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Developing community-based physical activity interventions and recreational programming for children in rural and smaller urban centres: a qualitative exploration of service provider and parent experiences

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Abstract

Background Children's physical inactivity is a persisting international public health concern. While there is a large body of literature examining physical activity interventions for children, the unique physical activity context of low-density communities in rural areas and smaller urban centres remains largely underexplored. With an influx of families migrating to rural communities and small towns, evaluations of health promotion efforts that support physical activity are needed to ensure they are meeting the needs of the growing populations in these settings. The aim of this community-based research was to explore service providers' and parents' perspectives on physical activity opportunities available in their community and recommendations toward the development and implementation of efficacious physical activity programming for children in rural communities and smaller urban centres.

Methods Three in-person community forums with recreation service providers ($n=37$ participants) and 1 online community forum with the parents of school-aged children ($n=9$ participants) were hosted. An online survey and Mentimeter activity were conducted prior to the community forums to gather participants' views on the barriers and facilitators to physical activities and suggestions for activity-promoting programs. The service provider and parent discussions were audio-recorded, transcribed verbatim, and analyzed following a deductive approach guided by Hsieh and Shannon's (2005) procedure for direct content analysis. A code list developed from the responses to the pre-forum survey and Mentimeter activity was used to guide the analysis and category development.

Results Seven distinct categories related to the existing physical activity opportunities and recommendations for programs in rural communities and smaller urban centres were identified during the analysis: (1) Recovery from Pandemic-Related Measures, (2) Knowledge and Access to Programs, (3) Availability, (4) Personnel Support, (5) Quality of Programs and Facilities, (6) Expenses and Subsidies, and (7) Inclusivity and Preferences.

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Conclusion To improve the health and well-being of children who reside in low-density areas, the results of this study highlight service provider and parent recommendations when developing and implementing community-based physical activity programs and interventions in rural and smaller urban settings, including skill development programs, non-competitive activity options, maximizing existing spaces for activities, and financial support.

Keywords Youth, Exercise, Recreation, Intervention, Population-level, Town

Background

Physical activity is an important behaviour for children's development, health, and well-being [1]. The World Health Organization's guidelines for physical activity and sedentary behaviour recommend that children 5–17 years of age accumulate an average of 60 min of daily moderate-to-vigorous physical activity to attain physical, mental, and cognitive health benefits, including improved quality of life [2]; however, most children are not meeting the recommendations [3, 4]. The high rates of physical inactivity have been further exacerbated by the COVID-19 pandemic, with the literature reporting considerable declines in children's physical activity during stay-at-home orders [5] and activity levels remaining low following the reopening of recreational facilities [6]. In Canada, only 28% of children aged 5 to 17 years met the recommended amount of physical activity during the early years of the pandemic [7], an 11% decrease from the reported activity levels prior to the pandemic [8]. This is particularly troubling as sedentary lifestyles during childhood can cultivate unhealthy habits that will continue as they transition into adolescence [9] and persist into adulthood [10]. To help engage children in more physical activity as the public health precautions were lifted, parents highlighted the need for a variety of accessible, affordable programs that offered children the opportunity to be active outside of school [11, 12]. Therefore, tailored and feasible health promotion interventions and initiatives are essential in preventing the persistent rise in physical inactivity.

Although there has been increasing support for interventions to promote physical activity in children, low-density areas – including dispersed rural communities (i.e., rural areas with a low population density and low population size), villages (i.e., small, semi-dense, rural settlements with a small population size), and smaller urban centres (i.e., semi-dense areas with a moderate population size) – have been underexplored [13–15], even though thinly populated communities have higher rates of obesity, chronic conditions (e.g., asthma and developmental delays) and mortality among children [16, 17]. Due to the lower densities of development in rural and smaller urban settings, children in these areas commonly experience issues related to limited local resources and program options, reduced access to health-related services, and greater need for vehicular transportation to activities [18, 19]. With the recent rise in migration of

Canadians to rural areas [20], finding ways to help children from smaller communities overcome the barriers to physical activity participation is valuable. As Canada has the fastest-growing rural communities of the G7 countries [20], it can serve as an ideal location for additional research on children's physical activity in less densely populated settings.

The Grade 5 ACT-i-Pass Program is a community-based physical activity intervention originally developed for London, Ontario, Canada that offers children in grade 5 free organized and drop-in activities at participating recreational facilities for the school year [21]. As previous evaluations of the program have indicated that the pass improved children's physical activity [22], expanding the program to additional communities may be a promising approach to address children's low physical activity levels; therefore, plans for offering the program in the neighbouring rural and smaller urban areas are underway.

Despite community-based interventions having the potential to foster much-needed population-level changes in physical activity [23], the effective implementation and intended outputs of these programs are vulnerable to the context and can be hindered by a variety of complex individual, social, and environmental conditions [24]. Durlak and Dupre [25] suggest that understanding the factors that influence program uptake and adoption by a specific community can help close the gap between an evidence-based intervention plan and its effectiveness in a real-world context. Thus, prior to investing the funds necessary to scale-up this program to rural and smaller urban settings, the extent to which community members would find programs like the ACT-i-Pass suitable needs to be determined to ensure a tailored version of the program that is most likely to be used by the target population is offered.

As an initial step of the program development phase, a needs assessment provides context into the factors associated with children's engagement in physical activity and service providers' capacity to offer recreation programs [26]. Specifically, a multisector approach to physical activity promotion can improve the quality and implementation of interventions in real-world settings by allowing families and community organizations to advise on the development and design of interventions based on their experiences and knowledge of the area [27]. Gaining input from the target audience during the planning stages of interventions can be used to highlight strategies to

address the various social and environmental factors that influence physical activity participation, help align components of interventions with the needs and preferences of the target audience, generate buy-in from the community, and incentivize organizations to promote and adopt programs [28, 29]. Notably, studies have shown that multi-disciplinary collaborations that integrate partners during the design stage of interventions can lead to more effective and sustainable health promotion initiatives [29–31].

The aim of this study was to host discussions with service providers and parents in Oxford, Elgin and Middlesex Counties to understand their experiences with the physical activity opportunities available in rural communities and smaller urban centres and gather their recommendations toward the development and implementation of efficacious physical activity programming for children in dispersed, resource-limited areas. To achieve this aim, this study explored factors which positively or negatively influence children's physical activity participation in rural communities and smaller urban centres. Moreover, this study gathered parents' and service providers' perspectives about the design and/or implementation of health promotion initiatives in their community, specifically, the ACT-i-Pass Program and physical activity interventions targeting children.

Methods

Study design

This naturally-unfolding experiment is part of a larger study exploring the adaptation, implementation, and evaluation of the Grade 5 ACT-i-Pass Program expansion. As a case study, this research focuses on a predominantly rural region in Southwestern Ontario, Canada. Oxford, Elgin, and Middlesex counties are made up of farmland, outdoor attractions including conservation areas and beaches, and a variety of smaller urban centres (i.e., towns and small cities) and rural settlements (i.e., villages and dispersed communities) with populations of 22,015, 17,030, and 83,160 children ages 0 to 14 years, respectively [32–34]. To achieve the aim of this study, we hosted community forums, a group information collection technique that empowers members of the target area to use their knowledge and lived experiences to identify community-level impacts of interventions and provide locally derived strategies that can support beneficial behaviour changes while minimizing potential harms [35]. This study protocol was approved by Western University's Non-Medical Research Ethics Board (REB #103954).

Participants and recruitment

Service providers and parents were recruited to participate in this study. Service providers were identified

through an online search of recreational facilities, which was reviewed for missing organizations with program partners at the two health units and the municipal governments that attend to the residents of Oxford, Elgin, and Middlesex Counties in an effort to produce a comprehensive list of potential participants. Identified service providers were contacted via email and phone and provided details about the community forum, including an overview of the study. Potential parent participants were identified via the ACT-i-Pass registration form. For year 1 of the expanded program, information was distributed earlier than previous program years, including early access to the registration form, as part of a promotional effort to inform families that the program was now available to children in the counties. An extended pre-program promotion timeline also offered the project team time to recruit parents for the community forums and integrate their feedback into the program design for the upcoming year. Of those who consented to be contacted about research activities, parents were emailed an invitation to participate in the community forum, which included a brief overview of the study and the pre-forum survey.

Service providers were defined as any business, organization or community group that works with children and their families in the counties. To be eligible to participate in this study, service providers had to: (1) offer programs related to physical activity or have mandates that aimed to improve the health and well-being of children (i.e., physical activity program providers, municipal recreation representatives, small business owners who offered activities for children, government employees from family service branches, health unit representatives, and not-for-profit organizations); (2) provide services for families in Oxford County, Elgin County (including the City of St. Thomas), or Middlesex County; (3) speak and understand English; and (4) provided written and oral consent to participate in the study and to be audio-recorded.

Parents were eligible to participate in a community forum if they were the parent or guardian of a grade 5 child(ren) in Oxford, Elgin or Middlesex County who enrolled their child in the ACT-i-Pass during the early registration stage and consented to participate in the research study.

Data collection

Pre-forum survey

As part of the invitation email for the community forum, service providers and parents were asked to complete an online (via Qualtrics) pre-forum survey. The service provider survey gathered details about their organization, key barriers and facilitators to physical activity opportunities, and the extent to which community members would find the ACT-i-Pass program appropriate for

children in their area. Parents were posed similar survey questions as service providers except the parent survey asked to provide socio-demographic information instead of organization details.

Mentimeter activity

Before the start of the community forum conversations, service providers and parents were asked to engage in a brainwriting activity using Mentimeter interactive presentation software (<https://www.mentimeter.com/>). Brainwriting is a form of idea generation where participants silently and independently record their ideas [36]. As an alternative to collaborative group-sharing sessions, brainwriting can be an effective way to gain a greater variety of unique ideas by engaging more participants in an activity while minimizing group conflicts, social pressure to conform to the group, and dominance of a few participants' perspectives [37, 38]. Participants could provide an unlimited number of responses to two questions: (1) What are the factors that influence children's physical activity participation?; and (2) What program components or strategies can lead to successful physical activity programs and interventions in your community? Service provider and parent responses to the Mentimeter activity and the pre-forum survey, including their frequency counts, were amalgamated into a single list.

Community forum discussions

In total, 4 community forums were hosted for service providers ($n=3$ forums) and parents ($n=1$ forum) in Spring 2023. Community forums were organized and hosted separately for parents and service providers to acquire the perspective of those trying to access the activities as well as those trying to develop and run programs. In-person community forums with service providers were hosted at local community centres and libraries. Separate community forums were offered in Oxford, Elgin, and Middlesex Counties to improve geographic accessibility. The agenda of the community forums was organized in two parts. The first hour of the forum served as a promotional event for the health units to educate and recruit organizations to the ACT-i-Pass Program. Following a short break, the second hour was a research effort conducted by the research team to gather perspectives from community stakeholders about the physical activity opportunities that exist in the area.

Parent community forums were planned to be in-person, but the research team experienced issues with geographic accessibility, scheduling conflicts, and commitments impacting attendance; consequently, parent community forums were hosted online via Microsoft Teams. Differing from the service provider agenda, the first half hour consisted of an overview of the ACT-i-Pass and a question and answer session, following an hour of

discussion guided by the research team about the physical activity opportunities for children in their community. The perspectives of children were not collected for this study as their input will be most valuable after completing a year of the program. By collecting children's perspectives once they have used the pass, they can offer the research team insight into their experiences and propose adaptations to the ACT-i-Pass design that can improve the quality of the program.

The discussions lasted between 50 and 75 min ($\bar{x} = 61$ min). Two members of the research team attended each community forum. One member acted as the moderator for all community forum discussions to ensure consistency. The second member took notes to capture all key ideas and thoughts from the participants. Prior to the questions, participants were provided an overview of the topics being discussed and asked if they still consented to be recorded.

The community forum conversations followed a semi-structured interview guide (Additional Files 1 & 2) developed by the research team. The guides for service providers and parents consisted of 7 and 6 questions respectively and a series of prompts. The questions were related to the recreational spaces and activity options available in their community (i.e., What organizations in your community provide physical activity programming for children?), the characteristics of the community that positively or negatively influence physical activity participation (i.e., What characteristics of Oxford/Elgin/Middlesex would you describe as factors that positively or negatively influence children's physical activity participation?), and the adoption of the community-based programs into their communities (i.e., Do you have any recommendations for the ACT-i-Pass as we begin offering activities in Oxford/Elgin/Middlesex?). Conversations with service providers and parents were audio-recorded and transcribed verbatim via Microsoft Streams. A member of the research team de-identified and reviewed the transcripts for accuracy.

Data analysis

All transcripts were imported into QSR NVivo 12 and analyzed following the steps outlined in Hsieh and Shannon's [39] procedure for direct content analysis. A deductive approach to the content analysis was deemed appropriate for this study as the responses generated during the pre-forum survey and Mentimeter activity offered a participant-directed list of codes related to children's physical activity participation, recreation programs, and health promotion interventions in the 3 counties [40].

The analysis started with the preparation of the coding list by developing the initial coding categories. A list of 119 codes was derived from the service provider- and parent-generated responses in the pre-forum survey and

Mentimeter activity. As similar words and terms were used to describe the same phenomena, the responses were refined into a universal term, resulting in 102 unique codes. Subsequently, the codes were grouped into initial categories based on key concepts and a definition for each category was generated. The initial categories were developed by members of the research team who attended the community forums as they had more in-depth knowledge of the data and the nuances associated with statements made by the participants [41]. An audit trail with a detailed record of the research process was developed to add trustworthiness to the findings [42, 43]. The list of pre-determined categories and their definitions were reviewed by an auditor to increase their accuracy and relevance to the responses provided by community forum participants [39].

Two reviewers analyzed the transcripts independently and collaborated to identify the final categories. Using multiple reviewers during coding can add reliability to the findings and improve the quality of the analysis by introducing various perspectives and lived experiences that can produce a deep, thorough exploration of the data [44]. The researchers first reviewed the transcripts to familiarize themselves with the data and note any initial patterns or thoughts on the discussions. To isolate the nuances in the topics discussed during the service provider and parent discussions, the data were organized by adding attribute codes to each transcript to identify the study population (i.e., parents or service providers) and location (i.e., Oxford, Elgin, or Middlesex) [45]. The reviewers then went through the transcript a second time and coded categories using the pre-determined code list. As some factors could be perceived as beneficial or a hindrance in different circumstances, reviewers included a second code, when applicable, to identify if the quote referred to a positive or negative experience. Statements that did not fit into one of the pre-determined codes were highlighted and reviewed to see if a new data-driven code was required.

Recommendations presented by Elo et al. [46] and Smith et al. [47] were integrated into the methodology of the study to add trustworthiness (i.e., credibility, transferability, dependability, and confirmability [48]) and rigour to the findings [49]. Transferability was introduced to the study by gathering direct testimony from service providers and parents in the counties and providing descriptions of the community and participant characteristics, which allows the reader to make a judgement if the findings are applicable to their settings [49, 50]. To establish dependability to the analysis, reviewers engaged in memoing throughout the analysis process, which involved recording thoughts of the transcripts or possible answers to the research question to improve the transparency of the findings [45]. This process included

a critical analysis of the transcripts to identify the potential influence of the focus group facilitators on participants' responses and to identify potential leading or vague questions [46]. The reviewers met at various points throughout the analysis to discuss coding and to share notes. Following the categories being finalized by the two reviewers, the research team engaged in the process of "critical friends" to add credibility and conformability to the findings [47]. As an alternative to inter-rater reliability where the aim is to reach a consensus, this is a reflexive activity that encourages in-depth discussions amongst the research team, where the reviewers offer their interpretations of the data and others present critical feedback that can challenge the reviewers' biases, pre-conceived ideas and knowledge of the subject matter that may have influenced the findings [47].

Results

Participants

In total, 94 physical activity service providers and community organizations from across the counties of Oxford, Elgin and Middlesex were contacted. From the invited organizations, 42 representatives from 38 organizations attended one of the community forums, with 37 representatives (39.36%) consenting to participate in the research study (with time constraints noted as the primary reason for not staying for the community forum group discussion). Additionally, 79 parents consented to be contacted about ACT-i-Pass research projects. Of those who consented, 9 parents participated in the community forum (11.39%). Participants were dispersed across the counties, with most parents characterizing themselves as white ($n=8$; 88.89%) and female ($n=9$; 100%). See participant characteristics for both the service provider and parent community forums in Table 1.

Category development

The positive and negative factors related to children's physical activity participation and physical activity programs identified by service providers and parents during the Mentimeter activity and the pre-forum survey are visually represented in Fig. 1A and B respectively.

The synthesis of the service provider and parent responses to the Mentimeter activity and pre-forum survey resulted in 10 initial coding categories. Following the analysis of the transcripts and discussion amongst the research team, 1 new category was added and 4 categories were integrated into other existing categories due to similarities in content. This resulted in 7 unique categories. Further details on the categories and their definitions can be found in Fig. 2.

Table 1 Characteristics of the service provider (n=37) and parents (n=9) who participated in a community forum

Characteristic	Service Providers n (%)	Parents n (%)
Location		
Elgin County and the City of St. Thomas	9 (24.32%)	3 (33.33%)
Middlesex County	10 (27.03%)	2 (22.22%)
Oxford County	18 (48.65%)	4 (44.44%)
Urbanization ^a		
Smaller Urban Centre	16 (43.24%)	4 (44.44%)
Village	17 (45.95%)	4 (44.44%)
Dispersed Rural Community	4 (10.81%)	1 (11.11%)
Service Provider Type		
City/Municipality – Recreation	14 (37.84%)	
City/Municipality – Other Branch	7 (18.92%)	
Health Unit	4 (10.81%)	
Private Recreation Provider	8 (21.62%)	
Non-Profit Organization	4 (10.81%)	
Participant Gender		
Woman	22 (59.46%)	9 (100%)
Man	15 (40.54%)	0 (0%)
Participant Ethnicity		
White		8 (88.89%)
White/Indigenous		1 (11.1%)
Child Gender		
Girl		6 (66.67%)
Boy		3 (33.33%)
Child Physical Activity Levels		
0–4 h/week		1 (11.11%)
5–7 h/week		2 (22.22%)
8–13 h/week		4 (44.44%)
14+ hours/week		2 (22.22%)

Grey blocks represent that there is no data available as the question was not asked to that participant group

a=the categories of urban and rural areas were based on Statistics Canada’s [51] definition of population centres. Percentages may not add up to 100% due to rounding

A. Positive Factors



B. Negative Factors



Fig. 1 Positive and negative factors related to children’s physical activity in rural and smaller urban centres. Positive factors are represented in blue (A) and negative factors are represented in red (B). The words represent service provider and parent responses to the pre-forum survey and Mentimeter questions related to children’s barriers and facilitators to physical activity participation, the design and implementation of physical activity programs, and recommendations for physical activity programs in their community

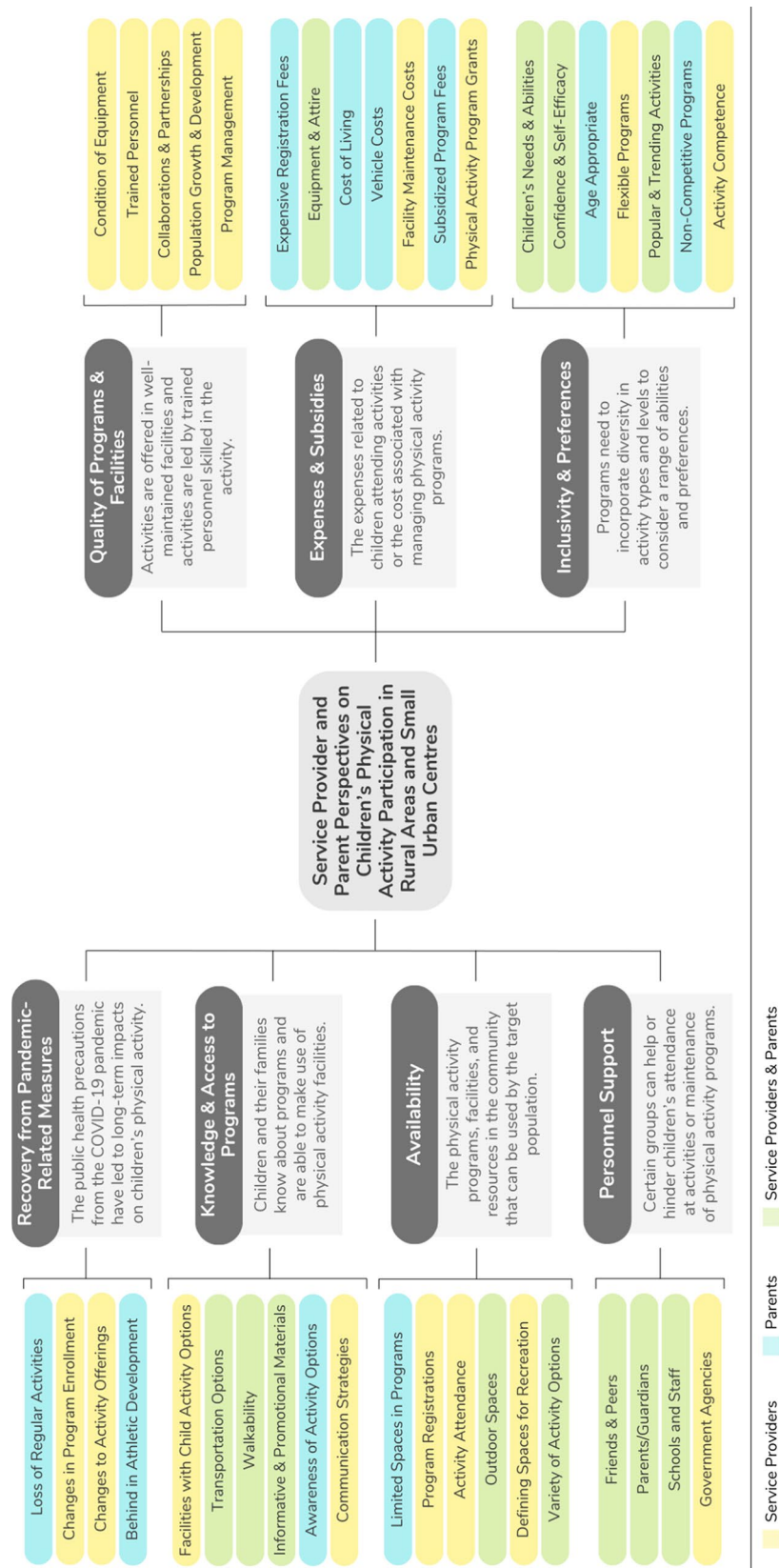


Fig. 2 Categories developed and adapted from the pre-forum survey, Mentimeter activity and community forum discussions. Yellow codes represent ideas discussed during service provider community forums, blue codes represent the ideas from the parent community forum, and green codes represent the ideas discussed by both groups

Recovery from pandemic-related measures

Conversations in all the community forums highlighted the long-term impacts of the COVID-19 pandemic on children's physical activity. Specifically, service providers and parents believed the public health protections introduced to reduce transmission of the virus were associated with lower physical activity levels that have yet to return to pre-pandemic levels.

Barriers

Despite both groups describing the barriers and challenges created by the pandemic, the focus of the discussions differed between parents and service providers. The community forum discussions with parents were directed toward their child's quality of life. During the early stages of the COVID-19 pandemic in 2020 and 2021, all the parents agreed that children lacked access to activities, resulting in, "two years or so of limited access to everything and they didn't even do it for an entire summer". Without their regular opportunities during the closure of recreational facilities and gyms, some parents expressed concerns about the physical activity-related skills their children may lack, with one parent explaining, "they [gyms] had to modify a lot longer than other places due to the fact that they were known as potential super spreader locations". As a result, some parents felt that "it's unfortunate for our kids now who didn't get that opportunity that you didn't realize at the time was such a big developmental stage that they were in". Without the opportunity for children to try different activities and develop their physical activity-related skills, parents worried about the long-term influence the early years of the pandemic may have had on their children's physical activity participation.

Alternatively, service providers were focused on the influence of the pandemic-related protocols on program attendance and the consequential changes to the current program offerings and schedules. Following the re-opening of gyms and recreational spaces after the removal of COVID-19 protocols, many service providers felt that enrollment rates had not returned to pre-pandemic numbers. As one service provider mentioned, "getting kids to sign up for anything is difficult. Getting them to register for anything is impossible". Another service provider expanded on this topic, discussing their experience recruiting children after they re-opened: "Pre-pandemic, all our programs were full. We were bursting at the seams March 2020. We are just slowly trying to figure out what people want right now. Our membership base is really changed and we're not seeing the kids in the drop-in programs like we used to". As a result, service providers had to adapt their programming options and scheduling. This includes "I would say at 6 out of our 10 branches we've changed our hours" and "trying to figure out what works

and we're hoping in the next session [Summer] to add a few more programs".

Knowledge and access to programs

Both service providers and parents noted the concept of accessibility of activities for children in their communities; specifically, discussions were focused on the knowledge of and ability to partake in physical activity programs. One of the primary topics explored during the community forums was the unique aspects of the rural environment that influence children's ability to get to the recreational facilities or small businesses offering activities. In addition to physical accessibility, service providers and parents discussed families' awareness of the local physical activity opportunities.

Barriers

Rural environments were described as low-density and dispersed spaces that, "if you live in a rural community, there's no option if you don't have a car" (Service Provider). The dispersed organization of these communities limits children's ability to get to activities by themselves. Service providers and parents both described safety concerns with children travelling to activities by themselves, referring to "they're [recreation facilities] a distance away and it's the time of the year that's dark" (Parent), and "there's no bike paths leading to here [our facility], so those are barriers for that age" (Service Provider). Public transportation is non-existent in rural areas, placing pressure on parents to get their children to activities. As described by one parent, "I think it's just access is a really big one, so like physically getting into the program and getting to London isn't going to work for a lot of the community because there's no public transportation between here and there." This is a particularly large issue in small rural communities that lack resource availability and require families to travel to other municipalities or towns to access services, as mentioned by one parent: "I live in a town where we piggyback off the other town, so I have to travel only because my town doesn't offer sports". One challenge service providers can encounter is families' unwillingness to travel to activities. Rural communities can cover a large area and it can be difficult to come up with programs that are accessible to all families within the region. As one service provider explained, "when we do county-wide scavenger hunts or something like that, if they live in the Far East they're not going to [go]. Absolutely not. They might go to St. Thomas, but they're not going from one end [of the county] to the other".

In addition, many parents highlighted having difficulties finding programs for children, describing that it requires time and research on multiple platforms: "I think there's programs all over the place. Some are private. Some are public. Some are invite only. Some of

them are on Facebook and some of them are word of mouth.” As a result, one parent believed that they needed to be self-reliant to find their child after school activities and “sometimes we have to seek the questions and ask ourselves and not wait for the information to come to us”. One parent noted that access to information also differs among different socio-demographic groups in their region, with those from “the lower income side ... [they] don’t have a lot of access to the information that gets sent out and be educated on things so there’s certainly a barrier of almost classism.”

One of the obstacles for service providers is figuring out how to best promote programs. While deliberating about effective ways to get information to parents, service providers indicated that the ultimate difficulty is that “there’s so much information out there that everything just gets bogged down, right? Gets lost in Facebook walls or Instagram or whatever”. Some service providers attributed promotion challenges to the popularity of different media platforms, specifically highlighting previously used modes of promotion now have limited effectiveness. Some examples provided by service providers included, “a newsletter every quarter of what’s going on and the newsprint in our area, people don’t read it anymore”, “FM radio is there and that’s supposed to be our local news for all that and most people don’t listen”, and “internet out in the rural areas is not always easy”.

Recommendations

To alleviate the issues associated with the physical accessibility of programs, parents and service providers recommended that interventions take the environment into greater consideration when developing programs for rural and smaller urban centres. Service providers encouraged more efforts to be focused on smaller communities that lack local recreational facilities and programs, including boosting the community’s use of outdoor spaces.

To better support parents’ understanding of the recreational opportunities available to their children, several parents spoke of the need for an online repository where the information for all physical activity programs can be found in one location, as emphasized by one who said, “it would be nice if there was a central spot where all of that [recreation programs] could be held and not necessarily relying on Facebook to find all that...”.

Availability

A large portion of the community forum conversations centred around the availability of physical activity opportunities related to the programs, facilities, and resources in the community that can be used by children. Primarily, service providers and parents focused on the variety of activity options available to children.

Barriers

In the counties, the activity options offered by municipalities can vary between communities, with some places not having programs, services and/or spaces for children to play. As one parent described:

They have the space, but they don’t have necessarily the programs. I’ll give you an example. We have a tennis court, but there’s nobody to run a tennis program. We don’t have the trained athlete or adult to run the programs. There’s badminton areas and volleyball areas, but there’s no one to run the program in our area again.

When trying to enrol in programs, some parents mentioned having difficulties getting a space for their child, with one parent highlighting, “show up two minutes late [to register] and now they can’t get in [the program]. Yeah, it really feels like if you already know then you’re good, but if it’s something new you’re trying to try out, good luck”. By not being able to enrol their child in local physical activity opportunities, parents struggle to get their children active outside of school.

In response to parents’ concerns about activities not being available or programs having insufficient spaces, service providers explained that limited activity offerings may be a consequence of previous attendance rates. As one service provider explained, “it gives you that justification to run the program that the numbers [participants] are there and it[s] driving revenue into your pocket, then you could say yeah let’s drive it forward”. Attendance is especially important in smaller, rural communities that have limited recreation budgets as underscored by one service provider who said, “[our municipality] does have a community center, but I know that they have been struggling to get people, so that’s affecting their offerings”. Consequently, local private organizations and small businesses are critical resources for physical activity in non-urban areas.

In addition to the activities, service providers referred to the available spaces for physical activity in rural and smaller urban centres. Predominantly, service providers focused on dispersed rural communities as they do not have local indoor recreational facilities. One service provider detailed, “again, it comes down to amenities and facilities. There aren’t really any there. It’s the rural part. There’s no facilities so there’s no programs”. While there may be a lack of indoor facilities for physical activity, a variety of outdoor spaces do exist in the counties; however, children can encounter challenges when trying to use these spaces. For instance, the definitions linked to specific places can limit children’s use of outdoor recreational facilities. One service provider referred to the definition of a space in terms of the associated activity:

“Yeah, so if you have a big open park that is a soccer field, you can’t do anything else there but soccer. You can’t go and run around or do stuff because then they think you get kicked off”. In addition, service providers believed demographics, particularly age, influenced the places children felt they were allowed to use to play. For example, one service provider discussed older children’s experiences playing on the local playgrounds:

The facilities seem to be claimed by another group. It’s like your sense of belonging, like ‘well, I can’t go there,’ and I hear it quite regularly by youth that are in that transitional age that they don’t feel like they could even go to the playground facility because it’s for younger kids and they’re deemed troublemakers if they’re there... so the facility might be there, but they’re not welcomed there.

Recommendations

Parents requested additional spaces in organized recreation programs to help alleviate their current frustrations. Conversely, based on the conversations with service providers, capacity can vary across community types and resource availability, as one service provider described, “if you look at what the capacity of the City of London compared to the capacity of the county and the capacity of each municipality is very different”. Service providers suggested that the development of seasonal programming should be influenced by the available spaces in the community, prioritizing activities that they can offer consistently and sustainably.

For service providers, particularly municipal recreation departments, to maximize the available spaces in the community and increase their capacity for additional programming, non-traditional locations for physical activity programs were suggested. This includes offering activities in any large, open room that is available such as a church, school, or library. The discussions also highlighted the large number of outdoor spaces in their communities. However, some parents noted that outdoor spaces were being underutilized, “you’re not just going to meet a bunch of kids at the park for a few hours. It’s rare that we just find random kids on the street that they can go play with... Yeah, my kids don’t have the internal appetite to just go outside and play”. Thus, parents believed additional outdoor organized activities, particularly during the summer, would be an advantageous way to increase the number of physical activity options and encourage more children to be active. Service providers did note that children may perceive certain outdoor locations as unwelcoming and unavailable and emphasized the importance of educating and redefining the way children view the spaces in their community.

Personnel support

There are multiple levels of support required for children to engage in physical activity. Service providers and parents highlighted four groups: friends and peers, parents/guardians, schools, and governments and municipalities.

Barriers

Both service providers and parents discussed the difficulties parents/guardians face when trying to engage their children in physical activity. The discussions with service providers indicated that many families in rural communities “have to travel... My town is close enough to bigger centers, but, and as I hate to say, behind the times so there’s nothing”. Consequently, it can be difficult for parents who live in rural communities who drive longer distances to work. As one parent mentioned, “parents that work outside of their community have to drive all the way home at the end of the workday to pick up their child, and then to drive an hour back into [the city] is a lot of hours in a car. That is a lot of time consumed that is difficult for families and gas”. An additional issue service providers mentioned about parents’ ability to support active lifestyles was their knowledge of physical activity expectations for children. Some service providers felt, “the parents that I talked to in training have very little idea of physical activity guidelines, but they have an idea of what their child looks like. There are a lot of barriers and to kind of make sense of what’s out there and how it applies to raising a child”. As a result, service providers believed that low registration rates were potentially attributed to inadequate physical activity literacy.

While peers were primarily described as a positive influence on children’s physical activity, peer pressure was recognized by parents. If friends exhibit dislike for, or remove themselves from, an activity, this may discourage a child from participating. As one parent noted, “depending on who’s in their class, my daughter would definitely choose to sit on the sideline with her friend than try dodgeball”.

Governments and municipality officials were also highlighted by service providers as a group that has hindered children’s ability to be physically active. As one service provider describes, “a lot of policies in these small towns... I know that’s an issue in a lot of small communities, the liability issues”. Specifically, the safety protocols that need to be enforced at their facilities have led to inequities in activity access. As one service provider mentioned, “A lot of street hockey going on right now and the powers that be shutting it down... Hard getting their kids out to let them do anything because there’s always somebody watching saying ‘no, no, no you can’t’”. Similarly, another service provider talked about their skating programs and the new helmet regulations:

It was felt really hard this year with the new board policy for skating at the arenas. The school board implemented a policy of CSA-approved helmets, so children that only had a bicycle helmet could no longer participate in the school field trip for skating unless their families could pay to get them a hockey helmet or ice hockey helmet. Very limiting policy for those children to be able to participate.

While the government's efforts aim to create a safety measure that protects children, they have also led to greater inequities in physical activity participation.

Facilitators

Peers were characterized as key influencers in children's lives, with parents and service providers describing how they can encourage each other to be active. For example, parents highlighted, "if you can bring a friend with you they're more than likely to go with a buddy or two or a couple people instead of by themselves", and "you both can kind of support each other on the [basketball] court and it'll be great and they had a great time, but it was only because her friend was joining that she joined". Some service providers have also seen the benefits of peers encouraging participation in recreation programs, explaining, "our badminton program almost didn't run this past season because we had one kid signed up for the first month and then within probably a week or so of us cancelling the program, we had 15 kids sign up because one kid told his friends". Overall, peers were viewed as an important driver of physical activity for children by acting as a key support system during activities.

Besides peers, parents and guardians have a pivotal role in their children's health and are "key to their child's physical activity" (Parent). Many parents felt that it was their responsibility to encourage their children to be active: "I guess it also at the grade 5 level, it's really the parent that needs to push it [physical activity]. The parent is the one that has to drive them. The parent has to free time up in the afternoon, not to be cooking or cleaning or picking up from the week, but let's pause and do physical activity". Some of the service providers believed parents demonstrated they recognized the relationship between physical activity and their children's health and well-being: "I have parents emailing me every day right now about stuff, so I think parents are starting to see what we are seeing, that their kids aren't active enough". Many parents described being happy to take their children to activities, stating, "it's a choice, but you also see the joy in the kid, your kid's eyes and you wanna keep going because they just love it so much".

In addition, schools were described as key settings for physical activity, with staff playing an important role in physical activity promotion. Parents believed schools,

specifically physical education classes, are responsible for introducing children to activities:

The other thing with sports is that you have to sign up for a period of time and we were just saying, if they're not introduced to it in school, how would they know if they like it? And then why would a parent pay \$300 for them to try something that they might absolutely hate? So, something like school can help introduce sports.

Similarly, many service providers viewed schools as advantageous places for physical activity, specifically for afterschool programs as "schools can provide space after hours and the kids are already there". Schools were also labelled as a central location for program promotion, with one service provider stating, "schools are actually sending their papers home. They send their newsletter home once a week, electronically". In terms of staff, teachers can be ambassadors and advocates for children's participation in physical activity. As one parent explains, "if you get it to the right teachers, they interact with parents all the time. I know that they will send like a video or something".

Recommendations

Based on the conversations with service providers and parents, creating partnerships is important for community-based interventions and recreation programs. Some service providers believed that talking with "established organizations that have the audience has been a driver of success for programs especially". Teachers and administrative staff at schools were key collaborators identified during the community forums as they are constantly in contact with parents and can easily share information about recreation programs with their classes. Service providers have talked about the benefits of teacher advocates for physical activity interventions like the ACT-i-Pass Program, with one recommending, "put it in some of the teachers' brains that 'hey, guess what? We got this ACT-i-Pass thing.' They can physically talk to a parent instead of just a paper or something that gets missed". Additionally, service providers recommended that parents be provided more education about the national movement guidelines to reinforce the amount of physical activity children should be acquiring.

Quality of programs and facilities

The quality of the physical activity offerings and facilities was discussed during the service provider community forums. By quality, service providers referred to the facilities being in good condition and programs being led by trained personnel who are skilled in the activity.

Barriers

A few service providers noted changes to the composition of the counties over the last few years, including the growing population, changing demographics and redevelopment, as one of the underlying reasons for lower program quality. This has been particularly difficult in rural and smaller urban centres, with one service provider explaining, “everyone’s moving out of the city into the smaller towns so it makes sense to expand them now, establish them now, but [my community] hasn’t done anything”. As a result, service providers stressed that the internal migration “changes the dynamic of how you look at programming too because you could have a group you catered to for a while and then you have a line of families that are coming in from other places. They are expecting a lot of different standards of smaller areas which forces us to grow too”.

To offer a quality program, many service providers emphasized the demand for qualified staff that are knowledgeable about the activity and “skilled enough to be able to actually provide the program”. As mentioned by one of the service providers, “finding that instructor is definitely the hardest part when you’re trying to either start or restart a program, because if you don’t have that person to lead it or you don’t have the right person to lead it, your program doesn’t work no matter whether you had 1500 kids interested in that program if you don’t have someone excited and skilled to run it”. Due to the low population size of rural and smaller urban centres, finding community members who are proficient in an activity and willing to teach the skills to children is one of the service providers’ key obstacles in offering recreation programs.

When offering new programs, service providers stressed the time needed to gain community buy-in, as recreation programs are a “community service, it’s a service that you’re offering the community, so their interest is important”. The challenge highlighted by service providers is the time and effort required to gain awareness and secure regular enrollment in programs, which is necessary for their longevity:

It doesn’t happen overnight that people will come ... It’s building the consistency, so families know that’s what’s gonna happen, whether they have 3 people show up for open basketball or whether there’s 20 people show up. If you don’t have the consistency, I think it’s really hard to be able to keep programming and families close within that area to participate in it.

Facilitators

To encourage community engagement, service providers have found that partnerships can help provide useful insight into the program models that work and the different approaches that have been unsuccessful. For instance, some service providers believed that sharing their experiences with other organizations can improve the quality of physical activity offerings across the community. One service provider referred to their experience meeting with the recreation programmers across their county:

I mentioned earlier how the municipalities who are in recreation are more than willing to talk to each other and share information with each other about what works and what doesn’t work. We started to try to open a membership option with some of our recreation programs and we reached out to a couple [of organizations], like, ‘hey, have you seen that this is a good thing or not?’

Consulting families was also viewed as vital for higher-quality programs. One service provider found that “a big piece, if you wanted to utilize those spaces, would be to engage with the youth to understand, like, if we open the gym or do we have a structured basketball tournament or badminton tournament or whatever that be”. By talking with potential users, this provides “validation that if they are going to pay staffing to be there and that people are going to show up”.

Recommendations

To account for the rising population, a service provider suggested that municipalities need to account for physical activity-related facilities and staffing during the development of rural communities and smaller urban centres: “we need to be able to provide the programs and amenities that come with that [the county growing], but until other things grow, whether it’s facilities or staffing or availability or whatever it is, you won’t grow with the population”. Service providers from rural communities also noted that it takes time to gain awareness among families when they introduce new program offerings, recommending that fellow program coordinators “... keep in mind with timing, it’ll take time. The population is lower, but we find things take longer and you have to build over time. Be patient”.

Expenses and subsidies

The expenses related to physical activity programming were a predominant topic among all community forums; however, the focus of expenses for parents was related to the cost of attending activities, while service providers were associated with the cost of managing programs.

Barriers

For parents, the topic of expenses was related to the cost of their child attending and participating in activities. Ultimately, many parents felt that the price of organized physical activity is too high, with some describing sports as unfeasible opportunities for their children. As one parent described her son's hockey season, "we'll be in at \$5000 by the time the season's done and that's just local league. That is cheap hockey. Now, if he wants to go competitive, some of my friends are saying they're spending \$7,000 to \$10,000 for them to play competitive". Families attributed the challenges associated with expenses to the cost of living "getting worse. We had a conversation at our dinner table about the cost of living. Everyone's talking about it increasing". Due to the high prices, parents felt that it can be difficult for children to try a variety of activities and find what they enjoy as one parent reported, "we'd be more than willing to sign our kids up for a bunch of programs if they had them, if we could... I can maybe pick one and then that's all you can get this year because it's all financially I can do", meaning that "the cost of certain programs are just not attainable for some people... there's a much larger cost to getting into the programs, so that negates it for some people".

In addition to the registration fee, parents attributed transportation and unplanned expenses as challenging supplemental costs. Parents described the cost of gas accumulating quickly throughout the season, "now I'm driving him every day, not every day, but to his practices and his games. Well, that's gas money, that's another thousand dollars". There are also team events that can lead to activities being more expensive than planned. For instance, one parent discussed the extra costs they noticed as their child engaged in more team sports:

It's not only just the cost of equipment, but people go out for dinner after or they go out for ice cream. It's all those things that if you can't afford to bring your child, pay for it, the child might just decide 'I don't wanna be the one who's going and I can't go out for a meal after or get that ice cream cone with the group because I don't have the \$4', so it's a lot.

In contrast, service providers were focused on the expenses of managing physical activity programs. Service providers described having to limit the types of activities they can offer due to their available funds. Service providers supporting rural communities believed that it "might be easier for cities and towns to run them [recreation programs] because maybe they have that built into their budget that they can have money to give a program. We don't, unfortunately". Also, due to limited funds, they may not be able to offer some free and low-cost programs, with one service provider explaining, "there's

pickleball nets and they get so many people out of that but it's free and that's not something that I can do with our programs".

Service providers also discussed the available resources in their communities. Due to budgets, service providers reported issues getting access to the necessary equipment and the need to borrow supplies from partners or schools. For those who have the equipment, service providers experienced time and cost challenges of transporting their equipment to facilities: "We have our equipment because we have our own space... we can bring it there [to the school] but we can't store it there, which means there's an extra amount of time and money that goes into that transportation every week for each day".

Finally, a lack of funds influences the type of staff working at service providers. As one service provider expressed, "getting actual programmers for us, 'cause we don't have the Y budget that would provide a programmer to us, so that is a challenge". In order to recruit the necessary staff, many service providers have to counter the extra costs by increasing the price of their activities: "So then you start paying that that main instructor that price needs to go up in order for us to continue". Either the price goes up or you don't run the program".

Recommendations

To improve access to resources, one suggestion offered by service providers involved partnering with other publicly-funded organizations, such as community centres or libraries, to supply children with equipment that they can borrow and bring home: "Through the Y[MCA] or a program like that where you could come and get sports equipment or things so they can try a sport whether it be a hockey stick or a baseball glove or a soccer ball or a basketball. To have a sports lending library there".

To help fund activities, a few service providers found that gaining sponsorships from organizations was a beneficial way to acquire additional funds. As described by one service provider, "maybe there would be another business that might be willing to provide funding so if a child wanted to sign up or to be able to help out businesses that are keen to help but maybe just can't afford it financially". External funding partners can also subsidize activity fees for children by acting as a "sponsor a dance class or a Taekwondo class or a something like that". As offering free programming was deemed difficult or impractical for service providers, it was suggested that grants and subsidy programs be used to help improve families' access to recreation programs. Funding support offerings can provide opportunities related to "their income level and if they were under a certain level then they received 50% funding for all the registration fees", or "a necessity program so money is just for low-income families to help cover the cost of activities".

Inclusion and preferences

Offering a variety of activity types and levels to make service providers more welcoming to all children was another frequently discussed topic during the community forums. As stated by one service provider, “inclusivity is crucial to youth right now, right? So, if you’re not inclusive you’re not being positive and allowing everyone to participate and then you’re not gonna be successful and kids aren’t gonna participate”. The discussions concentrated on service providers having a diverse number of activity types and levels within each activity to consider children’s abilities and preferences.

Barriers

Some service providers and parents credited children’s low engagement in physical activity to the confidence or skillset to participate in a specific activity. As one service provider discussed, “I have noticed a huge confidence issue. Not picking things up that they aren’t fantastic at right off the bat... ‘I’m not good, I’m outta here, everyone’s better than me’”. A few parents reported seeing confidence issues in their children, with one parent describing, “it’s so tricky, especially when you think about that confidence. The ability to do sport, especially hitting that grade 7, that 13-year-old where you’re very self-conscious.” An explanation for confidence issues is the pressure they feel from their peers when they “size themselves up. It’s a natural thing people do. The ‘am I better than you? Are you better than me?’ mentality” (Parent). To help grow children’s confidence, children are looking for “proper skills and drills, it’s very popular” (Service Provider).

The appropriateness of the available activities may also be lacking with the current program options. Specifically, children have different needs and a greater variety of activities will help offer programs suitable to the different skill sets and ages of children. One characteristic highlighted throughout the conversations was the competitive spirit of children. Some of the parents attributed the lack of participation in organized programs to the absence of non-competitive options for sports. As one parent mentioned, “I find that there’s kind of a gap between like rec hockey players and just base recreation players... They don’t like high levels.” Parents felt that many activities were “the team sport atmosphere. My child’s not competitive, so knowing that she wants to learn, she wants to be better, but she has her own internal competitiveness, not external”. A problem many parents encountered was trying to find programs for their children to try and learn activities, as underscored by one parent while discussing an introductory hockey program in their community:

Now, one thing I don’t know is having those same kids on the ice at the same time as those who have

been playing the sport for years because if that’s the case, that’s gonna fail immediately. They almost need their own ice time or their own space that they’re learning at their level.

In addition to the activity options for non-competitive children, the activities need to be age-appropriate. For instance, children can be embarrassed when “my child who is 10 is doing say beginner hockey, but then there’s also 5-year-olds in that group. Even if she’s at the same level as them, she is not going back. She’s like ‘I’m at the same level as a 5-year-old. No, thank you’” (Parent). The financial and personnel constraints service providers experience have also affected the program offerings by prompting more co-ed activities that combine both boys and girls; however, one parent said this has negatively impacted her daughter’s participation in team sports as, “at her age, they’re often both male and female combined, so co-ed. What I’m seeing as a parent is that the boys are becoming bigger and more aggressive as in they’re competitive and she is not, so therefore, she gets intimidated”.

Facilitators

Offering children activities they want to participate in and are passionate about was described as critical for continued physical activity participation. Ultimately, parents cannot force their child to want to take part in an activity. As one service provider highlighted, “you know we have parents bringing kids 3 or 4 years old to take martial arts. The parents are making them do something that doesn’t really draw [their] interest, but after 11 years old they seem to make their own choices”. As one parent noted, providing children with the opportunity to try various activities can be beneficial “if you want them to stay active in the long run, they need to find something they enjoy”.

Recommendations

Moving forward, it will be important to offer activities for various skill levels. As noted by one service provider, “building people’s confidence up, giving them an opportunity—a safe space to try a sport or try an activity with people with the same skill level as them”. In order to develop children’s self-efficacy and increase program uptake, there needs to be a variety of program offerings to account for “the diversity in who the kids are, the ages of the kids and interests” (Service Provider). This can also be done by offering flexible activities where the programs are “something more that evolves and keeps them interested” and they can be adapted by “asking them if they feel good and you’re teaching them to help structure play” (Service Provider). In addition, offering non-competitive and entry-level programs can encourage children to join activities where “everybody that joined it was just

kind of trying it. Nothing serious and it made it easier to attend those things as opposed to going with a group of kids who have been playing that sport for 7 years and you're trying it for the first time" (Parent).

One strategy to alleviate the issue of activity options for all children is offering non-traditional activities. For instance, service providers reported, "people get bogged down with the traditional programming like soccer and basketball. There's so many other programs that are out there" and "dodgeball's huge right now. Just those off the cuff programs that aren't traditional... just doing something that they don't have the opportunity to do and just being creative with that". Similarly, service providers suggested that program offerings should integrate trending activities among youth: Working on some trends in certain sports. Like, who would've thought pickleball? Cornholes replaced horseshoes. You know what I mean? You gotta kind of recognize it's replacing something in a more modernizing way.

Discussion

Through a series of community forums with service providers and parents, this study aimed to explore the physical activity opportunities in rural communities and smaller urban centres and to understand how to develop and implement community-based physical activity programs for children in areas with low resource availability. The discussions with service providers and parents highlighted a variety of barriers and facilitators to physical activity participation. Some examples of barriers included the distance to activities, the expenses related to physical activity programs, and limited resources to meet the population growth. In contrast, flexible activities, promoting programs through schools, and outdoor spaces were described as facilitators. In addition, recommendations for the development and implementation of physical activity programs for children in low-density and minimally resourced areas were noted. Recommendations covered a range of topics such as developing physical activity-related skills, utilizing non-traditional physical activity spaces, and centring program offerings around equipment and personnel capacities.

When asked about the factors that influence children's physical activity, service providers and parents believed that the loss of organized programs and the closure of recreational facilities due to the government-regulated COVID-19 public health protections had a negative effect on their child(ren)'s physical activity. Children's preference for organized recreational opportunities and limited involvement in active play is consistent with the evaluations of Canadian children's physical activity participation [7, 8]. For instance, Sharp et al. [52] found that most rural children were looking for structured after school or weekend activities and would enrol in a wide

variety of organized programs, such as physical activities, music, clubs, and tutoring. However, children's desire to engage in organized activities conflicts with the body of literature asserting that there is a lack of resources in non-urban communities [53, 54]. In a comparison of rural and urban Canadians, participants from rural communities are more likely to report barriers to accessing recreational facilities [55]. Due to the interest in more structured activities, implementing community-wide programs and finding strategies to improve recreation offerings can be a beneficial way to promote physical activity participation in resource-limited communities.

Accessibility was noted as a common barrier throughout the community forums, consistent with the literature on rural physical activity [56]. Poor accessibility was associated with the community structure and resources varying between communities. For instance, Gilbert et al. [19] found smaller rural communities with a population size of less than 6,000 residents had fewer resources and less infrastructure than larger communities, which may require a tailored intervention plan. Due to the longer distances between home and program offerings, transportation is one of the main barriers to physical activity in rural and smaller urban centres. In non-urban communities, public transportation is non-existent or unreliable, and active transportation is not available to children as parents may be concerned about the lack of bicycle lanes and sidewalks, their children travelling on underutilized routes, and wild animals [57]. Consequently, children cannot attend programs without a parent or family member acting as a driver. As a result, researchers and program coordinators need to understand the unique characteristics of the different communities in their jurisdiction when developing community-based programs and create an implementation plan that best meets the needs of the whole target population.

Outdoor spaces were also identified as a beneficial method for improving children's physical activity. Both parents and service providers highlighted the variety of outdoor spaces that are unused by children without organized activities. In addition to engaging children in more physical activity, outdoor spaces have been found to provide various other health-related benefits, including increased self-esteem, problem-solving abilities, social behaviours, and motor skills [58]. While outdoor spaces can provide additional recreational opportunities when programs and facilities are limited, they may target those who are sufficiently active. For instance, children from rural and remote communities who reported being involved in a higher number of organized activities also reported greater involvement in unstructured leisure activities; this refutes the 'over-scheduling hypothesis' that proposes those who participate in more organized activities face time constraints that inhibit participation

in unstructured forms of physical activity such as outdoor play [52]. As the outdoors can provide an open space for imagination and creative activities, offering non-traditional activities in these settings can help engage children who are not interested in sport-focused activity offerings.

In addition, parents and service providers described select individual-level factors as barriers to physical activity participation. Consistent across evaluations of urban and non-urban communities, children are potentially not participating in any programs due to their lack of interest in physical activity options [59]. Parents and service providers presented conflicting accounts for why there are issues with the current program offerings. Consequently, it is difficult to conclude if service providers' limited capacity or families' low uptake has led to a reduced variety of activity options, but they both likely play a role in children's physical activity opportunities. With the rising internal migration to rural communities on account of the transition to virtual and hybrid work options available during the COVID-19 pandemic [20], there is an increasing demand for resources and services in these areas. As there are difficulties associated with recruiting staff and the capacity for communities to build more recreational facilities, program offerings should prioritize the resources that currently exist in the community, including integrating the land use and development plans for the municipality to account for the growing population [60].

One finding highlighted in the current study by both service providers and parents was the cost of recreation programs. Due to the high cost of extracurricular activities, family income is an important factor in physical activity participation for children [61]. For example, Kellstedt and colleagues [62] found that children's chances of partaking in sports were 4 times more likely when they lived in a higher-income household. This aligns with the idea that socioeconomic-based health inequalities increase across the life course because of the cumulative advantage or disadvantage associated with differential access to health-promoting resources, much of which is rooted in early life exposures [63]. While many recommendations for reducing the economic accessibility of physical activity surround affordable programs, one frequently reported barrier among rural populations is the shortage of free and low-cost physical activity opportunities [55]. The high cost of activities was also noted as a challenge for service providers. Local governments in smaller communities tend to face financial challenges with limited revenue, minimal financial capacity, and a high cost of living [15]. As a result, service providers have difficulties maintaining their facilities and creating environments that better support physical activity, which means regular free activity offerings are not a viable solution in many communities.

Recommendations for physical activity interventions and recreation programs

In response to the identified facilitators and barriers related to recreation programs, service providers and parents offered recommendations to integrate into the expansion of the ACT-i-Pass Program and future physical activity interventions. Recognizing that the number of physical activity providers declines as the ACT-i-Pass shifts from a densely-populated city to more dispersed, resource-limited settings, the recommendations provide valuable adaptations to the intervention's design and implementation that can offer physical activity opportunities tailored to the needs of families in rural and smaller urban communities. For instance, due to the range of conditions that exist in non-urban areas (e.g., population size, resources), the unique characteristics of the different communities and available resources need to be incorporated into community-based programs to ensure activities are accessible to all children, particularly those in low-density rural areas [64]. For example, the transportation options in dispersed communities differ from urban environments; therefore, additional attention needs to be placed on creating more programs in a variety of neighbourhoods or reducing transportation barriers by offering busing from schools to service providers or encouraging carpooling with other families.

Primarily, creating additional structured activity options for children was deemed a beneficial strategy for engaging children in greater amounts of physical activity. One suggestion included utilizing the abundance of outdoor spaces available in the area. Encouraging outdoor play and creating more outdoor programs in a variety of communities can help children be more active [65]. In addition, increasing the program offerings to service a greater variety of activity preferences and skill levels can allow programs and interventions to have a greater impact on the health behaviours of children. Traditional activity offerings are not reaching all children, particularly those not interested in sports or competitive environments; therefore, providing unique and fluid programs may help gain their interest in activities and engage them in more physical activity. Program coordinators were encouraged to integrate trending activities (e.g., pickleball) and flexible programs into their offerings. Flexible programs, alternatively termed scaffold play, are child-directed activities that are guided by an adult [66]. The objective of these activities is to foster children's development and creativity as they work towards a specified objective outlined by the adult [67]. While this strategy is primarily used in a preschool context [68], it may continue to have benefits among older children.

Additionally, partnerships were a key recommendation from service providers, reinforcing the importance of collaborations in successful community-based interventions

[69]. Specifically, it was stressed that community organizations and families are valuable sources of information and support when creating programs for children. Community organizations, such as government agencies and businesses, can assist in the administration of programs and interventions by offering financial support via subsidies or grants that reduce the financial strain of registration fees for families or facility management costs for service providers [70]. Other partners, such as schools, can also improve awareness of programs and interventions by acting as promoters [71]. Alternatively, engaging with families can give greater context to the community and help set priorities for interventions based on the interests and the supports needed by the target population [72].

As COVID-19 continues to influence the physical activity context, there are additional recommendations that need to be integrated into health promotion efforts. For instance, children missed pivotal years of physical education due to the closure of schools and recreational facilities. Perceptions of athletic ability, self-efficacy, and motivation to be active are all factors that can have a significant influence on physical activity behaviours [73]. Thus, interventions should integrate programs with a greater focus directed toward building children's physical activity confidence by teaching skill sets and movement competence [74]. In addition, with many small businesses closing during the pandemic, redefining what qualifies as a setting for physical activity is important. In rural communities, children do take advantage of existing afterschool program opportunities (e.g., church youth groups) when school athletics programs, sports leagues,

and recreation activities are limited or unavailable [52]. As the findings indicate that children are hesitant to use spaces without the guidance of an adult, creating structured programs will make non-conventional physical activity spaces more accessible for children. A full list of the recommendations provided by service provider and parent community forum participants is provided in Fig. 3.

Limitations

While this study provides valuable insights into rural and smaller urban centres and physical activity programs, there are limitations that must be considered. The parent community forums exclusively involved responses from mothers. While it is common that parental perspectives on their children's health behaviours tend to come from mothers [75], we are missing the paternal perspective that may offer different experiences with their child(ren)'s physical activity. Additionally, our study consisted of families and service providers from Elgin (including the City of St. Thomas), Oxford, and Middlesex Counties. Based on responses to the Census Profile, the populations of these three communities consist primarily of English speakers and non-immigrants and have a lack of racial and ethnic diversity [32–34]. Due to the similarities between participants, we are unable to make conclusions about the influence of demographic characteristics on the experiences of families from our study area. While efforts were made to produce a thorough list of service providers, the perspectives of some organizations may have been missed if they did not have an online presence or if our community partners were unaware of their

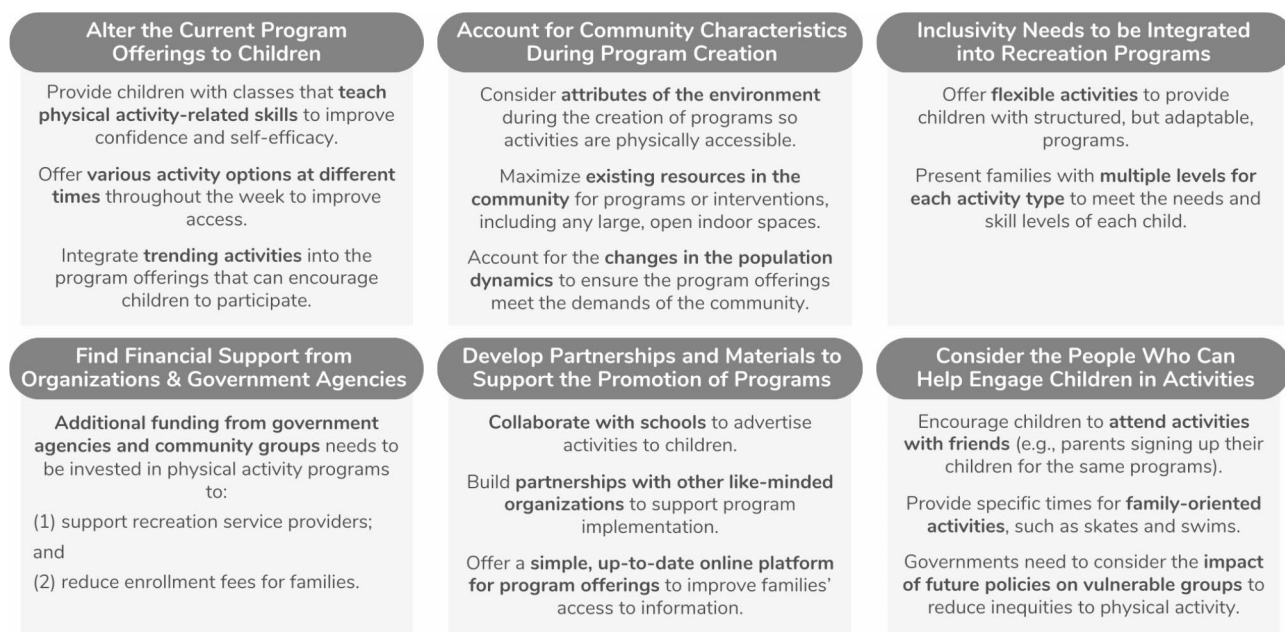


Fig. 3 Service provider and parent-derived recommendations for physical activity programs and interventions in rural and smaller urban centres

existence. Finally, rural communities and smaller urban centres are contextually diverse based on population size and physical activity-specific resources [19]. There are multiple definitions used to differentiate between urban, suburban, and rural areas that vary based on one or more community characteristic(s), such as population density, population size, distance from an urban area or distance to an essential service [76]. As a result, the applicability of findings to other non-urban spaces can be challenging and may only relate to the experiences of service providers and families who reside in rural communities, villages and small urban centres that are within an hour's drive of a large urban centre.

Conclusion

To counter the rise in physical inactivity associated with the COVID-19 pandemic, developing and implementing interventions that can encourage children to live more active lifestyles are critical. To improve the quality and effectiveness of community-based interventions, researchers and program developers should collaborate with community members and organizations to adapt interventions to meet the needs of their target community. This is particularly important for small, dispersed communities that have unique characteristics based on their population size, number of recreational facilities, and activity options. Service providers and parents emphasized the need for interventions and programs that offer accessible, diverse, high-quality program options that are inclusive and meet the needs of all children in the community. To account for the impacts of the COVID-19 pandemic, interventions need to integrate additional opportunities for children to develop their confidence and physical activity-related skills and find resources that can reduce the economic strain associated with recreation programs. While a variety of suggestions from parents and strategies used by service providers were noted, further studies are needed to evaluate the impact of the recommendations on the effectiveness of interventions and recreation programs in rural and smaller urban centres with a focus on fidelity, uptake, use and changes to physical activity levels.

Supplementary Information

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Supplementary Material 1

Supplementary Material 2

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Author contributions

E.O., J.G., J.L., J.S. and P.T. conceptualized the study. E.O. and P.T. developed the community forum guides. E.O. recruited study participants, moderated the community forums, conducted the analysis, and wrote the original manuscript draft. J.G., J.L., J.S. and P.T. reviewed and edited the manuscript. All authors have read and agreed to the published version of the manuscript.

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Data availability

The datasets generated and analyzed during the current study are not publicly available due to research ethics board requirements but are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The study was approved by Western University's Non-Medical Research Ethics Board (REB #103954). Written and oral informed consent was obtained from all service providers and parents who participated in this study. All methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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