Patterns of participation in recreational and leisure activities among children with complex physical disabilities

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Children with physical disabilities are at increased risk of limitations to participation in everyday activities. This study describes research examining the participation of children in day-to-day formal and informal activities (excluding mandated academic schooling). Using the Children's Assessment of Participation and Enjoyment (CAPE) measure, data on participation patterns were collected from 427 children (229 males, 198 females; mean age 10y [SD 2y 4mo]; range 6–14y) with physical limitations and from their families. The primary types of physical disability in the sample included cerebral palsy, spina bifida, acquired brain injury, and musculoskeletal limitations. Findings indicate a broad range of diversity and intensity of participation, with proportionately greater involvement in informal rather than formal activities. Significant differences in participation and enjoyment were found between males and females, and for children more than 12 years of age. Children's participation was less diverse in families reporting lower income, single-parent status, and lower respondent parent education. These findings provide a foundation for an improved understanding of the participation of children with physical disabilities, which can assist families and service providers in planning activities that fit with their child's preferences and ensure active participation.

Participation of children with physical disabilities in everyday activities is a goal shared by parents, service providers, and organizations involved in children's rehabilitation. In the *International Classification of Functioning, Disability and Health*, the World Health Organization (WHO) defines participation as 'involvement in a life situation' (WHO 2001). The range of activities in which children and youths participate outside mandated school includes artistic, creative, cultural, active physical, sports, play, social, skill-based, and work activities (Sloper et al. 1990, Kalscheur 1992, King et al. 2004). For children, participation in day-to-day formal and informal activities is vital. Recognition of the importance of involvement in activity centers on its positive influence on the development of skills and competences, social relationships, and long-term mental and physical health (Werner 1989, Caldwell and Gilbert 1990, Lyons 1993, Larson and Verma 1999, Simeonsson et al. 2001, Forsyth and Jarvis 2002).

Children and youths with physical disabilities are at risk of limited participation (Brown and Gordon 1987). National surveys of disability report the prevalence of childhood disability and limitations to participation in daily activities to be 6.5% in the USA (Newacheck and Halfon 1998), 4.2% in the most recent Canadian survey (Statistics Canada 2002), and 4.6% in Australia (Bradbury et al. 2001). Children with physical disabilities experience rates of activity limitation that are two- to threefold those in children with other chronic conditions such as asthma (Newacheck and Halfon 1998). Data from the Canadian National Longitudinal Study of Children and Youth found a reported prevalence of 30.3% of children aged 6 to 11 years with a chronic health condition and 3.6% of these children had limited daily activity due to their condition (McDougall et al. 2003).

Previous research found that children and youths with disabilities are more restricted than children without disabilities in their participation: there was less variation, fewer social engagements, and more time spent in quiet recreational activities (Hewett et al. 1970, Brown and Gordon 1987, Sillanpaa 1987, Canadian Institute of Child Health 1994, Stevenson et al. 1997). Sloper et al. (1990) found that only 56% of children with Down syndrome participate in formal, organized activities. However, a recent study indicated that children and youths with disabilities are participating actively and in the same types of activities as children and youths without disabilities (Henry 1998). There have been no recent large studies focusing specifically on the nature of the participation of children and youths with physical disabilities. Most studies have been small and have not used representative samples of children with disabilities.

The data in this paper come from a longitudinal study of the participation of school-age children with physical disabilities in Canada, in which the child, family, and environmental factors that influence participation were examined. The purpose of this paper is to describe comprehensively the participation of children (229 males, 198 females; mean age 10y [SD 2y 4mo]; range 6–14y) with physical disabilities in day-to-day formal and informal activities (excluding involvement in mandated academic schooling). The influence of child and family demographic factors on participation is also discussed. In future reports our analyses will center on data regarding activity location, comparisons with children without physical disabilities, and the interrelationships between factors affecting participation.

Method

PARTICIPANTS

Children with physical disabilities were recruited from publicly-funded regional children's rehabilitation centers in Ontario, Canada. Working with 12 recruitment sites, we compiled a list of all children with physical disabilities born between 1 October 1985 and 30 September 1994 inclusive. Children with primary diagnoses or conditions such as the following were included: amputation, cerebral palsy (CP), cerebral vascular accident/stroke (vascular brain disorders), congenital anomalies, hydrocephalus, juvenile arthritis, muscular disorders (nonprogressive), neuropathy, orthopedic conditions (e.g. scoliosis), spinal cord injury, spina bifida, and traumatic brain injury. Children were described as fitting into two categories: those with disorders related to the central nervous system, and those with musculoskeletal disorders ('structural' and primary conditions of muscle tissue). One investigator (a developmental pediatrician) reviewed the lists and noted which children were to be included in each category.

Children with primary diagnoses such as the following were excluded: progressive disorders (e.g. cancer or muscular dystrophy); communication disorders of speech and/or language that do not accompany a physical functional limitation; hearing problems; cleft lip and palate; developmental delay; cognitive/mental (e.g. Down syndrome); fine motor; learning problems; behavioral/emotional (e.g. pervasive developmental disorder, autism, attention-deficit disorder, Asperger's syndrome); microcephalus; epilepsy; psychiatric disorders; anomalies of inner organs (e.g. heart, respiratory, or metabolism); anomalies of the hand, foot, or face; and syndromes with a recognized component of intellectual delay.

Three cohorts of children (aged 6–8y, 9–11y, and 12–14y), and their families were recruited. A total of 3062 children and families were identified who met the inclusion criteria with respect to age and physical functional limitation. Of the 3062 families sent packages, 84 did not have a valid mailing address or the child was deceased, and 510 were determined to be ineligible for various reasons (on the basis of information they provided at this recruitment stage), including the capability of their child to take part in research. Of the remaining 2468 families, 1442 made no response (58.4%) and 557 families were not interested in participating (22.6%), leaving a total of 469 consenting families (a 19% consent rate). Of the 469 enrolled families, 28 withdrew before data collection and 14 were judged to be unsuitable by the interviewer, leaving 427 children in the study.

Ethical approval was provided from McMaster University's ethics committee. Parents of each child signed a consent form before participation in the study.

Table I: Characteristics of the child respondents (n=427)

Characteristic	*Number*	*%*
Sex		
Male	229	53.6
Female	198	46.4
Age, y		
6–8	125	29.3
9–11	176	41.2
12–14	126	29.5
Child's primary health/development problem		
Cerebral palsy or related (CNS)	217	50.8
Spina bifida, spinal cord	52	12.2
Acquired brain injury	25	5.9
Developmental delay	12	2.8
CNS, minor motor	19	4.4
CNS, other	15	3.5
Neuromuscular	20	4.7
Skeletal	54	12.7
Musculoskeletal, other	13	3.1
Ethnic background		
Asian (east and southeast)	28	6.6
Asian (Arab/west)	8	1.9
Black	28	6.6
Caucasian	345	80.8
Hispanic	9	2.1
Native	6	1.4
Missing data	3	0.6

CNS, central nervous system.

MEASUREMENT AND ANALYSES

A study interviewer arranged a home-based interview for data collection with contacted families. In addition, a package of data collection materials was mailed to the family, to be completed before the home visit. Eleven experienced interviewers were hired and trained for data collection on a 2-day workshop. For quality control, ongoing feedback was provided to interviewers about measure administration and scoring. Interviewers also taped an interview, which was reviewed by the research coordinator to ensure that the measures were administered correctly. The measures and the interview were completed with the child and with the parent who nominated themself as most knowledgeable about their child's daily activities. Demographic information about the child and family was collected by means of parent-completed questionnaires.

Participation was assessed with the Children's Assessment of Participation and Enjoyment (CAPE; King et al. 2004), a measure designed to document how children or youth (with or without disabilities) participate in everyday activities outside mandated school activities. The CAPE, which is designed for use with children and youths aged 6 to 21 years, measures both formal and informal activities. Formal activities, such as music or art lessons, organized sports, or youth groups, are typically more structured, have rules and organization, involve leaders, and often require preplanning. In contrast, informal activities, such as reading, talking on the phone, or doing a puzzle, are typically more spontaneous, occur with less planning, and have few rules (Sloper et al. 1990).

The CAPE was designed to be a direct measure of participation, to document *what* a child does in the context of the child's normal environment. Thus, the CAPE does not confound participation by measuring aids, assistance, or environmental supports that might be necessary for the child to participate. Similarly, the CAPE intentionally does not capture factors that might influence participation, such as child autonomy, competence in performing an activity, or family and environmental factors known to influence children's activity choices. In this study, the 49-item version of the CAPE, which measured 13 formal activities and 36 informal activities, was administered in two phases. In phase 1, the children or youths completed a self-administered questionnaire booklet alone or

with the assistance of a parent or guardian if needed. They indicated both what activities they participated in and how often they had performed the activities in the past 4 months. In phase 2, the interviewer focused on the activities that the child ren or youths participated in and asked the following questions for each activity: (1) with whom do they typically do the activity (e.g. parent or friend)? (2) where do they do the activity (e.g. at home or at a friend's house)? and (3) how much do they enjoy doing the activity? Each activity was presented to the children/youths on a card with a drawing of the activity and a phrase (in words) describing the activity.

The CAPE provides three levels of scoring: (1) overall participation scores; (2) domain scores reflecting participation in formal and informal activities; and (3) scores reflecting participation in five types of activity (namely Recreational, Active Physical, Social, Skill-Based, and Self-Improvement activities), which were determined through principal-component analyses (King et al. 2004). The CAPE also provides scores for multiple dimensions of child and youth participation, including activity diversity and intensity. Diversity scores reflect the number of activities performed by the child over the past 4 months. Intensity scores reflect the average amount of time that a child spends participating in activities on the basis of the number of possible activities within a given level of scoring. Higher activity diversity and intensity scores represent more diversity and intense activity participation. Test–retest reliability for the formal, informal, and total participation intensity score of the CAPE ranged from 0.64 to 0.86 respectively (on the basis of random-effects intraclass correlation coefficients), when assessed with 48 children and youths with disabilities.

Descriptive statistics (such as means and frequencies) were calculated to describe children's level of participation and enjoyment with participation in each of the CAPE scores. Using an analysis of variance, we examined the effects of age, sex, and family demographic variables on participation scores. The level of statistical significance was adjusted for the number of statistical comparisons within each analysis.

Results

Study participants included 427 children and their parent respondent. As outlined in Table I, the children had a range of health and development problems, with 50.8% of the sample having CP. Most family respondents were mothers (88.7%). Characteristics of the family respondents are reported in Table II.

PARTICIPATION DIVERSITY AND INTENSITY

For participation diversity, children participated in many different activities, with proportionately greater participation in informal activities rather than formal activities (mean 3.34 [SD 2.0] of a possible 13, compared with mean 25.09 [SD 4.3] of a possible 36 respectively; see Table III). Across the five activity scales, children took part in greater numbers of activities in the areas of recreational, social, and self-improvement activities. Proportionately, there are fewer activities completed in the active physical and skill-based scales.

There was also a broad range of intensity of participation across all possible activities on the CAPE. The mean intensity of participation was 1.10 (SD 0.62) for formal activities, and 3.42 (SD 0.73) for informal activities (Table IV). Participation intensity in formal activities was lower than intensity in informal activities as a proportion of the total activities completed in each domain. In examining overall participation in formal activities, 93.9% of children in the study were involved in a formal activity, and 59.9% were involved in formal activities

Table II: Characteristics of parent respondents and families (*n*=427)

Characteristic	*Frequency*	*%*
Age range, y		
20–29	19	4.5
30–39	154	36.2
40–49	218	51.2
50–59	35	8.2
Missing data	1	–
Sex		
Male	48	11.3
Female	375	88.7
Missing data	4	–
Education of respondent		
Elementary	9	2.1
Some high school	38	8.9
Completed high school	81	19.0
Some college/technical training	56	13.1
Completed college/technical training	110	25.8
Some university	28	6.6
Completed university	104	24.4
Missing data	1	–
Primary activity of respondent		
Caring for family	139	32.7
Working full-time	59	13.9
Working part-time	8	1.9
Caring for family/working	190	44.7
Recovering from illness or disability	9	2.1
Looking for work	5	1.2
Going to school	4	0.9
Retired	2	0.5
Other	9	2.1
Missing data	2	–
Number of children in family		
One	59	13.8
Two	188	44.1
Three	116	27.2
Four	39	9.2
Five or more	24	5.5
Missing data	1	–
Family type		
Two-parent	355	83.3
Single-parent	71	16.7
Missing data	1	–
Total family income ($ Canadian)		
<15 000	25	5.9
15 000–29 999	43	10.2
30 000–44 999	79	18.7
45 000–59 999	74	17.5
60 000–74 999	80	19.0
75 000–90 000	34	8.1
>90 000	87	20.6
Missing data	5	–
Type of community (population)		
Major urban (>100 000)	212	50.0
Small urban (3000–99 999)	134	31.6
Rural (<3000)	78	18.4
Missing data	3	–

once a week or more often.

In comparing the diversity of activities completed by males in comparison with females (Table III), females participated in significantly more social ($p=0.001$) and skill-based ($p<0.001$) activities. For participation intensity, males scored significantly higher for active physical activities ($p=0.001$). Table V shows differences between males and females in the percentage doing the 20 activities done most often. Overall, however, there are more similarities than differences in activity participation of males and females.

Post hoc analysis by age indicated that overall participation was significantly lower for children 12 years and older ($p<0.001$), owing to a significantly lower participation in informal ($p<0.001$) and recreational activities ($p<0.001$; Table III). In Table VI, age grouping shows the percentage of children performing the 20 most common activities. For 21 of the 49 activities on the CAPE, there were differences in participation frequency of 10% or greater between the younger two age groups and the children aged 12 years or older.

EFFECT OF FAMILY DEMOGRAPHIC VARIABLES

Participation diversity was significantly lower in families reporting lower income ($p=0.007$), single-parent status ($p=0.002$), and lower respondent education level ($p=0.01$). For families whose incomes were below $30 000 per year, participation diversity was significantly lower in total participation ($p=0.001$), formal ($p=0.030$), informal ($p=0.001$), active physical ($p=0.001$), social ($p<0.001$), and self-improvement activities ($p=0.023$). For single-parent families, total participation intensity ($p=0.007$) and participation in active physical activities ($p=0.001$) was significantly lower. Participation in self-improvement activities was significantly lower ($p=0.003$) among children whose parent respondent reported less education. No other family demographic variable was found to have a significant relationship to children's participation in informal and formal activities.

Discussion

Findings from this study indicate that the participation of children with physical disabilities in activities outside school is extensive, particularly participation in informal activities. In contrast, participation in formal activities was lower and less intense.

Despite the absence of a comparison group, these findings contribute to our understanding of patterns of participation in children with physical disabilities. This study, as well as studies by Brown and Gordon (1987) and Sloper et al. (1990), found less diversity in community-based, formal activities for children with disabilities. However, unlike those studies, children in this study seemed to have relatively greater involvement in informal active physical recreational activities. Participation in informal activities may have been more diverse within this sample because access to informal activities is influenced in a different manner from access to formal activities, and is less likely to be adversely affected by physical or institutional environmental barriers. Additionally, items on the CAPE capture a

Table III: Participation diversity/number of activities done

Activities	*Total sample (n=427)*		*Male (n=229)*	*Female (n=198)*	*6–8y (n=125)*	*9–11y (n=176)*	*≥12y (n=126)*
	Mean (SD)	*Interquartile range*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*
Total (49 items)	28.43(5.47)	25–32	27.79 (5.51)[a]	29.18 (5.35)	29.25 (4.51)[b]	29.09 (5.36)	26.71 (6.12)
Formal (13 items)	3.34 (2.00)	2–5	3.20 (1.95)	3.51 (2.06)	3.35 (1.84)	3.53 (2.05)	3.06 (2.08)
Informal (36 items)	25.09(4.28)	23–28	24.59 (4.41)[a]	25.67 (4.06)	25.90 (3.54)[b]	25.56 (4.15)	23.64 (4.77)
Recreational (12 items)	9.58 (1.91)	8–11	9.45 (1.95)	9.73 (1.85)	10.35 (1.32)[b]	9.95 (1.68)	8.29 (2.07)
Active physical (10 items)	3.36 (1.52)	2–4	3.48 (1.52)	3.23 (1.51)	3.34 (1.32)	3.59 (1.50)	3.07 (1.68)
Social (9 items)	6.95 (1.62)	6–8	6.72 (1.67)[a]	7.22 (1.52)	6.86 (1.64)	6.98 (1.58)	7.00 (1.65)
Skill-based (9 items)	2.24 (1.45)	1–3	1.97 (1.43)[a]	2.54 (1.41)	2.42 (1.35)	2.28 (1.49)	1.98 (1.46)
Self-improvement (10 items)	6.30 (1.70)	5–8	6.17 (1.75)	6.46 (1.62)	6.28 (1.52)	6.28 (1.74)	6.36 (1.81)

[a]Pairs of means significantly different by sex at $p<0.01$; [b]pairs of means significantly different by age group at $p<0.01$.

Table IV: Participation intensity

Participation intensity	*Total sample (n=427)*		*Male (n=229)*	*Female (n=198)*	*6–8y (n=125)*	*9–11y (n=176)*	*≥12y (n=126)*
	Mean (SD)	*Interquartile range*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*
Total participation	2.76 (0.62)	2.37–3.20	2.72 (0.62)	2.80 (0.63)	2.85 (0.54)[b]	2.83 (0.63)	2.57 (0.66)
Formal activities	1.10 (0.70)	0.64–1.50	1.06 (0.69)	1.14 (0.70)	1.07 (0.61)	1.17 (0.72)	1.04 (0.74)
Informal activities	3.42 (0.73)	2.97–3.94	3.39 (0.73)	3.47 (0.72)	3.56 (0.64)[b]	3.50 (0.73)	3.19 (0.75)
Recreational activities	4.16 (1.03)	3.50–4.92	4.16 (1.05)	4.17 (1.00)	4.59 (0.88)[b]	4.34 (0.95)	3.50 (0.96)
Active physical activities	1.76 (0.91)	1.11–2.33	1.89 (0.93)[a]	1.61 (0.86)	1.77 (0.83)	1.86 (0.88)	1.61 (1.00)
Social activities	3.21 (0.97)	2.56–4.00	3.11 (0.96)	3.33 (0.96)	3.05 (0.90)	3.23 (0.98)	3.35 (0.99)
Skill-based activities	1.09 (0.78)	0.56–1.56	0.95 (0.77)[a]	1.26 (0.76)	1.16 (0.70)	1.13 (0.81)	0.98 (0.81)
Self-improvement activities	3.07 (0.89)	2.50–3.70	2.99 (0.90)	3.17 (0.88)	3.06 (0.77)	3.08 (0.93)	3.07 (0.97)

[a]Pairs of means significantly different by sex at $p<0.01$; [b]pairs of means significantly different by age group at $p<0.01$.

broader range of activities than many measures of participation. These differences may have influenced the results obtained for informal activities in this study.

In this study, 94% of children participated in at least one formal organized activity. In contrast, Sloper et al. (1990) found that 56% of a sample of children with Down syndrome in the UK participated in organized activities. Although culture and locale may account for some of this discrepancy, such large differences probably reflect changes in integration since 1990 as well as differences between the types of disabilities of the children. Despite this high level of participation in formal activities, only 60% of the children in this study participated in formal activities once a week or more often. These findings are of concern given that participation in organized activities is important for the development of skills and competences, social relationships, and long-term mental and physical health (Werner 1989, Caldwell and Gilbert 1990, Lyons 1993, Larson and Verma 1999, Simeonsson et al. 2001).

One area of participation that is of particular interest is the level of involvement in physically-based activities by children with disabilities (Longmuir and Bar-Or 2000). Results from our study indicate that children with physical disabilities participated in an average of only three out of 10 active physical activities. Damiano et al. (2002) have shown the importance of active involvement of children with physical disabilities in everyday physical activities as a means of maintaining and enhancing strength and function. Given the current frequency of therapy intervention and issues of childhood obesity, the level of involvement in physical activities found in this sample is a cause for concern.

The sex differences found in our study are consistent with studies of the recreational and leisure activities of children and youths without disabilities. For example, males without disabilities between the ages of 6 and 11 years participate more intensely in sports, whereas females participate more frequently in arts or social activities (Offord et al. 1998). Interestingly, our findings are in contrast with other research of children and youths with disabilities, which has not found significant effects

Table V: Percentage participating in activity by sex (*n*=427)

Activity	*Male (n=229)*		*Female (n=198)*	
	%	*Rank*	*%*	*Rank*
Watching TV	99.6	1	99.5	1
Playing on the computer	96.1	2	93.9	7
Listening to music	93.9	3	97.0	2
Doing homework	92.6	4	94.4	6
Talking on phone	91.7	5	94.9	4
Board/card games	91.3	6	91.4	8
Playing things	89.1	7	83.8	14
Reading	89.1	8	94.9	5
Doing a chore	87.3	9	86.9	11
Walk or hike	86.9	10	88.4	9
Crafts/drawing[a]	84.3	11	95.5	3
Shopping	82.1	12	88.4	10
Playing games	79.5	13	70.2	22
Water sports	79.0	14	82.8	16
Going to party	76.0	15	85.9	12
Hanging out	75.5	16	83.3	15
Visiting someone's house	75.5	17	84.3	13
Bicycling[a]	73.8	18	60.1	28
Collecting things	72.9	19	68.7	24
Playing with pet	72.1	20	79.3	18

Top 20 activities sorted in descending order for males are shown.
[a]Activities in which difference in percentage is 10 or more.

Table VI: Percentage participating in activity by age group (*n*=427)

Activity	*Age 6–8y (n=125)*		*Age 9–11y (n=176)*		*Age ≥12y (n=126)*	
	%	*Rank*	*%*	*Rank*	*%*	*Rank*
Playing things[a]	100.0	1	93.2	4	64.3	22
Watching TV	99.2	2	99.4	1	100.0	1
Doing homework	97.6	3	92.6	5	90.5	5
Reading	96.8	4	90.3	9	88.9	7
Board/card games	96.0	5	91.5	8	86.5	8
Crafts/drawing[a]	96.0	6	92.0	6	79.4	12
Playing on the computer	95.2	7	96.6	2	92.9	4
Listening to music	94.4	8	94.9	3	96.8	2
Talking on phone	93.6	9	92.0	7	94.4	3
Doing pretend play[a]	92.0	10	79.0	17	44.4	31
Walk or hike	91.2	11	87.5	11	84.1	10
Going to party[a]	87.2	12	81.8	15	72.2	17
Playing in the playground[a]	87.2	13	71.6	24	39.7	33
Doing a chore	86.4	14	89.2	10	84.9	9
Water sports[a]	84.0	15	85.8	12	70.6	18
Playing games[a]	82.4	16	76.7	20	65.9	20
Puzzles[a]	80.8	17	69.9	25	44.4	32
Shopping	80.0	18	85.2	13	89.7	6
Visiting someone's house	77.6	19	83.0	14	77.0	14
Collecting things[a]	76.8	20	74.4	22	60.3	23

Top 20 activities sorted in descending order for children aged 6 to 8 years are shown. [a]Activities in which difference in percentage between age groups is 10 or more.

of sex on recreational and sport participation patterns (Brown and Gordon 1987, Mactavish et al. 1997, Longmuir and Bar-Or 2000). These differences might be due to a combination of time and sampling differences, reflecting changes in activity participation since previous studies, and the fact that the sample in this study is population-based.

In examining differences by age for children and youths with disabilities, children 12 years or older scored significantly lower on overall participation intensity, and in particular on intensity of informal activities. It is likely that these findings are, in part, attributable to developmentally expected differences in child and youth patterns of participation. It should also be noted these data are cross-sectional in nature so they reflect age differences in separate cohorts, not the same children as they grow older. This pattern is in keeping with trends in the general population that show marked declines in participation in physical recreational and extracurricular activities (Mahoney et al. 2005) and increasing emphasis on social activities (Garton and Pratt 1991, Henry 1998) as children transition into adolescence.

Previous research on the activity patterns of children with disabilities has not always found significant effects of household income, parent education level, or number of parents (Brown and Gordon 1987). In contrast, and similarly to Sloper et al. (1990), our findings indicated that the diversity or number of activities in which a child participates, and their participation intensity in active physical or self-improvement activities, are significantly influenced by these demographic variables. Although it may be difficult to change these demographic factors at the societal level, it is important to examine how community programs, local policies, and supports can be structured to facilitate equitable participation for all children and families.

In using these data, it is important to consider that greater participation is not necessarily better, and lower participation does not imply personal failure (Henry 1998, Forsyth and Jarvis 2002). A child could choose a variety of participation patterns, ranging from intense involvement in a few activities to participation in many activities. Participation in activities outside school is a choice that children and their families make to fit their needs, preferences, environment, culture, and lifestyle.

Conclusion

This research provides a foundation from which to gain an improved understanding of the participation of children with physical disabilities in recreational and leisure activities. Such information can assist families and service providers in planning activities that fit with their child's preferences and ensure active participation.

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