

## Introduction

### Background

- Children with disabilities often experience more participation restrictions than their typically developing peers due to personal impairments, environmental factors, and activity demands.<sup>1-8</sup>
- Level of participation in activities may be limited by type and severity of children's disabilities.<sup>5,8</sup>
- Physical and social environmental barriers can cause various participation problems for children with disabilities.<sup>1,4,6,7</sup>
- Level of complex and/or combined disorders is associated with extent of participation in daily activities.<sup>2,3,6,9</sup>
- Extent of participation is different in contexts where children with disabilities engaged<sup>2-8</sup>.

### Purpose

- To identify the participation restrictions and environmental barriers of school-aged Taiwanese children with different types of disabilities in home, school, and community.

## Methods

### Data Collection

- This descriptive cross-sectional study was part of a larger national survey conducted in Taiwan by the New Disability Eligibility System (NDES) team.
- Data were collected in Taiwan from 2011-2012.
- 31 hospitals that qualified for the NDES in Taiwan were invited in this study.
- Data were collected on 614 parent/caregivers of children with disabilities using the Child and Family Follow-up Survey- Traditional Chinese version.<sup>2,9</sup>

### Materials

- Child and Adolescent Scale of Participation – Traditional Chinese version (CASP-C)<sup>2</sup>: 20 items in 4 subdomains: home, school, and community, and home and community living activities (HCLA). 4-point rating scale. Internal consistency:  $\alpha = .88-.91$ . Higher scores reflect greater extent of participation.
- Child and Adolescent Scale of Environment- Traditional Chinese version (CASE-C)<sup>9</sup>: 18 items. Internal consistency:  $\alpha = .86$ . Higher scores reflect bigger problem of environment.

### Data analyses

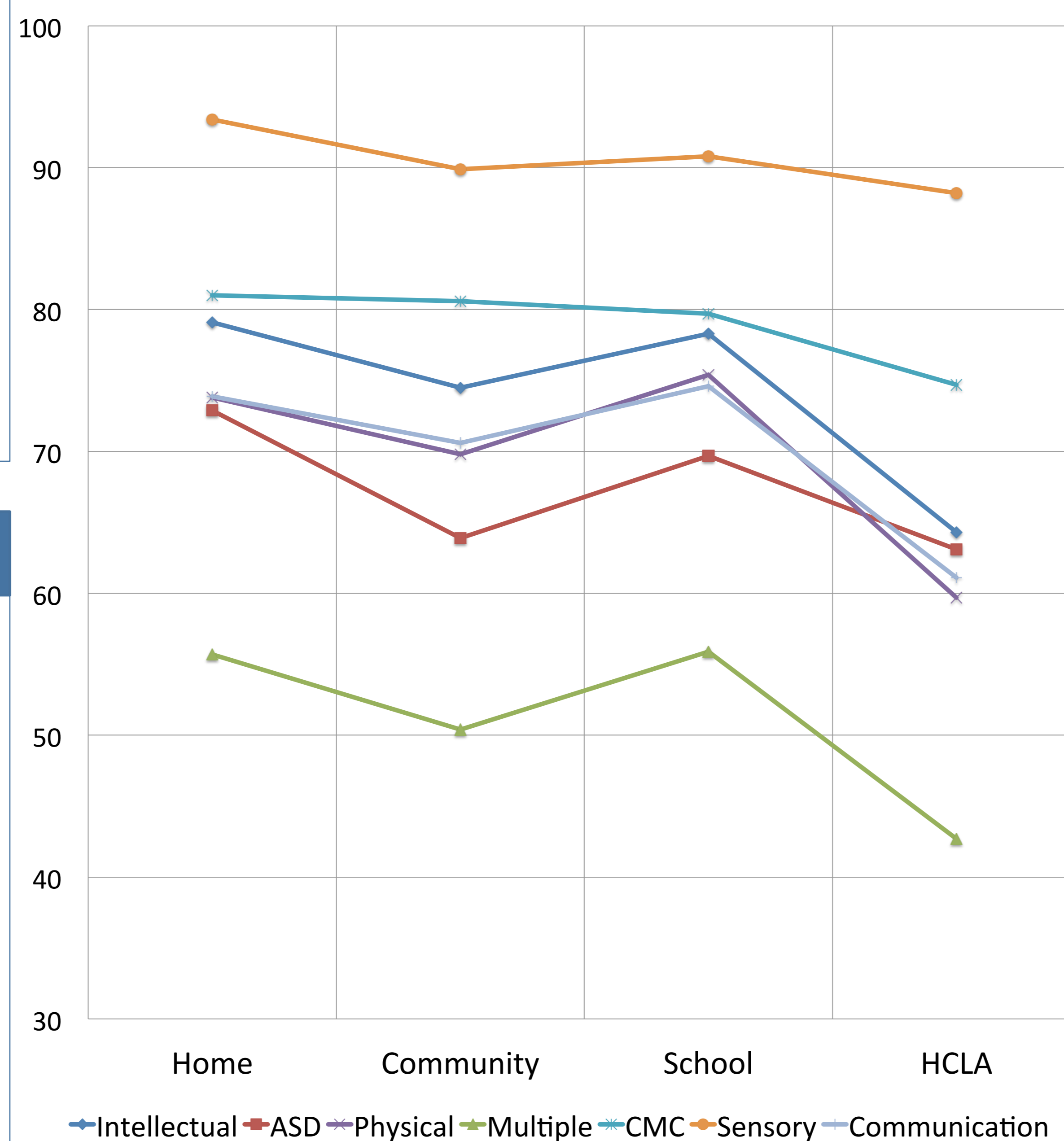
Descriptive analyses and one-way ANOVA were used to investigate the problems among children with 7 types of disabilities. Raw scores were converted to percentages for comparison.

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**Table 1.** Sample Demographics (n=614)

Variables		n (%)
Age (y/o)		11.2±3.4 (6.0-17.9)
Sex	Male	385 (63%)
Age band	6.0-11.9y	346 (56.4%)
	12.0-14.9y	134 (21.8%)
	15.0-17.9y	134 (21.8%)
Disability Type	Intellectual	331 (53.9%)
	ASD	72 (11.7%)
	Multiple	71 (11.6%)
	Physical	52 (8.5%)
	CMC	40 (6.5%)
	Sensory	26 (4.2%)
	Communication	22 (3.6%)

ASD= Autism Spectrum Disorders; Multiple= Combine 2 or more disabilities; CMC= Chronic Medical Conditions; Sensory= Visual + Auditory disabilities



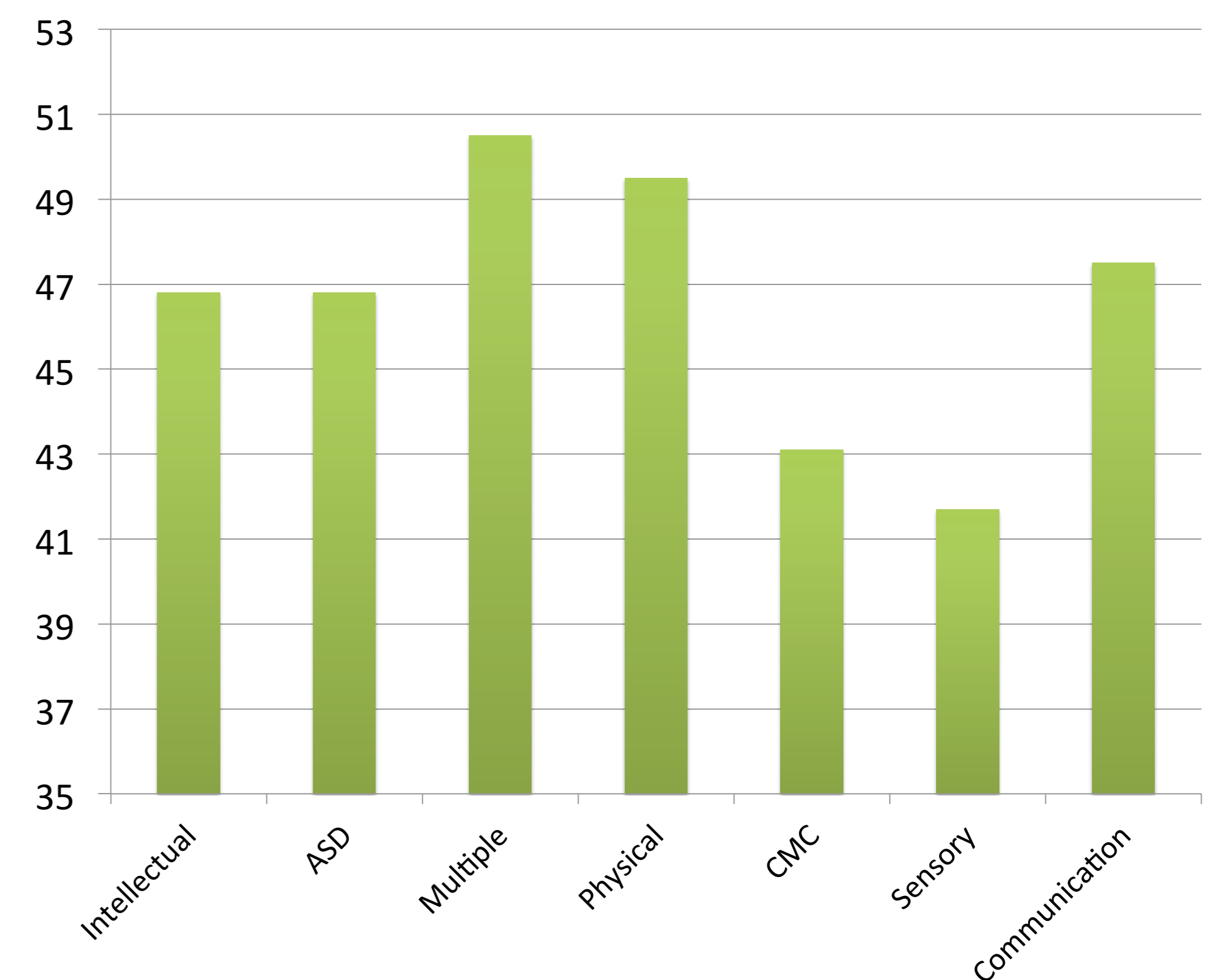
**Chart 1.** Participation scores for seven disability types

## Results

- Significant differences among disability groups found in participation scores and environment scores ( $p < .05$ ).
- Children with multiple disabilities had the most participation and environmental problems, whereas children with sensory disability had the fewest problems.
- All groups faced the biggest participation problems in community, and children with ASD also had significant participation restrictions at school.
- Inadequate assistance from others at school and in the community, family stress, and insufficient programs and services at school were the top environmental problems faced by most children regardless of disability type.
- Children with physical and multiple disabilities had more significant restrictions on accessibility of the physical environment in the community than children with other types of disabilities ( $p < .05$ ).

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**Chart 2.** Environment scores for seven disability types

## Discussion

- Results are consistent with previous studies that have used the original CASP and CASE.<sup>3,6</sup>
- Children with multiple disabilities had more reported challenges in daily activities than those with a single disability.
- Schools could provide sufficient programs and activities for children with disabilities to facilitate school participation and learning.<sup>4-7</sup>
- Participation in community activities and events seems to require higher physical and cognitive functions and social skills than in other contexts.
- Accessibly physical environment and adequate equipment and device are needed to support extent of participation.<sup>1,4,7,8</sup>
- Supportive psychosocial environments are needed for all children with disabilities, and related departments could provide support groups to help family modulate and cope with stress.

## Conclusions

- This study identified the difference and similarity of participation restrictions and environmental barriers among children with different disabilities.
- Results may provide insights of participation needs for stakeholders, and also may assist clinical practitioners to plan intervention services and programs for improving children's participation based on their disability type in different contexts.
- Further analyses of participation restrictions affected by gender, age, socioeconomic status of family, and residential area, are needed.