

Healthy Eating and Physical Activity Challenges and Opportunities in After-School Programs: Providers' Perspectives

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Abstract

The purpose of this study was to understand after-school program providers' perspectives of (a) current physical activity and nutrition curriculum, practices, and challenges, and (b) necessary modifications, program suggestions or resource needs to improve the healthy eating and active living practices within their after-school program for children aged 6 to 12 years. This qualitative study targeted a sample of nine after-school program providers in London, Ontario. Data was collected via in-depth interviews and a demographic survey between January and April 2009. Strategies to enhance data trustworthiness were incorporated throughout. After-school program providers identified insufficient healthy eating curriculum and requested interactive, engaging activities to augment existing curriculum. Physical activity opportunities were incorporated more frequently; however, barriers such as equipment, space, and adapting activities to meet developmental needs and abilities of all children in after-school programs remained challenging. Findings support the development of additional healthy eating and active living program resources and training for after-school program providers. After-school programs enhanced by effective nutrition and physical activity components might create supportive educational environments for building children's lifelong healthy eating and active living behaviours.

Keywords: physical activity; nutrition; after-school programming; caregiving; children; professional education; resource allocation

We would like to thank Danielle Amey and Melissa van Zandvoort for assisting with data analysis and Leigh Vanderloo and Alex Wilkins for their help in preparing this manuscript. We would like to acknowledge the support of the YMCA of Western Ontario and London Children's Connection. Finally, special thanks are extended to the after-school program providers who gave of their time to participate in this study. Correspondence concerning this article should be addressed to H. M. Thomas, Middlesex London Health Unit, University of Western Ontario, London, Ontario, Canada. N6A hclark4@uwo.ca

Overweight and obesity rates are at epidemic proportions in Canada and around the globe (Shields, 2001; World Health Organization, 2009). In a recent study in Ontario, Canada, He and Beynon (2006) found 25% of sampled children aged 6 to 13 were overweight or obese, a finding consistent with national data from the Canadian Community Health Survey (CCHS) Cycle 2.2 (Health Canada, Office of Nutrition Policy and Promotion, 2004). This rate has nearly doubled in the last 30 years, strengthening the need for effective public health interventions to quell the rising rates of obesity and corresponding risks for chronic disease (Shields, 2001).

Canada's most recent *Report Card on Physical Activity* released by Active Healthy Kids Canada (2010) failed Canadian children in physical activity, indicating 88% are not meeting the federal guidelines of 90 minutes of moderate to vigorous daily physical activity. Canadian children also received an "F" for their screen viewing behaviours, indicating many Canadian children spend as much as six hours each day viewing televisions, computers and/or hand-held video games (Active and Healthy Kids Canada, 2010). Insufficient physical activity during childhood puts children at risk for poorer academic achievement, and increases their risks for health-related problems such as obesity and type 2 diabetes (Tompsonski, Davis, Miller, & Naglieri, 2008; Trudeau & Shephard, 2008).

Almost 60% of Canadian children aged 2 to 17 years consume less than the recommended five servings of fruits and vegetables daily (Shields, 2001). Poor dietary habits during childhood may impact day-to-day wellbeing and performance, academic achievement and attainment, and maintenance of healthy weights, growth and development, and dental health, among other health indicators (Fagot-Campagna, 2000; Figueroa-Colon, Franklin, Lee, Aldridge, & Alexander, 1997; Figueroa-Munoz, Chinn, & Rona, 2001; Reilly, Methven, McDowell, Hacking, Alexander, Stewart, & Kelnar, 2003; Serdula, Ivery, Coates, Freedman, Williamson, & Byers, 1993).

Many children spend the hours immediately following school engaging in screen viewing activities (Active Healthy Kids Canada, 2008). Consequently, the hours after school should be considered high priority for programs engaging children in healthy eating practices and physical activities (Active Healthy Kids Canada, 2008; Isasi, Soroudi, & Wylie-Rosett, 2006). It is important to establish healthy eating and physical activity patterns in younger children to improve health outcomes while decreasing the potential for overweight and obesity immediately and later in life (Canadian Paediatric Society, 2002; Kaufman, 2006).

Contextual Settings and Physical Activities and Healthy Eating Opportunities

After-school (AS) programs offer educational and recreational activities to children for the hours between the completion of the school day and the time their parents pick them up to go home (e.g., if school ends at 3:30 p.m., this program would begin at 3:30 p.m. and run until approximately 6:00 p.m.). These programs typically provide opportunities for physical activity participation, nutrition education, a healthy snack, and a safe place for children to play and socialize in the hours following school (Afterschool Alliance, 2006). As such, the primary purpose of AS programs is not to provide direct educational instruction. Because of the large number of children who attend these programs (James-Burdumy, Dynarski, & Deke, 2007) AS programs present ideal settings to implement health promotion strategies combating childhood obesity, if presented in an appealing and fun way. After-school programs provide a window of opportunity to assist children in the development of healthy lifestyle behaviours without

competing with the demanding and structured school-based curricula related to health and physical activity (Beets, Beighle, Erwin, & Huberty, 2009).

Merrifield (2007) stressed the importance of AS programs, specifically the value of creating environments supporting and encouraging healthy eating and physical activity. For example, utilizing physical activity through recreational play and healthy eating through education, role modeling, and simple meal preparation instruction, the AS setting may facilitate healthier lifestyle behaviours overall. AS programs are administered by a variety of organizations and provide child minding services, homework support, and leisure activities. However, it is not known to what extent these programs incorporate suitable opportunities for healthy eating *and* physical activity.

Health Curriculum in After-School Programs

Health curriculum (related to physical activity and healthy eating opportunities) provided in after-school settings varies from agency to agency. One curriculum which has been adopted by a large province wide agency offering after school care implements the Co-ordinated Approach to Child Health (CATCH) Kids Club. CATCH Kids Club involves healthy activities in AS programs for elementary school-aged children. Originating as a research study funded by the National Heart Lung and Blood Institute in 1991, CATCH Kids Club was developed to determine the effectiveness of school physical education and health programs in improving students' dietary- and activity-related behaviours (Coordinated Approach to Child Health, n.d.). CATCH includes nutrition education materials and a physical activity component, mandated to be implemented for 45 minutes, three days per week. CATCH has been adopted in over 7500 schools globally (e.g., after-school programs and communities across the United States, Japan, Germany, and Canada; Coordinated Approach to Child Health, n.d.). The integration of health promotion to enhance curriculum in AS programs can foster physical activity and promote health eating among children participating in CATCH Kids Club programs (Mazaffarian, Wiecha, Roth, Nelson, Lee, & Gortmaker, 2010). In contrast, AS programs not offering CATCH Kids Club curriculum may not follow a structured program. In these cases, after-school providers access a variety of lesson plans with activities made available by their employing agency which focus on crafts and recreation. At these centres, what remains less clear is how frequently physical activity and nutrition curriculum is implemented within their daily practice. The variation in daily curriculum within these centres is further compromised by the fact that some provincial childcare regulations (for preschool-aged children) also legislate the after-school timeframe, whereas others provinces do not capture this type of program within their regulation (Vanderloo, Tucker, Ismail, & van Zandvoort, under review). Therefore, the stipulations and expectations differ with regards to incorporating and providing daily physical activity. The regulations that do exist for after-school programs within the childcare centres focus on the food and physical activity afforded, and not on the curriculum per se.

The purpose of this study was to understand after-school program providers' perspectives of (a) current physical activity and nutrition curriculum, practices, and challenges, and (b) necessary modifications, program suggestions or resources needed to improve the healthy eating and active living practices within their after-school program for children aged 6 to 12 years.

Methods

A sample of AS program facilitators in the local municipality was targeted for inclusion in this study. The sample was drawn from the three main organizations in London which offer structured AS programs from varying geographic locations throughout the municipality, determined through discussions with community partners affiliated with the local health unit. To recruit potential AS providers, a flyer was posted at community-based AS programs in the municipality and announcements about this study were made at AS program staff meetings. Additionally, snowball sampling was used, whereby the research team invited participants to tell other AS providers about the current study. A heterogeneous sample of AS providers from around the city and from different organizations providing AS programs was recruited, with a goal of securing eight to ten participants as previous research has found this to be within the range needed for data saturation, that is, when no new information is provided by participants (Guest, Bunce, & Johnson, 2006). A total of nine in-depth one-on-one interviews were conducted with AS providers at a time that was considered most convenient for the participants. Data saturation was reached by the seventh interview; however, two additional interviews were completed to confirm data saturation.

All participants were employed by one of two major agencies providing structured AS programming within the local municipality; unfortunately, researchers were unable to recruit any AS providers from the third major agency providing this service. The two participating agencies, which employed the participants in the current study, offer AS programming in elementary school settings, in which AS program groups have access to their assigned school classrooms, the gymnasium, and outdoor playground. Six participants were employed by an agency which implemented CATCH Kids Club. The remaining three participants' organization did not offer a structured afterschool curriculum. These participants created and/or used activities already developed and available from their agency. These activities focused primarily on physical activities and games and few included nutrition material. These resources were not part of a formal curriculum prepared for AS programs.

The study participation criteria included adults employed by an after-school program, with the ability to speak English fluently. The working definition of *after-school program* was programs formally run and licensed by an organization and parent-led programs supported by agencies offering professional resources, support, and program visits from qualified staff. Interested participants telephoned the lead researcher (HT), who explained the study purpose and determined participant eligibility before arranging an interview soon after initial contact.

Interviews were conducted at the AS program location between January and March 2009. During each in-depth interview, the lead researcher (HT) greeted the participant and re-explained the research purpose. A semi-structured interview guide facilitated each interview, and participants were asked questions related to their perceptions of the following: the existing nutrition and physical activity curriculum ("What kinds of healthy eating/physical activity curriculum [activities] do you use with the children in your after-school program?"); their comfort implementing these activities (How comfortable are you with leading the children in your program in curriculum/activities related to healthy eating/physical activity?); nutrition and physical activity resource needs (What kind of additional resources related to active living or physical activity would help you in augmenting the current curriculum/activities in your after-school program? and, "What kind of additional resources related to healthy eating would help you in augmenting the current curriculum/activities in your after-school program?"); and their training needs to enhance current offerings ("What kind of training would assist you in

augmenting the curriculum/activities related to healthy eating/active living?"). Participants also completed an anonymous demographic questionnaire at the interview's conclusion (See Table 1 for participant characteristics). In-depth interviews lasted between 60 and 90 minutes, were audio-taped and transcribed verbatim. At the interview conclusion, participants were given a gift certificate to a local grocery store as a token of appreciation for their participation. Ethical approval for this study was granted by the University of Western Ontario's Research Ethics Board.

Table 1
Demographic Characteristics of Participating After-School Program Providers

Demographic Characteristic	N	%
Age		
20-29	3	33
30-39	2	22
40-49	2	22
50+	2	22
Sex		
Male	1	11
Female	8	89
Ethnicity		
White	8	89
Arab	1	11
Education		
High school	1	11
University	7	78
Graduate school	1	11
Employment status¹		
Part-time	5	62.5
Full-time	1	12.5
No other employment	2	25.0
Years experience		
< 5 years	4	44.4
5-9 years	4	44.4
10+ years	1	11.1

¹ Employment in addition to provision of after-school program care

Analysis

Data saturation was reached by the seventh in-depth interview, and two additional interviews were completed to ensure that saturation had, in fact, been achieved. Inductive content analysis, as described by Patton (2002), was used to categorize emerging themes.

QSR NVivo 7.0 software (2006) was used to code and categorize emerging themes. A number of strategies, as outlined by Guba and Lincoln (1989), were employed to ensure the trustworthiness of the findings including member-checking, peer-debriefing, and using multiple coders. To ensure credibility, member-checking between each question ensured the responses from participants were correctly understood by the interviewer, and then again at the end of the meeting to summarize the main points. Additionally, a colleague not involved in this study was recruited to engage in peer-debriefing sessions with the research team. To facilitate dependability throughout the duration of the study, a detailed journal of interpretations was kept to provide an audit trail, and reflexivity was utilized to keep any potential biases in check. To facilitate confirmability of the data, multiple researchers with experience in qualitative analysis independently analyzed the data and then compared their findings through triangulation, as described by Patton (2002). Finally, the entire research process was documented in detail to allow other researchers to determine if the context and findings from this study are transferable to their contexts and settings.

Findings

AS Program Demographics

The mean age of the participants was 36 years. The mean working hours per week was 20 hours/week, and the average number of years of experience was five. Demographic characteristics of the AS programs' curriculum are provided in Table 2. When reviewing the demographic survey results, it was found that AS programs cared for an average of 19 children per day. These programs were offered five days/week, the vast majority (89%) for more than two hours per day, and all AS programs charged a fee ranging between \$43.75 and \$80.00 per week. The children cared for in these programs ranged in age from 4 to 12 years, were both male and female, and were a diverse group of multicultural children. Of interest to the researchers was the level of education attained by AS program providers. The majority of AS program providers (78%) were university educated and 11% had obtained graduate level degrees. AS program providers do not require university-level education and are well qualified with a college-based education in an early childhood education or a related program.

Table 2
Demographic Characteristics of After-School Program Curriculum

Demographic Characteristic	<i>N</i>	%
Healthy eating curriculum		
Yes	8	89
No	1	11
Physical activity curriculum		
Yes	9	100
No	0	0
Snack provided		
Yes	9	100
No	0	0
Food preparation facilities		
Yes	8	89
No	1	11

In concert with the overall purpose of this study, the three main themes emerging from the data related directly to nutrition, physical activity, and suggestions for assisting providers. More specifically, participants highlighted nutrition curriculum challenges; nutrition program suggestions; physical activity challenges; sedentary time, physical activity resources; physical activity program suggestions; after-school program providers' initiative; and training/workshops. Finally, demographic descriptions of the AS programs themselves are also highlighted. Details of each theme are identified below.

Nutrition Themes

Nutrition Curriculum Challenges

After-school programs run throughout the school year. Children who participate in AS programs spend up to 190 days (40 school weeks) in AS programs. All AS program providers interviewed agreed their nutrition curriculum was notably limited and the paucity of nutrition resources available was repeated frequently. As a result, the children in the AS programs quickly became bored with the limited nutrition activities in the CATCH after-school curriculum and had no interest in engaging in healthy eating activities. One participant indicated, “[t]he resources aren’t there for us unless we search them out.” Another participant, involved in the CATCH after-school program in which nutrition curriculum is mandated indicated, “[o]nce we finish [the 32 nutrition lesson plans in the curriculum], the nutrition is kind of left up to me because the kids won’t repeat it. It was hard enough to get them to do it the first time. . . .”

Participants explained the CATCH program’s 32 nutrition-based lesson plans are typically completed in six weeks, leaving an additional 34 weeks to fill with healthy eating

activities. It was agreed by all AS program providers that any nutrition-related activities for the children in their care must be creative, interactive, and fun. One participant stated, “. . . the kids have been in school all day so they don’t want to be lectured and talked to, but if it’s something fun [it would be well-received].” This sentiment was described by another participant who offered, “I think anything you make a game out of, [and] then they are into it.” Nutrition curriculum, while valued by AS providers as an important program component, tended to be repetitive and disengaging. Participants were seeking ways in which nutrition education could be more engaging, enticing and fun for the children in their care.

Nutrition Programming Suggestion

All participants in the current study indicated the need for nutrition curriculum activities and resources to supplement their AS programming. One participant identified succinctly the need for such resources when she said, “I like this [taps his physical activity index box] and I hope that they could have a companion to it that would be nutrition-based.” The opportunity to have additional nutrition resources that were quick, fun, and easy to implement without providing a didactic lesson plan would be well-received by participants in the current study. One participant commented, “I think if there are activities to go along with [the nutrition education] . . . they [the children] would really get involved in that. If there aren’t activities, it’s harder. I think anything you make a game out of then they are really into it.” Another participant confirmed the importance of creative, fun programming when she said, “I would try to make a game for every [nutrition] lesson because it’s more fun to learn about it and maybe it will stick more . . . what we are talking about, they are actually going to take it in.” These nutrition curriculum suggestions were significant for the research team to understand when moving forward with proposed program activities for AS programs.

Physical Activity Themes

Physical Activity Challenges

Physical activity barriers identified by seven of nine participants related to ages of the children in their care. For example, AS program providers indicated it was very difficult to engage all children in the same activities at the same time, when their ages ranged from 4 to 12 years. The CATCH program mandated 45 minutes of group-based activity three times weekly. This became onerous for providers with children of different ages, stages, and physical abilities. One participant stated, “[m]y group . . . does not like playing together as a group because the age range is JK to grade six . . . It’s like pulling teeth to get that entire group to play a game together.” Other physical activity challenges identified related to equipment and space shortages. The CATCH Kids Club program provided a wide range of physical activities that were easily implemented in large spaces and using available equipment, but the activities became problematic when the gymnasium was booked by other groups (e.g., extra-curricular school team practices or competitions) or when the weather did not permit outdoor activities. One participant exemplified this barrier by stating, “I have two soccer balls and 10 kids so that just eliminates a lot of games . . .” Another participant revealed, “. . . the more equipment we have, the more active, constantly active the kids could be . . .” In the same vein; however, outdoor and gym playtime were well-received by the children and were often encouraged by AS providers. The

benefits to utilizing gymnasiums and outdoor playgrounds for physical activities were well-recognized by participants in the current study. One participant indicated, “I think it gives them the ability to run some energy off and shake their sillies out.” Another indicated the impact of poor weather on behaviour, “[i]f we have rainy days and the gym is closed, they are off the roof!” And another participant mentioned, “[i]f we could play outside in the good weather, we [would] go beyond the half hour.” Clearly, having ample space, equipment, and the ability to engage in outdoor activities as frequently as possible made for effective, enjoyable physical activities in the AS programs. Specific challenges related to finding physical activities to keep all children of all ages absorbed and participating in the program remained and inability to be active outdoors during inclement weather.

Sedentary Time

In contrast to the physical activities in which children in AS programs engaged, four of nine program providers indicated their children also participated in sedentary activities. Of all sedentary behaviours in which children in the AS programs engaged (e.g., crafts, independent reading, story time, and computers), the most common sedentary activity was computer time. One participant, whose comment was echoed by three other participants, stated, “[c]omputer is their favourite . . . I wouldn’t say we discourage [computer use] but we limit it . . . to 10 minutes per child.” When asked why the computer usage per child is limited, this participant indicated, “[b]ecause we figure, you know, they have been sitting [all day in school], they need to be up and moving around. They need to get some of their energy out.” It is clear there is recognition that physical activity can be a useful tool to engage children in healthy, active play, which is promoted and encouraged within AS programming.

Physical Activity Resources

Participants in the current study indicated they had access to a variety of ideas for activities promoting physical activity. One participant noted, “I think there [are] lots of activities to do with physical activity. There [are] lots of resources for that.” Another participant indicated, “[t]here’s a great variety [of physical activity resources] for sure. They have a whole box full of recipe cards that are games, and they are divided up in different categories, so they have a lot of variety and choice” The resources for physical activity ideas was reportedly ample; however, the challenge for the participants related more to the type of activity offered with respect to space, equipment, and age limitations, as previously mentioned.

Physical Activity Program Suggestions

The main suggestions for physical activity programming related to the issues identified as barriers to physical activity, specifically, limited available space and limited access to equipment. Participants indicated a desire for “. . . games that didn’t need a lot of equipment.” It was recognized that, “. . . ‘limited space activities’ [are available] but they are still designed to be in [an open] space with nothing in it.” These types of activities presented a challenge to participants who were often left to engage children in these activities in classrooms filled with desks, chairs and toys. Limited access to the school gymnasium and poor weather conditions were barriers to AS program providers that must be addressed. Participants working for one after-school program agency, in which a structured physical activity program is not mandated,

requested additional physical activity ideas focusing on activities that can be implemented in limited spaces. One participant revealed:

I think sometimes we get stuck in the same stagnant ability of playing the same thing all the time so . . . if we had a resource that would give us some different kinds of games . . . that didn't need a lot of equipment . . . we would have more of a variety to choose from for them [the children].

There is a need for additional small space physical activities requiring limited equipment.

Suggestions for Assisting Providers Theme

After-School Program Providers' Initiative

The after-school program providers' initiative relates to the time and effort the AS program providers took to research and coordinate AS activities and educational materials focusing on healthy eating and physical activity. Planning and preparation for AS programs mainly occurred on their own time. Many of the participants (six of nine) mentioned that in addition to the preparatory time available during the workday, they spent unpaid time preparing for their AS program. One participant revealed, "I do a lot of it, a lot of planning, a lot of cutting [e.g., using scissors to cut out components to be used for craft and other activities], a lot of preparing on my own time because there is no way I would be able to finish it [otherwise]." Another participant agreed, stating, "I think the challenge is . . . our time is precious." When making recommendations for any resources that could support the AS providers in the activities they provide for the children, it was recommended by one participant that, "they [after-school program providers] don't have that extra time or energy to go and do research [to enhance AS programming]." This same participant recommended that, "whatever it [the resource] is, it has to be pretty self-explanatory . . . so that they can really take it and go with it and not have to put . . . a lot of outside effort to make it work."

The AS program providers spoke of the importance of engaging with the children to facilitate increased participation in activities focusing on physical activity and healthy eating. All participants indicated they felt well prepared and comfortable implementing both physical activity and healthy eating activities with the children in their program. One participant succinctly summarized this sentiment indicating, ". . . as long as the leader is motivating and engaging in the activity themselves, then usually all the children are having a good time." Role modeling as a behaviour for both healthy eating and active living was key to AS program success in terms of engaging children in active play and healthy eating.

Training/Workshops

All participants in the current study indicated interest in receiving training or attending a workshop related to implementing healthy eating and physical activity resources and curriculum in their AS programs. All participants indicated they have mandatory monthly staff meetings and suggested training could be offered as the professional development component on the agenda of these staff meetings. Additionally, all participants mentioned that they are required to participate in two additional professional development opportunities per year, above and beyond what is

offered during staff meetings. One participant said, “I am always open to workshops. I am always open to learning. . . I would definitely go to it.”

Suggestions regarding how to provide training to the AS program providers revealed a desire to have information presented in an integrated manner in which program providers learn by actively engaging in the activities, to gain a greater understanding of how to implement the materials or curriculum. One participant explained, “[s]o it’s just rather than somebody just handing you ‘here’s the curriculum . . .’ [I’d prefer] going through it and [the trainer] giving you some ideas and perhaps providing some demonstration of how to implement stuff like that.” Three participants mentioned the local school-age exposition in which school-age childcare providers from different regions unite and participate in professional development opportunities while reviewing and sharing resources and program ideas relevant to the AS setting. Participants in the current study thought the local school-age exposition would be an ideal setting to highlight training and healthy eating and active living program materials, curricula, or resources.

Discussion

After-school programs provide excellent opportunities for children to participate in fun, safe, unstructured, and structured physical activities and nutrition education sessions (Hall & Gruber, 2006). Incorporating standard nutrition teaching tools in the curriculum such as *Eating Well with Canada’s Food Guide* (Health Canada, 2007) and activity sessions that attract the children’s interest are popular methods used in many after-school programs (Hall & Gruber, 2006). The findings from the current study focus on the need for additional nutrition and physical activity resources which could be implemented in areas with limited spaces and minimal equipment (given the challenges AS staff are currently experiencing). Additionally, curriculum could be developed to enhance the current syllabus of activities utilized by the AS program providers interviewed. The participants provided salient suggestions for both nutrition and physical activity programming and were interested in training opportunities showcasing any new resources, tools, or curriculum supports.

If healthy eating and active living resources are created to augment existing programming, the participants of the current study indicated it is necessary to consider potential space and equipment limitations. A study by Sangster, Eccleston, and Porter (2008) echoed our findings by identifying insufficient space as limiting the opportunity to have children engage in physical activities during inclement weather. However, the provision of games and activities requiring minimal play equipment and space should still be promoted by AS providers to reduce barriers to physical activity opportunities in this setting.

Existing school-age programs have been studied and may provide insight to the results of the current study. For instance, findings from the Switch-Play program (Salmon et al., 2005) illuminate the value of encouraging a reduction in the time spent in sedentary activities while increasing skills in, enjoyment of, and participation in physical activity. The researchers’ aim in Switch-Play was to investigate the effectiveness of a school-based intervention with respect to maintaining healthy bodyweight among 10-year-old children. The key difference between Switch-Play and the AS programs discussed in the current study is how the curriculum is offered. Specifically, the former is an intervention meant to be integrated into school curriculum whereas the latter is an after-school supplement in which curriculum is less structured and does not meet education expectations outlined in provincial curriculum standards. As such, the Switch-Play program is facilitated by teachers whereas the current study focuses on programming facilitated by AS program providers. Regardless, the Switch-Play researchers recognize the importance of

interventions focusing on increasing physical activity among children in community-based settings such as AS programs. Salmon and colleagues (2005) indicated the need for interventions to increase physical activity among children and youth by becoming involved with community-based strategies, such as the AS programs described in the current study. In fact, the authors of the Switch-Play study highlighted that, “the effect of the community, school and family environments as potential moderators of the intervention should also be considered” (Salmon et al., 2005, p. 15). One further consideration linking the Switch-Play study to the findings of the current study was the need to ensure the programming is easy to implement and cost-effective. Salmon and colleagues (2005, p. 15) indicate, “[w]hile the development of the programme is critical, the programme elements should also be practical and feasible in terms of delivery and cost.” The participants in the current study also referred to the need for ease in program implementation and although not mentioned by every participant, cost considerations were also important factors in program design.

The Medical College of Georgia KidFit Project is an after-school project focusing primarily on physical activity and espousing a mastery-based approach which emphasized enjoyment and improvement in physical activities and games while ensuring children tried their best and had fun (Yin et al., 2005). Participants in this study, regardless of their levels of adiposity, were capable of engaging in 70 to 90 minutes of moderate-to-vigorous physical activity as long as they were in a supportive environment and were motivated (Yin et al., 2005). Additionally, the results from the KidFit Project found that having well-qualified and enthusiastic staff ensures success of the AS program (Yin et al., 2005). The health benefits of an after-school program with emphasis on physical activity are significant and should not be diminished, given how widespread childhood obesity is in Canada. In the current study, AS program providers recognized the need for the children in their care to have interest in the activities and games offered to ensure they would engage fully in the activities. Furthermore, all participants indicated they had an excellent level of comfort when providing physical activities and healthy eating instruction to the children. This would ensure that the children in their care would have greater confidence in their caregivers and would be more willing to participate in the curriculum.

Shernoff, Csikszentmihalyi, Schneider, and Steele Shernoff (2003) discuss flow theory, that is, the state in which an individual is intensely engaged in an activity that is fundamentally pleasing, as defined by Csikszentmihalyi (1997). In order for flow to occur, the individual must experience a coordinated experience of concentration, interest, and gratification in the activity (Csikszentmihalyi, 1997) to ensure the participant is thoroughly engaged and motivated to become involved in it. The AS program providers in the current study recognized the need to engage children in program activities, as well as the challenge in doing so in groups with children of a variety of ages. Regardless, finding creative and fun ways to engage children would encourage success and maximize participation by all children. It is integral for public health professionals to consider the principles of flow theory when creating appropriate nutrition and physical activity resources. An example might include public health professionals piloting activities with children in an AS program to see if the activity engages or motivates the child to get involved. Seeking feedback from children enrolled in an AS program would ensure the created activities are having the intended impact. A relevant role for public health is to collaborate with AS program providers to ensure the activities offered to children in this environment are effective and impactful.

In a qualitative study with childcare providers with a similar focus to this study, researchers found childcare teachers were interested in having additional resources to facilitate physical activity, better physical activity equipment, improved and additional space in which activities can be implemented with the children in their care and, increased training and workshops (Tucker, van Zandvoort, Burke, & Irwin, 2011). Childcare providers' desire for additional resources, equipment, space, and training is similar among those who care for both preschool-aged children and those in the after-school participant age groups of this study. Locally, space requirements are mandated by the Day Nurseries Act for Child Care Supervisors of Ontario (Government of Ontario, Ministry of Children and Youth Services, 2009). These require a minimum of 30 square feet per child of uninterrupted space. The challenge experienced by the participants in the current study was that the environment for the after-school program doubled as regular school classrooms during school hours. While desks and chairs could be moved aside to accommodate various physical activities, there was still difficulty in finding opportunities to accommodate certain activities in this somewhat restrictive environment.

Given the opportunity for enhancing healthy lifestyle behaviours in AS environments (Witt, 2004) it is important to understand the challenges faced by program providers in these settings and identify solutions that can reduce these barriers. For example, the participants in the current study were keen to have nutrition resources that facilitated fun, interactive activities while providing education about healthy eating. According to Hughes, Patrick, Power, Fisher, Anderson, and Nicklas (2007), childcare providers influence children's eating by providing role modeling and instruction. The opportunity for AS providers to be exemplar proponents of healthy eating could improve children's eating behaviours and knowledge about healthy eating with entertaining instruction.

Given the time barriers AS providers face, it is imperative that any resources created for the AS program providers are easy to implement, engaging, and fun with minimal advance preparation. Any resources created must be evaluated to ensure they are effective in terms of educational value and implementation efficiency, thus meeting the needs of the AS program providers. Additionally, professional development opportunities for AS staff are important to sustain quality programs while being responsive to new research (London Children's Connection, n.d.). The United States Departments of Education and Justice (1998) created a report which highlighted that AS programs can provide many benefits not only to children, but to their families, their school, and the entire community at large. This report identified the various components that create successful AS programs, including staff professional development, training, and support through the provision of relevant resources that enrich their ideas for hands-on activities. This report provides excellent information to motivate existing AS programs to be comprehensive in their scope, including the needs of the providers as well as the children in their care.

After-school programs are ideal settings in which children are able to learn about and engage in healthy eating and physical activity opportunities in a semi-structured format to enhance healthy lifestyle behaviours. The current study contributes to the body of evidence focusing on the value of AS programs and provides specific information about the needs of AS program providers.

Limitations

This study was qualitative in nature; therefore, the results cannot be generalized to a broader audience. Regardless, the findings provide important information for public health professionals

to contemplate when supplying AS program providers with resources focusing on nutrition and physical activity education and promotion. Another limitation to this study relates to the AS program providers we were able to recruit. Those who participated in our study may be more eager AS program providers compared to those who did not come forward. Although data saturation was reached, indicating sufficient participant numbers, it is important to note that the majority of AS program providers participating in the current study had attained a university education, which is not required for the position, thus making them unique. All interviews for the current study were conducted during the winter months between January and April. The winter (2009) was unseasonably cold for our region and much more snow fell than in previous years. The poor weather conditions may have influenced the AS program providers ability to engage in physical activity with their children outside in the AS program playground.

Though not specifically a limitation, a future consideration for after-school programming at least in this province is the introduction of full-day kindergarten in Ontario schools as of September 2010. Full-day kindergarten provides a program in which a child attends school each weekday for approximately six hours (Miller, 2005). Though not without its challenges, the potential benefits of full-day kindergarten include cost savings to parents, educational benefits, improved readiness for school, and enhanced socialization of children (Jefferson, 2010). The implication for AS programs housed in elementary schools in which full-day kindergarten has been implemented is that these programs now require governmental regulation to ensure adherence to nutrition and physical activity requirements similar to legislation already in place in early years centres. There is an opportunity for early childhood educators, school-aged educators and curriculum specialists, and public health professionals with expertise in nutrition and physical activity to collaborate to ensure regulations are met while reflecting upon the results of this study in terms of implementing easy, fun activities focusing on meeting healthy eating and physical activity guidelines.

Conclusion

The results of this study highlight the current practices and challenges of AS program staff when implementing physical activity and nutrition curriculum. The results further support the development of a training program directed at AS program providers as well as resource development which can complement the current curriculum available to AS staff. The local health unit and university are well positioned to build on the existing infrastructure and work with community partners to create or augment physical activity and nutrition program components. This could be accomplished with the development of additional healthy eating and active living resources for this population as well as providing professional development opportunities for AS program providers on how best to implement these resources with the children in their care. Additionally, as part of its mandate, the local health unit can ensure that the development and provision of workshop and training opportunities for AS program providers will meet the required provincial health unit program standards. After-school programs enhanced by strong nutrition and physical activity components will create supportive environments for learning. As such, this programming will foster lifelong behaviours for healthy eating and active living.

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