Implementing active play standards: A qualitative study with licensed childcare providers in British Columbia, Canada


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Implementing active play standards: A qualitative study with licensed childcare providers in British Columbia Canada

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Abstract
With an increasing number of children attending regular early childhood education and care (ECEC), this setting presents an opportunity to develop physical activity habits and movement skills of children. These behaviours play an important role in the development and well-being of children. In 2017, an Active Play Standard was introduced in British Columbia, Canada, to mandate practices related to physical activity, screen time and movement skill development in licensed ECEC. A capacity building initiative including training and online resources was released alongside these guidelines to support implementation. The purpose of this study was to qualitatively examine the barriers and facilitators ECEC practitioners faced in implementing the standard, and to explore the role of the capacity building initiative. Data were
collected via semi-structured telephone interviews with educators (n=23). Data were coded using thematic analysis and sorted into three major themes influencing provision of physical activity opportunities: attributes and impact of the Active Play standard and capacity building workshop, characteristics of providers, and characteristics of ECEC settings. Future studies should consider targeting factors including organizational culture and climate, and provider capacity to provide physical activity and fundamental movement skill programming, and support for facility level policies and collaborative planning processes that create a positive physical activity culture.

Keywords: Canada, childcare, activity
Introduction

The early years, particularly ages 3-5, are an important time for physical activity participation. Physical activity, particularly when coupled with fundamental movement skill (FMS) development, plays a role in promoting positive development in all aspects of a child’s life including the physical, cognitive, psychological, and social (Timmons et al., 2012). FMSs are the foundational skills needed to participate in physical activity and sports, and can be subdivided into locomotor skills (e.g. running and hopping), object control skills (e.g. catching and kicking), and balance and stability (Gallahue et al., 2012; Pangrazi and Beighle, 2013). FMS competency is also an important modifiable predictor of participation in physical activity in later childhood and adolescence (Barnett et al., 2009; Lubans et al. 2010; Robinson et al., 2015).

Physical activity guidelines recommend at least 180 minutes of physical activity per day at any intensity for children aged 3-4 years, with a progression towards 60 minutes of "energetic play" or moderate to vigorous physical activity (MVPA; Tremblay et al., 2017). At age 5, the recommendation is 60 minutes of MVPA daily (Tremblay et al., 2016). Early childhood education and care (ECEC) presents a unique opportunity to promote physical activity, reduce screen time, and develop FMS. Over 50% of Canadian children aged 4 years and younger are currently enrolled in ECEC, and of those 70% are in full-time care (≥30 hours per week) and similar numbers are found in other developed nations including the United States, Sweden and France (Morgan, 2005; Sinha, 2014). There is also an upward trend in the number of licensed ECEC spaces in Canada (Friendly et al., 2015).

While ECEC settings may be important for activity behaviours, there is evidence to suggest children have low proficiency in FMS and participate in insufficient physical activity in these settings (LeGear et al., 2012; Temple et al., 2009; Vanderloo et al., 2014b). Two Canadian
studies have found low levels of MVPA (1.54 and 1.76 min/hour) during the childcare day, but higher levels of light physical activity (18.75 min/hour; Temple et al., 2009) or total physical activity (17.42 min/hour; Vanderloo et al., 2014b). Children in ECEC settings may be achieving sufficient or near to sufficient activity at any intensity, but not progressing towards achieving the 60 minutes of MVPA by 5 years.

The generation of policies to promote physical activity in ECEC has been examined as a potential mechanism to promote behaviour change. At the state level, implementation of activity policies was associated with improving fixed play environments and providing training and education for employees (O’Neill et al., 2017). Studies examining the existence of activity policies on the physical activity behaviours of children attending ECEC, as well as the frequency with which educators report offering opportunities for physical activity, have found mixed results (Bower et al., 2008; Erinosho et al., 2016). These studies shared the conclusion that policy existence without training to support the translation of policy into practice may mean that well-intentioned policies exist only in writing (Erinosho et al., 2016; Wolfenden et al., 2011).

While educators are being asked to implement these activities, current educator training programs do not prioritize physical activity or FMS; therefore, educators may not have the practical skills or confidence to implement activity related policies (Buckler and Bredin, 2018; Martinyuk and Tucker, 2014).

In response to stakeholder demands for physical activity policies and capacity-building to facilitate ECEC providers adopting and implementing physical activity supportive environments, policies and practices, the provincial government in British Columbia developed the Active Play (AP) standard (Government of BC, 2016) and funded the development of a capacity building intervention: Appetite to Play (www.appetitetoplay.com). In July 2017, the AP standard was
fully enacted and enforced by licensing officers, who determine if ECEC providers are meeting provincial standards. The AP standard, requires ECEC facilities to enact active play and screen-use policies and ECEC providers must: provide 60 minutes of active outdoor play per day, limit screen time to ≤ 30 minutes/day, incorporate FMS development into daily activities, break up sitting time so that children are not sitting for ≥ 60 minutes at a time, and model active behaviours in daily routines. Additionally, they should provide 120 minutes of indoor and outdoor active play.

In tandem with the enactment of these standards, Appetite to Play, a capacity-building initiative, was launched and consisted of an online resource incorporating tools and supports (e.g. self-audits, video clips, ideas for action, newsletters), and in-person, e-learning or virtual workshop training focusing on healthy eating and physical activity and incorporating better practice recommendations that reflect and extend the AP standard. The Appetite to Play workshop and materials focused on playful activities that developed FMSs appropriate for the stage of development (Hassani et al., 2020).

The purpose of this study was to qualitatively examine the barriers and facilitators ECEC practitioners faced in implementing the AP standard, and to explore the role of the capacity building initiative (Appetite to Play). This study was one component of the “A Good Start Matters” study which used an evaluation framework informed by implementation science and behaviour and organizational change theories (Bandura, 1986; Bandura 2001; Damschroeder et al., 2009; Durlak and Dupre, 2008; Hassani et al., 2020; Lau, Wandersman and Pate, 2016; Rogers, 2003; Goodman, Stuckler and Kegler, 1997). The framework included measures of implementation, characteristics of the childcare centers, provider characteristics, attributes of the innovation (AP Standard and Appetite to Play), and implementation facilitators and barriers as
key contributors to change. The focus of this study was the implementation issues, facilitators and barriers which are important to generate strategies to increase policy and practice uptake (McKay et al., 2019).

Methods

Study design

This study is a nested qualitative study, within “A Good Start Matters” a three-year prospective mixed methods study of the AP Standard and Appetite to Play capacity-building initiative, assessing their impact on the environments, policies, and practices in ECEC settings (implementation) and identifying the hierarchy of factors that influence implementation. The qualitative data was collected to complement quantitative survey-based provincial data collection (McConnell-Nzunga et al., 2020). We collected data from February to October 2018. The study received ethical approval from the University of Victoria and University of British Columbia Harmonized Research Ethics Review Board (BC16-128 and H18-01434).

Participants

Eligibility criteria were that participants had attended an in-person Appetite to Play workshop, spoke English, and consented to be contacted for a follow-up telephone interview. A research assistant contacted participants via telephone or email to schedule an interview. Attempts were made to contact 106 individuals, and 23 interviews were scheduled and completed.

Procedure

A member of the research team (EJB or JMN) contacted participants at the time of the scheduled interview. Data were collected via semi-structured telephone interviews. Telephone interviews allowed engagement of participants from all five provincial health authorities.
Telephone interviews provide comparable responses to face-to-face interviews and may permit participants to express controversial feelings and increase response rate, as there is no need to travel (Novick, 2008; Sturges and Hanrahan 2004; Sweet, 2002). A semi-structured interview guide informed by the evaluation framework (available on request) facilitated the conversation and addressed implementation issues as well facilitators and barriers to implementation. Example questions included “how is addressing the recommended practices going?” and “what factors within your facility have made it easy or difficult to adopt and implement the AP Standard?” Interviews were audio recorded and transcribed by professional transcribers and interviewers took notes.

Participants were asked preliminary questions to determine their work role and what, if any, type of ECEC facility they worked at (e.g. licensed, parent participation), and the age of children attending the ECEC. Interview questions were broken down into two sections: first, questions focused on the capacity building intervention, and second, on implementation of the AP standard. Questions regarding the AP standard were for licensed ECEC providers only. However, two participants worked in fields related to ECEC training or implementation and requested to answer these questions.

**Data Analysis**

This study adopted a constructivist relativist approach: the understanding that multiple realities exist through each individual’s interpretation of their experience, as each ECEC providers’ experience differed (Tamminen and Poucher, 2020). Data analysis was conducted in NVivo 12 (QSR International, Australia). Coding of interviews used an inductive approach using thematic analysis to identify ECEC providers perceived facilitators and barriers to implementing the AP standard and their overall perceptions of the capacity building initiative. This process followed Braun and Clarke’s (2006) six steps of thematic analysis to identify, label, and analyze
data by codes. Following free coding of the interviews into themes, we sorted the themes under category headings common to the implementation science frameworks and theories that guided the interpretation (Damschroeder et al., 2009; Durlak and Dupre, 2008; Hassani et al., 2020; Lau, Wandersman and Pate, 2016). These categories were impact and attributes of the standard and intervention, characteristics of providers, and characteristics of the childcare settings.

Throughout data collection, analysis, and writing of the manuscript co-authors also acted as ‘critical reviewers’ (Smith and Sparkes, 2016) to encourage deep exploration and alternative interpretations of the data and as a step recommended to overcome recognized limitations of member checking, inter-rater reliability and universal criteria for enhancing trustworthiness (Smith and McGannon, 2018). To provide an illustration of the breadth of citations across interview participants, percentages were calculated (Maxwell, 2010).

Results

Participants (n=23) were from five regional health districts in British Columbia and the majority (n=14, 61%) were employed in a licensed ECEC. All participants were women, reflective of the gendered nature of ECEC. Table 1 provides detailed participant demographics. Sixteen participants responded to questions regarding both the capacity building workshop and the AP standard, and seven only to questions regarding the workshop as they worked in non-licensed ECEC settings and are not required to adhere to the AP standard.

Table 1

<table>
<thead>
<tr>
<th>Participant employment characteristics</th>
<th>n (%)</th>
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<tbody>
<tr>
<td><strong>Type of employment:</strong></td>
<td></td>
</tr>
<tr>
<td>Licensed childcare</td>
<td></td>
</tr>
<tr>
<td>Group licensed childcare</td>
<td>9 (39.1)</td>
</tr>
<tr>
<td>Preschool</td>
<td>2 (8.7)</td>
</tr>
<tr>
<td>Family licensed childcare</td>
<td>3 (13.1)</td>
</tr>
<tr>
<td>Parent participation programming</td>
<td>5 (21.7)</td>
</tr>
<tr>
<td>Training and implementation</td>
<td>2 (8.7)</td>
</tr>
</tbody>
</table>
Four themes related to the attributes and impact of the AP standard and capacity building initiative were identified. In addition four themes were identified that aligned with characteristics of providers and another four could be categorized as characteristics of the ECEC setting. Figure 1 provides an overview of these the categories and themes and relationships identified as part of the analysis. All three evaluation categories influenced participant practice in promoting physical activity. Changes in provider practices often depended on alignment between the childcare setting and/or childcare providers with the AP standard and capacity building workshop. Notably, very few participants spoke to FMSs in their ECEC practice despite the fact that they were a specific focus within the Appetite to Play initiative. Responses to screen time policies and practices differed greatly to responses about physical activity. Therefore, these data are reported separately.
1 Evaluation Category: Attributes and Impact of the Standard and Intervention

Overall, the capacity building initiative and related materials were well received by participants with nearly all participants indicating that they had used the workshop materials, and 60% of participants indicating they had used the website. Many participants (83%) mentioned the workshop, materials, or website, when asked about what supported implementation of the AP standards. Of the four themes that addressed AP standard and the capacity-building initiative, two themes related to their impact: awareness and knowledge, and intention and commitment, and two addressed attributes: simplicity and compatibility.

Awareness and knowledge
Some participants (30%) spoke at length that the workshop was not providing new information about the need for physical activity and improving FMS in children but it included a review and reminder of important knowledge. Many participants indicated that the workshop increased their awareness of the AP standard and its associated expectations. This was particularly salient for participants, as they were aware of the need to be meeting the physical activity component of the new AP standard, but it reinforced their need to address the standard in their practices. This participant quote highlighted this aspect:

*I think it was another addition to what I already knew, ... it's a nice refresher, okay this is what the field’s about, this is what we’re supposed to do with the new mandate coming in. Here are some of the policies we need to follow. So it was a nice ... it’s a nice reminder.* –Participant 15

In addition, 60% of the participants noted that the capacity building initiative empowered the participants in implementing the AP standard as they were provided with additional activities (i.e., instructions and modeling of behaviours and resources) to add to their physical activity tool-kit.

**Prompted intention and commitment**

Many participants (87%) highlighted that the capacity building initiative prompted participants to intentionally address physical activity in their practices. In addition, many noted that it helped them commit to changing their practices. This participant quote highlights this aspect:

*This has spearheaded a lot of stuff for me, this Appetite to Play has kind of got me in the groove of .... lets do more physical activity things. Not that I – like I said, I’ve been like that way anyways, cause I’m a very active person myself. But it’s just kind of given me a nice practical avenue to get excited about it actually.* –Participant 19

**Compatibility**

Participants were already committed to practices and philosophies surrounding promoting physical activity in their workplaces prior to the release of the AP standard and participation in
the capacity building workshop. In particular, 93% participants indicated that the workshop was in line with their own values. For example,

*Without the specific guidelines per se, it was stuff we were doing anyways. ... there was no big aha oh yeah we’d better do this and oh we can’t do that. It really did align with my philosophy, ... so it was pretty much what I was doing, but now I’m more specific.* –Participant 18

**Simplicity**

Participants praised the workshop for the simplicity and ease with which they could implement the activities they learned. For example, one participant said:

*I certainly got a lot of ideas ... like real easy simple things that could be done with zero prep... it was just packed with great fast ideas. And then the website too, that’s a fantastic resource.* –Participant 14

Another participant highlighted how useable the workshop resources were:

*I think the – the planning and the systems that are there are – are 100 percent workable. You know if people are having a problem with it, they need to relook at their, how they’re approaching it because it’s so workable.* –Participant 13

**Evaluation Category: Characteristics of Providers**

The majority of participants (68%) noted personal experience as a facilitator for implementing the AP standard. Key components of personal experience were long service as educators (e.g. 20-30+ years), experience raising their own children, having a positive role model (at work or in their personal lives), and general personal philosophies that physical activity should be an integral part of the day. Four themes were categorized as characteristics of providers: personal activity level, previous experience, capability, and role models.

**Personal Activity Levels**

Participants discussed their own high level of engagement in physical activity and movement skills during the ECEC day. For example:

*I still do cartwheels in the gym with my kids.* –Participant 19
Previous Experience

Participants indicated that long service as ECEC providers was influential in meeting the
AP standard.

*My degree is in Child Development, I mean I’ve been doing this for 20, 30 years, so I mean as far as the rationale why I do stuff, I mean its pretty clear to me.* –Participant 19

Participants also highlighted how their own experiences as parents reinforced the importance of
physical activity to them.

*When I got into this field, I sort of used that ... as my foundation of how I wanted to be a caregiver because it was how I wanted to be a parent. And outdoor play I figured out is just, is just so essential.* –Participant 1

Capability

Having the skills or the behavioural capability to provide certain activities was sometimes
highlighted as being difficult depending on the providers capability to adapt to the needs of the
children. This is highlighted in this quote:

*I think it depends on the person that is looking after the children, how willing are they to deal with different issues, while they’re playing a game. So some are okay with it, and some are not okay, so sometimes we just oh, I don’t think our group can manage this so let’s not even bother playing that* –Participant 12

Role Models

Several participants (30%) highlighted that former coworkers or mentors played a role in
developing their attitudes around implementing physical activity, which helped in implementing
the AP Standards. For one participant, role models and her previous work were some of the
pieces she found supportive in implementing the AP standard:

*And I had good role models myself, teaching me ... how to deal with children and so problem solve; and the importance of learning through play. And so the – so my work, the people I worked with and the education I had.* –Participant 12

Evaluation Category: Characteristics of ECEC Settings
Four implementation themes related to the characteristics of the ECEC Settings; infrastructure, schedules, organizational support and policies and practices. Infrastructure had two sub-themes; outdoor and indoor space, and equipment.

Infrastructure

Outdoor and Indoor Space

The physical spaces that educators had available to them came up frequently (63% of the participants cited this) as a barrier or facilitator to meeting the AP standards. The availability of equipment was frequently cited (47%) as a facilitator to meeting the AP standard. Participants with large outdoor areas, or access to gym space noted the importance of these areas when providing opportunity for physical activity experiences. Access to quality indoor and outdoor space facilitated AP standard implementation.

Participants frequently cited high quality space as a facilitator to meeting the AP standard with participants referencing both indoor and outdoor spaces.

We have not just great outside space, but we also have a recreation room and a gym. So I find that, especially for the active play portion, I find those things make it really easy to implement what we learned about in the training -Participant 17

Participants working in home-based ECEC often described the quality of their outdoor area in reference to nearby parks and playgrounds.

I’m in a pretty neat location in that there is like four or five parks right within walking distance of me ... There’s also the big backyard. –Participant 18

One of the training and implementation participants highlighted how she witnessed the importance of space from a broad perspective: programs with a higher emphasis on outdoor time, or with higher quality indoor space, were better able to demonstrate the AP standard.

Well there’s some programs that are really embracing outdoor play, and particularly ... outdoor based programs where the kids are outside the majority of the day. Those kids are getting a lot more active play than programs that are more indoor based. And those programs that have
decent indoor activity space that exceed the minimum standard within the regulation, and have gross motor rooms. Those children tend to be much more active, as well. –Participant 21

The majority of participants identified safe, spacious, indoor and outdoor play areas as important for meeting the AP Standard.

Participants with lower quality outdoor space highlighted this as a major barrier for meeting the minimum outdoor time mandated by the AP Standard. This was particularly salient when safety was a concern, as described by one participant:

We have a big beautiful field, but there are still spots, like at the other end of the field – there’s no gate . . . I need to have a safer outdoor place, right now is what I’m working towards, but I do the best with what I can. –Participant 19

This was echoed by a training and implementation participant, who highlighted that while the AP standard mandates outdoor active play time, adjacent outdoor space is not a requirement.

For other programs that are standalone in a church that don’t have, you know as I was saying at the beginning, don’t have access to an adjacent outdoor play space; they have [space] that meets minimum requirements; it’s going to be much more challenging for them – Participant 21

Participants with low quality space had greater difficulty meeting the AP Standard for outdoor play.

Equipment

Equipment was cited less frequently than space, but almost half of all participants referred to equipment.

I’ve got climbers and I have basketball hoops, and riding toys ... and a huge backyard that they can run around –Participant 5

Participants discussed the importance of having and providing equipment, but allowing the children to play freely with the equipment.

I would make a tent out of tables and put the tarp over it, bring some wood in, and then the children just expand, you know, from there. –Participant 12
No participant indicated that they had a lack of equipment, only that the equipment available to them was helpful in engaging the children in activity.

### Schedules

Participants highlighted how scheduling could be a hindrance to meeting the AP Standard. One participant particularly highlighted meeting the physical activity guidelines was a struggle, although she used the Canadian daily recommendation (180 min) instead of the AP Standard (120 min).

*Just the active – the 180 minutes a day, cause we have naps and buses, and lunch and food, and ... we do struggle some days with it, very much.* – Participant 8.

### Organizational Support

The support of other staff in implementing the AP standard and workshop materials was influential for 64% of the participants. Participants indicated the benefit of the entire staff attending the workshop:

*The fact that all the staff were there right, so ... we all know about it so we’re all on the same page, so it makes it easier to implement it into our schedule, than if our boss or just one other person had went ... to the workshop and comes back. Oh my gosh, like this, you know we need to try some of this ... so definitely doing it with the whole childcare facility, so that everyone’s on the same page, has definitely made it easier.* – Participant 16

Another participant indicated that staff she worked with were happy to engage in physical activities with the children.

*Right, so they make it easy for us to just, you know do whatever we need to do. None of the staff here are afraid to get down on the floor, look silly or, you know basically follow a child’s lead.* – Participant 3

### Policies and practices

Institutionalization of facility level policies was noted as important by 83% of the participants and important to ensure that providers implement the AP standards. In some cases,
policies could have influenced how practices were already aligned before the implementation of
the AP standard and in other instances it was discussed as supporting institutionalization as
highlighted by one participant:

*I have worked in some centers that were unaware of some of the things I learned in the training.
I been fortunate enough to work in a lot of centers that had a lot of policies in place around the
things we learned in the training, so but not everybody does, so it definitely is very important for
others to learn –Participant 17

Screen Time

All of the participants indicated that screen time was not a regular part of their ECEC
day. All participants working in licensed childcare noted that there was no screen time at their
facilities. Educators only used screens for safety or educational purposes, or for a “special
occasion”. Participants noted that while absence of screen time was in practice prior to the new
standards, they, or their supervisors, had generated a written screen time policy since the release
of the AP standard. Participants highlighted that they did not believe screen time was necessary
for young children. For example, one educator commented that

*The screen time is written down now, but I mean I’ve never not had that in my mind ever, so you
know like I don’t have screen time, we don’t have video games; we don’t have that stuff here. We
don’t even have computers, so that’s just my philosophy, I don’t think the kids need all that, at
the moment. So we just don’t have it period. So I had no problem following the new guidelines
for that at all, it didn’t exist in the first place. –Participant 13

Another echoed a similar sentiment:

*I don’t do screen time. The only time I use a screen is ... I have to do fire drills with my kids
once a month ... so I simulate a fire drill sound on my iPad. I’ve shown the kids a video on the
Cuttlefish. So I have only used it like for science type things ... I don’t believe in screens under
12. –Participant 19

All participants indicated that screens were not a necessary part of childcare, and most noted that
screen time in childcare was not a part of their personal philosophies. The use of screens was rare
and typically educational; however, some educators mentioned occasionally using screen time as
Discussion

We set out to explore the attributes of the AP standards and capacity-building and the characteristics of the setting and provider that ECEC providers perceived were influencing implementation of the new standards. We also specifically explored the impact of the provincial capacity-building efforts on implementation. The results of this study provide a better understanding of the barriers and facilitators to implementing physical activity, sedentary behavior and FMS standards for ECEC highlighting both structural and social supports within the setting and provider level and particular attributes of the innovation itself. Comments about the AP standard highlighted the simplicity of it and its alignment with individual philosophies of the interviewees; although, specific centre policy content beyond screen use remained uncommented. The identified implementation barriers were primarily characteristics of the setting representing factors that individual providers may not be able to modify particularly if they are staff and not managers (e.g. physical space, equipment, the attitudes and behavior of other staff). Facilitators included the externally provided capacity-building initiative and characteristics/attributes of the provider but also included the social environment (role models) in the setting and the alignment between the standard and the provider philosophy. Limits on screen time appeared to be more aligned with current values and practices in the early years setting.

Categorized under the theme ‘impact of the AP standard and capacity building workshop’, educators indicated that the workshop enhanced awareness of the AP standard, and provided actionable ideas to meet the standard. This is in line with quantitative data from Appetite to Play workshops, where self-reported knowledge and confidence improved in all
areas of physical literacy and physical activity post-workshop (Hassani et al., 2020). Previous research also supports the capacity of similar workshops to improve the physical activity and FMS related knowledge and confidence of ECEC providers (Brujins et al., 2021; Naylor and Temple 2013). Participants felt the AP standard and capacity building intervention were compatible with each other, with the intervention directly aligning with the AP standard. Participants indicated that the workshop provided simple, easy to use strategies, which addresses issues of fit, where end-users may have difficulty accessing content due to accessibility of the material (e.g. due to education, language; Wandersman, Chien and Katz, 2012). Finally, the workshop was seen as prompting intention and commitment to AP standard adherence.

Under the theme ‘characteristics of the providers’, most of the participants highlighted that personal experience was a major influence in prioritizing physical activity time. This was demonstrated previously among elementary school teachers whereby teachers who were active themselves prioritized daily physical activity delivery (Weatherson et al., 2017). Additionally, self-efficacy to facilitate physical activity was significantly higher when student early educators met physical activity guidelines themselves (Martyniuk and Tucker, 2014). Pre-service training or hiring practices that prioritize previous physical activity experiences could be important.

Several participants in this study also indicated that role models positively influenced their physical activity practices. This is a technique that has been used successfully in past school research, where “champions” were identified and tasked with leading implementation of a physical activity intervention and supporting others within the school to do the same (Naylor et al., 2008). Future research should consider employing peer-to-peer support or mentoring within interventions.
Within the large theme ‘characteristics of ECEC settings’, the infrastructure, namely the physical spaces and equipment available to educators was consistently raised by ECEC providers as a factor that influenced their capacity to implement the AP standard. Specifically having access to quality indoor spaces, particularly gymnasium style spaces, and to safe, spacious outdoor spaces facilitated achieving the physical activity levels in the AP standard. Previous quantitative research has shown that physical space was associated with activity time, and our findings support this (Bower et al., 2008; Erinosho et al., 2016; Gubbels et al., 2012; McConnell-Nzunga, 2020). In particular, references to large indoor gymnasiums as a facilitator to increased activity time is supported by quantitative findings. For example, a significant positive correlation was found between the size of indoor space and children’s physical activity levels (Gubbels et al., 2012), and survey data indicated sufficient indoor space for running games was associated with achieving the AP Standard (McConnell-Nzunga et al., 2020). Appetite to Play specifically targets providing activities in small spaces or with little to no equipment. Participants’ consistent references to space as a facilitator or barrier, coupled with the current evidence surrounding the importance of a quality environment on physical behaviours, indicates that there is continued need to support providers with ideas for small spaces and little equipment.

Organizational processes were largely not discussed by participants as an implementation facilitator or barrier. Incorporation of these processes, which may include reflecting and evaluation, goal setting, and conducting a needs assessment, are associated with greater adherence to a physical activity intervention in an organized setting (Lau et al., 2016). It is unclear if our participants did not prioritize these processes, or if they were absent in their workplaces. There is some evidence that organizational processes may play a strong role in
adapting the physical activity climate in ECEC settings, and continued work is needed to explore the most efficacious way to employ these processes (Battista, et al., 2014; Langford et al., 2019).

The Appetite to Play workshop and materials defined physical literacy and focused on playful activities appropriate for the stage of development that developed FMS. However, we did not ask specific questions regarding provision or qualities of these activities specifically and participants did not elaborate greatly on this area. However, evidence from pre- and post-workshop survey data demonstrated significant improvements in participant confidence and knowledge in physical activity and physical literacy promotion in a childcare setting (Hassani et al., 2020).

All participants were in consensus that screen time should not be a part of ECEC. While there were references to the use of screens for educational purposes; these were reported to be short (e.g. 2-3 minutes) and/or infrequent (e.g. once every month or two). Overall, self-report indicated that participants were adhering to the AP standard of providing no more than 30 minutes of screen time per day, with the exception of a “party” every month or two. This is contrary to previous Canadian research that has shown that children in childcare spend significant periods of time in screen behaviours, in some cases over 2 hours per day (Vanderloo, 2014a). This discrepancy may be due to the self-selection of our participants who all placed high value on physical activity behaviours.

The results of this qualitative study highlight the need to address the hierarchies of factors that influence policy implementation at the individual and organizational level, and are diagrammed in Figure 1. These factors provide a road map to develop comprehensive capacity building interventions (otherwise known in the literature as implementation support strategies (Waltz et al., 2019)) that support ECEC staff and managers in changing their practices. On the
individual level, interventions to support or enhance policy implementation should designate program champions in the target settings to role model the importance of physical activity and FMS development, and support staff implementation. Additionally, training should include considerations for the diverse needs of children to ensure ECEC staff can support and manage behavioural concerns while implementing physical activity and FMS programming. At the organizational level, all staff should receive free or subsidized training, and managers need to change facility-level to policies and schedules to facilitate increases in physical activity. Despite the efforts of Appetite to Play to focus on providing activities that require little to no equipment and minimal space, participants continued to emphasize these as implementation barriers. This finding has implications for the outer setting. Policy-makers may need to mandate and financially support the creation of larger and/or higher quality outdoor and indoor spaces for physical activity in ECEC settings that facilitates the physical activity and FMS development of children attending ECEC. The factors that emerged are common to popular implementation science frameworks like the Consolidated Framework for Implementation Research (CFIR) (Damschroder et al., 2009). For example, characteristics of individuals within the CFIR aligns with our theme characteristics of providers, and the intervention aligns with our theme Attributes and Impact of the AP standard and capacity building workshop (Damschroder et al., 2009).

Strengths and Limitations

The findings should be viewed in the light of the strengths and limitations of the methods. One limitation is the risk of sampling bias; participants needed to self-enroll in the capacity building intervention training and then agree to be contacted for a follow-up interview. Given the overwhelmingly positive attitudes towards physical activity in ECEC among the participants, the individuals who took part in the interview process were likely those who already placed high
emphasis and value on physical activity in early childhood. Conversely, the purposive sample
allowed us to dive deeper into the attitudes and opinions of educators regarding the capacity
building intervention training and AP standard, which the quantitative data (Hassani et al., 2020)
could not capture. These rich discussions provide significant insight into the ground-level
experience of educators in promoting physical activity with the guidance of a physical activity
standard and an associated training intervention.

**Conclusion**

We highlight three levels of factors that may influence implementation of physical
activity and FMS development supportive policies and practices in the early childcare setting.
Infrastructure including space and equipment, and organizational culture and climate (e.g. is
physical activity a priority) were important at the setting level. Individual provider characteristics
including their personal activity profile and experience with mentors who prioritized physical
activity were also influential. The role of capacity-building, in particular providing training to
support policy change was also highlighted. Future implementation strategies and research
should focus on addressing the modifiable factors like organizational culture and climate and
provider characteristics through pre-service and in-service training and support for facility level
policies and collaborative planning processes that create a positive physical activity culture.
References


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Routledge.


Captions:

Table 1: Participant employment characteristics

Figure 1: Provider identified factors that influenced implementation of the Active Play Standard