year

→ If yes, please describe the training that is offered:

15. Are children involved in food-related activities (e.g. food preparation, cooking)?

- Yes
- No

→ If yes, what type of activities?

- Food-related games
- Food tasting

- Baking and cooking
- Preparing snacks
- Other

16. Is nutritional information offered to parents (e.g. by workshops, activities and take-home materials)?

- Yes
- No

→ If yes, how is the information offered to parents? (please check all that apply)

- Workshops
- Food tastings
- Interactive activities or events
- Take-home materials
- Other

17. Do you have a policy on nutrition of foods consumed by children during after-school care at your facility?

- Yes
- No

→ If yes, please check the option that most closely describes your policy or guideline:

- There are informal guidelines for healthier options, but they are not enforced
- There are informal guidelines for healthier options, and they are usually enforced
- There is a written policy for healthier options, but it is not enforced
- There is a written policy for healthier options, and it is usually enforced
- Other

→ If yes, Are the following topics covered by your policy?

	Yes	No
Nutritional value of food served to children by staff	○	○

Nutritional value of food brought in by children	○	○
Nutritional value of foods eaten by staff in front of children	○	○
Nutritional value of food brought in or served on holidays/celebrations	○	○
Healthy eating education/training for staff	○	○
Healthy eating education for children	○	○
Healthy eating education for parents	○	○
Food allergies	○	○
Food safety	○	○

THANK YOU FOR COMPLETING THE CHASE SURVEY!

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