

USING A THINK ALOUD METHODOLOGY TO UNDERSTAND PHYSICAL ACTIVITY  
INTERNET SEARCH EXPERIENCES AND PREFERENCES OF PARENTS OF  
CHILDREN/YOUTH WITH DISABILITIES

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## **Abstract**

This research examined the physical activity (PA) internet search experiences and preferences of parents of children/youth with disability (CYWD). A sample of parents of CYWD (n=10) participated in a prompted think aloud process (i.e., verbalize thoughts) while searching for PA information online. Researchers observed the parents and gathered information regarding their experience and preferences. Using an inductive thematic analysis of the parents' think aloud responses, the following emerged as key themes regarding online PA information needs: "Know exactly what programs they offer", "Keep it very very simple", and "More work for parents to find something". Parents used an online evaluation criterion, including information parents considered important, to determine the suitability of the program for their CYWD. An improved understanding of parents' experiences and preferences while searching for PA information can inform how PA or disability organizations structure their websites to create positive search experiences.

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## Introduction

Children who engage in physical activity (PA) can attenuate the risk for cardiovascular disease, diabetes, and certain cancers (CDC, 2015; Siebert, Hamm, & Yun, 2017). Children who lead an active lifestyle experience not only physical health benefits, but also key psychosocial benefits to foster positive development such as meaningful friendships (Martin & Smith, 2002), enjoyment (Martin, 2006), empowerment (Martin, 1999) and reducing the risk of depression (DePaoli & Sweeny, 2000). Participation in PA is also positively linked with confidence and healthy biopsychosocial development (Turnnidge, Vierimaa, & Côté, 2012). These benefits and behaviours developed in childhood may carry over into adulthood, sustaining positive physical and psychological health (Siebert et al., 2017).

Unfortunately, only one third of Canadian children and youth are meeting the PA recommendations to achieve physical and psychosocial health benefits (Statistics Canada, 2017). Children and youth with disabilities (CYWD) engage in less PA compared to their able-bodied or typically developing peers (Rimmer & Rowland, 2008; Steele, Kalnis, Jutai, Stevens, Bortolussi, & Biggar, 1996), which is likely the result of reduced access to and support for PA programs. Indeed, CYWD face many challenges in meeting the daily PA recommendations. These challenges include but are not limited to, lack of inclusive PA information and resources (Bassett-Gunter, Ruscitti, Latimer-Cheung & Fraser-Thomas, 2017), physical and mobility impairments, lack of accessible or appropriate equipment, inability to access the environment, bullying from other children (Lauruschkus, Nordmark, & Hallstrom, 2015; Martin-Ginis, Ma, Latimer-Cheung, & Rimmer, 2016; Mihaylov, Jarvis, Colver, & Beresford, 2004; Taub & Greer, 2000) and lack of knowledgeable adapted PA specialists (Rimmer & Rowland, 2008). These factors can act as significant barriers for families of CYWD to participate in PA and seek out PA

information (Bassett-Gunter et al., 2017). Accordingly, CYWD require significant support in overcoming barriers to participate in PA (Siebert et al., 2017). Parents of CYWD have the potential to provide social support to facilitate PA participation.

Indeed, one important determinant of PA participation among all children including CYWD is parent support (Antle, Mills, Steele, Kalins, & Rossen, 2008; Gustafson & Rhodes, 2006; Kowalchuk & Crompton, 2009; Siebert et al., 2017; Yao & Rhodes, 2013). One way in which parents of CYWD can provide support is through PA information seeking. Parents often access multiple sources of information to support their CYWD (Alsem, Ausems, Verhoef, Jongmans, Meily-Visser, & Ketelaar, 2017). The Internet is a familiar and popular tool parents use to seek health related information, specifically PA information (Aslem et al., 2017; Bassett-Gunter et al., 2017; Tristani, Tanna, & Bassett-Gunter, 2017). The Internet is seen as a tool to complement formal healthcare information and to empower parents to make decisions benefiting their CYWD (Aslem et al., 2017). Therefore, given the important role parents play in supporting PA participation, and the role of the Internet in providing parents with PA information, there is value in understanding parents' experiences and preferences in online PA information seeking.

## **Literature Review**

### **The Physical Activity Levels of Children and Youth with Disabilities**

CYWD are at higher risks of not reaching the recommended health-enhancing levels of PA, with studies highlighting the engagement level of PA vary depending on the type of disability (Lobenius-Palmer, Sjoqvist, Hurtig-Wennlof & Lundqvist, 2018). In a recent study (Arbour-Nicitopoulos, Bassett-Gunter, Leo, Sharma, Olds, Latimer-Cheung, & Martin-Ginis, 2018), movement behaviours, including PA, were examined in Canadian youth with physical disabilities. Over the span of 24 hours, the participants in the study spent a very small percentage

of time engaging in PA. However, children and youth with physical disabilities who are physically active, typically engaged in PA outside of school hours, and with their families (Arbour-Nicitopoulos et al., 2018; ParticipACTION, 2018; Modell, Rider & Menchetti, 1997).

### **The Role of Parents in Supporting Physical Activity Among Children and Youth With Disabilities**

Parents have a strong direct influence over the health related behaviours of their CYWD, especially with regard to PA levels (American Academy of Pediatrics, 2003; Beets, Cardinal, & Alderman, 2010). Parents' attitudes and expectations about PA have an impact on their children's PA levels (Beets et al., 2010; Loprinzi et al., 2013; Pitchford, Siebert et al., 2017; Trost, Sallis, Pate, Freedson, Taylor, & Dowda, 2003). Parents can support their children's confidence and enjoyment in PA through being actively involved in their children's PA and through influencing their children's attitudes toward PA (Brustad, 1993; Power & Woolger, 1994; Siebert et al., 2017). Additionally, parents play a critical role for their CYWD to overcome unique barriers to PA through the provision of transportation, encouragement, and adaptations to promote autonomous PA participation (McManus, Michelsen, Parkinson, Colver, Beckung, Pez, & Caravale, 2006; Siebert et al., 2017). CYWD are often reliant on their parents to take advantage of opportunities for PA (Siebert et al., 2017). Most youth spend at least 18 years living in a home with their parents and as a result parents often take responsibility to facilitate their children's PA programming involvement (Beets et al., 2010; Goldscheider, Thornton, & Young-DeMarco, 1993). Commonly, CYWD often require parent support beyond 18 years (Mahy, Shields, Taylor, & Dodd, 2010). Parents of CYWD are involved in seeking PA opportunities by advocating for their CYWD and suggesting strategies in order to support the inclusion of their children in PA programs (Goodwin & Ebert, 2018). Given the challenges faced, such as lack of

available programs (King Petrenchik, Law, Hurley, 2009), coupled with parents' values towards types of PA (Heah, Case, McGuire & Law, 2006), parents are often required to support decision making and problem solving to facilitate PA for CYWD. Consequently, parents play a critical supportive role to plan and facilitate PA participation for CYWD.

Parents act as significant gatekeepers for their CYWD PA levels (Gustafson & Rhodes, 2006; Siebert et al., 2017). Parents know their children best (King, Teplicky, King, & Rosenbaum, 2004) and have the ability to facilitate or thwart PA participation (Shields, Synnot, & Barr, 2012). As such, parents of CYWD need access to PA resources and information to support their children in both formal (e.g., organized sports) and informal (e.g., neighbourhood games) PA opportunities (Bassett-Gunter et al., 2017; Siebert et al., 2017). Parents are the proximal and primary source for information for their CYWD (Hopper, Munoz, Gruber, & Nguyen, 2005; Hopper, Gruber, Munoz, & Herb, 1992) and support their CYWD through information seeking (Alsem et al., 2017; Bassett-Gunter et al., 2017; Khoo, Bolt, Babl, Jury, & Goldman, 2008; Tristani et al., 2017). With regard to PA information specifically, parents of CYWD can use information seeking for social support by relying on information from other parents, credible organizations, or searching online (Bassett-Gunter et al., 2017). To facilitate PA participation among CYWD, there is a need for targeted PA program awareness and promotion (Gorter, Galuppi, Gulko, Wright, & Godkin, 2016). Organizations that provide inclusive PA programming for CYWD should provide targeted information for parents such that it is accessible and meets their information preferences, which can subsequently serve parents in supporting PA among their CYWD. In order for PA organizations to provide parents with the necessary information to support PA participation among CYWD, it is essential to recognize and

consider parents' unique needs to ensure: (a) parents can access and uptake appropriate PA programming information, and (b) the information meets the parents' preferences.

### **Using the Internet as a Tool for Physical Activity Information Seeking for Parents of Children and Youth with Disabilities**

Having a CYWD can impact the family (Rentinck, Ketelaar, Jongmans, & Gorter, 2007) and parents often require additional information to support their children's daily activities such as PA (Alsem et al., 2017). Access to information has been reported as a strong determinant for parents in making decisions for their children (Koren, DeChillo, & Friesen, 1992). For many parents who are trying to support PA for their CYWD, a lack of PA information acts as a barrier (Bassett-Gunter et al., 2017; Gorter et al., 2016; Martin-Ginis et al., 2016).

The Internet is a popular way for parents to access information (Alsem et al., 2017; Eurosat, 2013; Dominguez & Sapina, 2015; Khoo et al., 2008; Plantin & Daneback, 2009). Indeed, it is important to recognize the role the Internet plays for parents to search for, make decisions on, and understand online information pertaining to their CYWD (Alsem et al., 2017). A content analysis of PA websites targeting parents of CYWD suggests online information is insufficient in meeting parents' informational needs to make decisions to support their CYWD (Tristani et al., 2017). Therefore, to help parents support PA participation among their CYWD, PA information should be made more accessible and relatable (Hummelinck & Pollock, 2006; Jackson, Cheater, & Reid, 2008; Raats, van den Brink, & de Wit, 2013) and meet the preferences of parents (Bassett-Gunter et al., 2017).

Previous studies have highlighted the need to understand the information preferences and search experiences of parents of CYWD in order to support their access to information and resources (Alsem et al., 2017; Bassett-Gunter et al., 2017). A recent study out of the Netherlands,

explored how parents of children with physical disabilities searched for and evaluated different types of information for their children. Through this work, it was established that parents had different information needs based on the type of information for which they were searching, which subsequently influenced the types of sources they accessed (Alsem et al., 2017).

Although health care professionals or peers were typical sources of health related information for parents, parents also relied heavily on the Internet to seek additional information. However, one of the biggest challenges parents faced with using the Internet as a source for information was finding reliable information that met their needs. Instead, parents often turned to other sources of information as a result of their lack of success in finding information online. Although this earlier research was valuable in providing insight regarding the use on the Internet among parents of CYWD, parents retrospectively shared their general information seeking experiences, consequently limiting the understanding of parents' experiences to search for specific information through one source of information seeking. The current study sought to understand parents' experiences and preferences with seeking PA information by having parents search for PA information for their CYWD on the Internet and share their experiences simultaneously.

### **Accessing Physical Activity Information That Meets the Needs and Preferences of Parents of Children and Youth with Disabilities**

There is a need for research to understand parents' preferences when seeking PA information, so that online PA information can be tailored to their needs. In a recent study, researchers engaged in knowledge exchange initiatives with community members to identify factors related to successful PA programming for CYWD (Gorter et al., 2016). The knowledge exchange approach allowed community members to share their perspectives on preferences for PA programs that reach families of CYWD, such that promotional strategies can meet the needs

of families of CYWD. Information that aligns with the needs and preferences of parents of CYWD may be valuable in influencing parents' perceptions of the information relevance and uptake of the information (Gorter et al., 2016). However, little is known about parents' experiences and preferences regarding the PA information they need to support their CYWD PA participation.

In acknowledging the important role that PA information plays in facilitating parent support for PA among CYWD, researchers conducted focus groups to understand parents' of CYWD general PA information needs (Bassett-Gunter et al., 2017). Parents of CYWD identified their preferences, challenges, and desired methods of receiving PA information. Parents reported that targeted PA information (e.g. program opportunities, safety, PA guidelines for CYWD) was preferred but lacking. There was also an identified need for PA information and messages that used inclusive imagery (e.g., pictures of CYWD engaging in PA) and information regarding strategies to support parents' self-regulation of support behaviours to facilitate PA among CYWD (e.g. strategies for parents to use in planning and scheduling; Bassett-Gunter et al., 2017). Although parents shared that their preferred source of information included the Internet, there is no known research to consider the online information seeking process and related experience among parents of CYWD. Therefore, to optimize parents' use of the Internet for PA information seeking, PA information needs to be tailored to meet the preferences of parents of CYWD so that they have positive information seeking experiences. The current study explored parents' PA information seeking experiences by having parents complete Internet searches to understand their online search preferences.

## **A Need to Understand the Internet Search Experiences and Preferences of Parents of Children and Youth with Disabilities Seeking Physical Activity Information**

Studies have suggested that navigating the Internet can be taxing and produce disorientation among users (Eveland & Dunwoody, 2000). The demanding process to navigate through websites highlights the challenges users may have to search for information, and the need for information to be presented in a manner that is accessible. Therefore, there is great value in understanding the preferences of the individuals seeking information such that websites and online information can be tailored (Jetha Faulkner, Gorczynski, Arbour-Nicitopoulos, & Martin-Ginis, 2013; Koch-Weser, Bradshaw, Gualtieri, & Gallagher, 2010). Previous research identified the following factors as preferred for online information seeking: high perceived credibility of websites, user-friendliness of websites and the availability of specified information (Diviani, van den Putte, Meppelink, & van Weert, 2016). Information seekers reported preferences for positive navigational experiences by integrating technical features to be able to interact with information online easily (Koch-Weser, St. Jean, Kenneth, Hoti, Hughes, & Emmerton, 2014). Websites that prioritized creating positive search experiences were most preferred by users seeking for specific information (Maher, Robichaud, & Swanepoel, 2018). Parents of CYWD may benefit from positive experiences that facilitate PA information seeking online. However, there is little available evidence to inform an understanding of the Internet search experiences or preferences of parents of CYWD. Having an improved understanding of the information seeking experiences and preferences of parents of CYWD would be valuable in providing information to organizations disseminating PA information online.

People rarely browse past the first few searches during an online information seeking experience (Eysenback, & Kohler, 2002). People also make quick judgments of the information

displayed based on the website layout (Sillence, Briggs, Harris, & Fishwick, 2007).

Consequently, PA information that does not target the needs of parents of CYWD can be dismissed and result in a lack of awareness of PA opportunities available for their CYWD, and heightened frustration to continue searching for PA information (Bassett-Gunter et al., 2017).

Alternatively, online information that is accessible and addresses the unique online search preferences of parents with CYWD may assist with the relevance and uptake of that information (Gorter et al., 2016). In understanding parents of CYWD preferences to access PA information online, information disseminators can match their preferences with specific methods to support their online search experiences (Letts, Martin-Gins, Faulkner, Colquhoun, Levac, & Gorczynski, 2011). Therefore, the objective of this study was to understand parents of CYWD PA Internet search experiences, by exploring the processes parents engage in when searching for PA information online.

### **Using the Think Aloud Method to Understand the Online Physical Activity Search Experiences and Preferences of Parents of Children and Youth Disabilities**

Van Someren and colleagues (1994) postulated that to best understand the process someone engages in when completing a task, a good approach is to ask that person by instructing them to share their processes aloud (think aloud). Think aloud means to verbalize thoughts during the performance of an activity to share experiences as they occur (Gerjets, Kammerer, & Werner, 2011; Hoppmann, 2009). Compared to other forms of obtaining information processing, such as experimental manipulations or self-reports, the think aloud methodology offers a direct and accurate observation (Eveland & Dunwoody, 2000; Macias, Lee, & Cunningham, 2017). The think aloud methodology allows researchers to observe participants' processes as they complete a task by expressing their thoughts aloud (Ericsson & Simon, 1993; Eveland & Dunwoody,

2000). Think aloud is a non-directive technique where influences from the researcher are limited to delivering instructions and probing participants when the think aloud has stopped (Eveland & Dunwoody, 2000). The think aloud method provides a clear and direct insight on how people approach and solve questions by verbalizing step by step processes and any concerns (Jaspers, Steen, van den Bos, & Greenen, 2004; Van Someren et al., 1994). Therefore, the think aloud method provides an ideal approach to understand parents' experiences and preferences when completing Internet searches for PA information for their CYWD.

Think aloud statements convey participants' experiences and stories through rich quotes (Aranyi, Schaik, & Barker, 2012; Perski, Blandford, Ubhi, West & Michie, 2017). A benefit of using think aloud to understand experiences is that it avoids requesting for interpretation, as the instruction to verbalize allows participants to focus on their cognitive processes with the task without any interruption (Van Someren, Barnard, & Sandberg, 1994). An advantage of using a think aloud method is that the immediacy of the articulations of the Internet search task will enable a depth of description of the experience (Van Someren et al., 1994). Therefore, avoiding the need for participants to remember how the experience felt but instead allowing participants to share their stories prospectively. Despite the proposed benefits of think aloud, the method has been criticized by scholars for the demands involved in verbalizing thoughts and accessing memory simultaneously, as it requires a high cognitive load (Lundgren-Laine & Salantera, 2010). Nevertheless, from an interpretivist perspective the immediacy of the thought articulations enables an in-depth description of the experience without relying on participants' memories (Lundgren-Laine & Salantera, 2010).

The think aloud method provides an alternative way to observe experiences through collecting and measuring participants' think aloud statements while simultaneously observing

participants' experiences as they perform the task (Lundgren-Laine & Salantera, 2010). Previous research has used think aloud methods to understand Internet search experiences and applied participants' responses to the design of online application interface and information (Aranyi et al., 2009; Gerjets et al., 2011; Hoppmann, 2009; Perski et al., 2017). Aranyi and colleagues (2012) used a think aloud methodology to explore how readers interacted with and experienced a specific news website. There were two groups of participants: regular website users and non-users. Participants were asked to navigate the website and verbalize their experiences. Their verbalizations and computer screens were recorded to be reviewed by researchers. Upon completion of the task, questionnaires were distributed to obtain an understanding of the users' experience of the website. The results from the study showed a significant difference between regular users and non-users experience of the website. Five categories related to the users' experience were identified (i.e., impression, content, layout, information architecture and diversion), which were used to inform future news website design. The goal was to inform desirable interaction outcomes such as intention for continued use and satisfaction of news website.

Another study completed by Perski and colleagues (2017) used a think aloud methodology in a health care setting to explore design features that influenced smoking cessation or alcohol reduction app use. Participants were given a task to search for apps of their choice, while simultaneously verbalizing their thoughts, impressions, and feelings. Researchers were present to provide think-aloud prompts when participants fell silent. Semi-structured interviews were conducted immediately following the completion of the task to elaborate and clarify think aloud statements. The results identified engagement features (i.e., motivation, autonomy and

personal relevance) that participants considered important in engaging users with smoking cessation and alcohol reduction apps.

The application of a think aloud methodology has not been employed in a PA context or in an exploration of online PA information search experiences. Hypermedia systems such as the Internet, allow individuals to access information in an efficient manner because of the freedom users have to navigate online for their searching goals, and organizations that use the Internet to promote information have, to present targeted information online (Eveland & Dunwoody, 2000). Thus, incorporating the Internet search preferences of parents of CYWD on websites that wish to reach families of CYWD, can inform the structure and efficiency of the access and uptake of online PA information. The knowledge acquired from the think aloud method can inform how PA information should be structured and made accessible online, and further the understanding of parents of CYWD online PA Internet search experiences.

### **Study Rationale and Purpose**

Seeking and providing PA information is an important form of parent support (Alsem et al., 2017; Khoo et al., 2008). As parents rely on the Internet to find PA information to support their CYWD (Bassett-Gunter et al., 2017), there is value in understanding parents' experiences and preferences in seeking online PA information. Although the term PA was used to provide a broad view of activities, in this study PA will be seen through the sports lens. The purpose of this research was to use the think aloud methodology to better understand the experiences and preferences of parents of CYWD when seeking PA information online.

### **Theoretical Paradigm**

An interpretivist paradigm was used to inform the research study. In this framework, it is acknowledged that both participants' experiences and researchers' interpretations are subjective,

and thus researchers must seek to understand the contexts of a phenomenon to meaningfully interpret the data collected (Crotty, 1998). Through the lens of interpretivism, this study examined the Internet search experiences of parents of CYWD and how these experiences contributed to understanding parents' preferences in accessing PA information online. The interpretivist perspective allowed for the exploration of themes and discovery of the multiple realities that exist with parents' experiences (Perski et al., 2007). The interpretivist paradigm acknowledged the researchers' active presence in the elicitation and interpretation of the data collected to derive meaning (Perski et al., 2007).

## **Methodology**

### **Ethics Approval, Confidentiality and Informed Consent**

This study was conducted in accordance to the regulations and policies set out under the York University Ethics Review Board. In partnership with the University of Alberta, this study is also approved under the University of Alberta Research Ethics Board. All participants were required to sign an Informed Consent Form (Appendix D & E). Each participant received a \$50 honorarium.

### **Participants**

The participants in the current study were parents of CYWD, which was operationally defined as legal guardians of at least one person under the age of 19 who has an identified disability (i.e., developmental, sensory cognitive, and physical; Statistics Canada, 2006). Purposive sampling (Petty et al., 2012) was used to recruit participants from a database of parents of CYWD who had participated in previous research and had asked to receive information about other research studies. Participants were recruited via email from the lead researcher (see Appendix G). For the purpose of this study, a sample size of 5-10 participants

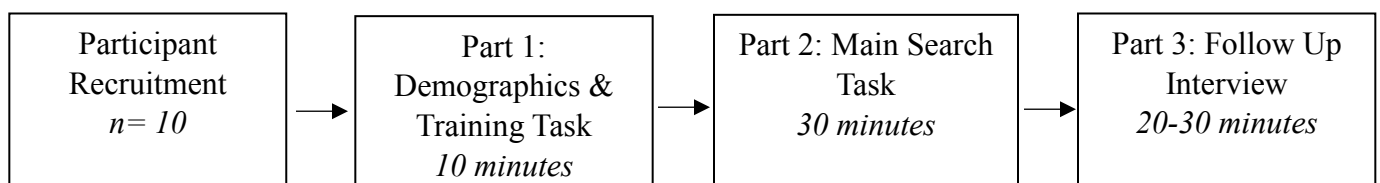
was considered adequate based on previous studies within the think aloud literature, and the interpretivist philosophy that prioritize depth over breadth (Lundgren-Laine & Salantera, 2010; Nielsen, 1994; Yardley, 2000).

The inclusion criteria for the recruitment involved the following: (a) participants who are parents, legal guardians, primary guardians, or adults in charge of PA activities of CYWD (under 19 years of age), (b) live in the Greater Toronto Area, (c) who use English as one of the primary languages of communication in their homes, and (d) who have experience searching online and looking for information online. For the purposes of this study it was important that participants have some familiarity with looking for information online, such that the time spent during the study is dedicated to searching for information rather than learning general search strategies (e.g., determining search engines to use). Participants' previous Internet experience did not have to be specific to PA information; rather, general experience searching on the Internet was sufficient. The exclusion criteria included any individual: (a) who was not a parent, or adult in charge of PA activities of CYWD, (b) who did not use English as a primary language of communication in their homes, (c) who lived outside of the GTA, and (d) who had no experience searching for information on the Internet.

## **Procedures**

This project used a think aloud method, which allowed the researcher to capture the experiences of parents of CYWD while interacting with PA information during Internet searches (Perski et al, 2017). Think aloud is defined as “a method that requires subjects to talk aloud while solving a problem or performing a task” (Jaspers et al., 2004, p. 783). The think aloud method aligns with the interpretivist paradigm by asking participants to express their realities and experiences in their own words (Crotty, 1998). Participants visited a research lab at York

University to complete the study. The data collection process occurred in three parts, aligning with previous research which had employed think aloud methodology (Aranyi et al., 2009; Gerjets et al., 2011; Hoppmann, 2009; Perski et al., 2017). **Part 1** was the **Demographics and Training Task** that involved the administration of a questionnaire and completion of a training think-aloud task (10 minutes). The demographics questionnaire can be found in Appendix A. **Part 2** was the **Main Search Task**, which involved the participants following instructions to complete the Internet search task and verbally sharing related experiences via the think aloud protocol (30 minutes). The researcher was present to provide think-aloud prompts (i.e., “What are you thinking? Can you tell me why you chose that?”), while the participants searched for PA information online. The think aloud prompts guide can be found in Appendix B. **Part 3** was the **Immediate Follow Up**, which involved a semi-structured interview allowing participants to elaborate on their experiences and preferences with the Internet search task (20-30 minutes) (i.e. “Can you tell me why you chose to do that?”). The immediate follow up interview questions can be found in Appendix C. A flow chart of the study design can be found in Figure 1. The following section includes a description of each phase of the study.



*Figure 1.* The flowchart of the study design

**Part 1.** The first part of the study included the collection of demographic information regarding participants’ age, gender, Aboriginal identity, ethnicity, socio-economic status, Internet searching skills, number of hours spent on the Internet weekly, child’s type of disability, PA program familiarity for CYWD, and child’s PA participation levels (Appendix A). Consistent

with previous studies (Grejets et al., 2011; Perski et al., 2017), a training think aloud task was administered. The purpose of the training think aloud task was to give participants an opportunity to familiarize themselves with the process of verbalizing thoughts (think aloud statements), in preparation for the main task. The researcher gave participants a simple think aloud task to complete, which included looking for two PA programs in Toronto for children or youth with and without disabilities, with which they were not already familiar. For this study, familiar searches included websites participants self-reported having already viewed during past experiences searching for and browsing online. Participants disclosed their rationale for selecting a website (as part of their think aloud statements), allowing the researcher to know if participants were familiar with the website, and remind participants to look for a website with which they were not already familiar. First participants looked for a mainstream program for all children or youth. Then participants looked for another PA program that was accessible or adapted for CYWD. The training task was completed upon selection of two websites for PA programs in Toronto or when the time limit (5 mins) expired. During the training task, the researcher used think aloud prompts to encourage participants to verbalize their experience.

**Part 2.** Participants were asked to search for four adapted or inclusive PA programs for their CYWD in the GTA, for which they were not already familiar with the website and/or program. In line with interpretivist paradigm, PA was not specifically defined; this allowed for more authentic interpretations of parents' search experiences to seek PA programs that they believed would work for their CYWD. The unfamiliar searches included websites the participants had no experience searching and browsing for online. Unfamiliar searches also included programs or organizations the participants were familiar with but unfamiliar with searching for and browsing on their websites.

During the main search task, the researcher was present and the sessions were recorded using an audio and screen capture software called Snagit, which was downloaded on the computer being used during the study. Snagit creates a video recording of the computer screen while an audio recording is created through a microphone (separately attached to the computer). Snagit allowed the researcher to record participants' think aloud statements and capture the computer screens in video format to be replayed. This allowed the lead researcher to review participants' statements and simultaneously cross-reference their computer screens to understand participants' online search experience during the data analysis phase. Consistent with the think aloud literature, the main search task was timed for 30 minutes. Participants were informed they had 30 minutes to complete the task, and asked to continue searching until the four tasks were completed or when the researcher indicated that the time had lapsed. Subsequently, the participants were asked throughout the session to verbalize their thoughts, feelings, and experiences about their Internet search process. Participants were unaware of how much time had elapsed, however when requested for the time, this information was given by the lead researcher. Participants were further encouraged to share their thoughts through prompts from the researcher. Examples of prompts included "Please think aloud during your Internet search", "Please keep constantly talking from beginning until the end of the task. Act as if you were alone, with no one listening, and just keep talking" (Hoppmann, 2009); "You're doing well. What are you thinking?" (Perski et al., 2017); "A reminder to think aloud" (Gerjets et al., 2011). Additional think aloud prompts included, "Can you tell me why you chose to do that? What did you think of that website? How did that go for you? Tell me about your experience. Tell me about what made the search easy, frustrating, and challenging. What was going on for you at that time? What was the search process like for you?" A list of think aloud prompts can be found in

Appendix B. During the main search task, the researcher also took notes to explore during the follow up. The search process was stopped under one of the following conditions: (a) 30 minutes had passed, (b) participants completed the search tasks (i.e., found four PA programs as per the instructions), or (c) participants reached fatigue and expressed an interest to quit searching.

**Part 3.** Immediately after the completion of the main search task, participants were invited to a semi-structured interview guided by the researcher. The immediate follow-up allowed participants to further elaborate on their search experience, adding to their meanings associated with the task. The follow up also served as an opportunity for the researcher to explore key moments noted during the task. During the interview, the lead researcher gave participants the opportunity to provide their interpretations of their Internet search experiences (Perski et al., 2017). Parents had access to their computer screens, and some parents referred to their search results to recall information or use as examples during their interviews. The lead researcher asked participants to pick key moments during the search process and asked exploratory questions to allow participants to elaborate on their experiences. Examples of exploratory questions included “Can you share with me what this experience of searching was like for you in general? Was there a website you found particularly useful or easy to navigate?” The full semi-structured interview guide can be found in Appendix C.

### **Data Analysis**

The think aloud sessions including the main search task and interviews, were audio recorded and transcribed verbatim, which were analyzed similarly. The recorded think aloud sessions were analyzed using an inductive thematic analysis, through an inductive coding of semantic data (Braun & Clarke, 2006). In this way, the research fostered a better understanding of the experiences and preferences of parents of CYWD searching online for PA information.

Inductive coding is a data driven approach, where the themes are identified from the data itself, as opposed to identifying themes from a theoretical lens (Patton, 1990). Semantic data involves interpretation, where themes are identified by organizing significant patterns from the surface meanings of the data, instead of organizing themes from assumptions about the underlying ideas of the data (Patton, 1990). A six phased thematic analysis process was employed which included: (a) familiarizing with the data, (b) generating initial codes, (c) searching for themes, (d) reviewing themes, (e) defining and naming themes, and (f) producing the report (Braun & Clarke, 2006). A description of the data analysis process is described in length in the following sections. The screen capture data was used to cross-reference participants' computer screens and transcribe important information to understand specific references made to the websites (e.g. components of the website, or deciphering between search results or websites), search time lengths, and search words used during the main search task. Other think aloud studies analyzing screen capture data transcribed non-verbal cues such as search terms, search time lengths, and number of websites visited (Macias et al., 2017).

First, the lead researcher engaged in inductive coding by becoming familiar with the data set and reading all transcripts twice to understand the meanings within the texts (Thomas, 2006). Next, the lead researcher carefully identified meaning units by looking for themes in text segments (Grubs & Piantanida, 2010; Thomas, 2006). Each meaning unit was then coded with a unique label that (a) incorporated words from the original text, (b) used previously identified codes or (c) used codes from the researcher's vocabulary in order to reflect participants' true meanings (Grubs & Piantanida, 2010; Thomas, 2006). The researcher then reviewed all codes based on similarity of meaning, and codes were grouped as clusters (Thomas, 2006). Consistent with qualitative coding approaches, the researcher engaged in inductive coding where one

meaning unit may be coded in multiple clusters, and many meaning units may not be assigned to a cluster that are irrelevant to the research question (Thomas, 2006). Clusters were named based on an understanding of the shared meanings of the codes with any given cluster (Thomas, 2006).

The lead researcher engaged in continuous comparisons among the codes to group similar clusters and identify themes (Grubs & Piantanida, 2010). The themes were then defined by carefully choosing appropriate labels that reflected the original text and meanings (Thomas, 2006). Codes identified within the themes were then compared to the definition to ensure appropriate fit (Grubs & Piantanida, 2010). Labels for themes were created by identifying unique exemplars of parents' quotes that captured the shared meanings of the clusters (Fitzgerald, 2005). After the initial organization of the codes and themes, two researchers engaged in a verification process by re-reading the analysis to maintain trustworthiness (Vaismoradi, Jones, Turunen, & Snelgrove, 2016). Subthemes were identified to demonstrate main ideas within the main themes (Vaismordai et al., 2016). Figure 2 shows the links between the main themes and sub themes. The final step in the thematic analysis process involved connecting each theme.

### **Rigour**

Quality criteria were used to guide the study. The lead researcher built a positive rapport with all participants before and throughout the study (Perski et al., 2017). The lead researcher also followed the think aloud prompts guide for every session, ensuring consistency and quality throughout all think aloud tasks with participants (Perski et al., 2017). All semi-structured interviews followed the interview guide, where all participants were asked the same main questions (Perski et al., 2017). All transcripts were transcribed verbatim by the lead researcher, and reviewed twice in total (Braun & Clarke, 2006). Additionally, a commitment to rigor was proven through purposive sampling, careful attention to the depth and interpretation of the data

analysis, employing multiple methods: (a) the think aloud method was used to understand participants' Internet search experiences as they completed the main search task, and (b) the follow up interviews were used to understand participants' interpretations of their Internet search experiences, including multiple data sources (10 participants) and peer debriefing (with co-authors; Yardley, 2000). A critical friend methodology was adopted to involve an additional person to provide alternative perspectives, advice from the relevant literature, and validate the data as accurate (Foulger, 2010). The critical friend supports reflective and reflexive styles to view the study from diverse viewpoints and either validate or oppose the data analysis to maintain rigour (Foulger, 2010)

### **Trustworthiness**

In qualitative research, the findings are assumed to be context specific with the aim of transferring the findings to others' experiences and settings (Petty, Thomson, & Stew, 2012). In order for transferability to occur, other criteria needed to be considered to uphold trustworthiness of the study and the respective findings (Petty et al., 2012). This study maintained trustworthiness through maintaining dependability and credibility. Although replicability is not the goal of qualitative research, an accurate depiction of the procedure can provide rich context (Petty et al., 2012). This was completed by accurately depicting the procedures with detail, and analyzing data in a manner to maintain the dependability of the findings. Qualitative research seeks to understand and explore complex factors being investigated, and as such can be taxing for the researcher to interpret (Petty et al., 2012). Therefore, additional strategies to strengthen credibility such as peer debriefing, and collecting data in the form of audio and visual representations (the screen captures were examined to cross reference participants' think aloud statements to their search browser and transcribe information such as search time length and

search words) were used in this study (Petty et al., 2012). Additionally, this study supported the transferability through the purposive sampling to obtain diverse perspectives and descriptive data of the phenomena to enhance applicability of the findings (Petty et al., 2012). The impact of transferability rests on those who might apply the findings to their own lives (Petty et al., 2012).

## **Results**

### **Descriptive Results**

The description of participants can be found in Table 1. A total sample of 10 participants completed the study. Participants were parents, guardians or adults responsible for the PA behaviours of CYWD. The participants included nine female participants and one male participant. While there was one male participant in the study, the pronouns she/her will be used in the results section to maintain writing consistency. The age range of the participants was from 24-50 years of age, with a mean age of 41 years. The participants were parents or adults responsible of children or youth who were 2 to 19 years of age, with a range of disabilities including developmental, cognitive, and acquired disability. While there was one adult responsible for a CYWD, the term parents will be used to describe all participants in the study. The sample was ethnically diverse (e.g. Chinese, Asian, Ukrainian, Brazilian, Portuguese, African) and one parent identified as an Aboriginal Person, which was a strength of the study with regard to transferability of the findings (Graneheim & Lundman, 2004) as most PA research is conducted among middle class Caucasians. On average, participants' income ranged between \$100 000 to \$149 999, however some were below \$99 999. In terms of employment status, most participants were employed, one participant was a student, and two identified as homemakers. Participants rated their Internet searching skills from average to very good. Participants reported

on the amount of time spent on the internet per week, ranging from 8-35 hours a week.

Participants rated their familiarity with PA programming from “good to very good”.

Table 1.

*Description of parents' demographic information and CYWD disability.*

| Parent's Gender | Age (years) | Child/ Youth's Disability  | Ethnic or Cultural Identity | Household income       | Work Status          | Internet Searching Skills | Hours on the Internet /Week | Physical Activity program familiarity for CYWD |
|-----------------|-------------|--|-----------------------------|------------------------|----------------------|---------------------------|-----------------------------|--|
| Female          | 37          | SCN1A mutation with a rare variant, laryngomalacia and a global developmental delay, mild dystonia and hypotonic | Caucasian Canadian          | \$150 000 or more      | Student              | Good                      | 15                          | Good   |
| Female          | 32          | Down syndrome  | African Canadian            | \$75 000 to \$99 999   | Full time employment | Very Good                 | 35                          | Very Good                                      |
| Female          | 50          | Acquired Brain Injury  | Chinese                     | \$100 000 to \$149 999 | Full time employment | Good                      | 14                          | Excellent                                      |
| Male            | 49          | Moderate Down Syndrome   | Caucasian Canadian          | \$100 000 to \$149 999 | Full time employment | Very Good                 | 30                          | Good   |
| Female          | 49          | Down syndrome  | Canadian                    | \$100 000 to \$149 999 | Part time employment | Very Good                 | 8                           | Good   |
| Female          | 37          | Autism and unspecified developmental delay   | Caucasian                   | \$75 000 to \$99 999   | Full time employment | Good                      | 14                          | Very Good                                      |
| Female          | 25          | Autism   | Brazilian-Canadian          | \$20 000 to \$34 999   | Part time employment | Above Average             | 28                          | Very Good                                      |
| Female          | 42          | Autism   | Asian                       | \$100 000 to \$149 999 | Homemaker            | Above Average             | 15                          | Very Good                                      |
| Female          | 48          | Autism Attention Deficit Hyperactivity Disorder  | Ukrainian Canadian          | \$100 000 to \$149 999 | Homemaker            | Average                   | 20                          | Good   |
| Female          | 41          | Asperger's syndrome  | Portuguese                  | \$100 000 to \$149 999 | Full time employment | Good                      | 20                          | Fair   |

The PA levels of CYWD over the previous seven days were parent-reported (see Table 2). Below is a description of the PA levels for CYWD as reported by their parents: (a) Total PA: On average parents reported their CYWD were active for 1 hour per day on approximately three days in the last week. Over the last seven days parents' CYWD spent two days participating in sports, fitness or recreational PA for at least 1 hour each day. (b) Moderate to Vigorous PA: Typically, CYWD spent on average about 6 hours engaging moderate to vigorous PA over the previous seven days. (c) Mild PA: Relatively, over the last seven days, parents reported their CYWD were active at least on two days doing mild intensity leisure time PA, one day doing moderate intensity leisure time PA, and less than one day doing heavy intensity leisure time PA. Roughly, over the last seven days participants spent 3.5 hours doing mild intensity leisure time PA, 2.25 hours doing moderate intensity LTPA, and 1.87 hours doing heavy intensity leisure time PA.

Table 2.

*CYWD PA levels over the last seven days*

| Parent | Days of PA for 1 hour | Days of sports, fitness or recreational PA | Hours of moderate to vigorous PA | Days of mild PA, | Hours of mild PA | Days of moderate PA | Hours of moderate PA | Days of heavy PA | Hours of heavy PA |
|--------|-----------------------|--|----------------------------------|------------------|------------------|---------------------|----------------------|------------------|-------------------|
| M09    | 1                     | 1  | 0                                | 0                | 0.5              | 0                   | 0                    | 0                | 0                 |
| M02B   | 2                     | 2  | 3                                | 2                | 2                | 1                   | 1                    | 0                | 0                 |
| M02A   | 7                     | 7  | 7                                | 2                | 2                | 5                   | 1.7                  | 1                | 1                 |
| F28B   | 3                     | 2  | 2                                | 2                | 1.5              | 3                   | 2                    | 1                | 0.5               |
| F28A   | 2                     | 3  | 13                               | 6                | 6                | 1                   | 2.1                  | 1                | 6                 |
| F16    | 7                     | 5  | 21                               | 7                | 14               | 7                   | 7                    | 0                | 0                 |
| F15B   | 2                     | 2  | 1                                | 2                | 2                | 1                   | 1                    | 1                | 0.5               |
| F15A   | 6                     | 5  | 6                                | 4                | 4                | 3                   | 3                    | 0                | 0                 |
| F14    | 4                     | 4  | 9.5                              | 0                | 0                | 1                   | 1                    | 3                | 8.5               |
| F12    | 4                     | 2  | 4                                | 3                | 3                | 2                   | 3                    | 1                | 1                 |

## **Summary of Themes**

Three themes emerged from parents' recorded think aloud sessions (Figure 3): 1) Know exactly what programs are offered, 2) Keep it very very simple, and 3) More work for parents to find something. Theme 1 describes the type of information parents prefer and seek on websites to make decisions about the uptake of that information. Theme 2 describes parents' preferences to organize and navigate through websites to find relevant information. Theme 3 describes the unique considerations parents of CYWD thought about and experienced when they looked for online PA information. Each of the themes was supported by subthemes that illustrate parents' think aloud statements and interview elaborations regarding their experiences and preferences while seeking online PA information. Quotations are identified as coming from parents during either the search task (ST) or the semi-structured interview (SI). Codes, (including letters and numbers representing the day the participant completed the study) have been used to replace participant names throughout.

| <b>INFORMATION PREFERENCES</b>                    |  |                                    |
|---|--|------------------------------------|
| <b>Main Theme</b>                                 | <b>Subtheme</b>  | <b>Cluster</b>                     |
| <b>1. Know Exactly What Programs They Offer</b>   | <b>1 a. Look for Adapted Information</b>                                 | i. Information on Adapted Websites |
|   |  | ii. Terminology                    |
|   |  | iii. Supports for CYWD             |
|   | <b>1 b. Search with Familiar Words</b>                                   | i. Search Words                    |
|   |  | ii. Keywords                       |
|   | <b>1 c. Look for Information Regarding Program Suitability</b>           | i. Selecting Programs              |
|   |  | ii. Important Program Information  |
|   | <b>1 d. Consider the Credibility of Online Information</b>               | i. Credibility of Website          |
| ii. Sources of Information                        |  |                                    |
| <b>SEARCH PREFERENCES</b>                         |  |                                    |
| <b>Main Theme</b>                                 | <b>Subtheme</b>  | <b>Cluster</b>                     |
| <b>2. Keep it Very Very Simple</b>                | <b>2 a. How Information is Presented on Websites</b>                     | i. Organizing information          |
|   |  | ii. Navigating for Information     |
|   | <b>2 b. Helpful Website Features to Find Information</b>                 | i. Website Layout                  |
|   |  | ii. Technical Features             |
| <b>SEARCH EXPERIENCES</b>                         |  |                                    |
| <b>Main Theme</b>                                 | <b>Subtheme</b>  | <b>Cluster</b>                     |
| <b>3. More Work for Parents to Find Something</b> | <b>3 a. Consider Different Perspectives While Searching</b>              | i. Consider Family's Perspectives  |
|   |  | ii. Consider Child's Perspectives  |
|   | <b>3 b. Additional Effort Needed While Searching</b>                     | i. Time Spent Searching            |
|   |  | ii. Follow up For More Information |
|   |  | iii. Searching for Specificity     |
|   | <b>3 c. Search Strategies and Challenges Experienced While Searching</b> | i. Search Process                  |
|   |  | ii. Registration Process           |
|   |  | iii. Search Results                |
|   |  | iv. Affective Responses            |

Figure 2. The organization of the themes that emerged from the thematic analysis, including the cluster categories, subthemes, and main themes. The themes were also organized with respect to the research question, as either a part of the information or search preferences, and search experience while seeking PA information on the Internet.

## **1. Know Exactly What Programs They Offer**

This theme includes a discussion of parents' comments regarding their preferred information they recognized as important to feel confident in making decisions regarding online PA program information.

*Even this website, which is the skiing one, it doesn't have a lot information that I find helpful. When I click on our programs it's got couple of paragraphs that don't really explain to me what they do. So I find that frustrating. I'd rather know exactly what programs they offer and for who, and what kind of skill level and all kinds of other things. They obviously are popular because they have 100 people on their wait list, so they might just not think it matters. But again I'd rather have a very clear cut - this is exactly what we offer and for who. F16 (SI)*

### **1 a. Look for Adapted Information**

*[...] some of the accommodations that I think may not be in that level of details but at least list out my options like for feeding, for physical – one to one support, making sure that when he's –someone is monitoring him, just some sort of details. I don't expect like you know you go into very very fine details, here is the number you call the LIN to get your community nurse to come over, not to that kind of details, but at least you give a description of what you can offer. M02A (SI)*

This subtheme includes adapted information that parents recognized as inclusive for their CYWD. Many parents shared their preferences for adapted information, such as consistent terminology when searching for PA information. For example, terminology such as *inclusion*, *support* and *adapted* was important in facilitating parents' search tasks.

**i. Information on Adapted Websites.** Parents wanted to find a clear indication on whether the organization or program provided support for CYWD. Parents' preferred to find this information on the home page of the website. Parents were specifically looking for information to indicate the acceptance of CYWD into the PA programs.

*So if you see, you'll open their home page, you don't see any description about the kids with disability, they don't even sometimes write the age group of the child, and that's more frustrating when they don't mention the age and they don't mention will they accept the child with a disability or not. F15A (SI)*

*You know they had their own section for adapted as it is, which as [a] parent who is fighting for inclusion that's really important to me. So that was upfront. I didn't have to go looking for it, it was right there. M09 (SI)*

One parent shared her thoughts on using the term inclusion to find programs that would accommodate for her CYWD.

*Inclusive is kind of, it's a trendy word right, like everybody is inclusive or pick something. Like we are always welcoming to everybody but that's not necessarily helpful for me, for me I need something specifically for persons with disabilities, or at least a company that is specifically interested in assisting and providing that support for persons with disabilities. F28A (ST)*

**ii. Terminology.** Parents shared their preference for PA organizations to clarify the use of common disability terminology on their websites. Parents acknowledged that many common terminologies are used interchangeably (e.g., accessible or inclusive, and cognitive or intellectual) which is challenging when searching for online information.

*Others talked about programs for physical and I don't know whether the word they used was cognitive or intellectual, whatever they specifically mentioned that it wasn't just for people with physical disabilities. And they said cognitive or intellectual so that helps me because, you know if I, when you search for adaptive recreation, a lot of it is going to be for people with physical disabilities. I can't put in cognitive or intellectual because I don't know which term individual sites are going to use. So adaptive covers it all generally, but if some places calls it a cognitive disability, if I search for intellectual then I'm not going to find them and vice versa. F28B (SI)*

**iii. Supports for CYWD.** Parents wanted to feel confident to leave their child in the program, and that the necessary accommodations could be made available to support their children's unique needs.

*[...] If I'm sending my son over for 4 hours for a day camp right, so I need to know whether they have accommodation to give him water, because he cannot drink— most kids don't drink water [if] they are on G-tube right. So are the people there able to do that, or do I have to contact my LIN to kind of get my, community nurse there to do water intake. M02A (SI)*

### **1 b. Search with Familiar Words**

*So gymnastics is the sport, toddler is his age group, Toronto is where we want to be, and special needs is the kind of class we want an adapted class for inclusion reasons. MAR 09 (ST)*

This subtheme includes words that parents are familiar with and look for while searching for PA programs and information online. The common search words parents used included

information on the type of PA, type of disability or accommodation, age, and location.

Additionally, the common keywords parents searched for on websites included information on inclusion, disability and age group.

**i. Search Words.** Parents put thought into the search words they would choose to find relevant PA information online. Search words are words included in the search bar of a search engine, to yield desired results. The search words parents commonly used included the type of PA, location and adapted/disability terminology. One parent chose words she was familiar with or had heard the words used by others.

*The reason is that I know that I am looking for soccer, I am looking for something for special needs because my son has autism, and my preference is to look in Toronto, as I stay in Toronto. F15A (ST)*

*[Be]cause that seems to be, those are the possible words that people seem to use. Now I've got a former colleague that does, he's a ski instructor in the US in Buffalo somewhere and their ski program is called adaptive skiing. I've seen the word around, so that's sort of a, that's what people usually seem to call it. F28B (ST)*

Parents in this study included search words based on the search task instructions. However, when the search results yielded undesirable options, parents changed their search words.

*I took out inclusive just to see what else it would pull up, instead of like, with special needs. M02B (ST)*

**ii. Keywords.** Parents looked for what they termed as “keywords” on websites while searching for desired PA information. Keywords included words or visuals that parents felt were important and gave them comfort while searching for information online. Parents would scan for

certain keywords among the list of search results or the website as a guide to determine websites to explore further. Websites or search results that did not include the keywords parents looked for resulted in dismissal of that search.

*I am unable to find the keyword here, special need or support, something like that gives me comfort and if I see visuals here, I do see some visuals where the kids are learning climbing but nothing in terms of seeing key words like adapted, inclusive you know like that. FEB15A (ST)*

*It's the first one the list and it's got every-all the key words are right there, adaptive skiing and private and that's, that's a good thing, I'm okay with that. F28A (ST)*

*If they have inclusive or all abilities in their summaries that shows up on google, [be]cause that's one of the first things I'm looking for, I'm not even probably going to click on it if it doesn't. F16 (SI)*

### **1 c. Look for Information Regarding Program Suitability**

*So once they mention the age group you know, they mention they cover the kids with disabilities, I do read the component of the program. What is their basic focus? Are they just going to, I mean you need to know the description of the program too. F15 (SI)*

This subtheme includes important information parents looked for from the website to determine if the program would be suitable for their CYWD. Parents chose search words and looked for keywords that aligned with their preferences in finding information that matched with

their CYWD needs. The value placed on finding a program match, was a key part of every parents' search experience.

**i. Selecting Programs.** Searches often yielded a plethora of hits (list of search results), which made it difficult for parents to decide which program(s) to explore. The two most common reasons parents selected programs to explore, were the location and the eligibility criteria (e.g. age, a match with CYWD needs/abilities).

*I do look for the location of the program. Location plays a big role. It's just, that [is] why I didn't see other websites because of the location, they were too far for me. So, I need something that is easily approachable through public transportation first. F15A (SI)*

*I am seeing a variety village in Toronto, there are programs for all ages, so just going to go in there and see. M02A (ST).*

*Going down here this is an inclusive program, and looks like some very interesting program that may fit my sons needs M02A (ST)*

**ii. Important Program Information.** Through the main search task, many parents referred to an “unofficial” evaluation criterion when searching for PA information. A list of the evaluation criteria is discussed below. One of the evaluation criterion included specific information about the program that was deemed valuable. This included, knowing the location, time, date and description of the program.

*You know location, times, dates, that sort of thing [...] and a brief description of what the program actually is. F28B (SI)*

Another important program information that was included was having the organization's direct contact information available, to follow up about the PA program.

*[...] Call this director or whatever that direct line, instead of me having to chase people down, I would like that information there. F28A (SI)*

Parents wanted organizations to mention the specific disability(ies) they can accommodate.

*My son has down syndrome, a couple of the websites we saw specifically mentioned down syndrome, I think good I want that, that's good. F28B (SI)*

Parents also shared their preference to know the specific objectives of the PA program, so they could consider if the program would work for their child.

*So all campers has special needs in this program, and what do they teach in this. It's just a day camp, or after school or weekend classes? But what is their main emphasis in the program? I need to understand that too. F15A (ST)*

Including visuals on websites gave parents more context and confidence on what the program may look like for their child.

*Get straight to the point, show me pictures of the facilities, show me pictures of the actual programs, cause I'm more so like a visual person, I believe in the you know the actual facility and the service, I want to be able to see that. I think that it is very visual, [which] is very important. M02A (SI)*

*[...] but once I see the images there, I got some confidence that they could help me you know or it could be a right program for my child. F15A (SI)*

Parents also shared that staff biographies were valuable to gain a sense of the staff members' experience working with CYWD.

*Again the more, the more information about the people that work there. It can't hurt to have some you know pictures, mini biographies. F12 (SI)*

*So I'm just reading the Sportball adapted, it says coaches of our adapted programs receive specialized training which is good. And I, just looking at the ratio, six participants to one coach and minimum of four participants to a maximum of 12 which is good so it's not a huge group. So that's, I'm making my judgment whether it would be a suitable program for him or not, and I think it would be based on that. And it says right here, if your child has additional needs or you're interested in joining look at the program and the schedule, so that's what I am going to do. F14 (ST)*

#### **1 d. Consider the Credibility of Online Information**

*Unless I have a referral, somebody some other parents actually refer me to that page, then I will spend time to really study the program, otherwise if I am just searching over google, no move on. M02A (SI)*

This subtheme explores how the credibility of the organization and recommendations from personal connections impacted parents' experiences searching for PA information. Parents thought deeply about the familiarity and credibility of the information on websites.

**i. Credibility of Websites.** Most parents explored searches based on the ranking of the search in comparison to the other hits in the results list.

*Again you tend to go with the like top 10. Otherwise you know, you never really get anything. I figure if they made top 10 then they got all of the leads and the outreach programs and the better waiting list or the credit thing. F12 (ST)*

The credibility of the organization was also important.

*Well I know Special Olympics has the support that he would need and they work with kids with disabilities and I know they have all kinds of sports. F14 (ST)*

*[...] because it's adapted and I have a lot of respect for the UofT organization or brand as a whole. F28A (ST)*

**ii. Sources of Information.** Some parents shared their thoughts about using other sources of information to complement their online searching. Common sources included stories from other parents and online reviews.

*If I was looking for something totally new, I would definitely, if I was really serious about considering the program I would look at their google reviews and any other reviews that they might have and I am in some parent support groups on Facebook so I might ask if people had experience with this, just cause you hear sometimes things aren't great. F16 (SI)*

## **2. Keep it Very Very Simple**

This theme includes parents' preferences regarding the presentation, organization and interaction with information on websites.

*So if you are talking about the designs, I think making it very very colourful sometimes hides the information, you need to keep it very very simple. Like if suppose, okay I will keep some simple layout, it will not overwhelm the parent of a child right. I need it to be very simple. Very simple and not very very colourful, because a lot of things make it so complicated for them, you know. I need it very simple. F15A (SI)*

## 2 a. How Information is Presented on Websites

*It would be, oh I don't know, in a dream world, there got to be like some kind of portal I'm thinking like a search engine portal like where you just you go to this one place and everything you want every website, narrow down by city, age, your child's disability, that sort of. It would have be like you know a website where you can have four or five main features and then from there you can do your search. F12 (SI)*

This subtheme includes parents' preferences on the way the information is organized, to find information quickly. Preferences regarding the organization of information, as well as their search and navigation preferences were identified.

**i. Organizing Information.** Most parents wanted to find information in one place.

*[...] you think now somebody is going to come up with an idea for at least one website like a portal you know where you find all your music you go to that one place. F12 (ST)*

*And information, being able to consolidate it in in a centralized area, in a central area.*

*So I don't have to kind of search all over. M02A (SI)*

**ii. Navigating for Information.** Parents preferred website layouts that prioritized presenting information regarding the organization's support for CYWD. Websites that did not present the organization's objective to support CYWD or made it challenging to find this information, resulted in parents terminating the search task or dismissing the website.

*This website [is] good, it tells me directly what I want about special needs program because I am not interested to look at other programs, community programs because I*

*will have to go in there and search for whether that particular program is good for special needs. M02A (ST)*

*It's nice to look at, and I'd probably investigate it further for one of my other daughters, but not for her, just the way that website is set up and specifically that there isn't a specific link dedicated to inclusion, forget it. Which is probably, I mean if they haven't included that then it's probably not something that they are interested in anyway. F28A (ST)*

Appendix F includes further information regarding parents' preferences for ideal presentation of online PA information.

## **2 b. Helpful Website Features to Find Information**

*If you just want to look something up and not go through every section. You know like layouts like these are really nice too. It's like they give you short menus and contact information of course, if you can just do that again through an online form like this you don't have to send out a different email from your email like you could just do it from here. F12 (SI)*

This subtheme includes the technical and interactive website features parents preferred, to find information efficiently.

**i. Website Layout.** Parents shared their preferences to have the information be organized clearly either in separate sections or under labeled tabs, such that parents could find relevant information with ease.

*[...] I think just psychologically you see like there is all this writing on this page and seems overwhelming, where like if it's like one small paragraph on a single page, again like the website might contain the exact same amount of information, but it's just now it's been divided so that like psychologically it might just feel like it's less information that you have to deal with. F15B (SI)*

*And then for this particular website it tells me there is a tab here for all abilities with special needs, and this will help me to search a lot faster. Save time, which is good.*

*M02A (ST)*

**ii. Technical Features.** Parents noted various interactive features that aided with the search experience. Some parents shared their preferences for filters to have more flexible options to narrow the search criteria to find relevant information.

*Participant: and that worked out well, so now we're getting up to 12-16 [years old]. 12-16 [years old], this is awful, so it's, this is my complaint I think it showed me it had 313 programs and you show me then two or three at a time and there is no check box to say give me more*

*Researcher: what are you thinking?*

*Participant: that often web pages will have a check box, or drop down to say how many results at a time would you like to fetch or display, this does not have that so. This is going to be super frustrating to go through the 313 [search results], four at a time. F28B (ST)*

*So what I found was helpful was being able to limit the region so I can see specifically programs that would work for me specifically in terms of location so I liked that. There was another one where we could choose age it didn't work because there weren't any programs for him but that would be, that's helpful so that I could see if there is a program specific for a 12 year olds. F14 (SI)*

A common important interactive feature identified was the use of live links, which made it easier to further explore the PA information presented.

*So okay these don't have live links so I'm going to have to look them up individually. I would have preferred the live links. F12 (ST)*

### **3. More Work for Parents to Find Something**

This theme describes additional considerations, strategies, and negative affect that are involved with parents of CYWD experiences in looking for PA information specific to their CYWD.

*That [searching for PA websites] is more work for us as parents to find something for the kids. So you kind of take it for granted when you have a typical child that you could just quickly find something. But with yours is more, with a special needs child there is more layers that you have to make sure that the program fits, and that the child is going to be supported and they're safe all that jazz. M02B (SI)*

Parents acknowledged the value of putting their CYWD in a PA program. Most parents had involved their CYWD in a PA program previously and knew the type of PA information for which they were searching. However, all parents expressed the challenge in searching for PA information online. They recognized the extra work that is involved in searching for PA

information specific to CYWD, which made the search experience challenging, frustrating and disappointing.

### **3 a. Consider Different Perspectives While Searching**

*In terms of how to pay for it, like the prices are right on it too, how long it lasts, the age limits to each section that specificity of information makes my life as a person, as a mom of three kids and one with a disability running a household and working, like you don't have a lot of time to sit and wait through or you know spend hours on the phone trying to find all this information. And it doesn't take long to actually put that kind of specificity of information into a website, that makes it really efficient and time efficient for me to get the information that I need and connect with you. F28A (SI)*

This subtheme includes parents' considerations regarding familial perspectives and their CYWD's perspectives in relation to searching for PA information online. In addition, parents acknowledged the challenges in supporting PA for CYWD that was distinct from supporting PA for typically developing children and youth. Parents took into consideration factors related to their CYWD, as well as their broader family, when searching for online PA information.

**i. Consider Family's Perspectives.** For many parents, the challenges of their personal schedules were important to consider.

*It feels like a work out, [be]cause I'm you know if you're like anybody, like any other parent you're strap[ped] for time I figure. Me personally I might have you know an hour here, I'm in between sending out emails and trying to get more information. You end up with a huge list of things that you have to email back again, and it's kind[of] frustrating getting back and forth information. F12 (SI)*

Some parents brought up the perspective of families with multiple children.

*And also what am I going to do with my other child. You know divorce rates of families with children with special needs are quite high and more times, I mean I can think about my son's school there are a lot of single parents and what do you with your other child during that time. So, do they provide childcare [for the other children] at the same time?*  
M09 (SI)

**ii. Consider Child's Perspectives.** Parents also considered their CYWD perspectives with the program, including whether the type of activity or skill development would match their child's abilities, or the level of support that is needed.

*[...] I'm opening a bunch of these, private lessons. My son would much prefer private lessons to group things, [he] responds much better to one on one, so there we go. F28B*  
(ST)

*I'm just thinking she wouldn't do well with baseball or anything like that, like an organized sport. She might like basketball so I can try that. So, I'm typing in, actually kids basketball program Richmond Hill. And again I'm just looking through the summaries with the websites to see, whether they have inclusive programs. F16 (ST)*

### **3 b. Additional Effort Needed While Searching**

*It's a journey for parents like us and it's very very overwhelming to find a program in the very first go. I spent hours and hours exploring it, so I will make a note on the notebook that this [is] a program I find, and now I have to call them. F15A (SI)*

This subtheme includes the additional effort parents felt was necessary to facilitate searching for online PA information specific to CYWD. Time spent searching during the search task was a strong subtheme, which highlights the unique efforts of parents of CYWD online search experiences.

**i. Time Spent Searching.** A common theme from the parents was the amount of time seeking for information involved, and their limited availability to spend time searching.

*I want to stop now because there is no end to this, I know it will take hours and hours it will not be over. F15A (ST)*

*Yeah it's a real time commitment. I don't want to look through 20 pages of things he can do when he's 2 [years old] right now. I'm trying to make dinner, I'm trying to get my kids to bed, there's like a lot to do and that is too frustrating and that just makes me want to leave. M09 (SI)*

Many parents shared that the time they had for the search task was not enough and having more time would allow them to decide which programs they could consider.

*I think if I had a couple of hours, I would probably have maybe spent some more time or I probably would have just called Autism Ontario and said can you help me navigate this.*

*F15A (SI)*

*So I, you saw me I was looking for some programs for my child but I was unable to get in 30 minutes. So I will spend maybe one week, and approach them again and again and find it. And I may not find it right. So it's a lot of work. F15A (SI)*

**ii. Follow up for More Information.** In all search tasks, parents identified the need to follow up with the organization for more information. The follow up information included important program information that was missing from the websites and that parents needed to decide if their child could participate.

*I don't see anything specific to all abilities so, I'm looking for a frequently asked question [page] now. It's a pretty basic website. I'm clicking on the links page, doesn't really have anything. I don't see anything at the bottom that speaks to anything that I'm looking for. Their website does say that they provide skating lessons to all ages and abilities, so again I think I would just have to call them because they don't have the information on their website that I would be looking for. F16 (ST)*

**iii. Searching for Specificity.** Parents wanted their experience searching online to include all the important information they needed, and for information to be organized clearly to make decisions directly from the website. The unique considerations of being a parent of CYWD contributed to their information and search preferences to find PA information online; consequently, impacting their search experiences.

*I'd rather be able to find all the information that I need on the website, I don't really want to have to call people. If I haven't, I want the ability to make the decision from the website, before I call someone. Because then if I can't find all the information on the site, so I'm calling for more information, and then finding out it's not really going to work for us then I just wasted not only search time but phone time, and phone time is much more valuable. F16 (SI)*

### **3 c. Search Strategies and Challenges Experienced While Searching**

*Honestly, it's like par for the course. It's like everything to do with disabilities is difficult. No matter what I'm looking for it's hard. I'm looking for a social skills program you know it's a struggle. I'm looking for any kind of support, camp it's always a struggle. It's always more work. And so it's kind[off] like expected right. F14 (SI)*

This subtheme reflects the processes and emotions associated with parents' experiences in searching for PA information. Through the main search task, parents also shared their search strategies.

**i. Search Process.** Strategies parents used while searching for information included, opening searches in tabs, frequently going back to their search list, and reviewing the summaries or websites for keywords.

*So, I'm going to do the way that I search which is opening new tabs. F14 (ST)*

*It doesn't look like it's actually [a] place you can take the kids to, it looks more like it's a grant. So parents can apply for programs. So I'll go back to my list. M02B (ST)*

*I would do the same kind of thing, so I'm searching for very specific phrases on websites and I would just typically kind of typically browse through a website. F28A (SI)*

**ii. Registration Process.** A unique part of parents' search experiences was the time they spent unpacking the registration process. Parents shared that the registration process often provided additional clarity regarding program information such as availability and program description.

*So let's go see the March break ones, or actually I would look at June ones so let's look, let's see how to register, how to register or can we just go on register. I'd like to think I*

*can register without reading how to register first. Set up an online account, you can register online we'll open that tab, then you click on account. Oh you, same as last one, you've got to build an account and then you can see the days, level times and cost [...]. This looks reasonable so I would go through that process, and find him a, register, do the private lessons and, and then pick the times and costs, this doesn't sound like it would be exorbitant so I would go through the process for this one. F28B (ST)*

*It has a registration tab here, and sometimes the registration tab tells me more about the program. M02A (ST)*

**iii. Search Results.** All parents shared that the search results for PA information were unsatisfactory. The results often yielded information that was not applicable or did not meet their needs. A list including examples of parents' think aloud statements during their search task can be found in Appendix H.

*Okay so I'll go to adapted swim lessons, 5 to 12 [years old], so none of these meet his age criteria even though I put in toddler as the search. M09 (ST)*

*You know I think, at the same time it's a bit of a disappointment because I know that there are so much fewer programs that are specialized for kids you know with disabilities and with autism specifically. F14 (SI)*

**iv. Affective Responses.** Some of the parents' immediate thoughts from the search experience are shared below. Experiences associated with negative affect while searching, such as disappointment and frustration were common from parents' main search task. A list of all

parents' semi-structured interview responses to their experience searching can be found in Appendix G.

*So I feel, yeah I feel just a little bit disappointed that I have to search that much more for my son as opposed to a typical kid. F14 (SI)*

*I was really frustrated when I was searching for the programs for my child. It's a lot of time and I haven't seen, I should say maybe, I haven't seen on any website that shows that it's an inclusive program, it welcomes kids with disabilities, it's an adapted program. And most of the programs they did not even write the age group of the child. So it's very very overwhelming for a parent to look for a program like this. F15A (SI)*

## **Discussion**

Parents are recognized as key gatekeepers of PA for children (Gustafson & Rhodes, 2006) including CYWD (Shields, Synnot, & Bar, 2012). Parent support for PA is critical in facilitating PA participation for CYWD (Kowalchuk & Crompton, 2009; Siebert et al., 2016). Information seeking is one way parents can support their CYWD PA participation (Alsem et al., 2017; Bassett-Gunter et al., 2017). However, there is little research available regarding parents' experiences and preferences in searching for PA information online. In the current study, parents were instructed to look for PA information suitable for their CYWD to inform an improved understanding of the online search experiences and preferences of parents of CYWD. An improved understanding of parents' experiences and preferences could inform strategies to support parents of CYWD in seeking online PA information.

## **Parents' Online Physical Activity Information Preferences: Know exactly what programs they offer**

A listing of online evaluation criteria were identified as important to parents during their online PA information searches. While some of the evaluation criterion were consistent with research regarding health information seeking (Alsem et al., 2017; Anker, Reinhart, & Feeley, 2013; Macias et al., 2017) and PA information needs for parents of CYWD (Bassett-Gunter et al., 2017; Gorter et al., 2016), the current study provides more depth on the information seeking experiences and preferences of parents of CYWD.

**Adapted Information.** Parents interpreted adapted information as that which was recognized as inclusive of their CYWD. Parents acknowledged an absence of adapted information, as well as a lack of clarity for any adapted information that was available. Together, the absence and lack of clarity around adapted information led to confusion in understanding if their CYWD would be supported within any given PA program. Parents looked for an indication about the organization's objective to support CYWD, and the lack of clear adapted information served as a deterrent for some parents in further considering the information. For example, websites that did not clearly identify adapted terminology (e.g. inclusion, cognitive disabilities) resulted in parents perceiving that the website (or related information) was not appropriate for their CYWD. Parents' concerns regarding adapted terminology have been previously noted in a study exploring the PA information needs of parents of CYWD (Bassett-Gunter, et al., 2017). The clarification and inclusion of adapted information on PA websites is important because parents want to find the right information to feel confident that a PA program would be suitable for their child. In many cases, lack of clarity or the absence of information regarding adapted programs acted as a barrier to finding the necessary information. Therefore, organizations that

wish to reach families of CYWD should consider including appropriate adapted information that matches their intended audience, so parents can relate to the online PA information.

**Search words.** Parents inputted specific words into the search bar to find desired PA information. The words used in the search bar served as a prompt to generate a list of related websites that parents could navigate to find PA information. The search words chosen by parents were a reflection of the information parents felt was necessary and relevant to find their desired PA program information (Park & Go, 2016). Frequently, parents were experimenting with different combinations of search words to yield sufficient matches with their PA information preferences. However, there is no research to date that explores the search words or combination of search words parents of CYWD find relevant and use to search for PA information. Having an improved understanding of the common search words parents of CYWD use to search for PA information would help organizations that wish to reach families of CYWD in tailoring their websites so parents can find the information with greater ease.

The combination of search words parents used in the current study was typically formulaic and included a term regarding (a) the type of PA, (b) the type of disability or an inclusion term such as adapted, (c) the target location, and (d) the age of their CYWD. The formulaic combination of search words parents of CYWD used provides greater insight on how parents of CYWD search for PA information online and select websites to further explore. Interestingly, all parents thought about and included *sport* activities in their searches rather than other non-sport forms of PA. Parents typically select PA options for their CYWD based on their values towards specific activities (Heah et al., 2006). Parents from this study either preferred sport or perceived sport as a type of PA program that is of more value or more accessible than other types of PA for their CYWD. In a recent study that examined the PA preferences of

children and youth with physical disabilities, non-sport specific activities were identified as most preferred by CYWD (Leo, Faulkner, Volfson, Bassett-Gunter, & Arbour-Nicitopoulos, 2018), which is interesting that the children's preferences do not necessarily align with parents' search behaviours. It would appear that parents associated PA with sport activities or placed greater value toward finding information regarding sport activities. The availability of sport activities in communities in which the families with CYWD reside, may explain parents' preferences to search for sport activities online because of their perceived accessibility. CYWD familiarity with particular activities they have experienced (e.g. at school, after school programs or in their neighbourhoods) and their understanding of types of PA may explain their preferences towards non-sport specific activities. Therefore, the varied accessibility and familiarity of types of PA for parents and CYWD themselves may explain some of the differences between their PA preferences (Leo et al., 2108). Future research is warranted to further understand parents' desire to search specifically for sport information.

**Keywords.** When browsing search results and websites, parents looked for keywords or indicators as “clues” in finding their desired information. These words or indicators were important to parents and gave them comfort while searching for information online. The absence of these keywords or indicators resulted in the dismissal of the website or search result. For example, parents would scan for keywords on the home page of a website that explicitly addressed what they were looking for (e.g. types of disabilities served by the organization), and if this information was unavailable, parents would terminate the search and return to their search results list to view a different website. A greater awareness of the keywords parents of CYWD look for by organizations that promote PA can lead to tailoring online information to meet the needs of parents and improve their online search experiences.

**Suitability.** A unique finding from this study was parents' use of an unofficial evaluation criterion to determine program suitability. Previous research has suggested that users apply an intrinsic evaluation criterion when reviewing online information, using the following (Diviani et al., 2016): information on the credibility of the website, interactions of the website, and the types of information available. In the current study, parents' evaluation criterion consisted of program eligibility (e.g. age group, a match with CYWD needs/abilities), program location, program time, program dates, program description, organization's contact information, list of disabilities the organization accommodates and/or adapted terminology, organization's contact information, program objectives, relatable images of CYWD and the facility, staff biographies, information credibility, and familiar words (e.g. search words and keywords). Future research should include developing an online evaluation criterion regarding PA information for CYWD, which could inform the structuring of online PA information such that parents of CYWD could have more effective and positive navigating and search experiences.

**Credibility.** Parents in the current study relied on an assessment of information credibility when selecting PA websites and programs to further explore. Parents preferred to explore familiar organizations they "trusted" or from which they had previously sought information. This notion is consistent with previous research regarding parents' general preferences to search for PA information (Basset-Gunter et al., 2017) and considering the credibility of online information (Alsem et al., 2017; Bassett-Gunter et al., 2017; Park & Go, 2016; Macias et al., 2017; Morahan-Martin, 2004; Sillence, Sbaffi, & Rowley, 2017; Sweet, Perrier, Podzyhun, & Latimer-Cheung; 2013). To date there is no known research exploring how parents access PA information online. In the current study, when exploring the credibility of information, parents considered where the searches were ranked among the results list, and their

familiarity with the information from other parents. Internet users do not often search past the first couple of hits (Eysenback & Kohler, 2002), which suggests that all other information becomes overlooked and users are left with limited options to find their preferred information. Therefore, organizations that share online PA information for families of CYWD should consider the ranked search results, and ensure relevant keywords are included on their websites to match parents' information preferences to enhance information uptake. Additionally, organizations should consider the value of parental testimonials and include reviews on their website to enhance the credibility of the information.

### **Parents' Online Search Preferences: *Keep it very very simple***

The theme, *Keep it very very simple*, revealed parents' preferences for navigating online information with ease. In the current study, parents characterized positive search experiences as those that included information which was clearly presented and websites that were easily navigated.

**Presenting Information.** Parents reported a preference for accessible information, and website layouts that included appropriate uses of sub-menus to categorize relevant information separately and with unique headings to identify with ease. It was evident that the structural features of websites influenced parents' search experiences with many parents commenting on how the information is presented and available to access. Parents also preferred PA information organized in a centralized website specific for CYWD, to search for relevant information with ease. Parents' preferences for accessing information through central spaces (Bassett-Gunter et al., 2017) and organizing information with helpful structural features (Macias et al., 2017) is also explored in the literature. Parents looked at the presentation of the information from the

evaluation criterion (e.g. adapted terminology) to make decisions on the uptake of the information. The way information is presented on websites was an indicator for parents about the organization's objective to support CYWD. In cases where the information was organized poorly or did not appear to be inclusive for CYWD (e.g. lack of adapted terminology or indicators such as visuals), parents evaluated the website as challenging or insufficient in providing preferred information. Often parents dismissed websites on the basis of poor organization or lack of access to information.

**Interacting with Information.** Parents shared their preferences for a simple website layout with interactive features that allowed for easy navigation of websites. The preference for simple and interactive information has been previously recognized (Sillence et al., 2007). Parents' specific searching preferences influenced how they accessed information. For example, when information was organized with identified tabs parents could access the information they needed quickly and this led to positive search experiences. However, typical search experiences involved searching through multiple tabs without any clear indication of where parents could find their preferred information. The latter experience often led parents to abandon that website or the search task overall.

### **Parents' Online Search Experience: More work for parents of CYWD to find something**

Parents of CYWD have found it challenging to find relevant PA information (Bassett-Gunter et al., 2016; Gorter et al., 2016). While searching for relevant PA information, parents in the current study felt it was necessary to consider the complex needs of their family and CYWD, which required additional effort. One aspect of the additional efforts parents made included following up with organizations for more information. In a recent qualitative study, parents of CYWD detailed the heightened efforts of seeking and supporting PA opportunities for their

children (Goodwin & Ebert, 2018). Indeed, parents expressed a substantial amount of effort that was required to support the inclusion of their child in PA programming (Goodwin & Ebert, 2018). There is a need for organizations that reach families of CYWD to work collaboratively with parents and provide information directly on their websites to highlight the inclusion of CYWD in PA programming. The discussion below includes the complex needs parents considered, the search approach taken, the additional effort needed and the challenges experienced to search for specific PA information for their CYWD.

**Consider Different Perspectives.** Parents thought about their personal or familial perspectives to see if the program would fit with their own schedules or their need to balance the schedules of other family members (e.g., additional children). For example, some parents with multiple children shared their preference to find PA information regarding diverse programming or programs with a respite option to accommodate all their children. In many cases, a lack of childcare for other children was a barrier to access services and discouraged parents from being confident that the program would meet their complex needs. As a result of these complex perspectives, the search process was unique for each parent. Research on meaningful participation was determined by children with disabilities as enjoyment and sense of accomplishment, and by parents as their values towards the specific activity (Heah et al., 2006). Although considering children's interests and abilities is important in finding a meaningful experience for their child (Gorter et al., 2016; King, Law, Hanna, Hurley, Rosenbaum, Kertoy, & Petrenchik, 2006; King, 2004; Sandler, Ayers, Suter, Schultz, & Twohey-Jacobs, 2004; Tinsley & Eldredge, 1995), parents are forced to consider complex factors in their personal availability or familial commitments.

**Time.** Parents consistently commented on the inordinate time needed to find PA information. The theme of time was consistent throughout the study and impacted how parents searched for specific PA information, navigated on websites, and the quality of their search experience. Additionally, most parents in this study shared that they had a small window of time to search online for PA information. A lack of time for online searching has been identified as a barrier to information access (Koch-Weser et al., 2014), and with parents of CYWD who have busy schedules and familial commitments (Bassett-Gunter et al., 2017) finding time to search for more information online becomes limited. Therefore, organizations that wish to reach families of CYWD should recognize parents' limited time to spend searching online and consider simple website design features that allow for relevant information to be accessed quickly. Internet search experiences that allow parents to find and interact with the PA information with ease will encourage parents to continue to search online, and feel more confident to find opportunities to support PA for their CYWD.

**Following up for more information.** In many cases, parents felt a need to follow up with organizations in order to get the specific PA information desired. There was insufficient information online to meet the parents' needs and make decisions about PA programs for their CYWD. The lack of information from websites that met the parents' evaluation criterion resulted in parents being unable to determine the suitability of PA programs and expressed the need to follow up with organizations for more information. Although following up for more information was regarded as a part of the search process, the need to follow up limited parents' abilities to make decisions while searching online. However, it is also important to recognize that even in cases where parents found relevant information, the need to follow up remained. Although it may be difficult to include enough information to satisfy all parents, organizations that wish to reach

families of CYWD should consider making the information from the evaluation criterion more accessible on their websites that matches their intended audience.

**Search Strategies and Challenges.** Common amongst all parents was an interesting strategy which included checking the registration feature on the websites for additional information. Parents deferred to the registration process as a tool to search for important information that may have been unnoticed or missing from other parts of the website (e.g. availability of the program, program description, and program cost). Parents also reviewed the registration process to assess the ability to enroll their CYWD into the program. Although parents used the registration tool as a reference, completing the registration link was not part of the study, which limits the understanding of the feasibility of the registration process per se. Further exploration of experiences in completing online registration may lead to the discovery of additional online information that parents need to feel confident to enroll their CYWD in a PA program online.

Many of the challenges parents faced during their search resulted in the affective experiences of *disappointment* and *frustration*. Although all the parents in the study had some experience searching for online PA information specific to their CYWD, emotions of frustration and disappointment were prominent. Disappointment was experienced with the time and effort parents committed only to find unsatisfactory results. The search experience was depleting for parents as they had to self-regulate through the search process. As a result of frustration, many parents switched their searches (e.g. terminated one search and started a new search), or terminated the search task all together. The emotional response has been observed among other individuals facing challenges while searching for online health information (Macias et al., 2017). While some parents in the current study were pleased to discover new PA information, many

parents were disappointed with the lack of PA information available online for specific regions of the GTA, or regarding specific sports programs for certain age groups. The lack of online information, resulted in parents feeling frustrated with their search experiences.

Negative affective responses associated with the search experience led parents to become cautious about using the Internet to look for PA information. As a result, many parents may potentially overlook other opportunities because they are not willing to seek information online. Research on parents of CYWD experiences to seek for supportive PA opportunities, identified that unsupportive environments led to feelings of frustration, which resulted with parents' consideration of terminating their children's PA involvement (Goodwin & Ebert, 2018; McLaughlin, Goodley, Clavering, & Fisher, 2008). Therefore, PA organizations that do not present information regarding support for CYWD on their websites, could make parents of CYWD assume the programs are unsupportive, resulting in parents' considering to dismiss the information. The additional efforts required by parents and the negative affective responses associated with search experiences to find suitable PA information for their CYWD may deter parents from searching for PA information. Organizations that disseminate PA information to families with CYWD should place value on creating positive search experiences for parents by considering their information and search preferences on the website designs.

### **Pragmatic Considerations**

The following section includes pragmatic considerations for organizations wishing to reach families with CYWD and create positive online search experiences. Helpful structural features such as filters, presenting information clearly, and using specific headings, will allow parents to navigate and search for information on websites with greater ease. Also, organizations

that recognize the various perspectives parents of CYWD consider when selecting PA information would serve the parents better. Parents will feel more confident with the organization's approach to accommodate various needs. Furthermore, organizations should consider displaying information that demonstrates enjoyment experienced by CYWD (through images or testimonials) and incorporate parents' values (by considering the evaluation criterion), to assist with the uptake of information. To create positive search experiences, including the information from the evaluation criterion and organizing information in a simple way will allow parents to find the necessary information online to make decisions.

### **Strengths and Limitations**

The think aloud methodology provides a unique method to understand parents' online search experiences, specifically the process or strategies they use as they are navigating online (Perski et al., 2017; Macias et al., 2017). Earlier studies attempting to understand Internet users' information needs have often identified the retrospective nature of recalling previous experiences as a limitation (Diviani et al., 2016). Due to the use of think aloud methodology, there was no recall bias or limitation in the current study. The interview component of this study also complimented the main search task, as parents were offered the opportunity to expand on their search experiences. Another strength of this study is the diversity of participants, stemming from various ethnic backgrounds and age. There was good representation of parents who participated, including both mothers and one father, and one non-parent adult responsible for making PA decisions for a CYWD.

A limitation to this study is that there was no representation of parents of children or youth with a physical disability. Having representation from a parent of a child with a physical

disability could have provided some insight on whether the information preferences or search experiences varied based on the type of disability. The information from the evaluation criterion such as the adapted information parents look for to show support for a child with a physical disability, may look differently from other CYWD. A future consideration would be to include a diverse sample of parents of children or youth with various disabilities, to determine differences in the quality of the search experience and search results based on disability.

The parents of the study had a higher than average income range for the GTA, which posed another limitation in understanding the search experiences of parents of CYWD with different income backgrounds, so others (e.g. parents or disability organizations) can resonate with the findings. Additionally, self-selection bias was also quite probable and could have impacted the final sample. Parents were likely interested in PA, and had some familiarity with PA programs as their CYWD also had high PA levels. Having parents with no online PA search experience would have provided an interesting perspective on the novice search experience for PA information for CYWD. Future studies should consider understanding the novice searcher's experience to find online PA information, to provide PA or disability organizations with unique and current perspectives for their website design.

Another limitation is that definitions of PA programs or PA information was not provided to the parents during their main search task. Although this was intentional to align with the theoretical paradigm, a lack of consistency with controlling for parents' understanding of the search task also makes the findings subjective. However, a strength of this approach, is an accurate observation of parents of CYWD experiences when searching for online PA information for their children. A future consideration would be to explore parents' preferences to seek specific PA information for CYWD across different age groups and abilities (e.g. swimming

programs for toddlers with autism), to add to the literature on the experiences associated with the access to targeted PA information for CYWD.

### **Future Research**

The literature to date has explored the importance of displaying information that meets the needs of the target audience to optimize the uptake and relevance of the information (Bassett-Gunter et al., 2016; Gorter et al., 2016; Tristani et al., 2017). However, this study provided parents of CYWD an opportunity to have their voices heard and showcase their experiences with searching for online PA information. Understanding the search experiences and preferences of parents of CYWD who are seeking PA information, helps to bridge the gap between how information is presented online and applied by parents to support PA participation among CYWD.

The results of this study can inform recommendations for organizations sharing PA information with families of CYWD, and learnings about the Internet search experiences for disability organizations or other parents of CYWD. However, future research is necessary to assess the PA content on PA or disability websites reaching families of CYWD based on the results of this study to determine the effectiveness of the uptake of online PA information among parents of CYWD. Future research should also explore the additional efforts parents of CYWD experience when seeking for PA information online by examining the amount of effort parents expel and the satisfaction with their search experience.

This study focused on developing a broad understanding of the experiences and preferences when seeking PA information of parents of CYWD. As parents in this study were not given instructions to look for specific PA information, future research could look into

adopting a similar qualitative methodology and explore parents' experiences: a) with searching for specific PA information (e.g. types of PA programs, or availability of PA programs in different regions of the GTA), b) with the interactions of commonly used PA websites that reach families of CYWD, or c) with the use of self-regulation strategies to support the additional efforts associated with the online search experience. A more specified approach provides the opportunity for greater insight on understanding how to bridge the gap between the information that is available online and the information that is needed by parents of CYWD, with specific recommendations for: accessing types of PA information, interacting on PA websites and self-regulation strategies during the search experience. These recommendations could be valuable for organizations that display PA information for families of CYWD to consider as parents use information seeking to support their CYWD PA levels.

### **Contributions of Research**

The findings from this study helps fill the gap in the current literature with an experiential understanding of online search experiences of parents of CYWD to seek for PA information. Research has examined the value of incorporating parents' information needs into PA campaigns (Bassett-Gunter et al., 2017). However, there have not been any studies to date, incorporating parents' preferences for online information on websites that promote PA. This study brings a unique perspective on the value of the information needed for decision making, and the impact of the search process to find PA information for CYWD, in order to create positive search experiences for parents. The think aloud method was instrumental to explore the experiences of parents of CYWD in a novel way. This study gave parents an opportunity to share their stories about their search experience and is a call for future research to consider novel ideas to support

parents of CYWD searching for online PA information. In conclusion, parents' experiences can be used to promote changes to the access of online PA information for CYWD based on recommendations generated from parents' stories. PA or disability organizations should consider applying the findings of the study to display PA information online that meets the information and search preferences of parents of CYWD to create positive search experiences.

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## Appendices

### Appendix A—Demographics Questionnaire

#### Demographic Questionnaire

Please provide the following information about yourself.

1. What is your gender?

- Male
- Female
- Other gender:
- Prefer not to answer

2. What is your date of birth?

Day \_\_\_\_\_ Month \_\_\_\_\_ Year \_\_\_\_\_

An Aboriginal Person is a North American Indian, Métis or Inuit, or a member of a North American First Nation. An Aboriginal Person may be a treaty status or a non-status, registered or non-registered Indian.

3. Are you an Aboriginal Person?

- No
- Yes

4. Please describe your child/youth's disability.

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5. What is your ethnic or cultural identity?

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6. Please indicate your household income

- Less than \$20 000
- \$20 000 to \$34 999
- \$35 000 to \$49 999
- \$50 000 to \$74 999
- \$75 000 to \$99 999
- \$100 000 to \$149 999
- \$150 000 or more

7. Please indicate your work status

- Full time employment
- Part time employment
- Self-employed
- A homemaker
- A student
- Military
- Retired
- Unable to work

8. Please rate your internet searching skills

- 1-Very poor
- 2- Slightly Poor
- 3- Less than Average
- 4- Average
- 5- Above Average
- 6- Good
- 7- Very good

9. Please indicate the average time you spend on the internet per week

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10. Please rate your physical activity program familiarity for children and youth with disabilities

- 1-Very Poor Familiarity
- 2- Poor Familiarity
- 3- Fair Familiarity
- 4-Good Familiarity
- 5- Very Good Familiarity
- 6- Excellent Familiarity
- 7- Exceptional Familiarity

### Measure of Physical Activity Behaviour

In answering the following questions about your child, please keep the following information in mind:

Physical activity is any activity that requires some effort and increases the heart rate. Physical activity can include organized or programmatic activities. This would include things like playing on a sports team, and taking swimming lessons or dance lessons. Physical activity also includes unstructured activities like play and non-sedentary behaviour. This would include things like playing at the park, bowling with your friends or family, or going for a walk.

Moderate-intensity physical activities will cause your child/youth to feel like he or she is working hard and breathe harder. He or she should still be able to talk, but not sing.

Vigorous-intensity physical activities will cause your child/youth to sweat and be out of breath, it would be almost impossible for him/her to carry on a conversation.

1. *Over the past seven days, on how many of those days was your child/youth physically active for at least 60 minutes per day?*

\_\_\_ Days            OR            None

2. *Over the last seven days, on how many of those days did your child/youth do sports, fitness, or recreational physical activity?*

\_\_\_ Days            OR            None

3. *In the last seven days, how much time in total did your child/youth spend doing moderate and vigorous activities?*

\_\_\_ Hours \_\_\_ Minutes

The following questions will ask you about the time your child/youth spent engaging in mild, moderate, and heavy intensity leisure time physical activity in the last 7 days. Leisure Time Physical Activity (LTPA) is physical activity that your child/youth chooses to do during their free time, such as exercising, playing sports, gardening, and taking the dog for a walk (necessary physical activities such as physiotherapy, grocery shopping, pushing/wheeling for transportation are not considered LTPA).

Please refer to the intensity chart (pictured below) for descriptions of what mild, moderate and heavy intensity LTPA feel like.

|                                  | NOTHING AT ALL  | MILD  | MODERATE  | HEAVY  |
|----------------------------------|---|---|---|--|
| <b>How hard are you working?</b> | <ul style="list-style-type: none"> <li>Includes activities that even when you are doing them, you do not feel like you are working at all.</li> </ul> | <ul style="list-style-type: none"> <li>Includes physical activities that require you to do very light work. You should feel like you are working a little bit but overall you shouldn't find yourself working too hard</li> </ul> | <ul style="list-style-type: none"> <li>Includes physical activities that require some physical effort. You should feel like you are working somewhat hard but you should feel like you can keep going for a long time.</li> </ul> | <ul style="list-style-type: none"> <li>Includes physical activities that require a lot of physical effort. You should feel like you are working really hard (almost at your maximum) and can only do the activity for a short time before getting tired. These activities can be exhausting</li> </ul> |
| <b>How does your body feel?</b>  | Everything is normal  |   |   |  |
| Breathing & Heart rate           |   | <ul style="list-style-type: none"> <li>Stays normal or is only a little bit harder and/or faster than normal</li> </ul>   | <ul style="list-style-type: none"> <li>Noticeably harder and faster than normal but <u>NOT</u> extremely hard or fast</li> </ul>  | <ul style="list-style-type: none"> <li>Fairly hard and much faster than normal.</li> </ul>   |
| Muscles                          |   | <ul style="list-style-type: none"> <li>Feel loose, warmed-up and relaxed. Feel normal temperature or a little bit warmer and not tired at all</li> </ul>  | <ul style="list-style-type: none"> <li>Feel pumped and worked. Feel warmer than normal and starting to get tired after awhile.</li> </ul>   | <ul style="list-style-type: none"> <li>Burn and feel tight and tense. Feel a lot warmer than normal and feel tired.</li> </ul>   |
| Skin                             |   | <ul style="list-style-type: none"> <li>Normal temperature or is only a little bit warmer and not sweaty</li> </ul>  | <ul style="list-style-type: none"> <li>A little bit warmer than normal and might be a little sweaty</li> </ul>  | <ul style="list-style-type: none"> <li>Much warmer than normal and might be sweaty</li> </ul>  |
| Mind                             |   | <ul style="list-style-type: none"> <li>You might feel very alert. Has no effect on concentration</li> </ul>   | <ul style="list-style-type: none"> <li>Require some concentration to complete</li> </ul>  | <ul style="list-style-type: none"> <li>Requires a lot of concentration (almost full) to complete</li> </ul>  |

1. Mild intensity LTPA requires very light physical effort; mild intensity activities make you feel like you are working a little bit, but you can keep doing them for a long time without getting tired...

a) During the last 7 days, on how many days did your child/youth do mild intensity LTPA?

\_\_\_\_\_ Days                      OR                      None

b) On those days, how many minutes did your child/youth usually spend doing mild intensity

LTPA?

\_\_\_\_ Hours \_\_\_\_ Minutes

2. Moderate intensity LTPA requires some physical effort; moderate intensity activities make you feel like you are working somewhat hard, but you can keep doing them for a while without getting tired...

a) *During the last 7 days, on how many days did your child/youth do moderate intensity LTPA?*

\_\_\_\_ Days            OR            None

b) *On those days, how many minutes did you usually spend doing moderate intensity LTPA?*

\_\_\_\_ Hours \_\_\_\_ Minutes

3. Heavy intensity LTPA requires a lot of physical effort. Heavy intensity activities make you feel like you are working really hard, almost at your maximum. You cannot do these activities for very long without getting tired. These activities may be exhausting.

a) *During the last 7 days, on how many days did your child/youth do heavy intensity LTPA?*

\_\_\_\_ Days            OR            None

b) *On those days, how many minutes did your child/youth usually spend doing heavy intensity LTPA?*

\_\_\_\_ Hours \_\_\_\_ Minutes

## **Appendix B—Think Aloud Prompts**

### Think Aloud Prompts

The following is a list of think aloud prompts the researchers will ask participants during part two (think aloud method) of the research study.

1. Please think aloud during your internet search
2. Please keep constantly talking from beginning to the end of the task.
3. Act as if you were alone, with no one listening, and just keep talking
4. You're doing well.
5. What are you thinking?
6. A reminder to think aloud
7. Can you tell me why you chose to do that?
8. What did you think of that website?
9. How did that go for you?
10. Tell me about your experience?
11. Tell me about what made the search easy, frustrating, or challenging?
12. What was going on for you at that time?
13. What was the search process like for you?

## Appendix C—Semi Structured Interview Guide

### Follow Up Semi-Interview Qualitative Questions

The following is a list of follow up questions the researchers will use to guide participants to elaborate on their think aloud statements during their internet search experience.

1. Can you share with me what this experience of searching was like for you in general?
2. Is this similar or different to how you usually feel when you try to find physical activities for your child? How so?
3. Was there a website that you found particularly useful or easy to navigate?
  - a. If yes: Which one or ones? Can you tell me about that experience? What made it so useful or easy to navigate?
  - b. Other possible prompts for depth
  - c. If no – move on
4. Was there a website, or search experience, that you found more frustrating or challenging?
  - a. IF yes: Which one or ones? Can you tell me about that experience? What made it so frustrating or challenging?
5. In the end, did you find what you were looking for? Were you satisfied with the results of your search? How so?
6. Based on all of your experiences searching the web for physical activities for your child or youth: What are some of the most challenging or frustrating things about some physical activity websites?
  - a. Are there particular pieces of information that you find are missing?
  - b. Are there particular website design choices that you find frustrating or challenging?
  - c. Can you tell me more about these?
  - d. What does it feel like when you come across these frustrating or challenging aspects
7. Based on all of your experiences searching the web for physical activities for your child or youth,: What are some of the most useful or helpful things about some physical activity websites that help you figure out if it will work for your child?
  - a. Are there particular pieces of information that you find really important?
  - b. Are there particular website design choices that you find really helpful or meaningful?
  - c. Can you tell me more about these?
  - d. What does it feel like when you come across these kinds of websites?
8. What would the ideal website for physical activity look like for you?
  - a. Can you make up an example?
  - b. What information, images, design aspects would it have?
9. Is there anything else you would like to share about your experiences today?
10. Is there anything else you would like us to share with the people who design these websites?

Appendix D—Informed Consent



**Informed Consent Form**

**Study Name:** Using a Think Aloud Methodology to Understand Physical Activity Internet Search Experiences and Preferences of Parents of Children/Youth with Disability

**Primary Researchers:**

Rebecca Bassett-Gunter, PhD  
York University

Amy Latimer-Cheung, PhD  
Queen's University

Danielle Peers, PhD  
University of Alberta

Kinesiology & Health Science  
and Recreation

Kinesiology & Health Studies

Physical Education



Tharsheka Natkunam, MHK



**Purpose of the Research:** The purpose of the proposed research is to explore the online search experiences of parents of CYWD seeking PA information.

**What You Will Be Asked to Do in the Research:** If you wish to participate in the study you will be asked to do the following:

1. Complete a series of questions regarding yourself and your child's involvement in physical activity.
2. Complete a short think aloud training task. Think aloud is when you verbalize your thoughts as you are performing an activity to share your experiences as they occur. During the think aloud training task you will look online for information regarding two physical activity in Toronto and verbalize your thoughts.
3. Complete a second think aloud task, which involves searching for four physical activity programs in Toronto. As you complete the search you will be prompted by the researcher to verbalize your statements out loud (think aloud statements).
4. Complete an interview with the researcher to explore your internet search experiences and elaborate on your think aloud statements.

Your participation today will take approximately 90 minutes. You will receive a \$50.00 honorarium for your participation.

**Audio/Screen Capture Recording:** This study involves audio and computer screen recording of your internet search session with the researcher. Neither your name nor any other identifying information will be associated with the audio, computer screen recording or the transcript. Only the research team will have access and be able to listen and/or view the recordings. The tapes will be transcribed by the research team and safely stored on a password protected computer in Dr. Bassett-Gunter's locked research laboratory. Transcripts of your interview may be reproduced in whole or in part for use in publications or presentations that result from this study. Neither your name nor any other identifying information (such as your voice or picture) will be used in presentations or publications resulting from the study.

**Risks and Discomforts:** We do not foresee any risks or discomfort from your participation in the research.

**Benefits of the Research and Benefits to You:** This research will aid in the broad understanding of parents of CYWD PA information experiences, which could be valuable to stakeholders in understanding how to share information with parents online. The benefits to you is the opportunity to have your voices heard on your experiences and preferences to search for online PA information. Your participation in the study will also provide insight for other parents reading the study to resonate and apply the learnings to their lives to support their CYWD PA participation.

**Voluntary Participation:** Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer will not influence the nature of your relationship with York University either now, or in the future.

**Withdrawal from the Study:** You can stop participating in the study at any time, for any reason, if you so decide. If you decide to stop participating, you will still be eligible to receive the promised pay for agreeing to be in the project. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any other group associated with this project. Once the participant has left the premises the data will be de-identified and the data can no longer be withdrawn. In the event you withdraw from the study, all associated data and recordings collected will be immediately destroyed wherever possible.

**Confidentiality:** All information you supply during the research will be held in confidence. Your name or any information that can be identified with you will not appear in any report or publication of the research. Data will be collected using a secure online data collection system. Your data will be safely stored on a password protected computer in Dr. Bassett-Gunter's locked research laboratory. Only the researchers and research assistants will have access to this information. Any personal identifying information will be stripped from the data once downloaded from the online system. The data will be stored for a minimum of 7 years

(December 2024) after data publication and then will be destroyed. Confidentiality will be provided to the fullest extent possible by law.

**Contact Information** If you have questions about the research in general or about your role in the study, please feel free to contact Dr. Bassett-Gunter either by telephone at (416) 736-2100, extension 22072 or by e-mail [REDACTED]. This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, York Research Tower, York University (telephone [REDACTED] or e-mail [REDACTED]). The plan for this study has also been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at [REDACTED].

**Legal Rights and Signatures:**

I \_\_\_\_\_ consent to participate in Using a Think Aloud Methodology to Understand Physical Activity Internet Search Experiences and Preferences of Parents of Children/Youth with Disability conducted by Rebecca Bassett-Gunter. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form.

**Check here and sign below to indicate your consent:**  I consent

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(Participant's name)

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(Principal Investigator)

Sincerely,  
Rebecca Bassett-Gunter, PhD

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Appendix E—Audio and Screen Capture Consent



Consent to Audio/Computer Screen Capture

**Study Name:** Using a Think Aloud Methodology to Understand Physical Activity Internet Search Experiences and Preferences of Parents of Children/Youth with Disability

**Researchers:**

Rebecca Bassett-Gunter, PhD  
York University

Amy Latimer-Cheung, PhD  
Queen’s University

Danielle Peers, PhD  
University of Alberta

Kinesiology & Health Science  
and Recreation

Kinesiology & Health Studies

Physical Education



Tharsheka Natkunam, MHK  
York University  
Kinesiology & Health Studies



This study involves audio and computer screen recording of your internet search session with the researcher. The audio and computer screen recordings will be used to reflect key points during the follow up interview and review during data analysis. Neither your name nor any other identifying information will be associated with the audio, computer screen recording or the transcript. Only the research team will have access to the data.

The audio with computer screen capture tapes will be transcribed by the research team and safely stored on a password protected University property computer in Dr. Bassett-Gunter’s locked research laboratory. The computer screen recording will only capture information displayed on the desktop. Recordings will be safely erased once transcriptions are checked for accuracy. Transcripts of your interview may be reproduced in whole or in part for use in publications or presentations that result from this study. Neither your name nor any other identifying information (such as your voice) will be used in presentations or publications resulting from the study.

If you have any questions about the study, you may contact Dr. Bassett-Gunter [REDACTED].

**Legal Rights and Signatures:**

By signing this form I \_\_\_\_\_ am allowing the research team to audio and computer screen record me as part of this research study: Using a Think Aloud Methodology to Understand Physical Activity Internet Search Experiences and Preferences of Parents of Children/Youth with Disability conducted by Rebecca Bassett-Gunter. I have understood and allow the research team to audio record me and screen capture my internet search as part of this research study. I understand that I have the right to request access and inspect the audio recordings or transcripts in the finished form. I am aware that I may withdraw this consent at any time without penalty, at which point, the audio recording will be securely destroyed immediately.

I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form.

**Check here to indicate your consent and sign below:**  I consent

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(Participant's name)

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(Principal Investigator)

## Appendix F—Recruitment Email

Dear Parent

Thank you for your time and support. We are currently looking for volunteer parents to participate in a study at York University.

We want to understand the experiences of parents of children with disabilities in finding online physical activity information. The honorarium for participation is \$50.00. Participants would be required to attend one session (approximately 90 minutes) at York University, Keele Campus.

You are eligible to participate if: a) you are a parent, legal guardian or primary caregiver for a child with a disability (under 19 years of age), b) you live in the Greater Toronto Area and can attend one session at York University, c) English is one of the primary languages of communication in your home, and d) you have experience searching online and looking for information online.

If you would like more information or would like to participate in this research study then please contact my research assistant Tharsheka Natkunam by email [REDACTED] Please feel free to also contact me by telephone or email if you have any questions.

Thank you for interest and consideration.  
Sincerely,

Rebecca Bassett-Gunter, PhD  
Assistant Professor [REDACTED]  
School of Kinesiology and Health Science  
York University [REDACTED]  
310 Stong College [REDACTED]  
T: [REDACTED]



## **Appendix G: Parent's Semi-Structured Interview Responses to: What would the ideal PA website look like to you?**

*I like the website, because it seems to be very, attractive. I like the videos posted on this, and I do see that they are working with kids too on this, the visuals are quite nice and it makes me feel a bit comfortable that it may be right place for my child to go. F15A (ST)*

*It would be, oh I don't know, in a dream world. There got to be like some kind of portal I'm thinking like a search engine portal like where you just you go to this one place and everything you want. Every website, narrow down by city age your child's disability, that sort of. It would have be like you know a website where you can have 4 or 5 main features and then from there you can do your search. F12 (SI)*

*I think it would look very much like the uh special Olympics website but so it would have the location, the program, the days, and times that its offered. It would be this but with making each of these a link so that once I clicked on that program it will tell me the cost, whether there is space available, how to register all that kind of—the ratio and who the coach is. So I don't need that all on one page but I would like to have that as a link off of this page that would be ideal. F14 (SI)*

*But then you also have what I am looking for which is like okay is she eligible, when is it, application form, location, you know time, fees, you know. So I guess something that could be done and satisfy both groups of people is, you can have all this writing, but just on the side have this like, column, with just like the bare minimum information right, and keep it at the top, just kind of keep things simple. F15B (SI)*

*I'd rather be able to find all the information that I need on the website, I don't really want to have to call people. If I haven't, I want the ability to make the decision from the website, before I call someone. Because then if I can't find all the information on the site, so I'm calling for more information, and then finding out it's not really going to work for us then I just wasted not only search time but phone time, and phone time is much more valuable. F16 (SI)*

*It'd have a list of disabilities that they cater to so, these physical disabilities, these cognitive disabilities. So that's an important thing that has to be there. Tell me what activities you have for people with those disabilities, and a little bit about them. Because all that can – this may be okay this is something for another kid maybe it's something for people with very severe cognitive disabilities that might not be a good fit. F28B (SI)*

*And it's not, yeah there is not a billion things, like even my daughter could sit down and read through this and decide oh yeah maybe I would like to do this and click on the person and email, and that's good for fostering independence right. So it would be clean and it would be simple and it would be synced in terms of information. F28A (SI)*

*Will keep it very very simple, not very overwhelming in terms of information, very simple.*

*So if it's a website in terms of, educating or sharing information about a program for a child with special needs or an adult needs like this, I would use the key words uh disability, special needs, autism or down syndrome. F15A (SI)*

*Okay so the ideal one, it tells me, what the organization is all about, I think it is important to understand what is this organization, your, their mission that is important to me and then list a description of the programs, services, special needs page, and underneath each program it tells me the price, and the schedule. M02A (SI)*

*I would have information if the siblings is allowed to come with the child, I would have information about assistance using the washroom, allergies. I would have information about the staff like the training their backgrounds, I would put maybe images of kids, like the diversity in terms of needs, and then even then a video showing the kids engaging in the activity. And then I would put the schedule of times for the programs and the cost, and when registration begins. M02B (SI)*

*Yeah so why it's important, what type of accommodations we make for kids with different disabilities. Like I want to know I'm not dropping my kid off with another child that has cerebral palsy, another child that has another seizure disorder, like I want to know they are going to be able to accommodate but not make my child feel segregated. Like I want to know that these kids are going to be able to play together and that they know how to deal with you know an array of disabilities. 2) I want to know the background of the trainers, like I said that's really important. M09 (SI)*

## **Appendix H: Parents' Responses to the question: What was the searching experience like in general?**

*I mean I'm motivated to find my son something to do, so I will go through this all anyway um, but what, there are programs that, this this is getting too hard I'm going to keep looking and there are programs people aren't going to find because they make it too difficult to get in there. F28B (SI)*

*And it really depends on how, honestly it depends on how much effort and time and energy I want to put into this. [...] If like this dance is not working out so I would just set that aside and probably focus on something else like the swimming or the skiing, the swimming definitely probably will follow up on for sure. F28A (SI)*

*So I feel, yeah I feel just a little bit disappointed that I have to search that much more for my son as opposed to a typical kid. F14 (SI)*

*I think it's [search experience] okay, I think it would be easier if there was an easier way to search for umm programs for kids with disabilities. F14 (SI)*

*It was quite, to be honest with you I was very frustrated because it's a lot of time and I have to do so many things with my child, I don't have energy to focus again and again and explore it. I just have to explore a simple soccer program, but I am unable to find it. So if I have to explore 4 programs for my child, my entire week will go crazy. F15A (SI)*

*I was really frustrated when I was searching for the programs for my child. Its a lot of time and I haven't seen, I should say maybe, I haven't seen on any website that shows that its an inclusive program, it welcomes kids with disabilities, it's an adapted program. And most of the programs they did not even write the age group of the child. So it's very very overwhelming for a parent to look for a program like this. F15A (SI)*

*So in general um I mean I am really happy with the out- with the last one, I will actually probably go register him in Sportball now that I found this. But it's a lot of time. So this was time consuming, half an hour to do this to find 1 class. M09 (SI)*

*I think the searching is not extremely difficult for me because I am somewhat a tech savvy person um but I can uh, but even with a tech savvy person, I experience sometimes it's difficult to navigate to find the information that I needed through some of the websites. M02A (SI)*

*Participant: more difficult than I thought it would be. I've been used to Mississauga parks and rec site and variety village's site, um, I didn't realize that those were probably the 2 best sites out there, and everything else is just a significant step back.*

*Researcher: so is this then similar or different to what you normally experience.*

*Participant: No so I expect to be able to find programs and then register, and we've seen at least 2 or 3 where you have to register first before you look at the programs. F28B (SI)*

*It always kinda takes me awhile to remember, but finding a program guide like the Holland bloorview one is generally a lot easier, and that's why I was almost going to click on the CTN site too cause they have already done the work for you. F16 (SI)*

*In general its umm time consuming, it's a little bit frustrating. F12 (SI)*

*That is more work for us as parents to find something for the kids. So you kind of take it for granted when you have a typical child that you could just quickly find something. But with yours is more, with a special needs child um there is more layers that you have to make sure that the program fits, and that the child is going to be supported and their safe all that jazz. M02B (SI)*

*So normally I get frustrated and I just end up calling and asking to do it over the phone. So this was time consuming, half an hour to do this to find 1 class. M09 (SI)*

*It was it was okay. It's a bit, again I feel like it's kind of you know, I'm coming with a bit of maybe extra knowledge considering my kinesiology background, but um it just gets kind of frustrating because like there is so much, information out there, which again is good, but you kind of get overloaded, with all the information so you don't know where to look umm. F15B (SI)*

*It's not as bad as it used to be, like say 10 years ago or 6, 10 years ago when I was looking for stuff for her to do. There is a lot more out there and there is a lot more information on websites so far. [...] So in that respect there was a lot of information, and I wasn't—like I have enough here to at least start F28A (SI)*

## **Appendix I: Parents' Think Aloud Statements During their Search Experience:**

*Again, all of this is, it is time consuming so you want to make sure you get like you get a good reference. F12 (ST)*

*I'm just looking for a location on their website which allows me to choose the um greater Toronto area the GTA chapter as opposed to the Durham chapter which doesn't really work for me but I am having a hard time finding it. F14 (ST)*

*So I guess it becomes difficult because if you're typing PA programming like they don't, it's not very helpful. F15B (ST)*

*This is hard I didn't think it would be that difficult. F16 (ST)*

*The Special Olympics website makes it very difficult to see how you move from a website that is geared towards people with disabilities to them actually going, and the things that they can actually go and do. F28B (ST)*

*It's probably not something I would pursue just because, like I said as a parent of a person with disabilities, I get really tired of having to teach people how to help my kid. F28A (ST)*

*I want to stop now because there is no end to this, I know it will take hours and hours it will not be over. F15A (ST)*

*The website is not good, because I couldn't go in the, I had to go in dig deep down into the web pages to find out whether they actually offer one to one service. M02A (ST)*

*I just wished that they would provide more information about the questions I had, and then list like exactly what they would be doing. M02B (ST)*

*Please include any additional information, here we go, our office administrator will contact you to complete your registration it's always, this is really how it goes for I have a hard time with this because its, if your child's needs are little bit too much for us then we won't accept you in the program. And we've had that before but again it's a parent and tot program so I would expect that they would be okay with a kid with special needs. M09 (ST)*