

Regular Paper

Physical Activity Preferences, Attitudes, and Behaviour of Children and Youth With Physical Disabilities

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Abstract

Despite the numerous benefits of physical activity (PA) participation, children and youth with physical disabilities (CYPD) are not active enough. Limited research has explored the PA preferences and attitudes of CYPD, which are critical to the design of effective community-based PA programs. To address this gap, this study examined the PA preferences and attitudes of CYPD ($N = 38$, mean age = 15 years, 54% male). Top PA preferences included: being active after school (39.5%), in a gymnasium setting (52.6%), at a moderate intensity (52.6%), and with close friends (65.8%). Participants reported high positive attitudes ($M = 4.36$ out of 5) toward PA. This study offers important findings for therapeutic recreation (TR) professionals to consider as they design, deliver, and assist children and youth to locate PA programs within their communities.

Keywords

Attitudes, children and youth, community-based, disability, inclusion, physical activity, preferences

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Despite the many physical, psychological, and social health benefits regular physical activity (PA) participation provides to children and youth with physical disabilities ([CYPD]; Giacobbi, Stancil, Hardin, & Bryant, 2008; Murphy & Carbone, 2008; Taub & Greer, 2000), PA levels within this population are overwhelmingly lower than age-matched typically developing peers (e.g., King et al., 2010; Law et al., 2006; Masse et al., 2013; Rimmer & Rowland, 2008). Opportunities to participate in PA through community-based sport and active recreational programs are often limited for CYPD due to a variety of barriers, including limited local activity options, lack of access to transportation, limited finances, lack of information on accessible programming, and challenges with coordinating family schedules to attend structured activity sessions (Bassett-Gunter, Ruscitti, Latimer-Cheung, & Fraser-Thomas, 2017; DeFazio & Porter, 2016; Martin Ginis, Ma, Latimer-Cheung, & Rimmer, 2016; Shields & Synnot, 2016). Such limited community engagement opportunities may place CYPD at a disadvantage for accumulating daily bouts of PA, and consequently lead to more time spent alone and/or engaged in sedentary pursuits (Law et al., 2006; Majnemer, Shikako-Thomas, Schmitz, Shevell, & Lach, 2015).

While there is a growing interest in targeting the PA behaviours of CYPD (e.g., King et al., 2010; Law et al., 2006; Masse et al., 2013), little empirical research has been directed toward the antecedents of PA behaviour, specifically preferences and attitudes, within this population (Shields, Synnot, & Kearns, 2015; Verschuren, Wiart, Hermans, & Ketelaar, 2012). Considering theories of health behaviour change such as the Theory of Planned Behaviour (TPB), attitudes and preferences are salient factors to target for enhancing motivation toward, and engagement in PA among children and youth (e.g., Sallis, Prochaska, & Taylor, 2000; Van Der Horst, Paw, Twisk, & Van Mechelen, 2007). Specifically, within the TPB, affective and instrumental attitudes are posited to influence one's motivation to engage in PA behaviour (French et al., 2005). The influence of attitudes on the PA behaviour for CYPD remains unclear. Kodish et al. (2006) found that attitudes were not a significant predictor of the PA behaviour of the children and youth involved in inclusive physical education classes. Meanwhile, among typically developing youth, attitudes were shown to be a significant positive predictor of PA behaviour (Mummery, Spence, & Hudec, 2000). Preferences are also important to consider in the context of PA behaviour. Among children and youth with cerebral palsy, greater preference for more passive, solitary leisure activities has been associated with lower lifetime PA participation (Shikako-Thomas, Majnemer, Law, & Lach, 2008). Further work in the area of antecedents of health behaviour change, specifically preferences and attitudes, is necessary to provide a better understanding of the role they play in the promotion of PA among CYPD. This is the first step toward ensuring that favourable choices are made available to CYPD in their communities (Bloemen, van Wely, Mollema, Dallmeijer, & de Groot, 2017), which may lead to more optimal planning of PA programs that meet their unique needs (e.g., offered at times that enable families to arrange suitable transportation) (Verschuren et al., 2012).

Well-designed community-based PA programs that take into consideration the attitudes and preferences of CYPD also provide opportunities for building peer relationships, thereby decreasing social isolation (Snowden, 2012), as well as enhancing opportunities for CYPD to increase self-esteem and a sense of belonging and acceptance (DeFazio & Porter, 2016; King, Curran, & McPherson, 2012). To enhance

the quality of PA-specific programming for CYPD within their communities, greater attention must be directed toward asking CYPD about their specific PA preferences (e.g., not necessarily what they currently do, but what they would enjoy doing) and attitudes toward engaging in PA (Majnemer et al., 2015; Shields et al., 2015). This targeted approach would support the planning and implementation of desirable PA opportunities for CYPD within their communities (Bult, Verschuren, Lindeman, Jongmans, & Ketelaar, 2014; Kunstler, Thompson, & Croke, 2013). In line with “client-centered care” frameworks, matching program approaches to client preferences may enhance program adherence (Laine & Davidoff, 1996), and ultimately the PA participation of CYPD.

Considering the limited research on PA preferences and attitudes of CYPD, and the important role that these two factors play in the TPB (Sallis et al., 2000; Van Der Horst et al., 2007), the present study sought to examine the PA preferences and attitudes in a sample of community-dwelling CYPD.

Method

Recruitment and Eligibility Criteria

Institutional ethics review board approval was granted for this cross-sectional study. Data collection took place between January 2014 and December 2015. Participants were recruited from recreational and rehabilitation facilities situated in the Greater Toronto Area, Ontario, Canada using a convenience sampling strategy (Lavrakas, 2008). These facilities were chosen due to their emphasis on providing a variety of community-based PA programs and services to people of all abilities. Study information was distributed on the websites of various organizations and through advertisement flyers. Brief, face-to-face invitations to participate were also provided by a research assistant prior to or following therapy sessions, and specific recreation programs offered to children and youth (ages 10 to 21 years) where at least one CYPD had enrolled.

Participants up to the age of 21 years were included to reflect the age at which youth with disabilities transition from childhood to adulthood rehabilitation and education services within Ontario, Canada. According to UNESCO (2017), the age of youth may extend to 24 years, thereby situating our participants within a suitable timeframe. Prior to taking part in the study, informed consent was obtained from all parents/guardians. Participants over the age of 18 years provided informed consent, while those between the ages of 10 to 17 years provided assent.

Eligibility criteria included: a) between the ages of 10 to 21 years, b) self-reported having a physical disability (defined as a disability where there is a mobility impairment; e.g., cerebral palsy, amputation), c) able to read and write in English, and d) capable of completing a paper and pencil questionnaire on their own or with limited assistance.

Measures

A self-report questionnaire was used for this study given its cost-effectiveness, relatively low participant burden, and administration ease within the community (Biddle, Gorely, Perason, & Gull, 2011). This questionnaire included the four measures discussed below.

Demographic information. Demographic information was gathered pertaining to gender, age, type of physical disability, use of mobility device, and height and

weight. Modified versions of the child and 7-day Physical Activity Questionnaire (PAQ; Kowalski et al., 1997) were used to assess the overall PA level of the sample. Items contained five response options (1 = minimal activity to 5 = high activity), with an overall PA score calculated based on the mean of all items scored. Prior to data being collected, items were modified so they could be administered throughout the entire year (similar to the process described by Janz et al. [2007]), and items were also examined for inclusivity and, when appropriate, modified to reflect more inclusive language (e.g., adding wheeling as an activity option). The PAQ has been previously modified to reliably assess culturally relevant activities for older English youth (Aggio, Fairclough, Knowles, & Graves, 2016). Internal consistency across the items for the modified PAQ used in the current study was acceptable ($\alpha = .81$).

Preferences for PA. Preferences for PA were assessed for a variety of activities and modes of engagement. Participants were asked to report their PA preferences, defined as either physical activities they would like to do and/or are currently doing. PA was described as ‘sports or dance that make you sweat or make you feel tired or games that make you breathe hard like tag, skipping, running, wheeling, climbing and others. Preference questions related to the following: (a) time of day (i.e., weekend mornings, weekend afternoons, after school [3 p.m.–6 p.m.], weekday evenings), (b) location (e.g., in a gym, at home, outdoors), (c) mode (e.g., wheelchair basketball, gymnastics, swimming), (d) with whom (e.g., closest friends, siblings, parents), and (e) intensity (low, moderate, and high). Participants were able to choose more than one response, as well as the option of “no preference” for each question.

Attitudes toward PA. Attitudes toward PA were assessed using six items that were preceded by the statement, “For me, participating in physical activity and sports is/would be...” In line with Ajzen’s (2006) guidelines, attitudes were conceptualized as positive and negative feelings toward a behaviour, specifically PA, and its personal (salient) outcomes. In this study, we examined participants’ feelings in relation to the two types of attitudes (instrumental and affective), as there is a strong body of literature to support the differential effects of these two types of attitudes on motivation for engaging in PA and actual PA behaviour (e.g., French et al., 2005; Rhodes, Macdonald, McKay, 2006). Three items tapped into the affective component of attitudes (i.e., boring/fun, unpleasant/pleasant, not enjoyable/enjoyable), while the remaining three items targeted the instrumental aspect of attitudes (i.e., useless/useful, bad/good, harmful/beneficial). Items were rated on a 5-point scale, with higher scores representing more positive affective or instrumental attitudes toward PA. Two separate mean scores were then calculated, one for instrumental attitudes (mean across the three respective items) and one for affective attitudes (mean across the three respective items). These items have been previously used among adults with physical disabilities (Martin Ginis et al., 2013), and typically developing children and youth (aged 11-13 years) (Foley et al., 2011). Internal consistency across the items was acceptable ($\alpha = .78$). A copy of the complete set of preference and attitudinal measures is available from the first author.

Protocol

A research coordinator distributed the study information package (including consent/assent forms, the demographic measure, along with the scales pertaining to PA [preferences and attitudes]) to families during regularly scheduled programs or therapy sessions, in which the children or youth were enrolled. Participants were asked

to complete the entire package before or after their regularly scheduled program or therapy session in a designated meeting space and return it to the research coordinator. Parents/guardians were instructed that it was preferable for participants to complete the survey independently. For participants who were unable to complete the survey independently, the parent/guardian was instructed to read the survey to them and document their responses. Participants under the age of 18 years and who did not have a parent/guardian present to acquire parental consent were asked to take home the questionnaire and return it via a self-addressed envelope to the research staff.

For participants who took home the questionnaire, a follow up e-mail was sent after a two-week period reminding them to complete the questionnaire if they had not already done so. Those participants who were over the age of 18 years were also provided with the option to complete the questionnaire package on site and return it to the research coordinator or to take it home and follow the process previously described. Participants received a \$10 gift card as remuneration for taking part in the study.

Data Analysis

All analyses were conducted using SPSS version 23.0. Data cleaning procedures confirmed there to be no concerns with outliers and normality for the attitudes outcomes. Descriptive statistics (e.g., frequencies, means, and standard deviations) were used to examine PA preferences, and instrumental and affective attitudes of the 38 CYPD. Separate chi-square tests and ANOVAs were conducted to examine between-group differences for gender (female [$n = 17$]) and age (< 14 years [$n = 13$] vs. ≥ 14 years [$n = 30$]) on all outcome variables. Tests of homogeneity of variance within the ANOVAs were all non-significant ($p > .30$), indicating that the variability between-groups on instrumental attitudes and affective attitudes was equal. Where appropriate, effect sizes (Cohen's d) are provided to illustrate the magnitude of the difference between the groups and were interpreted as small ($d > .20$), moderate ($d > .50$), and large ($d > .80$).

Results

Participants

A total of 59 children and youth were approached to complete the study questionnaire, of which 43 (73%) were eligible and provided consent/assent to participate in this study. Of these 43 participants, 38 (88% response rate) responded to the study questionnaires. Mean age of the 38 participants was 15.58 ($SD = 3.16$) years, and mean self-reported body mass index was 21.78 ($SD = 5.37$) kg/m^2 . Over half of the sample was male (55.3%) and nearly half identified as being white (47.4%), while the majority had congenital disabilities (57.5%) and used a mobility device (55.3%). Self-reported PA behaviour was indicative of low-to-moderate activity levels for over half of the sample as assessed using the PAQ (Kowalski et al. 1997). See Table 1 for a detailed description of participant demographic characteristics.

Table 1*Participant Preferences (N = 39)*

When (Preferred Time)	n (%)
After school (3 p.m.- 6 p.m.)	16 (41%)
Weekends (12 p.m.-5 p.m.)	11 (28.2%)
Weekends (9 a.m.-12 p.m.)	10 (25.6%)
Weekday Evenings (6 p.m.-8 p.m.)	10 (25.6%)
Where (Preferred Space)^a	n (%)
At the gym	20 (52.6%)
Outdoors	17 (44.7%)
No preference	10 (26.3%)
At home	9 (23.7%)
How (Preferred Intensity)	n (%)
Moderate	21 (48.8%)
High	8 (18.6%)
No preference	7 (16.3%)
Low	3 (7.7%)
Who (Preferred People)^a	n (%)
My close friends	25 (65.8%)
People who are the same age as me	13 (34.2%)
My siblings	8 (21.1%)
My parents	7 (16.3%)
People who are older than me	6 (15.8%)
No preference	5 (13.2%)
People who are younger than me	4 (10.5%)
What (Preferred Activity)	n (%)
Swimming	28 (71.8%)
Weight-lifting	17 (43.6%)
Basketball	15 (38.5%)
Soccer	14 (35.9%)
Wheelchair Basketball	14 (35.9%)
Dance	13 (33.3%)
Wheelchair Racing	13 (33.3%)
Volleyball	11 (28.2%)
Track	10 (25.6%)
Hip hop	8 (20.5%)
Hockey/Sledge Hockey	7 (17.9%)
Zumba	6 (15.4%)
Gymnastics	6 (15.4%)
Taekwondo	6 (15.4%)
In-line skating	4 (10.3%)
Boccia	4 (10.3%)
Curling	2 (5.1%)
Other: Power wheelchair floor hockey	1 (2.3%)
Other: Racing and Shot put	1 (2.3%)

Note. ^aN = 38 participants who completed this section of the questionnaire.

Preferences for PA

Many (39.5%) participants identified the after-school period as their preferred time to be physically active, followed by weekend afternoons (26.3%). A gym setting (52.6%) and outdoors (44.7%) were selected as the most preferred activity spaces. The majority (71.1%) of participants selected swimming as their preferred activity, followed by weight-lifting (42.1%), and basketball (39.5%). Concerning activity intensity, moderate intensity was commonly chosen (52.6%). The majority of participants selected close friends (65.8%) as the people with whom they most preferred to be active, followed by same-age peers (34.2%), and siblings (21.1%). See Table 2 for a detailed description of the activity preferences. No significant age or gender differences were found for the preference items.

Table 2

Descriptive Statistics and Group Comparisons on Physical Activity Attitudes and Behaviour

Variable	<i>n</i>	Overall Mean (<i>SD</i>)	Gender Mean (<i>SD</i>)	Age Mean (<i>SD</i>)
Attitudes	38	4.36 (0.70)	$F(1,37) = .49, p = .49, d = .23$	$F(1,37) = .47, p = .50, d = 0.24$
Physical Activity Behaviour	43	2.40 (0.83)	Males: 2.37 (0.92) Females: 2.44 (0.75) $F(1,42) = .07, p = .79, d = .08$	< 14 years: 2.70 (0.93) ≥ 14 years: 2.27 (0.77) $F(1,39) = 2.52, p = .12, d = 0.51$

Note. Group comparisons for attitudes are based on $N = 38$ ($n = 17$ female and $n = 11 < 14$ years of age). Cohen's d values illustrate the magnitude of the difference between groups and interpreted as small ($d > .20$), moderate ($d > .50$), and large ($d > .80$).

Attitudes Toward PA

Participants reported highly positive instrumental and affective attitudes toward PA, with an overall mean instrumental attitude score of 4.54 ($SD = 0.66$) and affective attitude mean score of 4.18 ($SD = 0.83$). No significant differences were found for gender or age ($ps > .05$, Table 3). However, small to moderate effects were found with boys reporting more positive affective attitudes than girls ($M = 4.27, SD = 0.66$) ($f[1,37] = 1.49, p = .23$, Cohen's $d = 0.40$), and participants ≥ 14 years reporting more positive instrumental attitudes than participants < 14 years ($f[1,37] = 1.54, p = .22$, Cohen's $d = 0.40$). See Table 3 for group means and standard deviations.

Table 3*Descriptive Statistics and Group Comparisons on Attitudes Towards Physical Activity*

Variable	Overall		Gender			Age				
			Males (<i>n</i> = 21)	Females (<i>n</i> = 17)		< 14 years (<i>n</i> = 11)	≥ 14 years (<i>n</i> = 27)			
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>p</i>	Cohen's <i>d</i>	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>p</i>	Cohen's <i>d</i>	
Affective Attitudes	4.18(0.83)	4.33 (0.77)	4.53 (0.73)	0.22	0.40	4.15 (0.90)	4.20 (0.82)	0.88	0.06	
Instrumental Attitudes	4.54 (0.66)	4.00 (0.89)	4.55 (0.56)	0.90	0.03	4.33 (0.77)	4.62 (0.60)	0.23	0.42	

Note. Affective attitudes consist of items relating to x, y, and, z. Instrumental attitudes consists of items related to x, y, and z. Cohen's *d* values illustrate the magnitude of the difference between groups and interpreted as small ($d > .20$), moderate ($d > .50$), and large ($d > .80$).

Discussion

This study provides meaningful information for professionals involved in planning PA and recreation programs (e.g., therapeutic recreation [TR] specialists) to develop opportunities according to the identified preferences and attitudes of CYPD. With nearly half of the participants not identifying as white (49%) or reporting a diagnosis other than cerebral palsy (46.5%), which has been well-represented in the literature, these findings provide insight into ensuring that the increasingly diverse needs of CYPD are met (Bloemen et al., 2017; Hodge, Kozub, Robinson, & Hersman, 2007). The degree to which CYPD participate in their preferred activities has received some attention within the literature (e.g., Bult et al., 2014; Nyquist et al., 2016; Shields et al., 2015). Our findings extend this relatively small body of literature by identifying specific aspects of PA that CYPD prefer—to be physically active after school, in a gymnasium-type setting, at a moderate intensity, and with close friends. This information will be useful for program planners to ensure PA programs are designed and delivered to meet the needs and interests of CYPD.

Incorporating TR within a community development perspective is useful for discussing community-based PA participation of CYPD (King et al., 2012). In terms of capacity-building, linking TR directly with communities (outside of the more traditional rehabilitation setting) has the potential to increase the availability of inclusive services and quality programs for CYPD (King et al., 2012). The impact of using the identified preferences and attitudes of CYPD will support and develop the decision-making ability of CYPD thereby enhancing empowerment and encouraging self-determined behaviours (King et al., 2012). Developing self-determined behaviours in CYPD may positively impact the relationship between CYPD and therapeutic recreation specialists and improve the quality of PA experiences for CYPD and their families.

These findings may be meaningful to ensure that community-based PA opportunities are available for CYPD to select. Participants in this study overwhelmingly identified swimming as a preferred activity; however, it is unclear why this activity was the most popular choice. It is possible, given the wide availability of adapted swimming

programs in the study area, that this is a familiar activity choice for CYPD. Ideally, CYPD will have access to, and awareness of, a wide variety of PA choices within their community. Examining the preferences of CYPD is one strategy to support community organizations to provide choice and variety in PA offerings.

With respect to attitudes toward PA, it was encouraging to see both positive instrumental (beliefs about the behaviour) and affective (feelings about the behaviour) attitudes toward PA reported among this sample of CYPD. It was interesting to see greater instrumental attitudes toward PA compared to affective attitudes, which can be used to inform planning strategies that focus on outcomes and behaviours (e.g., health benefits of PA). Considering the critical role that attitudes are shown to play within the TPB, the positive attitudes toward PA that were reported among CYPD, particularly the older youth group, is encouraging and may provide an important foundation for motivating and engaging CYPD in PA programming (Connor, Rhodes, Morris, McEachern, & Lawton, 2011). Professionals, such as those working in the field of TR, can support CYPD to build their capacity for decision making by discussing their feelings toward certain physical activities, such as those identified in this study, and reasons for why they may feel this way. To accomplish this, strategies may include weighing the pros and cons of engaging in physical activity or identifying life skills goals and then seeking out available opportunities (King, Curran, & McPherson, 2012).

Bearing in mind the preferences identified by the participants in this study (e.g., PA that is offered in gymnasium-type settings with peers), CYPD expressed a desire to participate in community-based inclusive programs. To support and encourage decision-making capacity, CYPD need to have legitimate and meaningful choices (Morphy & Goodwin, 2012). For example, building on the findings presented in this study, a weekly after-school program that offers inclusive PA programming, including a wide range of activity choices to provide both new and familiar experiences, may be a desirable choice.

The preference to take part in PA alongside peers is a finding that has been previously recognized (Nyquist, Moster, & Jahnsen, 2016). DeFazio and Porter (2016) lend support to the notion that inclusive PA experiences will provide CYPD with opportunities to establish peer relationships. Supportive instructors can foster friendship development by creating a climate that supports acceptance and belongingness. Findings from this study shed new light on the desire of CYPD to participate in community-based PA settings, alongside their close friends. This finding is of particular importance as CYPD tend to report having only one or no close friends (Snowden, 2012). Participating in PA alongside peers may provide CYPD with enhanced opportunities to establish and foster friendships. In turn, through these relationships, CYPD may be motivated to try new activities and stay physically active (Walla & Leipert, 2012).

Implications

This study offers important findings for TR professionals to consider as they design and deliver programming and identify programs within the community to recommend to their young clients. TR professionals have an opportunity to listen to the needs of children and youth and may find the results of this study to be useful for initiating discussions situated around PA. For example, given the more positive instrumental attitudes of older participants (over 14 years), this could be used to develop discussion

questions (e.g., focusing on knowledge of the health benefits of PA). Professionals may also wish to use the findings of this study to guide further stakeholder engagement sessions that focus on capacity and ability of CYPD rather than barriers to generate new family-focused opportunities. It is critical that TR professionals pay attention to these preferences to help communities build capacity and increase the availability of services by offering programming which is meaningful, empowering, and inclusive for CYPD (King et al., 2012). The desire of CYPD to be active alongside their peers may present challenges in community-based settings, depending on accessibility. However, listening to the lived experiences of disability may encourage communities to improve accessibility and access if they are to meet the needs of their members and encourage improved health outcomes. The implications of these findings may extend to TR programming that occurs beyond community-based settings including education, rehabilitation, and sport-specific contexts. We hope that professionals, including those working in the field of TR operate from the presumption that CYPD should be involved in TR planning and be informed throughout the decision-making process (Alderson, 2017).

Strengths and Limitations

Several strengths and limitations were identified in this study. The sample of participants was recruited from within a predominantly urban and suburban geographical area. Thus, the PA experiences of CYPD in rural settings were not reported and the findings cannot be generalized beyond the urban and suburban population of this study. However, the participants represented a diverse sample in terms of ethnicity and disability type, which along with the sample size, is a strength of the study. Secondly, the focus of this study was on self-reported PA behaviour of CYPD. There is potential for measurement error due to issues of recall in children and youth. Children and youth are likely to only report on easily recalled activities, which means some activity (e.g., short and sporadic bursts) may not be included (Biddle, Gorely, Perason, & Gull, 2011). Additional threats to validity include participants being more likely to provide responses according to social desirability (Moore, Tapper, Moore, & Murphy, 2008). The PA behaviours reported may not reflect the experiences of children and youth with other types of disabilities (e.g., a youth with autism who accesses PA opportunities along with their support worker). Participants were recruited from recreation and/or therapeutic settings which suggests that they were likely more active than CYPD who do not attend these types of settings. Their preferences might not reflect those of inactive children who would like to be active or at least might have opinions about PA preferences. Finally, the sample included more youth-aged participants (e.g., aged 14 years and older), thereby making it more difficult to make comparisons across ages. We recommend recruiting participants with more even distribution across the age bands.

Future Research

Further research is warranted to understand how best to integrate the preferences identified in this study into the design and delivery of PA programming for CYPD. This might include looking at different ways to measure preferences and attitudes of CYPD to reduce the possibility of bias in the findings. By using a community-based research approach, researchers could connect with TR and community-based professionals to

design, deliver, and evaluate PA interventions that use the identified preferences of CYPD. Including a youth representative in the planning process would be important to ensure their perspective continues to be integrated and to examine whether this collaborative approach leads to the availability of more inclusive services. Including the whole family would extend the findings of this study to gather a broader perspective on the factors that influence the PA behaviour for CYPD and would be consistent with the shift toward family-centred service delivery (King et al., 2012).

Further research is also warranted on examining knowledge translation strategies to ensure families of CYPD are aware of the PA opportunities that are available in their communities and that community organizations are aware of the preferences of CYPD to participate. For example, targeting affective attitudes within the messaging and knowledge translation strategies would be worth exploring. Given the preference of CYPD to be active alongside their peers, additional research is needed to understand the influence of peer relationships on the PA participation of CYPD.

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