

Movement and Physical Activity Promotion in Regulated Child Care Centres

AN ASSESSMENT OF EXISTING ENVIRONMENTS AND PRACTICES WITHIN NOVA SCOTIA

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Report Summary

It is a popular belief that young children are naturally very active and need little guidance to develop physical skills. However, research documenting young children's activity levels suggests there is significant room for improvement in the activity levels of young Canadian children¹. Seasoned professionals from a variety of fields such as paediatrics, early childhood education and sport are deeply concerned about the decline in children's physical literacy^a they have witnessed over decades. Attaining a level of physical activity and the mastering of fundamental movement skills^b that allow a child to confidently move in a variety of active pursuits may not always receive adequate attention during the early years. It is important that young children are supported in their physical development and health-enhancing behaviours.

The Canadian Physical Activity Guidelines and Sedentary Behaviour Guidelines for Children 0-4 years of age were released in 2012^{2,3}. Physical and Health Education Canada, Canadian Sport for Life and other organizations are mobilizing to enhance supports for children's physical literacy development⁴. A number of provincial strategic initiatives are aiming to improve the way we support and care for young children in Nova Scotia. The Government of Nova Scotia's initiatives such as Thrive: A Plan for a Healthier Nova Scotia, the Action Plan for Education and the Child Care Review, and the Nova Scotia Health Authority's Engage for Health initiative suggests an urgency to act and an optimal time to pursue change⁵.

A considerable number of preschool aged children living in Nova Scotia require some form of child care on a full time basis (i.e. >30 hours/week)⁶. In this province, regulated child care settings have the capacity to care for 32% of preschool aged children—this presents an ideal setting to establish physically active behaviours⁷. However regulations and/or guidance that support the promotion of physical activity and physical literacy are minimal and current efforts are not fully understood. To improve our knowledge this report describes, environments and programming practices that promote movement and physical activity in regulated child care centres in Nova Scotia. It illustrates the barriers limiting the capacity of regulated child care directors, early childhood educators, and post-secondary and professional development educators.

Overall, the belief that young children should develop physical literacy, engage in movement and physical activity, and limit unnecessary sedentary time was supported, however, it was clear that regulated child care centres are not all created equal. Some centres are able to offer environments and daily programming that promote regular movement and physical activity while others are challenged with available space and resources that limit what they can do. All regulated child care settings who support cognitive, social, emotional, and physical development equally, are governed by regulations. While necessary, there may be some specific regulations that may unintentionally interfere with the promotion of physical activity and physical literacy. In addition, early childhood educators and individuals trained to work directly with children understand the importance of physical activity during this life stage but may not know how to effectively create environments that best support young children in their achievement of physical literacy. Confidence regarding physical activity promotion may also be low in the profession as a whole. Access to

^a *Physical Literacy* is defined in Appendix 2: Definitions and Terms

^b *Fundamental Movement Skills* is defined in Appendix 2: Definitions and Terms

training and professional development opportunities offered by qualified instructors who understand both early child development and active living is lacking. Finally, a number of societal barriers constrain all child care settings as socially acceptable behaviour and main-stream values hold back even the most dedicated and devoted early childhood educators.

Interest in the provision of formal guidance addressing movement and physical activity practices in regulated child care centres is divided among those who work in and support the regulated child care sector in Nova Scotia. Perspectives seem to be influenced by personal beliefs about the level of government responsibility to the practical elements of incorporating formal guidance into existing environments and routines.

It is imperative that any action taken towards change is purposely shared. Collaborative effort - across government departments accountable for early child health and development, across sectors that support early childhood education and care, and across sectors that support active living- is needed. The following 'Levers for Change', further detailed in section 4, are actions that may support an increased capacity within regulated child care settings to optimally promote movement and physical activity:

❖ Action targeting the possibility of formal guidance is recommended. A deeper understanding of the divided support for guidelines is needed. Representatives from the regulated child care sector could be actively involved in the decision making process to ensure any support aligns with best practice and can practically be implemented in regulated child care settings. Support for the development of a province-wide early years curriculum framework along with the assurance that physical activity are important considerations in its development.

❖ Action targeting active play environments and opportunities is recommended. Existing guidelines and regulations could allow for the creation of environments and daily programs that support movement and physical activity. Encouraging regulated child care centers and settings to work with their Early Child Development Consultant may help to determine how they can best meet safety regulations without compromising active play opportunities. Current processes to promote safe 'risk-taking' also need to be considered in regulated child care settings. Working with municipalities can help to ensure community facilities are made available and accessible to local regulated child care services and advocate for the establishment of natural play spaces and outdoor classrooms.

◆ Action targeting the capacity of the regulated child care sector is recommended. This involves encouraging the early childhood sector to reconsider current child care environments and opportunities as they relate to movement and physical activity. Collaborating with experts in active living promotion and physical literacy is also important to seek their knowledge and expertise to identify how physical literacy and physical activity can be supported in regulated child care settings within a play-based learning approach. Focused attention is needed on supporting those who oversee regulation, those who manage regulated child care settings, individual early childhood educators, and those who represent educational institutions and early childhood resource centres. To strengthen communication, refining terms used to define movement and physical activity will be an important step in establishing a common language between early child development experts and active living experts.

◆ Action targeting societal barriers is recommended. With the support of regulated child care settings, deliver communication to parents about the importance of movement and physical activity, the importance of limiting screen time, and the importance of safe risk-taking and outdoor play. This communication opportunity may help to increase the profile of early childhood educators as experts on child development and supporters of child health and wellbeing.

This report is intended to activate conversation and debate around how to approach positive change so that young children in regulated child care are optimally supported in their physical development and physical health. Collaborative action will contribute greatly to the health and wellbeing of this generation and will ensure regulated child care settings in Nova Scotia are providing children the best start possible in life.

Section 1: Physical Activity in the Early Years

Learning to move one's body and engage in active energetic play is important in early child development and represents a major developmental domain⁸. Health benefits, such as a fit cardiovascular system, improved body metabolism, a balanced body composition, and psycho-social well-being are experienced with regular physical activity during the early years^{9,10}. In addition, learning and practicing fundamental movement skills^c in the early years is linked to greater involvement and enjoyment of physically active pursuits later in life¹¹. Contrary to the popular belief that young children are naturally very active¹², a Canadian research study published in 2013 documented that while 84% of three to four year old children participated in 180 minutes of daily physical activity at any intensity with varying times engaged in moderate-to-vigorous physical activity (MVPA), only 14% of five year old children engaged in 60 minutes of daily MVPA¹. Early Development Instrument^d 2012-13 data for the province of Nova Scotia indicated that young children enter elementary school with a less well developed physical health and well-being skill set compared to national normative results¹³.

In 2009, an international consensus meeting among physical activity experts highlighted a gap in effective preschool aged physical activity guidance¹⁴. In response, the *Canadian Physical Activity Guidelines*² and *Canadian Sedentary Behaviour Guidelines*³ for the Early Years (0-4 years) were developed. Launched in March 2012, the physical activity guidelines promote 180 minutes of physical activity at any intensity spread throughout the day for children ages 1-4 years. Stipulations around guidance advise that specific physical activities occur in a variety of environments and include pursuits that develop movement skills. Sedentary behaviour guidelines encourage parents and caregivers to minimize the time young children (0-4 years) spend being sedentary (i.e.; prolonged sitting in a stroller). Screen time (e.g. television, computers and mobile devices) for children under the age of 2 years is not recommended and, for children between the ages of 2 and 4 years, should be limited to less than 1 hour per day.

Experts in public health and disease prevention support comprehensive and sustainable policy and environmental initiatives that foster the development of healthy physical activity behaviours in young children^{11,15}. Within child care settings, such policies and environmental initiatives have the potential to foster the early development of healthy physical activity behaviours that can positively impact the trajectory of an individual's health¹⁵. Over the last three decades rising employment among women has increased the need for child care in Canada⁶. Approximately forty-six percent of parents require some form of child care assistance in Nova Scotia with 36% of those parents choosing to enrol their child(ren) in regulated child care settings⁶. Nationally, among parents who rely on child care the majority (60%) use it on a full-time basis (≥ 30 hours/week)⁶. As part of *Thrive! A Plan for a Healthier Nova Scotia*, the provincial government has clearly outlined a primary objective to increase physical activity and decrease sedentary time in child care settings and schools. A specific action proposed within this objective is the incorporation of physical activity guidelines for regulated child care settings⁵. This commitment to action from *Thrive!* alongside the newly released Canadian Physical Activity and Sedentary Guidelines for children 0-4 years old

^c *Fundamental Movement Skills* is defined in Appendix 2: Definitions and Terms

^d *Early Development Instrument* is defined in Appendix 2: Definitions and Terms

represents a timely opportunity to support the enhancement of movement and physical activity during early child development.

Section 2: Project Overview

In 2011, the Nova Scotia Day Care Regulations of the Day Care Act underwent revision to allow for the introduction of the *Food and Nutrition Standards in Regulated Child Care Settings*¹⁶. The *Nutrition Standards in Child Care Project* (NSCCP), a research study funded by the Nova Scotia Health Research Foundation (NSHRF), is investigating both the intended and unintended impacts of this policy change. Within the NSCCP an opportunity to capture a snapshot of physical activity environments within regulated day care centres presented itself through the province-wide distribution of a Nutrition and Physical Activity Questionnaire (NAP-Q)^e. Sixty-six completed questionnaires were returned representing close to 18% of the regulated child care centres in Nova Scotia in 2013-14. The inclusion of physical activity environments alongside food environments was important as both could help to support healthy living. Included within this assessment, feedback was gathered from child care centre directors on the practices, resources, attitudes, training opportunities, and promotion associated with physical activity. This Nova Scotia specific dataset is unique in its assessment of such components of physical activity environments in regulated child care centres.

To deepen our understanding of current movement and physical activity practices taking place in regulated child care centres in Nova Scotia and to complement data from the NAP-Q questionnaire, we engaged three separate groups of child care stakeholders in guided group discussions or one-on-one guided conversations to learn from their collective experience: 1) directors of regulated child care centres, 2) early childhood educators (ECEs), and 3) child development educators affiliated with ECE diploma and professional development institutions. We also wanted to better understand the type of support these groups would offer the development of formal guidance directed at movement and physical activity environments and opportunities in regulated child care centres.

Process for Recruiting Participants

- 1) To engage regulated child care centre directors, invitations to participate in a guided group discussion^f were sent to the *Non-Profit Directors Association* and the *Private Licenced Administrators' Association of Nova Scotia*. Five child care centre directors volunteered to participate along with one private early childhood consultant^g. The five child care centre directors represented regulated child care centres located in the Halifax Regional Municipality. Two facility directors managed non-profit centres while three managed profitable establishments. One of the represented centres serviced middle to high socioeconomic families while the other four serviced a variety of socioeconomic backgrounds. All centre directors had many years of experience. The private early childhood consultant brought a

^e *Nutrition and Physical Activity Questionnaire* questions provided in Appendix 6

^f Guided group conversation questions and one-on-one guided telephone conversation questions provided in Appendix 4 & 5

^g Only one participant responded to the NAP-Q questionnaire circulated in 2013.

wealth of experience from a number of different regulated child care centres within the province. All participants were presented with a \$20 grocery store gift card to thank them for their time and participation.

- 2) To connect with ECEs, an invitation to participate in a guided group discussion was provided to ECEs attending a workshop within the Halifax Regional Municipality. Five ECEs volunteered; each representing a separate regulated child care centre in Nova Scotia. Two ECEs represented centres located in urban settings; one in a middle to high socioeconomic neighbourhood and the other in a lower socioeconomic neighbourhood. Two ECEs worked in centres that were established in sub-urban areas and serviced families from varied socioeconomic backgrounds. The final ECE came from a rural community and also serviced families from varied socioeconomic circumstances. The ECEs had a variety of experience levels; three ECEs had worked for more than two decades in the child care sector, one had worked less than ten years as an ECE in a variety of settings, and the final ECE was new to the field having worked for less than two years in regulated child care centres. In addition, one of the ECEs took care of children with special needs. All ECE participants were presented with \$20 grocery store gift cards to thank them for their time and participation.
- 3) One vocational, one private and one non-profit post-secondary educational institution for early childhood education were strategically selected for their jurisdictional representation, association with a professional development resource centre, and representation of both English and French speaking child care providers. Five administrators and educators from three separate educational institutions, located in different areas of Nova Scotia, each offering an Early Childhood Education diploma program volunteered to take part in a one-on-one guided conversation. Two of the represented educational institutions manage early childhood resource centres where professional development opportunities are offered to individuals working in the early childhood sector. The third institution maintains a collaborative partnership with an organization that provides professional development opportunities to its community of ECEs. A representative from that organization also participated in a one-on-one conversation. Finally, one educational institution supported the French speaking early childhood educators.

The following section details the key findings drawn from the integration of the results from the 'Nutrition and Physical Activity Questionnaire' and the themes that emerged from the guided groups discussions and one-on-one conversations. This analysis does not fully depict the regulated child care sector, rather it is a snapshot of a variety of personal experience and understanding around movement and physical activity practices in regulated child care centres in Nova Scotia.

Section 3: Key Findings

The following key findings are drawn from the integration of the results from the 'Nutrition and Physical Activity Questionnaire' and the themes that emerged from the guided group discussions and one-on-one conversations.

Active Play Environments and Programming Opportunities

Play spaces and daily routines available in regulated child care centres impact the type of activities children engage in and the length of time devoted to each activity^{15,17}. Regulations and standards governing daily routine structure address free and structured play in both indoor and outdoor environments as well as the equipment available for use in these spaces¹⁸⁻²⁰. Articulated below are the described environments and opportunities that are available in regulated child care centres that contribute to the movement and physical activity of children attending regulated child care in Nova Scotia.

Summary of Regulations Governing Outdoor Active Play

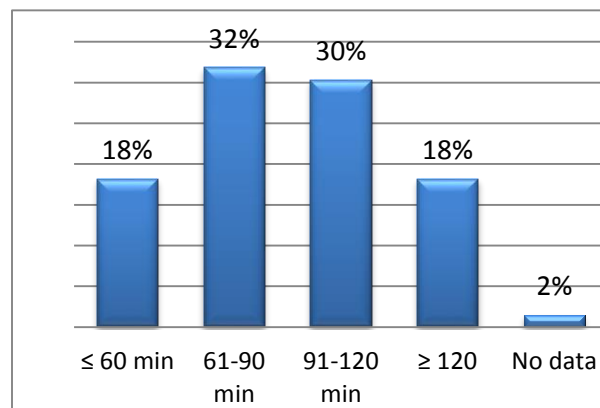
The *Day Care Regulations* govern “a developmentally appropriate period of outdoor activity in the morning and afternoon except when extreme weather conditions exist” [DCR, 22(1,2,3)]. The *Standards for the Daily Program* further elaborate on this regulation and indicate that daily routines in regulated child care environments need to provide a minimum of 30 minutes of uninterrupted outdoor play in the morning and afternoon when the majority of children are in attendance. In addition, the SDP indicates that the outdoor play space must be physically accessible to all children enrolled in a child care centre. The space must be located at the facility or within a reasonable distance, be safe, and be suitable for various age ranges. It also must provide enough room for each child (7 m²/child), be large enough to accommodate the largest age group of children, and be enclosed by a fence 4 feet in height. If a full-day infant program is offered, a centre must provide a separate outdoor play space that meets similar requirements. Section 6.4 of the SDP specifies that outdoor activity areas must support ‘(a) individual and group play; (b) active and quiet play; and (c) child-initiated and adult-facilitated play’. A *Materials and Equipment Checklist* ensures developmentally appropriate materials and equipment are available to all age groups in both indoor and outdoor settings. Materials and equipment found within this checklist, under the sub-section ‘Music and Movement’; include those that would facilitate active play and physical literacy^a for infants, toddlers, pre-schoolers, and school aged children.

Movement and Active Play in Outdoor Environments

Most questionnaire respondents indicated that children within their care took part in ≥ 1 hour of daily outdoor active play with 30% describing 1 ½ to 2 hours devoted to daily outdoor active play (Figure 1).

Figure 1: Daily Outdoor Active Playtime* in Regulated Child Care Centres in Nova Scotia (Nutrition and Physical Activity Questionnaire)

**Current Child Care Standards indicate 30 minutes of outdoor playtime in the AM and PM.*



To offer elaboration, centre directors who participated in our group discussion indicated that active play tends to take place in large, natural, outside open spaces that contain varying elements such as slopes, hills, flat surfaces and objects that facilitate jumping and climbing. ECEs described similar outdoor play spaces that offer children a variety of active play experiences.

All three groups of participants (i.e., ECEs; centre directors; diploma/PD educators) described beliefs about the benefits of outdoor play for children's growth and development, in particular how it promotes active play. Research investigating the impact of outdoor play on physical activity levels is limited with no conclusive evidence in support of any specific intervention¹⁵. All three groups made reference to the promotion of outdoor play more often and, if financial assistance were available, they would encourage the establishment and enhancement of outdoor classrooms that support the provision of opportunities for physical activity. One centre director suggested outside spaces with 'rubberized' surfaces, often found in fixed equipment playground spaces^h, result in a type of active play that seems less engaged. Play that takes place in more natural settings was described to resemble a

"...we feel very fortunate because we have a lot of land space...it's all fenced in so [the children] can run from one end to the other which is quite substantial... we're just building structures and building things for them to play with so I find that they're doing a lot of moving and a lot of running and a lot of playing..."-Centre Director

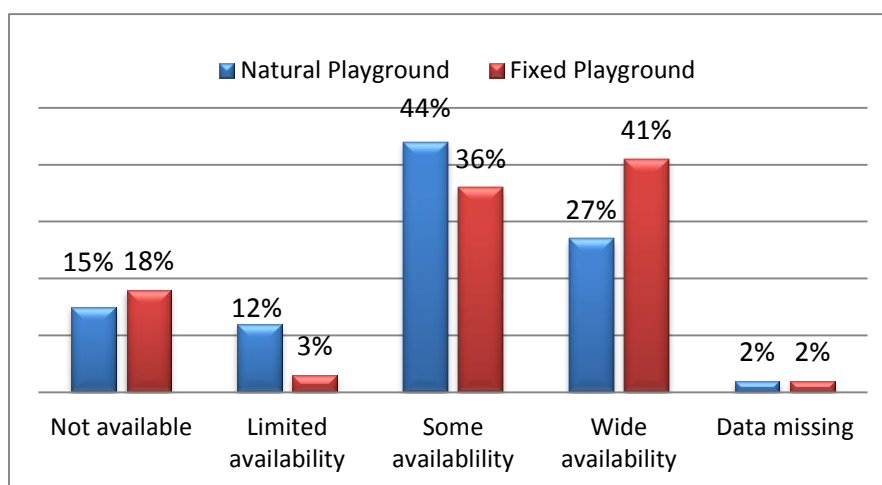
"We have a big field so in the winter time we may go sledding or coasting. We ride bikes, we do all that kind of stuff"-ECE

^h Images of a fixed playground and a playground with natural elements can be found in Appendix 8

combination of active and stationary play, both of which engage children and, depending on the interest of the child, could result in climbing and jumping, or intently investigating small objects such as leaves and bugs.

Interestingly, questionnaire results suggest the majority of regulated child care centres felt they provide children access to a mixture of fixed playground and natural playground options possibly representing a shift towards the inclusion of more natural elements in outdoor play spaces designed for young children (Figure 2).

Figure 2: Availability of Playground ‘Type’ (Nutrition and Physical Activity Questionnaire)



A few centre directors commented on the importance of access to outdoor space and felt that direct access from classrooms promotes active play and physical development as it is easy for centre staff to transition children from inside to the outdoors.

Facility directors that manage centres with small outdoor play spaces spoke of accessing larger spaces by bringing their children to community parks with hills, trees, and climbing structures considered ‘new’ to children eliciting levels of excitement and interest that are perceived to result in more active play and movement.

“...we go to other playgrounds because there's quite a few around us, they will play on the play equipment there, they don't really at ours. They found there's ‘the climbing tree’ which they love to go [on] and the older children will climb that...”-Centre Director

One facility director reflected on their use of the trail network in their community and the freedom they had in taking their children for group walks. During these walks children have the opportunity to climb and explore natural elements in a manner that would not be allowed in their centre’s outdoor space.

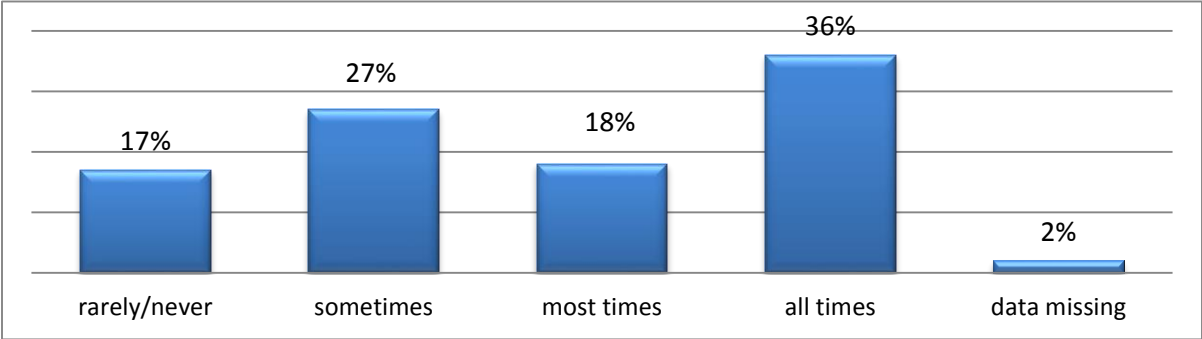
“[Direct access allows] free flow back and forth as long as you've got one person out and one person in, adult that is, so [children] can go in and out... as they like. Because they don't all want to be there at the same time.”-Centre Director

Some ECEs reported not being able to access public spaces, such as parks and playgrounds, due to their location while others described using surrounding community spaces regularly.

Notably, questionnaire results also demonstrated that outdoor opportunities often extend beyond centre boundaries (Figure 3). Sixty-four percent of respondents indicated that the centre they represent uses surrounding community spaces most-to-all times with only 17% describing minimal use of such environments.

“...our playground is in a parking lot in a chain-link fence...and right across the road, of course, is a beautiful [outdoor space]. Oh my gosh, so much forest and everything right across the road but the closest marked crosswalk is 8 kilometers [away]. So that is really unfortunate.”-ECE

Figure 3: Use of Surrounding Community Spaces by RCCC in Nova Scotia (Nutrition and Physical Activity Questionnaire)

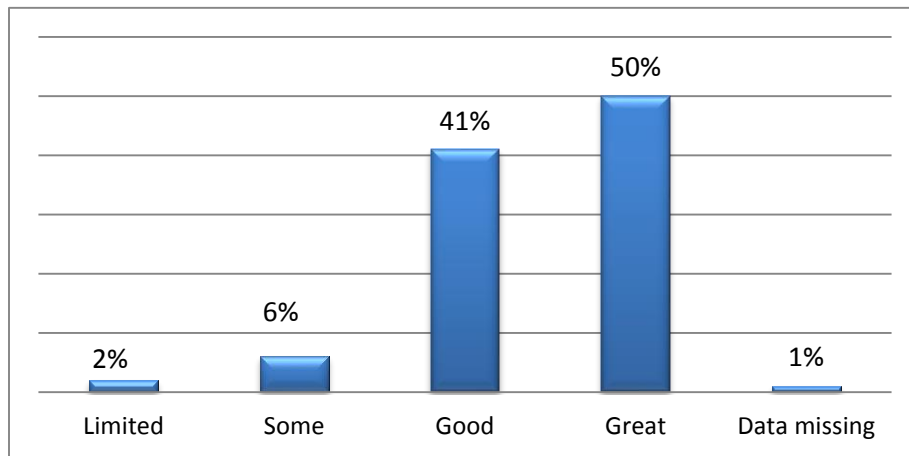


In addition to using surrounding community spaces, centre directors describe supporting physical activity and the development of physical literacy with the provision of portable outdoor equipment that promotes movement (i.e., balls, bikes, bubbles).

Questionnaire results indicate that the majority of regulated child care centres offer a good to great variety of portable equipment for children during outdoor play time (Figure 4).

“What we have done is we invested a lot in bikes. So we have a very nice bike path... And we have a lot of different types of bikes and last year we bought a lot of balance bikes so the children spend a lot of time on the bikes.”-Centre Director

Figure 4: Variety of Portable Playground Equipment in RCCC in Nova Scotia (Nutrition and Physical Activity Questionnaire)



Some ECEs reported that, despite a large selection of portable equipment (i.e. balls and bikes), daily access to materials and toys impacts children’s desire for active play. It was described that children appear ‘bored’ in their centre’s play area, because they are no longer excited by what is available to them.

Despite offering space and opportunities for outdoor active play in regulated child care environments, a number of barriers were described that were felt to limit the quality of active play offered to children. Inclement weather was a voiced barrier to offering regular active play in outdoor settings. The *Standards for the Daily Program*¹⁹ outlines that when temperatures fall below -25C with or without a wind chill factor or when the wind chill factor is ≥ -28 C outdoor play is not an option. One educator indicated that many winter days in their region of the province have temperatures that fall below these cut offs. Winter months also pose a challenge in terms of accessing parks and community spaces (i.e. inadequate snow removal for safe access).

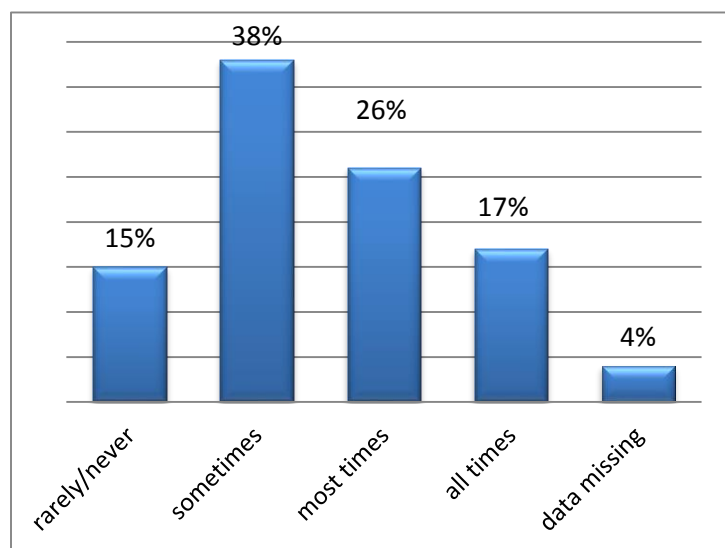
The *Standards for the Daily Program*ⁱ also mandates outdoor activities on days when the UV index is high (6-7) or very high (8-10). Children are not required to stay indoors however time must be allocated to the application of sun screen, appropriate protective clothing must be worn by children and therefore supplied by parents, and time spent outdoors must be planned for early morning and late afternoons. Concerns have been raised in the past about ECEs choosing to stay indoors because of unfavourable weather conditions. Thirty-eight percent of questionnaire respondents indicated that their ECEs ‘sometimes’ decide to be

“...we utilize that city space constantly, except in the middle of the winter because once you go up that hill in the middle of the winter, the wind chill, it just takes out anybody....But we use it constantly through the fall, spring and summer...” -Centre Director

ⁱ The *Standards for the Daily Program* is defined in Appendix 2: Definitions and Terms

indoors due to weather conditions while 26% 'most often' make this decision and 17% 'always' make this decision (Figure 5).

Figure 5: Percentage of early childhood educators who choose to be indoors or outdoors due to weather conditions (Nutrition and Physical Activity Questionnaire)



It is important to interpret the values of Figure 5 with caution as many questionnaire respondents may have been indicating that the ECEs in their centre follow the standards rather than limit outdoor play because weather conditions are unfavourable. To offer commentary on this noted concern, challenges that impact the decision to go outside come in very practical forms. For example, ensuring children are appropriately dressed for multiple outdoor play opportunities was identified as a barrier from various

stakeholders.

A few centre directors commented on ECE interest, commitment, and ability to be outside with children. As one centre director explained, some ECEs are more interested in getting children outside than others. Also, beliefs held by ECEs and parents around what weather is extreme and what weather is unfavourable may influence the decision to offer outdoor play experiences to children.

Moving children from an indoor space to the outside was a noted limitation hindering outdoor active play. This is especially hard in winter months and with the toddler age groups whereby six children require help getting dressed for colder weather with only one staff person to help. A few centre directors described stepping

“We try and get outside twice a day no matter what the weather. The barriers for that is sometimes children don't come with the appropriate clothing for rain or for snow or they're not warm enough or there's only one set of mitts and snow boots and they get soaked in the morning they can't go back out in the afternoon.” - Centre Director

“Rainy days are difficult because you can't always get outside but I move all the furniture out of the way and I have ride-on toys in my classroom. Well they do that every day but on rainy days they're allowed to run...usually inside it's 'walk your feet'.” -ECE

“-18, with wind-chill -25. You know, in the wintertime, that's the cut off. Parents don't want their children out there in that. People from away they find the Canadian weather very dramatic...and it's simply that they're not used to it and so they wonder if it could be harming, so they prefer that their children stay out of it. So we're finding it difficult...” -ECE

in to

facilitate outdoor play opportunities by helping during transition times so ECEs can go out with the children who are ready while they help the ones who are not.

In centres that do not have enough space to allow for multiple age groups to access outdoor playtime together, time spent outdoors requires scheduling which was a voiced barrier. In addition, requiring that all children stay together makes it hard to accommodate the variety of interests and was felt to possibly limit movement and physical activity in some children.

Finally, one ECE commented on barriers faced by ECEs working with children with special needs where opportunities for physical activity can be challenging to facilitate.

Each regulated child care centre in Nova Scotia likely holds different contextual challenges that limit the active play experiences of children in outdoor spaces. Although regulations are sometimes referenced as possible sources of limitation, one centre director shared that within her role exists opportunities to listen and respond to the needs identified by her staff so that the facility she manages is able to adapt and be flexible within a regulated environment.

"I have one staff ...she has a hard time getting up and down. So she said I would be able to do a lot more outside if I had something to lean on... so we listened to her... And I have another staff who said, 'I would do more with them but we need more soccer balls' ...I'm like, 'Well I got you a soccer ball' 'Yeah but you got one and that causes a fight cause they all [want it]...' 'So, here are 6 soccer balls'. So you have to really listen to what the issues are and you have the opportunity to eliminate those barriers as a director." -Centre Director

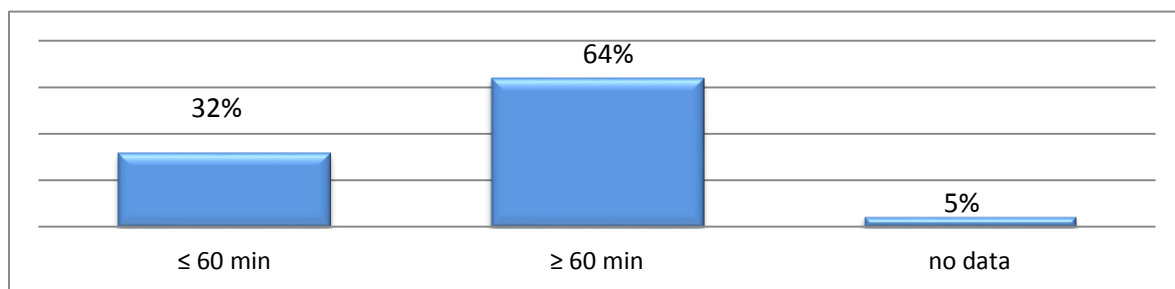
Summary of Regulations **Influencing Indoor Active Play**

Indoor active play is not specified in the *Day Care Regulations*, however, the *Standards for the Daily Program* indicate that indoor free play activities, active or otherwise, should occur for at least 1/3rd of the day with a minimum of 45 minutes of uninterrupted free play in the morning and afternoon when the majority of children are in attendance. The *Day Care Regulations* do specify that indoor play space must have 'at least 2.753 m² (30 ft²) of unobstructed floor space' for each child within a specific room [DCA 20(2)] with elaboration from section 6.4 of the *Standards for the Daily Program* specifying that indoor activity areas support '(a) individual and group play; (b) active and quiet play; and (c) child-initiated and adult-facilitated play'. A *Materials and Equipment Checklist* ensures developmentally appropriate materials and equipment are available to all age groups in both indoor and outdoor settings. Materials and equipment found within this checklist, under the sub-section 'Music and Movement'; include those that would facilitate active play and physical literacy for infants, toddlers, pre-schoolers, and school aged children.

Movement and Active Play in Indoor Environments

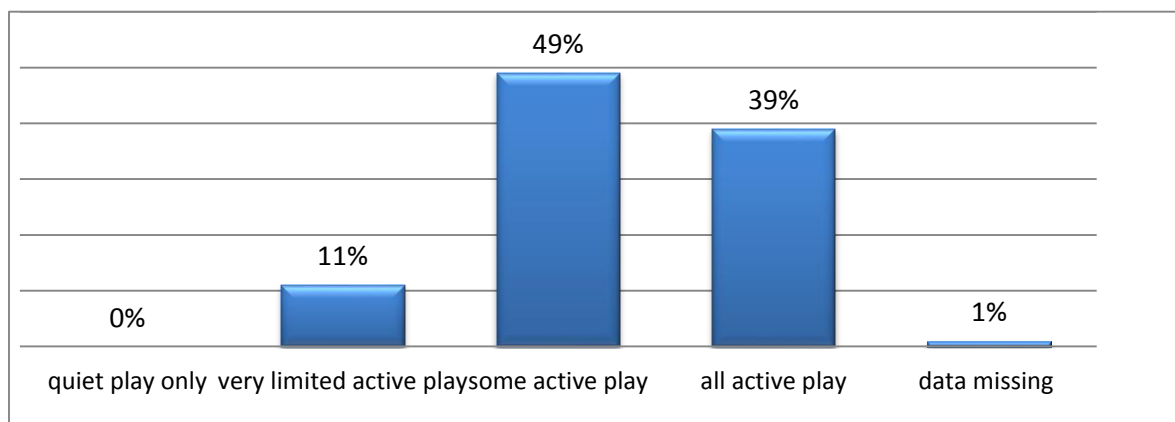
Sixty-four percent of questionnaire respondents indicated that children within their centre engage in indoor active play^j for ≥ 61 minutes per day while 32% indicated that children's indoor active play represents less than 60 minutes/day (Figure 6). A common definition for 'indoor active play' was not defined for questionnaire respondents and possibly represents a term not commonly used by the child care sector.

Figure 6: Percentage distribution of daily indoor active playtime (Nutrition and Physical Activity Questionnaire)



When asked about the indoor space available to children during daily operating hours, 11% of questionnaire respondents described a space that allows for very limited active play, 49% indicated that some active play was possible, while 39% felt that all types of active play could be accommodated (Figure 7).

Figure 7: Type of activity occurring in Indoor play spaces (Nutrition and Physical Activity Questionnaire)



^j Indoor Active Play is defined in Appendix 2: Definitions and Terms

Discussion with child care centre directors indicated that the availability of an indoor active play space, when outside play is not possible, ensures all age groups participate in energetic active play regularly. These spaces, often called 'gyms', are large open rooms available to all age groups and represent, to children and centre staff, a space where active energetic play is welcomed and encouraged.

When 'gym' rooms are not available, child care centre directors commented that they rent other community indoor spaces to offer these opportunities to the children within their care.

"We actually rent space at a community centre up from us and it's indoor but we go once a week just to give the children a big space to run."-Centre Director'

It was acknowledged by child care centre directors that sedentary play tends to occur in areas where tables, chairs and other play spaces are organized in a manner that prohibits active movement within a room. A few centre directors commented on the challenge presented by large class sizes (i.e 16 children vs. 24 children).

"...another limitation is the number of children so, again, regulations state how much square footage there has to be and also the ratio but there's a huge difference I see in a room where there are 16 pre-schoolers to 2 ECEs or 24 preschoolers to 3 ECEs...because the more children that there are in the room, the less places there are to go."-Centre Director

"The movement is often limited by the layout of the room and the amount of furniture and the particular areas that regulations require...And a lot of the time, the staff are actually arranging the room and sometimes to restrict movement. Because they don't want children running [in classrooms]." Centre Director

Not only do the classrooms hold more children, but more tables/chairs and resources are required under regulations and further limit movement and activity. It was identified that small indoor spaces meeting regulatory requirements do not always accommodate active play alongside more sedentary play and can create behaviour management concerns for ECEs. To proactively manage behaviour, centre directors acknowledged that some centre staff set up rooms in a manner that discourages moderate-to-vigorous active play and encourages quieter play among children.

Conversely, ECEs spoke of having limited access to indoor facilities for children to run and play thereby limiting their ability to regularly incorporate indoor active play opportunities for the children within their care.

Despite these barriers, examples of how active play opportunities are accommodated in indoor play spaces were provided. Directors articulated how they encourage and model to their staff ways to incorporate music and movement throughout the day to break up time spent in sedentary activities and to ensure a balance of quieter activities with more active ones. One director described a practical approach adopted by her centre staff to regularly encourage

children to 'get up and get things' rather than have ECEs do such activities. Another director talked about changing the physical space by moving the tables and chairs to the side of the room so that movement and physical activity was more possible. A third director described removing the chairs from the room while

leaving the tables to allow children to engage in stationary activities, such as colouring or drawing, while standing up.

“...you can consciously make a difference in your classroom in a few ways...one of the things that we've been working on is during free play time, we take away the chairs from the tables. We set activities up on the tables but children are standing beside the tables so they're walking around the tables to do their activities. And by taking the chairs away, the children are more engaged; they're even more engaged than when they're sitting there.”-Centre Director

Sedentary Play

Much evidence says that children who regularly spend time outdoors are more likely to be physically active children and also experience a variety of health benefits⁴. While health promoters emphasize outdoor spaces as a crucial setting for active play, it is also a setting for valuable idle activity. Participating child development educators acknowledge the value of certain sedentary behaviours and the role it plays in a play-based learning environment. This suggests a potential difference in how the public health community and the early childhood education community approach the concept of sedentary behaviour. Therefore, attempts to address the health impact of excessive sedentary activities need to be articulated appropriately to clarify the importance of supporting sedentary opportunities that contribute to child learning and development (i.e.; sitting while learning to manipulate small objects) while also limiting sedentary opportunities that oppose physical activity levels and physical literacy (i.e.; sitting for an extended length of time in a high chair).

It was articulated that ECEs are capable of distinguishing between patterns of sedentary behaviour that are linked to learning and those that may be categorized as ‘unhealthy’. The expertise that an ECE brings to a child care setting is to reconfigure and optimize environments and opportunities so that sedentary activities are not imposed by the child care providers but are chosen by children as a means to learn and grow. This concept is articulated by the following quote provided by an ECE and supported by her colleagues taking part in our group discussion.

“[Sedentary behaviour] is not always ‘not’ a good thing, you know what I mean? Children learn differently and sometimes children need to engage in sedentary behaviour in order for them to focus on something else that is equally valuable in their development.” – Educator

“I find though with idle play... they're actually engaged... in that hole that they're digging...I don't find that it's ever...boredom contributing to that, I find it's more like they're engaged in what they're doing at a particular spot.”-ECE

Stakeholders in the group discussions described sedentary activities in outdoor playground spaces to occur in areas such as sandboxes, mud kitchens, and play kitchens. As well, certain natural playground elements (i.e. digging holes) and portable equipment (i.e. small trucks and cars) elicit sedentary play. Indoor sedentary activities, outside of nap/quiet time, were described to take place in areas set up for stationary activities such as ‘art’ spaces, reading nooks, and snack/lunch tables. This aligns with findings from an American

research study published in 2009 investigating the social and environmental factors associated with preschool play. By observing preschoolers, researchers found that the five most common indoor activities were primarily inactive in nature (nap time, large group activities, indoor transitions, snack/meal time, and manipulative play) and together represented 84% of all indoor play observations²¹.

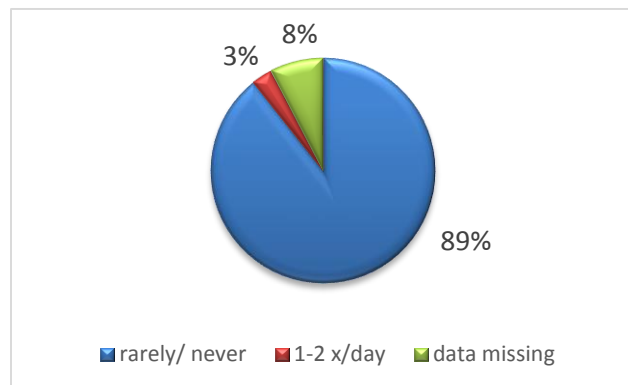


Figure 8: Time spent seated for ≥ 60 minutes/day in RCCC (Nutrition and Physical Activity Questionnaire)

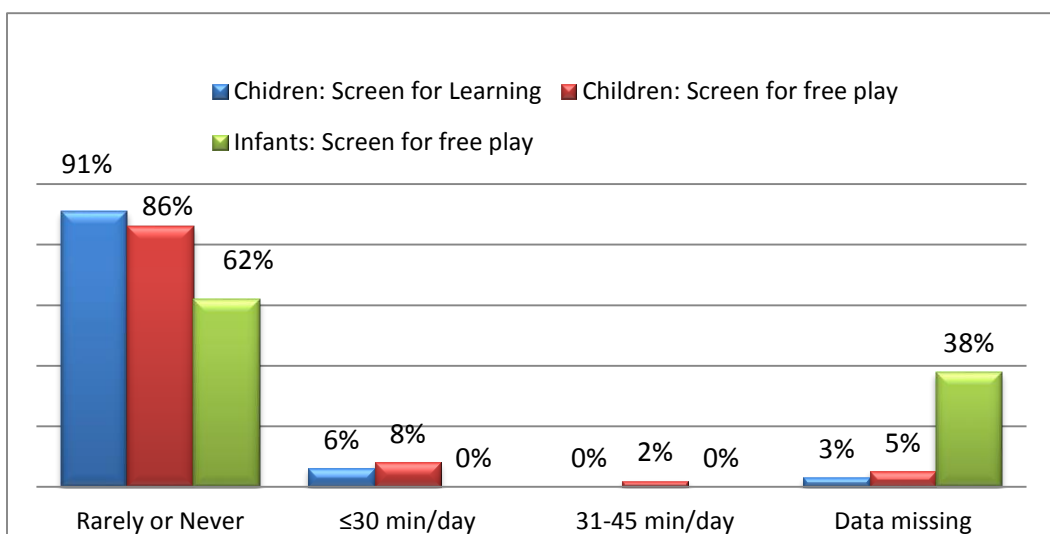
Although 89% of questionnaire respondents indicated that children within their centre rarely to never spend greater than 60 minutes seated at one activity (Figure 8), what is not made clear is the cumulative time spent in sedentary play throughout a child care day compared to the cumulative time spent in more active pursuits.

Beyond that is the question; how much sedentary play is child directed compared to sedentary play that is imposed upon children because more physically active options are not available?

Screen time

Most questionnaire respondents indicated that screen time for learning or free play was rarely or never incorporated into the daily programming offered at their centre (Figure 9).

Figure 9: Percent distribution RCCC who offer Screen Time to children/infants (Nutrition and Physical Activity Questionnaire)



“[Someone] told me I should buy a TV not long ago, it's the first time I've heard that in years. And I think if you remove that from so many of our children, then they automatically gravitate towards large motor play and more active play because that piece has been removed.”-Centre Director

“I might be the odd one out but it is hard to get them outside and it's hard to get them moving and they'd rather have media.”-ECE

All centre directors who participated in our group discussion indicated they support a ‘no screen time’ environment.

Currently, there is no standard or guideline related to the use of viewing screens in regulated child care settings. One centre director articulated her belief that when screens are ‘not in the equation’ children seem to gravitate to gross motor play more easily. Research has shown that preschool aged children (3-5 years) in Canada are sedentary for half of their waking hours and spend, on average 2 hours/day in front of screens¹.

ECEs offered reflection on challenges they face with children who they believe spend a lot of time in front of screens outside the child care environment^k. It was suggested that these children struggle with engaging in physical activity opportunities

and often request the use of electronic devices throughout the day.

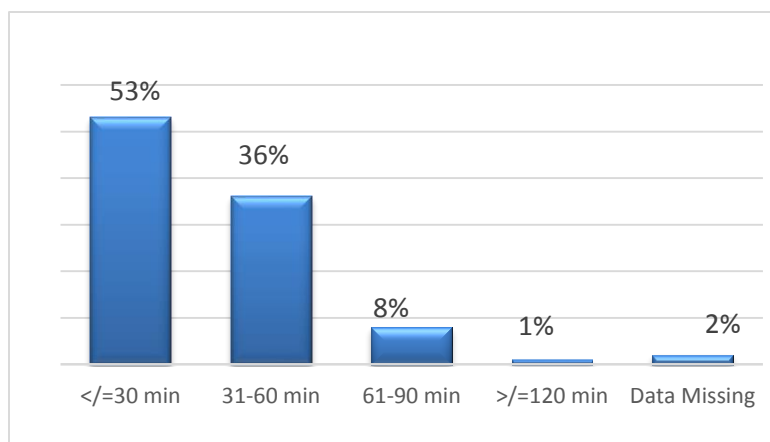
Structured Active Play

Regulations governing the provision of structured play opportunities can be found in the Standards for the Daily Program. Program plans are required to indicate that, for indoor and outdoor play, ECEs facilitate both child-initiated and adult-initiated play experiences. Adult-initiated play experiences, similar to structured play, are described as small and large group play where adults engage children in discussion, stories, games, and movement activities. Research has suggested that adult involvement during outdoor play experiences increases moderate-to-vigorous physical activity in young children^{12,15}.

Questionnaire results suggest that attempts to incorporate structured activities that promote active play and physical literacy into the daily program in regulated child care centres do occur with over 50% indicating that structured physical activity takes place ≤30 minutes/day (Figure 10).

Figure 10: Amount of Daily Programing Devoted to Structured Physical Activity (Nutrition and Physical Activity Questionnaire)

^k Commentary on this societal barrier is provided in a separate sub-section of this report on page 31



If available, structured indoor active play predominantly occurs in the large open rooms called 'gyms'. If offered, structured outdoor active play can take place in the outdoor playground space and surrounding community green space and parks.

Centre directors described programming that regularly includes structured activities that promote physical activity and physical literacy. Certainly centres with 'gym' spaces find this

easier to facilitate than those without. Organized games and more formal programs such as yoga, creative dance, and music and movement were cited as programmed daily or weekly events. Questionnaire respondents described providing children with additional activities throughout the year such as skating and swimming opportunities, dance parties, and 'bike days'.

"It's a nice place for preschoolers to start off their day [in the gym]. So there is a lot of running and a lot of large group games. As much as they 'get' them. Red light, green light."-Centre Director

With reference to structured physical activity, the ECEs who participated in our group conversation agreed that they typically like to have at least one planned activity for the day to complement free play. In order to do this, ECEs described needing to find time outside of typical work hours to prepare activities. They collectively spoke of both doing work early in the morning before the children arrive, or while at home in the evenings and on the weekend. It

was said that if they did not make time outside of work for such activities, their ability to encourage physical activity among the children within their care is compromised. Scheduled program planning time for ECEs is not common among regulated child care centres in Nova Scotia. Many do not have the ability, time, or finances to offer such support to their staff (i.e.: lack of extra staff to meet 'child/ECE' ratios to accommodate program planning time). One ECE reflected on the lack of planning that she witnesses

"I find for gross motor and outdoors we sort of have on our planning sheets 'gross motor/outdoor play' and my entire centre just writes 'playground'. And I'm like, okay. But I always have a planned activity. Whether or not we do it or not, I still have an idea about what we're doing and all my preschoolers know, they know that these are the games we play, this is what we do. And that's how I get to see where they're at physically and what they're doing..."-ECE

within her centre and described a frustration that often the idea of being 'at the playground with children' was considered a planned activity by some of her co-workers.

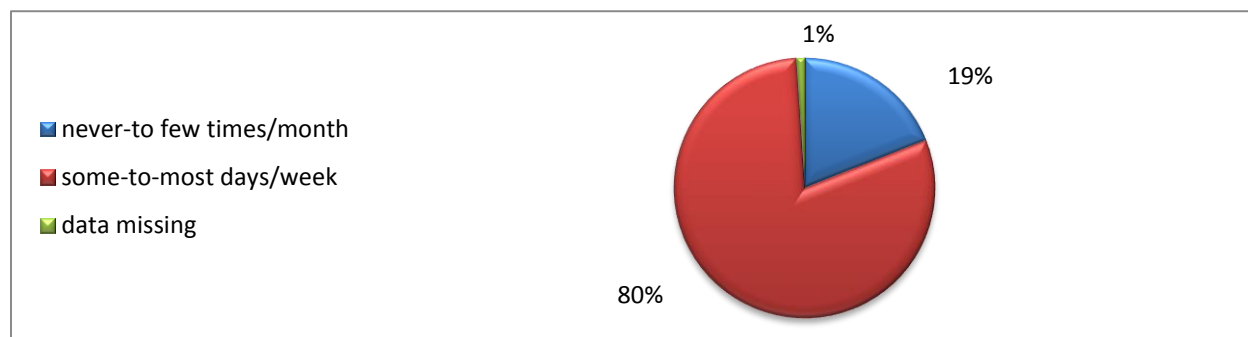
Described barriers to planning and preparation suggest a possible lack of confidence, held by ECEs, in their ability to create learning environments and opportunities that effectively support physical activity and physical literacy. A closer look at training and professional development opportunities that build such knowledge and skills can be found on page 23 of this report.

Children’s level of interest in participating in structured physical activity is an important aspect to consider. One centre director referenced using the *Tumblebugs*^l program but did articulate a challenge with its facilitation, as children were not always willing.

Sixty-eight percent of questionnaire respondents indicated that the ECEs employed in their centres were trained to facilitate the ‘Tumblebugs’ program and the majority of respondents (80%) indicated that fundamental movement skills were facilitated some-to-most days of the week (Figure 11). Unfortunately, the NAP-Q questionnaire was unable to establish the level of understanding respondents held regarding ‘fundamental movement skills’. It is worthwhile acknowledging that how early childhood educators interpret ‘fundamental movement skills’^m and other terms used by the active living sector (i.e. physical literacy and active play) may differ and the creating of a common understanding is needed. In addition, train-the-trainer type programs designed to affect physical activity in the early years would benefit from recruiting qualified instructors who appreciate and understand both perspectives.

“We try to do the Tumblebugs program and it's like, "Get back here, get back here" and they're just running and running and we're like 'Okay, let them run'. We figure if they run long enough they'll settle down.”-Centre Director

Figure 11: Facilitation of Children’s Fundamental Movement Skills (Nutrition and Physical Activity Questionnaire)



Educators from training institutions provided insight about the application of adult-structured active play. They indicated that student’s in early childhood education diploma programs are instructed on how to ascertain their own optimal level of involvement during a child’s learning process. For example, a decision to observe rather than direct may be made during one learning opportunity while a separate learning opportunity may include a more direct approach through the use of words, conversation, or the insertion of materials. Application of this approach to learning and how it can be applied when children are developing physical literacy and participating in physical activity is recognized in the following quote:

^l *Tumblebugs* is described in Appendix 7

^m *Fundamental Movement skills* is defined in appendix 2: Definitions and Terms

“We try to balance quieter activities with more physical active activities but a lot of time it's just following [the children's] lead... toddlers very clearly will tell us when they want to go outside or when they need to be moving or climbing or things like that so we would just kind of alter whatever we had planned or whatever we were thinking to follow them... Okay it looks like we're going outside now or it looks like we're jumping or climbing. Or if they're doing those then we'd set something up to support that interest.”-Centre Director

Other approaches to providing structured active play during the day were described. One centre director uses movement and music principles during transition times and times where she notices children to be engaged in idle play for long periods of time. To accommodate staffing requirements during rest time, another centre director described using adult-lead stretching activities during quiet time

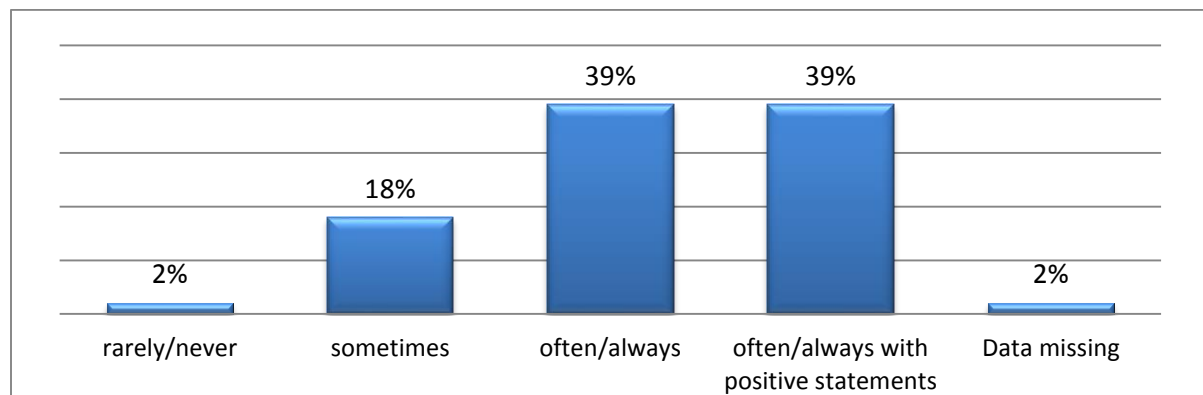
when children were not sleeping but were required to stay on their cot.

“The kids don't like laying on the bed for 2 hours and if you have two staff that each need an hour lunch it's difficult...once you have more than so many awake, you need two teachers. So we've been doing yoga and exercising on the beds”-Centre Director

Capacity of ECEs to Engage in Movement and Physical Activity

Whether structured or free, an ECEs level of engagement with children during active play is an important component of supportive physical activity environments in child care settings^{11,12,22}. Current regulations do not specify the need for centre staff to engage with children during active play beyond the overall standard that program plans must include child-initiated and adult-initiated play experiences (Standards for the Daily Program-Section 5.2). Seventy-eight percent of questionnaire respondents suggested that ECEs often-to-always involve themselves during active free play (Figure 12).

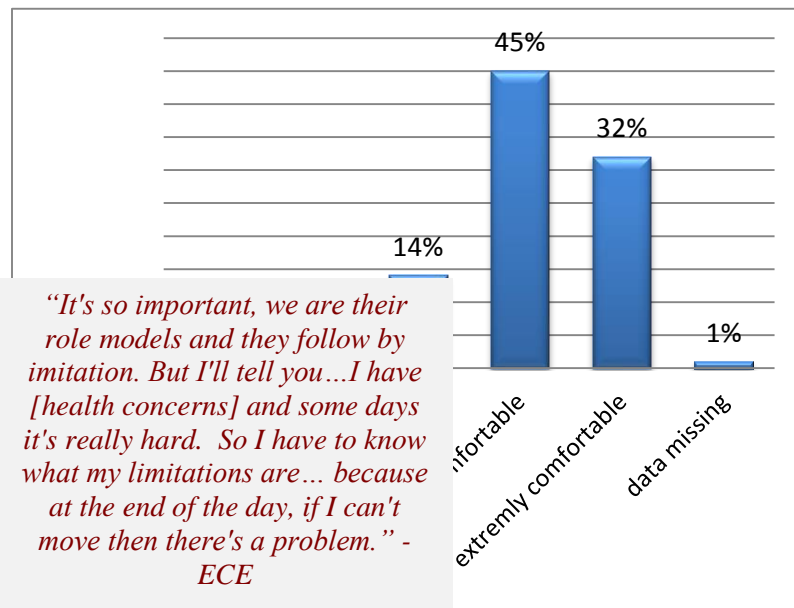
Figure 12: Level of ECE Involvement during Active Free Play (Nutrition and Physical Activity Questionnaire)



The majority of questionnaire respondents indicated that the ECEs were comfortable to extremely comfortable participating in active play with the children (Figure 13). This comfort level can be influenced by many things and as one ECE described, the chance that someone may ‘catch her in the act’ of participating in active play was enough to hinder her engagement.

"I love to dance as long as my door's shut. If my door's shut...the kids think that I'm a wonderful dancer. But you don't want your door open with other people walking by seeing you dancing."-ECE

Figure 13: ECE Level of Comfort Participating in Physically Active Play (Nutrition and Physical Activity Questionnaire)



ECEs reflected on engaging in active play activities with children and shared that although they understand the need to model physical activity sometimes it can be challenging.

ECEs also felt their ability to engage with children during active play was limited by other responsibilities during the day. Discussion around this topic ignited feelings about the working role of ECEs and how the general population, including parents, undervalue the expertise

they hold in relation to child development.

When asked about the influence centre directors have in promoting the engagement of their staff in active play, a few described engaging in constant role modeling to demonstrate ways in which children can be encourage to participate in more movement and energetic activities. Some described using the services of private consultants to solidify positive changes within child care settings. One facility director commented that involving a consultant affects change quickly and in a more sustainable manner.

"I can certainly lend an attitude that we value physical activity but it doesn't always result in a change because sometimes that messaging... may be taken as directive even though my intent wouldn't be to be directive with it...So when you have someone else come in then it becomes their ownership of it as opposed to "oh, she wants me to do that." - Centre Director

All child development educators felt that most ECEs know that physical activity and physical literacy is important to a child's growth and development. Although, this understanding exists, it was articulated that engagement in and promotion of physical activity and physical literacy is not fully realized by many ECEs working in child care environments.

This observation suggests that many in the field of early childhood education may agree with the commonly held belief that require minimal the confidence in being facilitate opportunities activity.

"I don't think you'll find an Early Child Educator that doesn't know that kids should be physically active. They know it, whether they're doing it or not?" Diploma/PD

"Yeah and maybe if we had the opportunity for more workshops in it we might be more confident in like implementing...the program. Because right now we're saying, "Well I want to do this but maybe I don't know how or I don't have the confidence to do it with a large group."-ECE

young children are naturally active and support¹². Alternatively, ECEs may lack able to enhance environments and that promote movement and physical

It is important to note that two educators did voice a sentiment that

positive centre-based work is taking place throughout the province in regards to physical activity promotion and physical literacy development.

Training and Professional Development Targeting Movement and Physical Activity

Post-secondary programs and professional development (PD) opportunities that provide practical training on supporting physical activity during the early years are needed if ECEs are feeling insufficiently prepared in this area. Current regulations require, at minimum, that child care centre staff who work directly with children must complete orientation training approved by the Department of Education and Early Childhood Development or must have completed comparable post-secondary courses in early childhood education (Day Care Regulations; Section 37). Level 3, the highest staff classification, is issued to individuals who have completed university level training.

Of the represented training institutions interviewed for this report, all offered 2-year diploma programs in early childhood education with one institution offering their diploma program through a distance-learning platform. Program curriculums are based on a child development perspective and ensure graduating students are competent to educate and care for young infants and children up to the age of twelve. A child-directed play-based teaching philosophy (also known as 'emergent curriculum') strongly guides course instruction in all three institutions interviewed²³. In this teaching approach, a teacher's attention is placed on observing children during play and recording their learning development. Teachers trained in this approach optimize environments and opportunities available to children to enhance their learning experience through play.

"Lots of research supports that children learn best, as do adults, when they make the choice to learn and to focus. Retention of key skills, concept and knowledge is enhanced if children, again, get to choose what it is they want to learn. And it's up to the Early Childhood Educators to ensure...that child development is adhered to and opportunities and materials and whatever the child needs at their particular developmental stage is also being met at the same time."- Diploma/PD Educator

It was recognized by two educators that within the child care sector a ‘theme-based learning approach’ⁿ, as opposed to a play-based learning approach^o, still lingers in child care centres across Nova Scotia with both ends of the spectrum represented throughout the province. However, a described shift in practice was articulated with recognition that time is required to transition the full child care community in Nova Scotia to the play-based philosophy which is considered best-practice.

Questionnaire results suggest that the regulated child care community strongly believes that physical activity education should be a component of ECE training programs (96% of respondents). All educators interviewed described curriculums that incorporate education about physical development in the early years into many of the courses required for program completion. Although it was not indicated that students require specific teaching on how to promote movement, physical activity, and physical literacy in young children, it was described that all courses contribute to a strong foundational understanding of child development. With that understanding students are then instructed on how to optimize environments and opportunities for children to learn and develop; both mentally and physically. Developmental domains; cognitive, physical, social, and emotional, are valued equally as is learning that takes place in both indoor and outdoor environments. All three ECE diploma programs offer a class devoted to music and movement, however this class is not offered to promote an understanding of physical activity and physical literacy in the early years but rather a means to target physical, language, and cognitive goals in specific developmental age groups. One training institution offers a specific course addressing psychomotor development^p in children that includes instruction on how to integrate psychomotor activities in education programs designed for children 0-12 years.

“...the shift [in emergent learning] is coming but it's at a very slow pace where key partners in the field are realizing the importance of play and it's trickling into the system and even into primary classrooms. It's at a very slow pace and it will take considerable time to fully be there but it is happening...”-Diploma/PD Educator

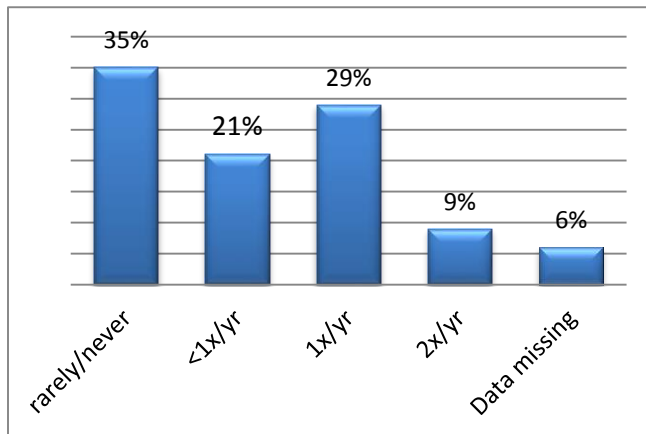
To enhance skills and knowledge specific to early childhood care, all child care workers holding classification allowing them to work directly with children in regulated child care centres are required to complete at least 30 hours of professional development in every 3 years (Day Care Regulations; Section 38). Questionnaire results suggest a limited number of physical activity focused training opportunities are available or accessed by regulated child-care centres across Nova Scotia (Figure 14). Although these opportunities seem to be limited, questionnaire respondents indicated qualified professionals ‘mostly’ provide instruction. Unfortunately, the questionnaire did not allow for elaboration on what constituted ‘qualified’.

ⁿ Theme-based learning approach is defined in Appendix 2: Definitions and Terms

^o Play-based learning approach is defined in Appendix 2: Definitions and Terms

^p Psychomotor Development is defined in Appendix 2: Definitions and Terms

Figure 14: Physical Activity Training Opportunities Provided to Child Care Workers (Nutrition and Physical Activity Questionnaire)



One educator tried to design a professional

development opportunity that focused on the core components that enhance physical literacy in the early years but was unable to identify a capable instructor who held expertise in both early child development and active living. The educator believed this barrier has limited the number of opportunities made available to the ECEs in her area.

Decisions about specific professional development opportunities are informed, in part, by level of interest, but also by identified knowledge/practical application gaps within the child care sector. For example, two institutions described a notable lack of application of knowledge with the optimization of environments and opportunities for infants and toddlers that enhance movement and physical activity. Programs either are available or are being developed to address this gap.

Educators indicated that professional development opportunities emphasize play-based learning approaches. With play-based learning environments representing best-practice in the area of child

“...if you begin thinking you need to instruct and restrict, you know, teach very specific things to children then that's not necessarily working and it's not in line with emergent curriculum [play-based approach] at all”-Diploma/PD Educator

development, it would be essential that any program used to formally address physical activity and physical literacy in regulated child care settings promote a play-based learning approach.

Formalized programs developed to address physical activity in children have been considered. One representative reviewed the ‘High Five’ national standard training program²⁴ that focuses on providing children in Canada with high quality

Examples of professional development related to the promotion of physical activity and physical literacy. See appendix # for existing programs:

- Integrating physical activity and physical literacy into programing
- Mental and physical wellness for ECEs (being active, and moving competently and confidently)
- All-season outdoor play and outdoor play space enhancement (see appendix #)
- Solutions for indoor child care space that encourage physical activity
- Fundamental movement skills through adult-led and child-led activity
- Verbal communication during learning and its impact on self-esteem
- Optimizing transition times with physical activity
- Interactive storytelling CONNECTION?

Training institutions and professional development centres teach Tumblebugs and Special Olympics Active Start (see Appendix 7)

experiences in sport and recreation, and determined it to be too specific as it did not address the learning needs of current ECEs working in child care settings. It was not identified if this program supported play-based instruction.

When the most current guidelines for physical and sedentary activity^{2,3} were shared with centre directors and ECEs who participated in our group discussions many were not aware of their existence. This brings into question the level of awareness held by the child care community about physical activity needs during the early years. During the centre director's group discussion, debate ensued about activity levels of young children and the realization that although children are believed to be quite active, energetic play at the levels recommended in the guidelines, is most likely not considered by many working with this age group. Research investigating the knowledge and attitudes of child care providers found that daily practices promoting physical activity and movement improved when provider's knowledge and beliefs changed about the role they played in supporting physical activity²².

Diploma and professional development educators were familiar with the physical activity and sedentary guidelines and spoke of incorporating them into program curriculums and course outlines. Despite informing newly trained ECEs, those who have been working in the child care sector for a number of years

"I think that 'yes they're very physical' because they're outside all the time and they're doing this and that but I will go back next week and really look at the amount that they are really being very physical. And I think if I had that same conversation with my staff, their awareness would be raised as well. And they would... be more inclined to be better." -Centre Director

have not received updates on current evidence. The Canadian Physical Activity and Sedentary Guidelines^{2,3} represent a valuable resource to bolster awareness and understanding around current physical activity levels of young

children.

Most ECEs expressed the desire for support in the form of professional development. The general consensus among ECEs was that most workshops focus on "cognitive" rather than physical enhancements. ECE's reported wanting to learn new and innovative ways in which they could facilitate active play with young children, especially in outdoor spaces. More specifically, a need for such workshops to be hands-on and practical, rather than theoretical, was expressed.

Societal Barriers

Societal barriers limiting the promotion of movement and physical activity in regulated child care centres were regularly described during the guided group discussions and one-on-one conversations. Affecting both the capacity of regulated child care centres and individual early childhood educators to support and enhance movement and physical activity in young children, these barriers have been categorized into the following broad themes: (1) Generational Divide, (2) Academics over Activity, and (3) Support for Safety over Risk-Taking.

Generational Divide

Both educators and centre directors voiced cultural challenges with recent graduates of ECE diploma programs. Reflection was offered on the knowledge that most come to the program directly from high school and represent a generation that may not fully appreciate the benefit brought by adequate physical activity and movement.

“...it's that generation where they've seen a dramatic increase in screen time and decrease in outdoor physical activity specifically. I don't know that they know any different. So the information I'm giving them I truly believe is not a denial or rejection, it's new knowledge...”-Diploma/PD Educator

“We've got the next generation of [children]... their parents didn't do it. Didn't experience it, didn't go out to play. It's already at that. So we actually have to educate the parents and the ECEs who will then pass that back on to the children.” Centre Director

An articulated lack of parent awareness around the importance of adequate physical activity during early child development was described. It was felt that parents also come from the generation of increased screen time and decreased outdoor play.

Academics over Activity

Concerns around school readiness and academic performance were voiced as a challenge impeding support for the promotion of physical activity in childcare settings. Research supporting this concern suggests that interest in academic readiness has removed focus from play-based development and growth²⁵.

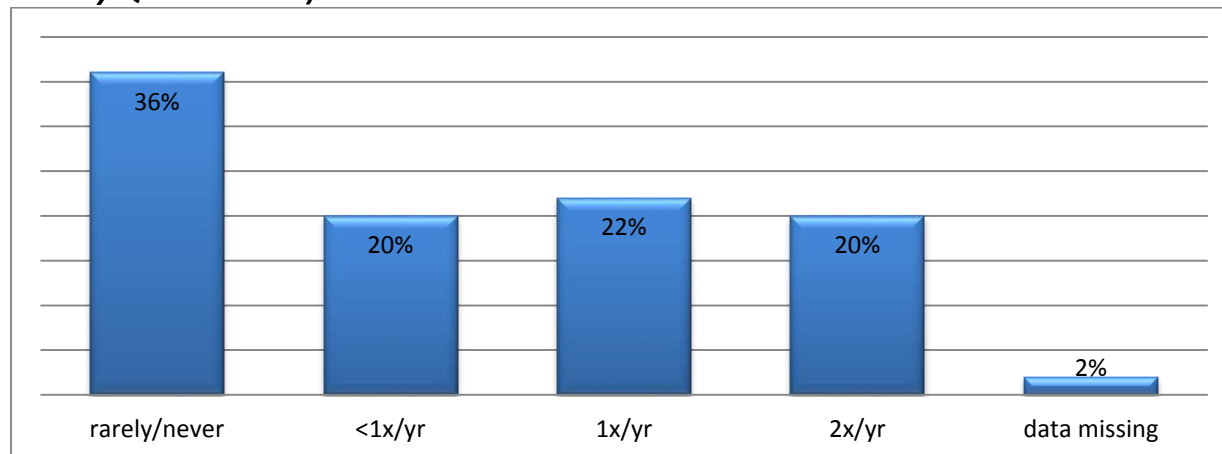
“[The parents] are more about the curriculum of...being ready for school...Instead the process versus product and how important play is. They don't think outdoor play, physical play...as something that they're learning. Their focus is more on academics...”-ECE

While ECEs understand it to be their responsibility to communicate with families about physical activity, it was a described challenge. Many parents were perceived to allow an abundance of “screen time” outside of the child care environment which was felt to negatively impact children’s desire to take part in active play throughout the day.

Questionnaire results suggest communicating with parents for greater awareness about physical activity is limited as only 46% of respondents indicated that this occurs ≥ 1 X/year in their centre (Figure 15). ECEs hold expertise in child development and, if supported, can provide education to parents about the physical

activity needs of young children and how to optimize such opportunities, which can serve to heighten their role as a 'resource provider' rather than a 'service provider'.

Figure 15: Building awareness about physical activity among parents (Nutrition and Physical Activity Questionnaire)



Support for Safety Over Risk-Taking

All groups highlighted the mindset of 'keeping kids safe and limiting risk' as a deterrent to physical activity in child care settings. It was articulated by all educators that encouraging children to take risks was an important developmental ingredient and in need of promotion. This is in line with a position statement published by ParticipACTION addressing the need to encourage risk-taking during childhood²⁶. Both centre directors and ECEs described a change is needed in terms of the 'risks' available to children in regulated child care which will require collaborative support from regulators and decision makers.

"[An] outdoor play space, if it's 18 inches or higher, it has to be commercially made. So if you want to make a bridge or if you want to make a climbing structure or if you want to have a tire stacked on a tire, the moment you hit 18 inches, you have to take it down because it's too high. So you've got to really watch that regulation as well because you want to encourage climbing and you want to encourage you know, risk taking and you want to encourage movement but at the same time you're bound by regulations."-Centre Director

Finally, ECEs suggested some parents want to "keep their child in a bubble". As per the reasoning behind this way of thinking, the ECEs felt that it was because the parents themselves (particularly the younger ones) were brought up in the "electronic" age, and thus did not engage in as much active free play when they were children.

Interest in Formal Guidance Targeting Physical Activity

Interest in the provision of formal guidance addressing the physical activity practices in regulated child care centres is very much divided. Fifty percent of questionnaire respondents indicated they would welcome this type of governance while 42% were opposed to such measures. To elaborate, a number of center directors who responded to the *Nutrition and Physical Activity Questionnaire* who were in support of additional guidelines felt that such an initiative would enhance the early childhood education profession and believed that it would help parents understand the important role physical activity and physical literacy plays in child health and development. A smaller number of questionnaire respondents felt that additional 'basic' guidance would be supported if the regulated child care sector were involved with its development and implementation. A number of questionnaire respondents in opposition of such an initiative felt that centres were currently too regulated and that it was not the child care centre's responsibility to regulate the movement and physical activity of young children within their care. A smaller number of respondents were concerned about facility and staffing challenges that would surface if new regulations or guidelines were set in place.

It was voiced by the majority of diploma/professional development educators that the prospect of additional guidance to enhance the promotion of physical activity and physical literacy in young children attending regulated child care was a contentious topic. Two educators articulated that guidance in the form of 'regulations' or 'guidelines' was an approach that would not result in positive changes to the movement and physical activity practices currently taking place.

*"Well I think the thing is if it comes in the form of support in a positive way, I think that it would be really appreciated. If it comes as another rule they have to follow...people will do it, because it's a rule but...that's not where we want them to be, we want them to be doing it because they believe in it and they're enjoying it and the children are enjoying it."-
Diploma/PD Educator*

On the other hand, two educators articulated a belief that additional formal guidance may positively influence current practices. Educators from all three training institutions felt that attention could be directed towards supports that would enhance skills and knowledge in this area. It was articulated that any support offered should align with the provision of opportunities and environments that nurture a play-based learning approach.

Among centre directors, there was recognition that intention behind regulations and guidelines is often grounded in research and are set in the interest of children and optimal child health and development. Many centre directors suggested that support be offered in the form of 'guidance' rather than 'guidelines'. It was described that although guidelines are not regulations, some licensing officers hold them in the same regard and present certain expectations to have them meet by regulated child care centres thus making it hard for centers to truly feel 'supported' in their efforts to address physical activity and movement. ECEs

"...you have to make sure that your director is on board with you and working with you and supporting you all the way around. The biggest thing, I'm sure, you and I, when we went to school how much everything has changed since then." -ECE

did not voice a want or a distain for formal guidance, but rather commented on needing support from their centre to strengthen their own ability to optimize environments that enhance physical development and active play in children. They recognize the world has changed since their own childhood and what worked in the past is not necessarily effective in the present.

In summary, the early child care sector is open to support but is very much divided on what that support is and how that support should be delivered.

Summary of Key Findings

Overall, the belief that young children should develop physical literacy, engage in movement and physical activity, and limit unnecessary sedentary time is supported by those who participated in our guided group discussions and one-on-one conversations. *Nutrition and Physical Activity Questionnaire* respondents described similar beliefs. It was clear that regulated child care centres are not all created equal. Some centres have access to resources that allow them to offer environments and daily programming that promotes regular movement and physical activity. Other regulated child care centres are challenged with available space and resources that, most likely, compromise their capacity to promote physical activity and physical literacy. All regulated child care settings who support cognitive, social, emotional, and physical development equally, are governed by regulations. While necessary there may be some specific regulations that may unintentionally limit the promotion of physical activity and physical literacy. In addition, early childhood educators and individuals trained to work directly with children understand the importance of physical activity during this life stage but may not hold the practical skill-set required to effectively create environments that best support young children with this developmental domain. Confidence regarding physical activity promotion may also be low in the profession as a whole. Access to training and professional development opportunities offered by qualified instructors knowledgeable in both early childhood education and active living is limited. Finally, a number of societal barriers limit all child care settings as social norms and dominant values obstruct even the most dedicated and devoted early childhood educators. Interest in the provision of formal guidance addressing the physical activity practices in regulated child care centres is divided among those who work in and support the regulated child care sector in Nova Scotia. A variety of reasons support individual views and range from beliefs about level of responsibility to the practical elements of incorporating formal guidance into existing environments and routines. It is important to restate that the information in the preceding section is an illustration of a variety of environments and practices taking place in regulated child care centres in Nova Scotia and is intended to activate conversations and debate around how best to approach positive change.

Section 4: What's happening elsewhere?

Other jurisdictions across Canada have implemented initiatives and created opportunities targeting the movement and physical activity environments in regulated child care settings. Summarized below are two examples of separate initiatives that have each taken a different approach to enhance movement skills and physical activity in young children. Of noted importance is the knowledge that province-wide early year curriculum frameworks support both examples.

Alberta Physical Activity and Sedentary Behaviour Accreditation Standards

Alberta is the only province or territory in Canada that has an accreditation program detailing standards that exceed minimum licensing requirements for regulated child care settings. The objective of this program is to help families choose the best care for their children as accreditation scores are made available to the general population. Approximately 90% of licensed child care centers in Alberta are currently accredited. Voluntary for child care centers, the accreditation program is a 'self-assessment' process. A self-study guide is used to measure and compare the quality of care in a center to set standards. In December of 2013, revised accreditation standards were released that included a new standard for physical activity and sedentary behaviour based on the most current research and practices in child care settings²⁷.

Throughout these standards there are multiple references to a play-based learning philosophy. Most active play guidance and children's physical development is encouraged in the provision of outdoor play spaces that 'provide a variety of developmental experiences and physical activities for children in a safe environment' (Standard 1.4). Opportunities for children to explore, appreciate, and learn about the natural world is also recommended. Standard 2.2 specifically targets the promotion of physical wellness and the incorporation of physical literacy in everyday programming. Included in this standard is the promotion of physical activity through structured and free play opportunities in both indoor and outdoor environments. This standard also includes commentary on adult participation and involvement in active play and the adaptation of activities and experiences to ensure children with diverse capabilities can participate at developmentally appropriate levels.

A pilot study comparing baseline data and follow-up data of 80 children enrolled in child care centres involved in the accreditation process was published in 2015²⁸. Significant changes were seen with the toddler age group in a number of objectively measured parameters. These changes were not significant with the 3-5 year old age group. Further research is needed to more clearly define impact from this policy change.

Ottawa Child Care Healthy Eating and Active Living Guidelines

In 2012, Ottawa Public Health (Health Promotion and Disease Prevention Branch) partnered with the City of Ottawa Municipal Child Care Services to develop Healthy Eating and Active Living Guidelines²⁹. These were created based on current evidence and best practices in the field of health and childcare. They align with national recommendations outlined in the Healthy Active Kids Canada Report Card⁴, Canada's Food Guide³⁰, and the Canadian Physical Activity Guidelines². The objectives of the Active Living Guidelines were

“to enable child care educators to promote, role model, and engage children in daily physical activity and provide opportunities for children to develop physical literacy skills”²⁹.

Active Living Guidelines target four specific components within a child care settings that support movement and physical activity: Active Living Environments, Sedentary Behaviour, Active Play, and Physical Literacy. Included within the ‘Active Living Environment’ component is guidance on parent engagement, ECE and child care worker participation, staying current with evidence based practice, maintaining a positive attitude about physical activity, and adapting indoor and outdoor play environments to enhance physical activity opportunities. The ‘Sedentary Behaviour’ component addresses screen time and time spent seated in sedentary activities. The ‘Active Play’ component provides guidance for infants and children directly related to the Canadian Physical Activity Guidelines for 0-4 years of age and addresses activity requirements of children with special needs. The “Physical Literacy’ component suggests 30 minutes/day of physical literacy promoting activities.

A number of supporting resources accompany these guidelines. Found within the ‘Ottawa Public Health’ website, a page specifically devoted to healthy eating and active living for child care is available³¹. Included within this webpage are separate links to 1) The Healthy Eating and Active Living Guidelines, 2) Health Eating, 3) Active Living, 4) Supporting Families, and 5) Child Development. Each section contains supportive information, links to practical tools that can be used by caregiver and/or parents, and links to services and additional information. Found within ‘The Healthy Eating and Active Living Guidelines’ section, an e-learning opportunity is available. Nine training modules developed for individuals who work in childcare settings are offered, three of which target physical activity that focus on 1) active environments, 2) active play, and 3) physical literacy. These modules seem to incorporate a play-based teaching approach that focuses on the importance of observing children during physical play to allow for an understanding of their individual stage of development and then to enhance environments and opportunities that help support growth and learning. The physical activity modules also highlight the importance of both child-directed active play and caregiver directed active-play. The need for the educator to be involved and ‘present’ in both is emphasized.

Evaluation efforts aimed at identifying the improvements to movement and physical activity practices in regulated child care settings in the Ottawa area as a result of these guidelines have not been identified.

Section 5: Levers for Change

Our developed understanding of how regulated child care centres in Nova Scotia currently support physical activity and physical literacy is emerging. At its core is a growing community of early childhood educators who believe in an approach that supports child growth and development, physical or otherwise, within a 'play-based' learning environment. As this approach is representative of best-practice, any action taken should encompass this professional value. Within the following section, a number of 'levers for change' are suggested that have the potential to increase the capacity within regulated child care settings to better support physical activity and physical literacy.

Action Targeting the Possibility of Formal Guidance

Interest in formal guidance that targets regulated child care centres is equally divided. The following 'levers for change,' may support action towards a common agreement of reasonable guidance, that will inform the enhancement of physical activity environments and opportunities in regulated child care centres in Nova Scotia:

1. Develop a deeper understanding of the concerns around the provision of formal guidance targeting movement and physical activity practices in regulated child care settings.
2. If formal guidance is pursued, actively involve regulated child care sector representatives in the development to ensure recommendations align with best practice in early childhood education and are practically possible in regulated child care settings.
3. Support the development of a province-wide early years curriculum framework and ensure alignment of any guidance related to physical activity.
4. Prior to implementing any formal guidance, ensure supports are established that increase the knowledge and skills of the regulated child care sector around physical literacy and physical activity promotion in child care environments. Supports could be designed to increase the capacity of those working with young children so they are able to more easily incorporate formal recommendations into their environment and daily program.
5. Develop a 'Support Plan' that extends beyond any initial implementation of formal guidance so that the evolving support needs of the regulated child care sector can be anticipated.

Action Targeting Active Play Environments and Opportunities

The daily routine and available play spaces in regulated child care centres contribute to the quality of active play opportunities offered to children. It seems centres with the benefit of active play spaces, both indoors and outdoors, are able to consistently plan and promote physical activity and physical literacy. The following 'levers for change' may support an improvement in active play environments and opportunities in regulated child care centres.

1. Evaluate existing guidelines and regulations that impact the physical environment and daily schedule of regulated child care centres using the following criteria:

- i. Does this particular regulation prevent a child's ability to decide to take part in active play? (e.g.: Material and resource requirements that limit physical movement in indoor spaces)
 - ii. Does this particular regulation prevent an ECE from enhancing a child's learning during active play opportunities? (e.g.: 18 inches or higher of non-commercial playground equipment requiring protective surface material)
2. Encourage regulated child care centers and settings to work with their Early Child Development Consultant to determine how they can best meet safety regulations without compromising active play opportunities.
3. Support current processes put in place that promote safe 'risk-taking' opportunities in child care centres through the assurance that 'safe-risk' taking is supported across government departments.
4. Support the establishment of natural play spaces and outdoor classrooms
5. Work with communities so that playgrounds, parks, trails and public green space, and indoor active play space are accessible to local child care centres. Enhance child care centres' access to playgrounds, parks, trails and public green space and indoor active play space, in all seasons; and improve accessibility in neighbourhoods through mixed land-use, child-friendly community design, a walkable environment and in some communities, public transportation.

Action Targeting Regulated Child Care Sector Capacity

It is evident that awareness about physical activity levels of young children is varied among regulated child care stakeholders. Although it is understood that the child care sector believes in the importance of movement and physical activity, supports are needed to increase the capacity of child care centres and ECEs to enhance environments and provide opportunities for movement and physical activity to children within their care. The following 'levers for change' may support an increased level of engagement adopted by child care centres and ECEs in efforts to promote physical literacy and physical activity in regulated child care centres in Nova Scotia:

1. Identify and promote current initiatives offered in regulated child care centres or by other organizations that aim to increase movement and physical activity and decrease excessive sedentary play.
2. Engage the regulated child care community about the need to reconsider current environments and daily programs in light of societal barriers that limit the development of physical literacy and the participation in physically active play.
3. Work with ECEs and other child care professionals to leverage their knowledge and expertise to help identify how fundamental movement and physical activity can be supported in regulated child care centres within a play-based approach.
4. Assign definitions to terms used to define movement and physical activity that can be understood by the early childhood community, the active living community, and the public health community.

5. Support the regulated child care sector in their efforts to optimize environments and opportunities for physical literacy and physical activity with the following practical measures:
 - i. Supports for Facility Directors
 1. Develop knowledge sharing tools that will help centre directors raise staff awareness about current physical activity and sedentary concerns in the early years.
 2. Create a staff feedback communication template that centre directors can use to approach ECEs about needs related to creating and supporting physical activity opportunities for children.
 - ii. Supports for ECEs
 1. Share evidence-based research about physical activity patterns in early childhood with ECEs working in regulated child care centres.
 2. Support the provision of training and resources to ECEs working in regulated child care centres that offer practical guidance on how movement and physical activity can be optimized within a play-based teaching environment.
 - iii. Supports for Educators of Training Institutions and Professional Development Opportunities
 1. Connect with educators of Early Childhood Education diploma/bachelor programs to find out how to best support the provision of any 'play-based' learning directed at enhancing physical literacy and physical activity in early childhood learning environments.
 2. Connect with early childhood resource centres across the province and support the development and provision of 'play-based' training workshops that address the enhancement of environments and opportunities that support physical literacy and physical activity.
 3. Connect experts that are knowledgeable in active living and early childhood education with educators across the province.
 4. Support the provision of formal training programs that address physical activity and physical literacy in the early years only if they fit within the play-based teaching approach.
 - iv. Support for Department of Education and Early Childhood Development (DEECD) Staff
 1. Extend education/professional development opportunities to DEECD staff that target the enhancement of environments and opportunities that promote safe risk-taking.
 2. To assist daily work, create internal DEECD policies that support the promotion of physical literacy and physical activity in regulated child care settings.

Action Targeting Societal Barriers

Societal barriers exist and impede the capacity of regulated child care centres and ECEs to affect change in physical activity behaviours of young children. The following ‘levers for change’ may help address such barriers and will contribute to the support offered to child care centres and ECEs as they promote physical literacy and physical activity in regulated child care centres in Nova Scotia:

1. Increase the profile of ECEs by collaborating on the development of a resource that highlights their expertise and skills to parents of young children.
2. Ensure ECEs have the knowledge and support they need to feel comfortable engaging parents about movement and physical activity during early child development.
3. Support parent engagement about physical activity and physical literacy. Use regulated child care centres and other child care settings as a way to inform parents about the importance of active living during the early years including movement and physical activity, limiting screen time, risk taking and outdoor play. Details around what it looks like and why it is an important part of overall wellbeing and development could be articulated. Within any developed resource, parents could be referred to ECEs for support.

Final Remarks

This report is an illustration of environments and practices in regulated child care centres that affect movement and physical activity levels of young children. Although physical development and the provision of opportunities to support physical literacy and physical activity is recognized by the regulated child care community to be an important component to early child development, capacity to facilitate such environments and opportunities is limited. A number of barriers have been identified throughout this report that affect the quality of physically active play offered to young children. Despite these challenges, effort directed towards building the capacity of those who care for young children so that they may affect their physical literacy and physical activity levels will contribute greatly to the health and wellbeing of this generation and will ensure regulated child care settings are providing children the best start possible in life.

It is imperative that any action taken towards change is purposely shared. Collaborative effort from government departments accountable for child health and development, institutions which offer early childhood education training and professional development, associations representing the child care sector in Nova Scotia, regulated child care settings, and organizations supporting active living all need representation to ensure all available expertise contributes to positive and sustainable change.

Appendix

Appendix 1: References

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Appendix 2: Definitions and Terms

Early Development Instrument

The Early Development Instrument is a questionnaire complete by primary grade teachers that measures 'readiness' for school across the following areas of child development: physical health and well-being • social competence • emotional maturity • language and thinking skills • communication skills and general knowledge. It is used to help communities identify their strengths and needs so they can best support early childhood development.

Fundamental Movement Skills

Fundamental movement skills are the foundational gross-motor actions needed to develop physical literacy. It involves a variety of physical skills to control objects, balance and move in a space (surface, air, water). In childhood, movement skills are learned progressively according to development stages, most competently during optimum acquisition periods for each skill.

Indoor Active Play

Indoor active play refers to play that involves movement and physical activity at a variety of intensities that occurs in indoor environments that address all stages of child development.

Physical Activity

Physical activity is any bodily movement that uses more physical energy than resting and increases both heart and breathing rates. It is typically categorized as light, moderate or vigorous. Physical activity can be part of how one learns, works, lives at home, travels and plays.

Physical Literacy

Physical literacy refers to an individual's ability to move with competence and confidence in a variety of physical activities in multiple environments. Built from fundamental movements skills, physical literacy includes abilities such as agility, coordination, speed and prediction. In childhood, physical literacy is best developed through both child-led unstructured play and educator-led structured activities. Physical literacy benefits whole child development, and is one supportive factor for being physically active in and beyond childhood.

Play-based Learning Approach

Play based learning draws from children's natural desire to engage in experiences based on their interests, strengths and developing skills. When children initiate play, they are more motivated to learn and develop positive dispositions towards learning. The educator's role in supporting play based learning is vital.

(Adapted from *Belonging, Being and Becoming: The Early Years Learning Framework for Australia*. Commonwealth of Australia. 2009)

Psychomotor Development

The relationship between cognitive function and all aspects of physical movement including fine motor, gross motor and loco-motor skills.

Screen Time

The time spent using electronic devices with screens for communication, entertainment and tasks is referred to as screen time (e.g. computer, television, video gaming unit, smartphone). Whereas most activities with these devices currently do not require being physically active, screen time is commonly considered as being sedentary.

Sedentary Behaviour/Activity

Sedentary activity is any action or waking posture with minimal movement while at or near resting heart and breathing rates. Sedentary activity can be part of how one learns, works, lives at home, travels and plays.

Standards for Daily Program

A set of standards that apply to regulated child care facilities only (i.e. centres) that assist in the provision of programs for children that are developmentally appropriate, inclusive and successful in meeting the needs of all children. The standards with respect to outdoor play assist in ensuring that outdoor play structures, are age appropriate, safe (appropriately risked); and well-maintained.

Theme-Based Learning Approach:

Theme-based learning is a teaching approach that integrates learning around a specific topic. The educator often selects, plans and develops the themes. Children follow the adult direction as the theme develops over time. Learning is usually focused on skills and predetermined, specific outcomes. Themes emerge from the environment, events, children or adults, culture or shared interests.

(Adapted from Play and Exploration Early Learning Program Guide. Saskatchewan Ministry of Education. 2013)

Appendix 3: Canadian Physical Activity and Sedentary Guidelines for Children 0-4 years

Canadian Physical Activity Guidelines

FOR THE EARLY YEARS - 0 – 4 YEARS

Guidelines:

For healthy growth and development:



Infants (aged less than 1 year) should be physically active several times daily – particularly through interactive floor-based play.



Toddlers (aged 1–2 years) and preschoolers (aged 3–4 years) should accumulate at least 180 minutes of physical activity at any intensity spread throughout the day, including:



A variety of activities in different environments;



Activities that develop movement skills;



Progression toward at least 60 minutes of energetic play by 5 years of age.



More daily physical activity provides greater benefits.

Being active as an infant means:

- Tummy time
- Reaching for or grasping balls or other toys
- Playing or rolling on the floor
- Crawling around the home

Being active as a toddler or preschooler means:

- Any activity that gets kids moving
- Climbing stairs and moving around the home
- Playing outside and exploring their environment
- Crawling, brisk walking, running or dancing

The older children get, the more energetic play they need, such as hopping, jumping, skipping and bike riding.

Being active can help young kids:

- Maintain a healthy body weight
- Improve movement skills
- Increase fitness
- Build healthy hearts
- Have fun and feel happy
- Develop self-confidence
- Improve learning and attention

All activity counts. Try these tips to get young kids moving:

- ☒ Create safe spaces for play.
- ☒ Play music and learn action songs together.
- ☒ Dress for the weather and explore the outdoors.
- ☒ Make time for play with other kids.
- ☒ Get where you're going by walking or biking.

**Any way, every day.
Get active together!**



Canadian Sedentary Behaviour Guidelines

FOR THE EARLY YEARS - 0 – 4 YEARS

Guidelines:



For healthy growth and development, caregivers should minimize the time infants (aged less than 1 year), toddlers (aged 1–2 years) and preschoolers (aged 3–4 years) spend being sedentary during waking hours. This includes prolonged sitting or being restrained (e.g., stroller, high chair) for more than one hour at a time.



For those under 2 years, screen time (e.g., TV, computer, electronic games) is not recommended.



For children 2–4 years, screen time should be limited to under one hour per day; less is better.

The Lowdown on the Slowdown: what counts as being sedentary

Sedentary behaviours are those that involve very little physical movement while children are awake, such as sitting or reclining:

- in a stroller, high chair or car seat
- watching television
- playing with non-active electronic devices such as video games, tablets, computers or phones

Spending less time being sedentary can help young kids:

- Maintain a healthy body weight
- Develop social skills
- Behave better
- Improve learning and attention
- Improve language skills

So cut down on sitting down. To reduce young children's sedentary time, you can:

- ☒ Limit use of playpens and infant seats when baby is awake.
- ☒ Explore and play with your child.
- ☒ Stop during long car trips for playtime.
- ☒ Set limits and have rules about screen time.
- ☒ Keep TVs and computers out of bedrooms.
- ☒ Take children outside every day.

***There's no time like right now
to get up and get moving!***



Appendix 4: Group Discussion Question Guide with ECEs and Centre Directors

These questions were prepared for a semi-structured guided group discussion. 'Semi-structured' refers to an open discussion format whereby questions are used as a guide while the exploration of new ideas that may divert from the script is welcomed.

Guided Group Discussion Question Guide

(Early Childhood Educators)

1. In your centre, are there any daily practices that you and other ECEs maintain that encourage movement and physical activity in children during their time spent outside? during indoor active time?
 - a. Is it difficult or easy for you to give children multiple opportunities participate in physical activity throughout the day while outside? inside? Why?
 - b. When you, or other ECEs, join in active play with the children; what allows this to happen? Is there anything that limits your ability or the ability of others from joining in?
 - c. When children are energetically playing, how do you think the centre 'space' contributes to this?
2. Prior to this discussion, we provided you with the *Canadian Guidelines for Physical Activity and Sedentary Guidelines*. What was your first reaction upon reading these guidelines?
 - a. In your centre, do you think helping kids be active is important to those who work in the centre and the parents who are on the parent committee? Why or why not?
 - b. To what extent do you think the role/responsibility for ECEs is to contribute to the amount and type of movement children get during their time in regulated child care?
3. During your college or university education and professional development opportunities; what type of instruction did you received on how to encourage physical activity in children?
 - a. Was this instruction useful? (Can you apply what you learned, why or why not?)
 - b. What kind of training for ECEs would best affect children's physical literacy development and physical activity participation in free play and adult-lead activity both in the outdoor and indoor setting?
4. Prior to this discussion we provided you with a summary of the current rules and regulations that impact the amount of movement and physical activity children get in regulated child care settings.

What would your reaction be to additional guidance that would help regulated child care settings contribute to the more physical activity and less sedentary activity for young children?

Guided Group Discussion Question Guide

(Regulated Child Care Centre Directors)

1. Considering the outdoor play space at your centre or used by your centre; what characteristics of that space contribute to the amount and type of idle time and energetic play children get when outside?
2. Considering your centre's indoor play space; what characteristics of that space contribute to the amount and type of idle time and energetic play children get when inside?
3. During a typical day in your centre; what components of the 'daily routine' contribute to the number of opportunities children have to engage and participate in energetic play inside or outside?
4. Prior to this discussion, we provided you with the *Canadian Guidelines for Physical and Sedentary Activity* for children aged 0-4 years. What was your first reaction upon reading these guidelines?
 - a. In your centre, do you think helping kids be physical activity is important to the staff and the parents on your parent committee? Why or why not?
 - b. How would you describe the role regulated child care settings should hold in helping children with the amount of physical activity and type of movement children experience each day?
 - c. As a facility director, do you feel you are able to influence how your centre contributes to the type of movement and amount of physical activity children take part in each day? Why or why not?
5. What type of training opportunities have you or your staff taken part in that allows for the promotion and encouragement of physical activity in children?
 - a. Was this instruction useful? (Can it be practically applied, why or why not?)
 - b. What kind of training for Facility Directors and ECEs would best affect children's physically literacy development and physical activity participation?
6. Prior to this discussion we provided you with a summary of the current rules and regulations that impact the amount of movement and physical activity children get in regulated child care settings.

What would your reaction be to additional guidance that would help regulated child care settings contribute to the more physical activity and less sedentary activity for young children.

Appendix 5: One-on-One Conversation Question Guide

These questions were prepared for semi-structured guided conversations. ‘Semi-structured’ refers to an open conversation format whereby questions are used as a guide while the exploration of new ideas that may divert from the script is welcomed.

One-on-one Guided Conversation Questions

(Diploma/Professional Development Educators)

1. Can you describe the amount and type of instruction students enrolled in your Early Childhood Education program receive on sedentary behaviour, fundamental movement and physical activity development in the early years?
2. Can you describe any workshops of PD opportunities offered through your Early Childhood Resource Centre that focus on sedentary activity, fundamental movement and physical activity development in the early years?
3. Prior to this discussion, we provided you with a copy of the *Canadian Guidelines for Physical Activity and Sedentary Behaviour* for children aged 0-4, perhaps you are familiar with them. What was your first reaction upon reading these guidelines?
 - a. To what extent should the role/responsibility of regulated child care settings be in helping children with the amount of physical activity and type of movement children experience each day?
 - b. As a representative of a training institution and Early Childhood Resource Centre, what do you think would help those working in regulated child care centres enhance and contribute to the type of movement and amount of physical activity children take part in each day?
4. Prior to this discussion we provided you with a brief summary of the current rules and regulations that impact the amount of movement and physical activity children get in regulated child care settings.
5. As an educator who trains and influences the professional development of those working in RCCC, what would your reaction be to additional guidance that would help regulated child care settings contribute to the promotion of physical activity in young children?

One-on-one Conversation Question Guide (French translation)

(Diploma/Professional Development Educators)

1. Veuillez décrire la quantité et le type d'instruction que les élèves inscrits à votre programme d'éducation de la petite enfance reçoivent au sujet des comportements sédentaires, du mouvement fondamental et du développement de l'activité physique pendant la petite enfance.
2. Veuillez décrire les ateliers ou les possibilités de perfectionnement professionnel offerts par votre centre de ressources pour la petite enfance, qui mettent l'accent sur les activités sédentaires, le mouvement fondamental et le développement de l'activité physique pendant la petite enfance.
3. Avant la discussion, nous vous avons fourni un exemplaire des *Directives canadiennes en matière d'activité physique* et des *Directives canadiennes en matière de comportement sédentaire* pour la petite enfance de 0 à 4 ans. Vous les connaissez peut-être déjà. Quelle a été votre réaction initiale en lisant ces directives?
 - a. Dans quelle mesure les milieux de garde réglementés doivent-ils être responsables d'aider les enfants à atteindre les objectifs quotidiens recommandés en ce qui a trait à la quantité d'activité physique et au type de mouvement?
 - b. À titre de représentant d'un établissement de formation et d'un centre de ressources pour la petite enfance, quelles mesures pourraient aider les employés des milieux de garde réglementés à améliorer le type de mouvement et la quantité d'activité physique des enfants chaque jour?
4. Avant la discussion, nous vous avons fourni un résumé des règlements actuels qui concernent la quantité de mouvement et d'activité physique des enfants dans les milieux de garde réglementés.
5. À titre d'éducateur ayant une influence sur la formation et le perfectionnement professionnel des employés des milieux de garde réglementés, quelle est votre réaction à des directives supplémentaires qui permettraient d'aider les milieux de garde réglementés à contribuer à la promotion de l'activité physique auprès des jeunes enfants?

Appendix 6: Physical Activity Questions from the Nutrition and Physical Activity Questionnaire

Adapted from the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC); Benjamin SE, Neelon B, Ball SC, Bangdiwala SI, Alice S Ammermann AS, Ward DS. (2007). Reliability and validity of a nutrition and physical activity environmental self-assessment for child care. *International Journal of Behavioural Nutrition and Physical Activity*.4:29. Retrieved from <http://www.ijbnpa.org/content/4/1/29>

Active Play and Inactive Time

INDOOR active (free) play time is provided to children	< 45 min per day	45-60 min per day	61-90 min per day	> 90 min per day
OUTDOOR active (free) play is provided for all children	< 60 min per day	61-90 min per day	91-120 min per day	> 120 min per day
Structured (ECE/staff-led) physical activity is provided for all children	< 30 min per day	31-60 min per day	61-90 min per day	> 90 min per day
ECE/Staff restrict active play time for children who misbehave	Never	Rarely	Sometimes	Usually
Children are seated (excluding nap time) more than 60 minutes at a time	Rarely or never	1-2 times per day	3-4 times per day	> 4 times per day
Children are allowed screen time (TV/videos, video games or computer) for facilitated learning	Rarely or never	<30 min per day	31-45 min per day	>45 min per day
Infants are allowed screen time (TV/videos, video games, computer) for free play	Rarely or never	<30 min per day	31-45 min per day	>45 min per day
Children are allowed screen time (TV/videos, video games, computer) for free play	Rarely or never	<30 min per day	31-45 min per day	>45 min per day

Supporting Physical Activity

ECE/Staff use surrounding community spaces/places (natural open spaces, parks, municipal playgrounds, recreation facilities)	Rarely or never	Some of the time	Most of the time	All of the time
During active (free) play time, ECE/staff	Rarely or never join children in active play (mostly sit or stand)	Sometimes join children in active play	Often or always join children in active play	Often or always join children in active play and make positive statements about the activity
ECE/Staff show visible support for physical activity by	No posters, pictures, or books about physical activity are displayed	A few posters, pictures, or books about physical activity are 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

Play Environment

Fixed play equipment (swings, slides, climbing equipment, overhead ladders) is	Not available at our site	Swing sets (or one type of equipment) only available	Different equipment available that suits most children	Wide variety of equipment available and meets needs of all children
A natural playground (does not depend on manufactured equipment; use landscape and materials as both play setting and play materials) is	Not available at our site	Very few structures, equipment, and materials available	Different structures, equipment and materials available that suits most children	Wide variety of structures, equipment and materials available and meets needs of all children
Portable play equipment that stimulates a variety of gross motor skills (wheel toys, balls, tumbling mats) 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 all children to use at the same time
ECE/Staff choose to be inside or outside more often because of weather conditions	Rarely or never	Some of the time	Most of the time	All of the time

When weather is not suitable to go outdoors (temp below -25C without windchill or when windchill is -28C), indoor play space is available	For quiet play	For very limited movement	For some active play	For all activities, including running
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Physical Activity Education for Staff, Parents, and Children

Physical activity training opportunities are provided to ECE/staff	Rarely or never	< 1 time per year	1 time per year	2 times per year
If physical activity training is provided, it is provided by qualified professionals (institute faculty, physical literacy instructor, resource centre educator, etc)	Rarely or never	< 1 time per year	1 time per year	2 times per year
ECE/Staff facilitate the development of fundamental movement skills for children	Rarely or never	A few times per month	Some days of the week	Most days of the week
The centre educates and increases awareness among parents about physical activity (i.e. Take-home materials, events)	Rarely or never	< 1 time per year	1 time per year	2 times per year

Physical Activity Guidelines

Do you believe that those who are training to become child care educators should have access to more education and resources (such as workshops, courses and books) regarding physical activity with children?	Yes	No
ECE/Staff are trained in the fundamental movement skills program, Tumblebugs?	Yes	No

Additional Questions

1. Rate on a scale of 1-5, your ECE and/or staff's level of comfort participating in physical activity with the children, such as running, jumping, skipping, and hopping? (1= extremely uncomfortable; 2= uncomfortable; 3 = neither uncomfortable nor comfortable; 4 = comfortable; 5= extremely comfortable)
2. If there are any changes that you would like to see happen in your child care centre in regards to physical activity, what are they?
3. What does the centre do to support physical activity beyond the minimum regulations and standards?
4. Would you be interested in having physical activity guidelines in regulated child care centres? (Please Explain)

Appendix 7: Summary of Initiatives re: Physical Activity in the Early Years

In Nova Scotia there are several programs that support early childhood educators to facilitate children in daily physical activity. These programs originated from professionals in physical activity promotion, public health, sport development and education who are concerned about the decline of physical literacy and active play with risk among children, as well as the increase in sedentary activity and decline in physical activity throughout development.

While the programs have common elements such as training, mentoring, resources and parental engagement, each program has a particular focus such as the physical environment, dis/ability or skill. All programs have the ultimate outcome of physically active children. The programs operate in key early childhood settings across regions or throughout the province.

Tumblebugs



Early childhood educators have been trained, in English and French throughout Nova Scotia, to facilitate fundamental movement skills for children ages three-and-a-half to five through the Tumblebugs program since 2006. The adaptable plans have fun, safe and developmentally appropriate activities that can be done with basic equipment at a child care centre, inside and outside. Information leaflets for parents support the educator in communicating supportive messages to parents.

Experts in early childhood development, physical skill development and program design collaboratively developed the program to support early childhood educators. The Department of Health and Wellness funded Gymnastics Nova Scotia to deliver Tumblebugs as an intervention to increase physical activity by developing physical literacy. This is a suitable organization for this type of program because basic gymnastics in early childhood is about body management, locomotor and object control skills, not risky movement on specialized equipment.

There are Tumblebugs trainers in post-secondary institutions and professional development centres who train students and practicing educators. There are organizers and trainers for regional areas throughout the province. A certificate for equivalency and continuing professional development is awarded upon successful completion.

www.gymns.ca

Active Start (Special Olympics)



Special Olympics Nova Scotia has delivered the national Active Start program from Special Olympics Canada since 2011 to train educators and community leaders to develop the physical literacy of children ages two to six years with intellectual disabilities. There are program leaders delivering it in English and French in all school boards, several community organizations and child care centres.

The program uses basic equipment and adaptable activity plans to help develop basic motor and movement skills. Information resources for parents support the leader in communicating supportive messages to parents.

Active Start borrows its name from the stage of physical literacy development identified in the Canadian Sport for Life initiative.

www.sons.ca

Outdoor Play in Early Years Project

An inter-sectoral coalition in Colchester and East Hants counties has been leading a project to increase quality outdoor play opportunities for children in early learning and school environments since 2012. A series of experiential workshops have trained child care centre directors and educators, and school administrators and teachers how to make outdoor spaces more natural and encourage child-led play, and increase parental support. Dr. Beverlie Dietze, a professor and education director, developed this professional learning model for outdoor play. People are being trained to deliver the workshops in Nova Scotia.

There is intent to develop a program that will benefit more regions. The coalition includes the Colchester-East Hants Community Health Boards and the Department of Health and Wellness as funders, as well as Nova Scotia Health Authority, the Institute for Human Services Education, Chignecto Central Regional School Board and Department of Education and Early Childhood Development.

Appendix 8: Playground Images

Fixed playground with a rubberized surface

Retrieved from: <http://www.gametime.com/playground-surfacing/recycled-loose-fill-rubber/>



Playground with Natural Elements

Retrieved from: <http://www.naturalplaygrounds.ca>

