

Parents' Beliefs About Physical Activity for Their Children With Visual Impairments

Luis Columna
Syracuse University

Denzil A. Streete
Yale University

Samuel R. Hodge
The Ohio State University

Suzanna Rocco Dillon
Texas Woman's University

**Beth Myers, Michael L. Norris, Tiago V. Barreira,
and Kevin S. Heffernan**
Syracuse University

Despite having the desire to become physically active as a family, parents of children with visual impairments often lack the skills and resources needed to provide appropriate physical activities (PAs) for their children. The purpose of this study was to explore the intentions of parents of children with visual impairments toward including their children in PAs after participating in a PA program. In this descriptive qualitative study, the participants were 10 parents of children with visual impairments. A series of workshops were designed to provide parents with the skills and resources needed to promote PA for their family. Upon completion of the workshops, parents took part in one-on-one semistructured interviews that were subsequently transcribed and analyzed using a thematic line-by-line process. Two interdependent themes emerged from the data analyses: (a) eye-opening experiences and (b) transformed, more hopeful, and optimistic outlook. The results revealed that through the PA intervention, parents learned teaching strategies that were intended to increase their PA opportunities and garnered resources that allowed them to teach their children to participate in PA.

Keywords: blindness/visual impairments, parental involvement, physical activity interventions, theory of planned behavior

Physical activity (PA) participation at an early age is a predictor for PA participation later in adulthood (Pan, Frey, Bar-Or, & Longmuir, 2005). In

Columna, Myers, Norris, Barreira, and Heffernan are with the School of Education, Syracuse University, Syracuse, NY. Streete is with the Graduate School of Arts and Sciences, Yale University, New Haven, CT. Hodge is with the Dept. of Human Sciences, Ohio State University, Columbus, OH. Dillon is with the Dept. of Kinesiology, Texas Woman's University, Denton, TX. Columna (lcolumna@syr.edu) is corresponding author.

addition, involvement in PA at an early age decreases risks for health problems, such as obesity later in life (Centers for Disease Control and Prevention, 2016). Unfortunately, children with visual impairments (VI), that is, those who are blind or who have low vision, are not meeting national guidelines for PA and tend to be more sedentary than their peers without disabilities (Kozub & Oh, 2004). Due to limited PA opportunities and inactivity, children with VI exhibit low levels of health-related fitness (Lieberman, Byrne, Mattern, Watt, & Fernandez-Vivo, 2010), which puts them at greater risk for secondary health conditions (Augestad & Jiang, 2015) when compared with their sighted peers (Augestad & Jiang, 2015; Shapiro, Moffett, Lieberman, & Dummer, 2005).

The lack of participation in PA among children with VI is related to several factors including a lack of: (a) appropriate equipment (Conroy, 2012), (b) parental awareness of PA program, and (c) parental knowledge in teaching and engaging their children and their families in PA (Perkins, Columna, Lieberman, & Bailey, 2013). Although parents of children with VI indicated valuing and having a positive attitude toward PA, they also indicated that they lacked the skills and athletic ability to teach their own children how to be physically active (Columna, Rocco-Dillon, Norris, Dolphin, & McCabe, 2017). Given that PA for children with VI is contingent on the advocacy and support they receive from their parents (Columna et al., 2017), parental involvement is critical to ensuring the active PA participation for children with VI (Columna et al., 2017; Stuart, Lieberman, & Hand, 2006). In order for parents of children with VI to maximize PA opportunities for their children, they need to have the intent (desire and will); support; and skills needed to promote, encourage, and teach physically active lifestyles to their children (Columna et al., 2017; Lepore, Columna, & Friedlander, 2015; Robinson & Lieberman, 2007).

Theory of Planned Behavior

Parents play an important role in facilitating and supporting PA participation for their children with disabilities (An & Goodwin, 2007; Pitchford, Siebert, Hamm, & Yun, 2016). Furthermore, positive parental beliefs may prompt more noteworthy participation in PA by their children with disabilities (Lepore et al., 2015; Pitchford et al., 2016). Using Ajzen's (1991) theory of planned behavior (TpB), researchers have explored parental beliefs and intentions toward PA (Pitchford et al., 2016). TpB asserts that expectations and values about performing a target behavior (e.g., engaging with their child with a disability in PA) are formed from behavioral, normative, and control belief aggregates. These aggregates, in turn, influence the development of attitude, subjective norms, and perceived behavioral control (PBC).

According to TpB, behavioral beliefs are the driving force behind the development of parental attitudes (Ajzen, 1991). Attitudes are reflective of feelings (positive or negative) about a target behavior (e.g., engaging their children with VI in PA) and are governed by the perceived consequences resulting from engaging in the target behavior and the evaluation of the desirability of these consequences (Ajzen & Driver, 1991). Normative beliefs are the framework upon which subjective norm, an individual's perception of whether significant others think

she or he should or should not engage in the behavior, is developed (Ajzen, 1991; Ajzen & Driver, 1991). Parents' beliefs about the opinions of significant others (e.g., therapists, teachers, coaches, family members), in turn, affect their intentions toward the behavior. The parents' perceptions of how difficult the target behavior (e.g., teaching or engaging their child with VI in PA) is to perform influences the development of control beliefs, which provides the structure for PBC (Ajzen, 1991). For the current study, PBC was operationalized as the perceived amount of control parents believed they had over engaging in PA with their children with VI. Parental PBC may vary between PA behaviors as some behaviors (e.g., parent-led PA at home) may be perceived as easier to perform, whereas others (e.g., integrating child into PA within community-based programming) may be perceived as more difficult.

Previous researchers have purported that parents of children with VI who demonstrate a positive attitude about PA may value the support of others (e.g., PA professionals, teachers) to engage in such PA (i.e., social support construct; see Rhodes, Courneya, & Jones LW, 2002), which may result in greater intentions and PA behaviors (Columna et al., 2017). In addition, a lack of parental skills to teach PA to their children could adversely hinder their PBC and, in turn, have a detrimental impact on parental intentions and behaviors of involving their children and families in PA (Columna et al., 2017). To (a) better understand the factors that influence parental intentions and behaviors toward PA with their children with VI and (b) address the call from researchers for interventions that maximize PA opportunities and PA levels among children with VI (Augestad & Jiang, 2015; Haegele & Porretta, 2015), the current study employed an intervention approach. More specifically, the current study used the TpB as a framework to design and implement a PA program designed to meet the needs of parents of children with VI, influence their PA intentions and behaviors, and facilitate PA opportunities for their children with VI and for the entire family.

Research Questions

The main purpose of this study was to better understand parental views of participation in a PA intervention, and how that intervention influenced PA intentions and behaviors moving forward. We designed this intervention using the TpB as a framework to influence the intentions of parents of children with VI toward participation in PA. It was our intent to examine the efficacy of a 4-day intervention program in regard to these goals, as well as focus on eliminating some of the barriers parents of children with VI encounter when trying to be involved in PA. Specifically, this study sought to answer the following research questions:

1. How do parents of children with VI make sense of their participation in a series of adapted physical activity (APA) workshops designed to promote PA participation?
2. What components of the APA workshops, if any, do parents judge influential to their intentions of engaging their families in PA?

Method

Research Method

This study was situated in descriptive qualitative methodology using a telephone interviewing approach (Cohen, Manion, & Morrison, 2011). According to Creswell (2016), telephone interviews are ideal when participants are located at some geographical distance from the interviewer. Furthermore, interviewing allows for a “deep understanding of people’s attitude toward life” (Spickard, 2016, p. 216); in this case, their attitudes toward the PA program. Because most families had to be in our facilities during the workshops for at least 6 hr, it was unrealistic to ask them to stay for at least another hour to conduct a face-to-face interview. Telephone interviews provided the researchers with extended access to the parents beyond the hours already invested in workshop participation and commuting. Parents articulated that they would prefer a telephone interview when given the option. By utilizing telephone interviews, the researchers understood that they faced the drawback of not being able to see the participants’ facial and nonverbal expressions and, consequently, may have lost some additional insight into what the participants were saying (Creswell, 2016).

Participants

Prior to the selection of participants, approval from the Syracuse University Institutional Review Board was obtained. Purposive sampling was used to identify possible participants for the study (Creswell, 2016) in the form of a critical sampling technique (Cohen et al., 2011). In this technique, a particular group of participants are studied to gain knowledge that might have broader implications. Only those participants who met the inclusion criteria of being parents of children aged 4–12 years with VI (as their primary disability for which they were receiving services at school) were included in the study.

A total of 10 parents (one per family) from 15 participating families provided consent and participated in the interview process. Of the 10 participants, nine were mothers, and one participant was a father. All participants were recruited as part of a larger PA study intended to explore parents’ perceptions and intentions regarding PA experiences for their family and their children with VI prior to a PA intervention (Columna et al., 2017).¹ To protect participants’ identities, pseudonyms are used for all participants. The average age of the children was 7 ± 2.54 years. Parents provided demographic information on their child’s level of VI and academic support. A total of eight children had low vision, and three were reported to be blind (see Table 1). Two parents, a special education teacher, and an ophthalmologist had professional training and experience working with children with VI.

Program Description

As part of a year-long, multifaceted PA intervention for 15 families of children with VI, a series of 4 day-long workshops were conducted at a university in the northeast region of the United States. Four content areas were covered in these

Table 1 Participants' Demographics

Parent	Child's gender	Child's age	Level of VI	Additional disabilities	Mother's age	Father's age
Sophia	M	6	Low vision	None	35	37
Emma	F	6	Blind	None	40	42
Olivia	M	12	Low vision	ADHD	52	62
Isabella	M	10	Low vision	None	43	44
Mia	M	4	Blind	Hydrocephalus	29	31
Zoe ^a	M	11	Low vision	Autism	35; 37	—
Emily	F	9	Blind	None	41	52
Layla	F	10	Low vision	ODD/CP	47	48
Nora	M	9	Low vision	Autism, ID, ADHD, asthma, and kidney problems	43	44
Nora	M	11	Low vision	ID, AS, and kidney problems,	43	44
Adam	F	7	Low vision	Hypersensitivity	49	50

Note. VI = visual impairments; M = male; F = female; ADHD = attention deficit hyperactivity disorder; ODD = oppositional defiant disorder; CP = cerebral palsy; ID = intellectual disability; AS = Asperger's syndrome.

^aTwo mothers.

workshops: (a) orientation and mobility (O&M workshop), (b) motor development and PA, (c) aquatic opportunities, and (d) team sports (e.g., goalball, beep baseball). Each workshop lasted approximately 6 hr, with both morning and afternoon sessions, and focused on enhancing parents'/guardians' skills in teaching and engaging their children in PA. Columna (2017) provides a detailed description of the PA intervention program.

In summary, during the morning session of each workshop, parents and children were divided into separate groups. The parent group was provided instruction in the content areas by professionals (e.g., APA faculty and O&M specialist) and afforded opportunities to engage in discussions and training with other parents. While parents were participating in their training sessions, their children with VI were concurrently participating in complimentary gymnasium- and pool-based activities (depending on the workshop) facilitated by physical education teacher candidates and exercise science students attending the host institution. Parents were reunited with their children during lunchtime and then participated in an afternoon session of activities that allowed them to practice new skills together. The purpose of the afternoon sessions was to enhance parents' confidence in their ability to teach different PA skills and games to their children, with subject matter professionals and staff providing support and guidance as needed throughout. At the culmination of each workshop, families received a variety of free equipment (e.g., beep balls, soccer balls) pertinent to each of the workshops to support continued practice and engagement in PA at home.

The following explanation described the application of two workshops. During the O&M workshop, parents received instruction related to the topics of spatial awareness, body positioning, white cane skills, trailing techniques, sighted guide techniques, and route travel. While parents were participating in O&M training, their children participated in one-on-one or small-group PAs, each paired with two PE teacher candidates. Following a lunch break, the parents and children came together to participate in a scavenger hunt designed specifically to utilize the orientation concepts presented to the parents. Parents were encouraged to support independent travel in their children. Families left the workshop with the low-vision simulators they had created (which double as blackout goggles), handouts summarizing orientation systems, and a bag of fun and useful prizes collected during the scavenger hunt (e.g., balls with bells, cones).

In another example, during the sports workshop, two adapted sports, goalball and beep baseball, were taught to the parents. While parents were participating in the sport training, their children participated in one-on-one or small-group PAs, each paired with two PE teacher candidates. After lunch, the families were divided into two groups. One group practiced goalball while the other group practiced beep baseball, each for a period of 30–40 min, and then, they rotated. At each sport station, teacher candidates provided feedback to the parents regarding their instruction. Following this workshop, parents received sport equipment, such as kneepads, blindfolds, and an auditory ball with bells.

Data Collection

The lead investigator used semistructured telephone interviews that involved verbal interchanges with the participants. Interviewing in this manner provided a medium for the participants to reflect on and speak about specific situations related to PA and their views regarding PA for their children with VI. A personal data sheet was used to collect demographic information about the participants, such as age, gender, income level, education level, type of employment, and participation in PAs. Participants were interviewed once at the culmination of the program for a period of 60–90 min. The purpose of the interviews was for parents to reflect on their participation in the PA program. Each interview was audio-recorded to ensure accuracy and content validity. Every effort was made to help the participants feel comfortable, such as asking introductory questions to engage the participants in the topics. A panel of five experts with experience in the field of PA and education for children with VI reviewed the interview questions to ensure content validity. Based upon the panel's recommendations, the primary investigator made changes (i.e., ordering of the questions and time references within questions) and resubmitted the instrument to the panel for final approval.

Sample questions included the following: (a) What was it like to participate in the program? (b) What happened after you participated in the program in terms of PA? (c) What do you need to learn more about to more effectively teach PAs and games to your child with a VI? (d) What assistance do you need to enhance and maintain the PA participation for your family and child with a VI? (e) What is your satisfaction with the program? and (f) Which component of the program was most valuable? Follow-up probing questions were asked based on participants' responses to the prescribed questions. In addition, at the end of the prepared

questions, participants were given time to express any thoughts they felt were missed or inadequately addressed during the interview.

Data Analysis

The 10 interview recordings were transcribed and analyzed using a thematic line-by-line analysis (Merriam, 1998). The parents' interview data were analyzed inductively by preparing the data (transcribing), by reducing the data (reading, bracketing, gleaning, and winnowing text), and by arranging data into themes and theorizing (Merriam, 1998), using NVivo 11 software to categorize themes into nodes. In addition, *in vivo* codes (where nodes were developed using selected text) were also identified using the software. First, the interview data were prepared for analysis by transcribing the audio-taped interviews. The first and second author independently read the transcripts numerous times and coded the data independently of each other using NVivo 11. Subsequently, the researchers reviewed their analyses together to reach consensus as to the codes and their descriptions (Bazeley & Jackson, 2013). These codes were then used by the researchers to develop themes and subthemes. The extracted and categorized themes from the data were reduced when the researchers found revealing common threads. These were highlighted and coded with meaningful labels (Merriam, 1998).

As the data were reviewed, this process led to the connection of patterns within categories resulting in the emergence of recurring themes (Creswell, 2016). Last, the researchers provided the themes along with supporting quotes retrieved from the transcripts to an external reviewer who examined the themes to assure they reflected the purpose of the study and corresponded with the research questions.

Validation of the Findings

To ensure trustworthiness and reduce subjective bias, several methods were used (a) member checking, (b) data analysis by multiple researchers, and (c) the evaluation of the data by an external reviewer. To ensure dependability of the findings and accuracy of the data, member checking allowed the participants to read the transcripts of their interviews to clarify or better explain their views and beliefs (Creswell, 2016). Nine out of the 10 participants gave feedback to the researchers helping to accurately represent their responses. The transcript data were analyzed individually, at differing sites, by three researchers enabling triangulation of the data. We also conducted a "search for negative cases" by looking for responses that were counter to or did not align well with the established major themes and categories. Last, the researchers provided the preliminary themes along with supporting quotes retrieved from the transcripts to an external reviewer who reviewed the themes to assure they reflected the purpose of the study and corresponded with the research questions. For this study, a scholar with expertise in qualitative research and APA served as an external evaluator.

Results

Two recurrent and interrelated themes emerged from the data analyses, which were (a) eye-opening experiences and (b) transformed, more hopeful, and optimistic

outlook. These themes emerged as parents recounted the impact of the workshops on their family's PAs and the efficacy of the program. Several subthemes support each theme.

Theme 1: "Eye-Opening" Experiences

For parents participating in the program, engaging in PA with their children with VI took on a new meaning with their newly obtained knowledge and skills. These experiences subsequently transformed their PA interactions with their children with VI. Stated differently, the parents had eye-opening epiphanies about engaging their children in PA. Two subthemes emerged under the theme of *eye-opening experience*. These subthemes were (1) being in his or her shoes and (2) awareness of child's potential. A discussion of each subtheme follows.

Subtheme 1: "Being in His or Her Shoes." Parents indicated that participation in the program (i.e., APA workshops) served as a medium for them to understand their children's disability in a different way. The workshops allowed parents to understand what their children experienced when trying to engage in PA. Olivia explained:

The exercise (O&M exercise) was enlightening, painting the goggles. I brought that home and had my husband put those on, and had my daughter put them on. I think all of us are guilty, when we're not the one with the disability, of forgetting what [child] is up against. We take things for granted, that sometimes you got to bring it back into focus and realize this is why he's having these difficulties, this is why these activities are hard for him.

The workshops situated parents in experiences that provided them with a sense of what their children experienced while participating in PA. For example, one parent, Olivia, mentioned that it was like "being in [her son's] shoes." Olivia commented that wearing the occluders² was scary for her. Occluders are goggle-type glasses, which were introduced to the parents during the O&M workshop, and then used within the rest of the program. During the O&M workshop, with the assistance of an O&M specialist, parents created and wore a pair of goggles (occluders) designed to mimic the level of VI experienced by their children. According to the parents, this activity was key for them to experience the struggles their children faced on a daily basis. Another participant, Zoe also shared her experiences while wearing the occluders. She mentioned, "I felt like I was so small in this gigantic world, but at the same time, I felt closed in on, because the darkness was just, almost depressive."

For all parents, having a better understanding of what their children encountered on a daily basis allowed them to more fully appreciate their children's experiences. Parents articulated that their involvement in the workshops afforded them an awareness of how to best engage in PA with their children. Parents indicated they also gained an understanding of how to approach PA from their children's perspective, which gave opportunities to modify the activity and consider specific challenges unique to their children. This awareness of the difficulties faced by their children with VI transformed not only the outlook of the parent participating in the workshop, but also extended out to other family

members. Isabella, for example, commented that the information learned at the O&M workshop was very beneficial for her entire family, especially her husband. She stated:

It was great for my husband, when he went and we made those goggles and we did those kind of experiences on that first day. I'm more day to day dealing with the teachers, dealing with other things, so I think it was really good for him to be involved in that kind of activity, with the eyes covered and the walk around the building. I really enjoyed it.

According to Isabella, the whole family benefited from understanding life from the perspective of their child with VI. This brought not just enlightenment, but also a sense of closer bonding and shared responsibility.

Subtheme 2: Awareness of Child's Potential. Before attending the program, many parents acknowledged that they lacked the skills to best support their children, and, in many cases, they were not aware of their children's potential in terms of PA. For instance, Layla commented, "I didn't really know how to help her." Participating in PA with their children also allowed parents to appreciate other preferences they were not aware their children had. According to Nora, seeing one of her children participating in the program was the first time her son with VI showed a liking for sports. Nora shared, "the first one [O & M Workshop] opened my eyes to how much they can and cannot see . . . I've never seen [child] so excited as he was when he was playing the game." For this mother, being able to participate and see her son experience joy while being physically active was a new experience. Likewise, Isabella also commented that this was the first time she saw her son playing an actual team sport, and according to her, it was a gratifying experience. She articulated:

We know he loves swimming, but I thought it was so great when I saw him play goalball, and beep baseball, because he was paying so much attention, he was so thoughtful about the rules, and you could just tell he was totally engaged in it, and he was very pleased with himself that he knew how to do it and he was doing it successfully.

Attending the program provided the parents with the basic skills needed to teach PA and sports to their children, as well as improve instruction to their children. Furthermore, as reflected in this theme, participating in the program provided parents with a new perspective of their children's disability and cognizance of their children's potential.

For some parents, this was the first time they felt that they allowed their children to try new activities. The ability to observe their children being successful in a variety of PA experiences created the environment for the parents to be more open to having their children engage in new activities outside the program. Mia commented in this regard:

I never really thought that my son would be able to do all these physical things because of his visual impairment, but then I realized just because he's blind, doesn't mean that he can't throw a ball, doesn't mean that he can't run. He might run a little bit funny, but it doesn't mean that he can't do it.

As a result of the parents being more aware of their children's potential, their postprogram participation in PA increased. Layla stated:

I think we're making more of an effort as a family to make sure we're doing something together. We are very aware that she is more capable than sometimes she lets us know. We want to keep the momentum going of being active. She definitely likes doing things as a family . . . we're just looking for opportunities.

Parents recognized that teaching PA to their children with a VI was not always an easy undertaking, but they indicated that they were willing to try it because they believed their children could be successful in PA, especially after they witnessed their participation in the program. For these parents, enjoyment of PA for their children with VI was more important than mastery. Adam expressed this sentiment:

We know she has limits, but we want to push those . . . much like you would do with a visually, quote normal, child. I know she's not going to be a professional skater like her mother. I know she's not going to participate or be on a level to play intramural sports, or to play varsity sports as she gets older. But we don't want [to] discourage her from enjoying those things.

For this parent, his child's involvement in PA was important, even while acknowledging that this involvement was merely for the child's enjoyment.

Theme 2: Transformed, More Hopeful, and Optimistic

The essence of this theme captures parents' beliefs about the future of PA for their children and their entire family. The parents were hopeful and optimistic about their children's PA future, as a result of the benefits derived from participation in the program. Parents indicated that the program gave families a sense of hope that they could participate together as a family in PA. Similarly, they expressed optimism about how the program was preparing future professionals to provide PA opportunities and programming to families of children with VI. Five subthemes were identified under this second theme. These subthemes were (1) awareness of other programs, (2) experience created, (3) inclusion of entire family, (4) socialization with similar families, and (5) university setting. A discussion of each of these subthemes follows.

Subtheme 1: Awareness of Other Programs. Parents articulated that participating in the program not only increased their knowledge around APA, but also increased PA opportunities for their children with VI. This subsequently left them with an interest in finding similar activities to keep their children with VI engaged in PA. Several parents indicated that, prior to involvement in the program, they were not aware of adapted sports. Emily commented, "It was really hard in the beginning, because I really didn't even know anything about adaptive [adapted sports]." This transformation in knowledge was evident as Isabella shared her sentiment, saying, "It makes us more thoughtful about what we do and that we should be doing more of it, and not necessarily thinking he can't do it, we should

just find a way where we can all do it.” For Isabella, the program helped her realize that there were multiple options available to her family for PA participation. She expanded by saying, “We just have to be a little more creative, instead of just thinking, Oh, that’s not a really great idea.” According to Isabella, PA opportunities for her child increased after participating in the program as her family became more aware of already existing programs. She stated:

There have been so many more opportunities for [child] to get involved in extracurricular activities . . . he’s been doing the skiing . . . there have been some camping opportunities for him. I think it’s more important for me to pursue them because now I can see that he really does enjoy it . . . last year, I was like, I don’t think he’d want to go to Brockport [Camp Abilities³], because he wouldn’t want to do sports all day, or he wouldn’t be capable of doing sports all day.

When asked to what she attributed the increased PA opportunities for her child, Isabella indicated, “Once you start doing a couple of them, you meet people and they tell you about more, this past year has been huge for us.” Involvement in other adapted sports programs for these parents led to increased opportunities for additional activities, the levels of parental anxiety decreased, and exposure to other parents who could recommend PA increased.

Parents in this study relied on different organizations and people in the community to obtain information about available sports programs that met the needs of their children and families. For example, Olivia shared that she was not aware of many programs in her community, but after attending the workshops, she communicated with one of her local organizations, and they were able to provide her with additional resources. She said, “One of my frustrations, and I think I share that with other parents of special needs kids, is there’s a lot of different programs out there, but you don’t always know about them.” Olivia expressed a desire for more information and recommended a central place where parents and families could go to get information. She shared, “I really wish there was more a central clearinghouse that’s accessible to everyone . . . one place to go and access whatever you feel is needed for your child.” Parents shared that it was difficult to find community programs in which their children could participate.

Subtheme 2: Experience Created. Several components of the program were responsible for creating an exciting, hopeful, and optimistic experience for the participating families, and these components, in turn, were responsible for enhancing and transforming their PA opportunities. Parents perceived the program as well rounded in addressing the needs of their children. Sophia, for example, did not see the importance of PA until participating in the program. She felt the program provided her with the tools she needed to promote PA for her child. Sophia stated:

One thing that I love about this program is that it combines everything. It combines orientation and mobility knowledge, it combines teacher of the visually impaired knowledge, OT and PT knowledge, all together, and there is a way to teach your child and address all of your child’s needs. It’s kind of . . . it would be what you would hope for to happen within your child’s school.

Another aspect of the program that parents found beneficial was the equipment they received as a result of their participation. Adam shared his impression:

My daughter loves the brightly colored balls, and the noise balls. She will say, let's go play catch, as much as my wife doesn't like doing it in the house, I do it anyway (laughs). I want to be able to enforce and not want to go outside. Let's play now, let's do it.

The equipment the parents received after each of the workshops⁴ ensured that they were not only exposed to alternative means of engaging their children with VI in PA, but now were also in possession of the required equipment to ensure sustained participation in the PA to which they were exposed.

Subtheme 3: Inclusion of Entire Family. The inclusion of the entire family was perceived as one of the key benefits of the program. Parents articulated that most programs for children with VI in their communities do not involve the parents in their children's PA experiences. Nora asserted:

The other programs that I've participated in, they did not have the parents [participate], they had us just kind of sit down and watch things while the kids went on and played . . . whereas [the] program had us participating in.

Involvement in the program focused not only on the PA of the children with VI, but also on the PA for the parents. The program allowed them to be more than just bystanders; it offered valuable opportunities for participation in "parents-only" sessions, as well as sessions of guided, hands-on instruction with their children. Nora contrasted the current program with other programs she had attended. She shared, "instead of being a glorified baby-sitter to play with your kids, [the program] really influenced the parents a lot, and that's what made the program different, and made it special." Being able to participate in the program alongside their children gave parents a sense of hope and the tools necessary to minimize the frustrations experienced when trying to be active as a family. Sophia mentioned, "I noticed that my husband's happiness during those times was greater because he wasn't feeling frustrated at himself, and not feeling like he was doing something wrong or that my son wasn't getting it." Overall, all parents indicated that they enjoyed playing together with their children while participating in the program.

Subtheme 4: Socialization With Similar Families. Having been exposed to a new perspective on the abilities of their children as it related to PA, several parents shifted toward socializing with people who exhibited positive attitudes toward PA and avoided limiting the PA potential of their children with VI. Layla commented, "I feel very motivated to keep her active, and that I can usually ignore what other people think . . . we're trying to surround ourselves with positive people, who believe that she can participate."

Echoing a similar sentiment, Sophia commented that the program exposed her family to other families who believed their children can achieve their maximum potential. When asked about the components she deemed valuable from the program, Sophia stated, "Just meeting people . . . who don't let their [child's]

visual impairment hinder them, but who also share some of their challenges and struggles that they did have in getting to where they are, has been helpful.” The program provided them an opportunity to gain new friends who were learning together how to promote PA. Isabella expressed:

The [program] was big, not only for us to go and learn more about his visual impairment, and for him to be social, but it was an opportunity for us to spend time with other parents . . . we came from farther away . . . we had a couple of other families that we traveled with, so it was a big event for us.

Even though these families indicated having an enjoyable experience and feeling hopeful and optimistic by interacting with other families of children with VI, Zoe indicated that she wished to have a larger network of families engaging in regular PA. She articulated:

We need to have more families with kids with visual impairments that meet, that can get together in big groups and play together. The kids learning from each other and bringing the families together . . . it’s fun for the three of us, but we don’t really have a big family, and in order to play a full game, we need more participants.

Having role models for their children was an important component of the program. Parents believed their children learned from the experiences of the other children with VI. Sophia remarked:

It’s important for my son to see the adult role models who are blind or teenagers who are blind who are active in sports . . . I haven’t met another blind child playing a sport until I went to your workshop. He’s always the only one who’s had something different with his eyes, just like at school.

When their children played with other children with VI and when they had role models, parents believed their children felt successful. Attending the PA program became a routine, and it developed a sense of belonging, hope, and optimism, which was reflected in the comments from the parents. Parents articulated finding a place that they felt safe and where their needs were well attended; this was not a common experience for them on a daily basis.

Subtheme 5: University Setting. For some families, the program’s setting became synonymous with being the place for PA and the place to interact with other families. Adam stated:

Love [university name]. In fact, [university name] now is known as the place that she can go for physical activity. That’s what she thinks when she hears [university name], she thinks of the vision programs and the recreation program. This program certainly helped reinforce what we need to do for both of our children.

For the children with VI, the university became closely associated with the PA program and the assistance they received.

Parents' knowledge about different sports and their disposition to share information with PE teachers motivated them to think about the future of PA for their children. The parents shared their experiences and recalled being excited about the future of PE because of their interaction with the college students. These parents were very optimistic about the future of adapted physical education because they believed future professionals were being educated in how to better serve students with VI. Emily stated, "I like how the students are getting educated about visual impairments." Olivia also commented that the feedback she received from the college students was important and allowed her to be successful during the practice time with her child. She said:

I like the input of young [college] students who are learning the latest models to work with this group of children. They have a lot of energy and haven't settled into a rut. I like having the next generation of adapted phys ed teachers, or physical therapists . . . who are getting the latest techniques.

One of the reasons parents indicated they enjoyed the interaction with the college students was because they perceived their families were not often exposed to professionals who are knowledgeable and enthusiastic about working with this population. Layla shared, "A lot of the children don't have contact with fun, college-age students. They really respond well to someone who's very young, who's very willing to try these things, and not afraid to make mistakes or look ridiculous." Participation in the program facilitated this type of interaction, which was identified as previously lacking in the lives of the children with VI. The program served as a space where parents and children with VI, alike, felt that they were part of an embracing community—creating an environment where involvement in PA was not only possible, but also expected.

Discussion

Research studies exploring barriers among families of children with VI have exposed multiple obstacles faced by families when trying to involve their children in PA (Lepore et al., 2015; Perkins et al., 2013). However, the research based on the PA experiences of families of children with VI is underdeveloped (Lepore et al., 2015; Perkins et al., 2013; Stuart et al., 2006). In particular, there is a scarcity of research on the implementation of interventions to address the needs of families of children with VI, and as such, these programs are desperately needed (Augestad & Jiang, 2015; Furtado, Allums-Featherston, Lieberman, & Gutierrez, 2015; Haegele & Porretta, 2015; Lepore et al., 2015; Perkins et al., 2013; Stuart et al., 2006). In the current study, the researchers examined the experiences of 10 families of children with VI participating in a PA intervention, as interpreted from the parents' perspectives. The parents' perspectives, summarized in the study's findings, magnified the need for and the importance of creating PA interventions that educate parents of children with VI. Through the PA intervention, parents learned teaching strategies that were intended to increase their PA opportunities and garnered resources that allowed them to teach their children to participate in PA. This section, addressing the impact of the PA intervention, is organized using the research questions that guided this study as points of departure.

Research Question 1: How Do Parents of Children With VI Make Sense of Their Participation in a Series of APA Workshops Designed to Promote PA Participation?

Overall, parents indicated that the intervention provided a new perspective to all participants. PA professionals have called for researchers and programs to educate parents of children with VI by (a) providing the strategies needed to become more physically active and (b) providing resources such that parents can teach their children to participate in selected PA (Lieberman, Ponchillia, & Ponchillia, 2013; Perkins et al., 2013). Consistent with this call, parents in this present study participated in a PA intervention that they believe provided critically needed PA information and resources, expanding their families' opportunities to engage in PA. Furthermore, they expressed having a positive attitude toward PA after participating in this PA intervention.

Consistent with the logic of TpB (Ajzen & Driver, 1991), parents' behavioral beliefs and attitudes toward participation in PA influenced their behavioral intentions. These values then influenced their decisions for their children to be physically active (Pitchford et al., 2016). Pitchford et al. (2016) specified that if parents have positive attitudes toward PA, it is more likely that they will encourage their children to participate in these activities. This current program impacted participants' attitudes and intentions by enhancing their awareness of their children's VI and expanding their perspectives of what their children are able to achieve in PA settings. Parents expressed that gaining a better understanding of their children's VI and PA abilities improved their attitude and opened new PA opportunities for their families. After attending the PA workshops, the parents felt compelled to educate and enlighten other family members about what they had learned during the workshops. They felt that this shared knowledge and perspective allowed them to be more physically active and bond more as a family. As such, the findings from the current study showed PA expectations increasing regardless of the child's level of VI. The findings from this intervention seem to alleviate an issue presented in the literature that parents have low expectations toward PA. This issue was uncovered in a previous study, which indicated that as vision loss increased, parents' expectations for their children's ability to be physically active decreased (Stuart et al., 2006).

Other studies exploring parents' perceptions of and barriers to PA for their children with VI (Columna et al., 2017; Lepore et al., 2015; Stuart et al., 2006) reported that parents valued PA and had high expectations for their children's participation. However, the parents in these studies (a) lacked knowledge of PA programs in the community and (b) did not know how to teach and/or involve their children with VI in PA programs. The findings of the current study are quite encouraging because they reveal that parents can acquire these skills. If parents become aware of existing programs and learn how to teach their children to be physically active, their perceived competence regarding their teaching abilities may increase (Pisterman et al., 1992), and consequently, the frequency and amount of PA their children and their family engage in may increase.

Research Question 2: What Components of the APA Workshops, if Any, Do Parents Judge Influential to Their Intentions of Engaging Their Families in PAs?

According to Ajzen (2015), professionals can use TpB as a framework when developing interventions. As designed, this PA intervention aimed to affect the intentions of families of children with VI to be physically active with their children. We targeted the parents' PBC specific to being physically active with their children (e.g., learning to teach and motivate their children), with the aim of increasing PA for the child with VI and his or her entire family. As documented in the literature, a lack of family time, along with a lack of knowledge in how to engage children with VI in PA, often serves as barriers and sources of stress for families. While they have intentions to be physically active, they lack the skills to do so (Columna et al., 2017; Lepore et al., 2015).

Researchers have also demonstrated that parental modeling and encouragement are important to maximize correlates with PA opportunities for their children (Carson, 2016). If children do not perceive that their parents participate in PA or that their parents are motivating them to be physically active, they will most likely not engage in PA (Carson, 2016). Consistent with the empirical literature (Schleien, Miller, Walton, & Pruett, 2014), the parents, in this study, believed that creating PA opportunities for their entire family was their responsibility, and while they were not highly skilled at performing all of the activities, these parents valued and were motivated to include their children in PA. As such, it was not surprising that the teaching and practicing sessions, wherein parents learned how to teach PA to their children, were one of the components well received by the parents.

In addition to the parent training, PA equipment was given to each family to maximize their PA opportunities. Ajzen (2015) indicated that in order for intentions to be positively impacted, barriers should be eliminated. One of the most common barriers reported in the literature is the lack of PA opportunities and the lack of equipment to participate in PA (Conroy, 2012; Furtado et al., 2015; Haegele & Porretta, 2015). By providing free equipment that aligned with the parents' training, we attempted to eliminate identified barriers. In addition, by teaching the children and their parents how to use the equipment, we sought successfully to enhance their belief about PA participation.

PA opportunities among families of children with VI tend to be unstructured or low budget, with walking and swimming among the most common activities (Lepore et al., 2015; Perkins et al., 2013). Consistent with the empirical literature, families in this study participated primarily in unstructured activities. However, through the PA workshops, the parents became aware of and promoted different adapted sports (e.g., goalball, beep baseball). The parents also commented that the PA workshops provided an opportunity to observe their children (for the first time) developing a passion for team sports. This exposure to adapted sports, coupled with the parents increased awareness of their children's potential and interest, developed more positive attitudes toward PA for the parents. In fact, they reported making PA plans, and enacting those plans, to provide PA opportunities to their children with VI and the entire family. Although the parents recognized that creating PA opportunities for their children with VI was not always easy, they were

willing to put effort into doing so because they perceived they had the knowledge and control to do so. In the logic of TpB (Ajzen, 1991), if parents believe they have the power, which indicates PBC, to effectively manage their children's behavior and are able to provide modified instruction to meet the needs of their children, they are likely to feel comfortable in providing PA opportunities for them (Mihye, So-Yeun, & Euikyung, 2015).

The attitudes and intentions to perform a particular behavior, in this case engage in various PA behaviors, are also influenced by subjective norms (perceived social pressure) often experienced by families of children with disabilities (Ajzen & Fishbein, 1980). According to TpB, normative beliefs provide the foundation for the subjective norm (the perception of whether others think they should or should not engage in the target behavior; Ajzen & Fishbein, 1980). It is common for families of children with disabilities to not engage their children in PA because of attitudinal barriers they experience in society (Schleien et al., 2014). Interestingly, the parents in this study did not feel pressure to be physically active because of what others think of them; instead, they felt that the social support component, provided through the PA intervention program, was a key to their being physically active. In other words, they did not feel pressure to participate; they felt encouraged to participate.

Limitations of the Study

This study has some limitations. First, this study was limited to the beliefs of parents of children with VI from the northeast region of the United States only. Including the voices of more participants, such as those from other regions of the United States, would have added to the perspectives and overall completeness of the findings. Especially, if a similar program is to be implemented in other regions of the country in which variables, such as weather and PA opportunities, might differ. In the future, researchers should address these issues. Second, although both parents of the children with VI were invited to participate in the PA intervention, not all could attend or regularly participate. The same is true for the interview process. As such, we were unable to engage both parents in the interview process. Therefore, the limitation of only one parent participating not only limited the amount of information, but may also have increased the potential gender bias of the responses given that nine of the 10 parents were women who participated in this study. It would have been interesting to understand how parents view the experience similarly or differently, especially given the differential role traditionally played by parents in the gender appropriateness of sport participation for their children and their own PA choices.

Conclusion

PA interventions for youth with VI are scarce, none of which have included family/parent components (Augestad & Jiang, 2015; Furtado et al., 2015; Haegele & Porretta, 2015). The interaction of PA professionals, parents, and children with VI provides a model for future interventions that target PA promotion. The current intervention provided parents with a deeper understanding of their children's disability and types of PA they enjoyed as a family. Furthermore, it provided

families an opportunity to promote their children's abilities. The intervention was a space where parents could expand existing sport and PA opportunities for their children and provided a sense of hope and optimism toward PA. For some parents, this was the first time that they were able to observe their children succeed in PA. They felt that after the culmination of this intervention, they possess the skills to support their children during these activities. Perhaps as important, this program allowed parents to advance their children's PA potential.

Program components deemed satisfactory by parents include acquisition of basic teaching skills, use of occluders to understand their children's disability, and exposure to adapted equipment and adapted sports. Together, these components were beneficial to advance parental intentions toward PA and to maximize family repertoire of PA opportunities.

Notes

1. The participants in the current study were recruited from a larger PA study that explored parents' perceptions regarding PA experiences for their family and their children with VI prior to a PA intervention. The preintervention results were recently published (Columna, 2017). The current submission describes qualitative data (of the same parents) after the intervention. Therefore, the current submission and the previous publication involved different research questions and purposes.
2. Using occluders and goggles to simulate low vision and no vision is a known strategy for developing an empathetic understanding of the unique barriers associated with learning travel skills (Columna, Lepore-Stevens, & Kavanagh, 2017; Jacobson, 2013). Travel vision occluded can however be a highly stressful event for many people, and if it is to be an activity in a group situation, care should be taken in the development of the activity including consultation with an O&M specialist as a minimum. In this workshop, parents were paired for a Human Guide travel experience with their vision fully occluded, and each team was provided with individual instruction to ensure safety. Full occlusion of all participants for the activity allowed for consistency of the group experience, as well as greater impact within the limited time frame.
3. Camp Abilities Brockport is a 1-week educational sports camp for children and teens who are blind, visually impaired, and deafblind. The camp is set up to provide a one-on-one instructional situation for each person, which is often on the contrary to other camps designed for people with VI (campabilities.org).
4. At the culmination of each workshop, families received a variety of free equipment (e.g., beep balls, soccer balls) pertinent to each of the workshops. The equipment must be developmentally appropriate to the age and level of performance of the students (Columna et al., 2017).

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. doi:10.1016/0749-5978(91)90020-T
- Ajzen, I. (2015). The theory of planned behaviour is alive and well, and not ready to retire: A commentary on Sniehotta, Presseau, and Araújo-Soares. *Health Psychology Review*, 9(2), 131–137.
- Ajzen, I., & Driver, B.L. (1991). Prediction of leisure participation from behavioral, normative, and control beliefs: An application of the theory of planned behavior. *Leisure Sciences*, 13(3), 185–204. doi:10.1080/01490409109513137

- Ajzen, I., & Fishbein, M. (1980). *Understanding attitude and predicting social behavior*. Englewood Cliffs, NJ: Prentice Hall.
- An, J., & Goodwin, D.L. (2007). Physical education for students with spina bifida: Mothers' perspectives. *Adapted Physical Activity Quarterly*, 24(1), 38–58. PubMed doi:10.1123/apaq.24.1.38
- Augestad, L.B., & Jiang, L. (2015). Physical activity, physical fitness, and body composition among children and young adults with visual impairments: A systematic review. *British Journal of Visual Impairments*, 33(3), 167–182. doi:10.1177/0264619615599813
- Bazeley, P., & Jackson, K. (2013). *Qualitative data analysis with NVivo* (2nd ed.). Los Angeles, CA: Sage.
- Carson, V. (2016). Cross-sectional and longitudinal associations between parental support and children's physical activity in the early years. *Journal of Physical Activity & Health*, 13(6), 611–616. doi:10.1123/jpah.2015-0420
- Centers for Disease Control and Prevention. (2016). Physical activity can improve health. People who are physically active live longer and have lower risks for heart disease, stroke, type 2 diabetes, depression, and some cancers. Retrieved from <https://www.cdc.gov/physicalactivity/basics/pa-health/index.htm>
- Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). New York, NY: Routledge.
- Columna, L. (2017). Syracuse University Fit Families Program: Physical activity program for families of children with visual impairments. *Palaestra*, 31(1), 32–39.
- Columna, L., Lepore-Stevens, M., & Kavanagh, E. (2017). Effective education for families of children with visual impairments and blindness in physical activity environments: A workshop model with a focus on orientation and mobility skills. *British Journal of Visual Impairments*, 53(2), 165–177.
- Columna, L., Rocco-Dillon, S., Norris, M.L., Dolphin, M., & McCabe, L. (2017). Parents' perceptions of physical activity experiences for their families and children with visual impairments. *British Journal of Visual Impairments*, 35(2), 88–102. doi:10.1177/0264619617691081
- Conroy, P. (2012). Supporting students with visual impairments in physical education: Needs of physical educators. *Insight: Research and Practice in Visual Impairment and Blindness*, 5(1), 3–10.
- Creswell, J.W. (2016). *30 essential skills for the qualitative researcher*. Thousand Oaks, CA: Sage.
- Furtado, O.L., Allums-Featherston, K., Lieberman, L.J., & Gutierrez, G.L. (2015). Physical activity interventions for children and youth with visual impairments. *Adapted Physical Activity Quarterly*, 32(2), 156–176. doi:10.1123/APAQ.2014-0164
- Haegele, J.A., & Porretta, D. (2015). Physical activity and school-age individuals with visual impairments: A literature review. *Adapted Physical Activity Quarterly*, 32(1), 68–82. PubMed doi:10.1123/apaq.2013-0110
- Jacobson, W.H. (2013). *The art and science of teaching orientation and mobility to persons with visual impairments* (2nd ed.). New York, NY: AFB Press.
- Kozub, F.M., & Oh, H.-K. (2004). An exploratory study of physical activity levels in children and adolescents with visual impairments. *Clinical Kinesiology: Journal of the American Kinesiotherapy Association*, 58(3), 1–7.
- Lepore, M., Columna, L., & Friedlander, L. (2015). *Assessments and activities for teaching swimming*. Champaign, IL: Human Kinetics.
- Lieberman, L.J., Byrne, H., Mattern, C., Watt, C., & Fernandez-Vivo, M. (2010). Health-related fitness of youths with visual impairments. *Journal of Visual Impairment and Blindness*, 104(6), 349–359.

- Lieberman, L.J., Ponchillia, P.E., & Ponchillia, S.K.V. (2013). *Physical education and sports for people with visual impairments and deafblindness: Foundations of instruction*. New York, NY: AFB Press.
- Merriam, S.B. (1998). *Qualitative research and case study applications in education. Revised and expanded from "case study research in education."* San Francisco, CA: Jossey-Bass.
- Mihye, J., So-Yeun, K., & Euikyung, L. (2015). Parents' beliefs and intentions toward supporting physical activity participation for their children with disabilities. *Adapted Physical Activity Quarterly*, 32(2), 93–105. doi:10.1123/APAQ.2013-0106.
- Pan, C.-Y., Frey, G.C., Bar-Or, O., & Longmuir, P. (2005). Concordance of physical activity among parents and youth with physical disabilities. *Journal of Developmental and Physical Disabilities*, 17(4), 395–407. doi:10.1007/s10882-005-6622-7
- Perkins, K., Columna, L., Lieberman, L., & Bailey, J. (2013). Parents' perceptions of physical activity for their children with visual impairments. *Journal of Visual Impairment & Blindness*, 107(2), 131–142.
- Pisterman, S., Firestone, P., McGrath, P., Goodman, J.T., Webster, I., Mallory, R., & Goffin, B. (1992). The effects of parent training on parenting stress and sense of competence. *Canadian Journal of Behavioural Science*, 24(1), 41–58. doi:10.1037/h0078699
- Pitchford, E.A., Siebert, E., Hamm, J., & Yun, J. (2016). Parental perceptions of physical activity benefits for youth with developmental disabilities. *American Journal on Intellectual and Developmental Disabilities*, 121(1), 25–32. doi:10.1352/1944-7558-121.1.25
- Rhodes, R.E., Courneya, K.S., & Jones, L.W. (2002). Personality, the theory of planned behavior, and exercise: A unique role for extroversion's activity face. *Journal of Applied Social Psychology*, 32(8), 1721–1736.
- Robinson, B.L., & Lieberman, L.J. (2007). Influence of a parent resource manual on physical activity levels of children with visual impairments. *RE: View Rehabilitation Education for Blindness and Visual Impairment*, 39(3), 129–140.
- Schleien, S.J., Miller, K.D., Walton, G., & Pruett, S. (2014). Parent perspectives of barriers to child participation in recreational activities. *Therapeutic Recreation Journal*, 48(1), 61–73.
- Shapiro, D.R., Moffett, A., Lieberman, L., & Dummer, G.M. (2005). Perceived competence of children with visual impairments. *Journal of Visual Impairment & Blindness*, 99(1), 15–25.
- Spickard, J.V. (2016). *Research basics: Design to data analysis in six steps*. Los Angeles, CA: Sage.
- Stuart, M.E., Lieberman, L., & Hand, K.E. (2006). Beliefs about physical activity among children who are visually impaired and their parents. *Journal of Visual Impairment & Blindness*, 100(4), 223–234.

Copyright of Adapted Physical Activity Quarterly is the property of Human Kinetics Publishers, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.