

Investigation of Activity Preferences of Children with Specific Learning Disorders and Their Families: Cross-sectional Study

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ABSTRACT

Objective: The aim of this study was to investigate the activity preferences of children with specific learning disability and their caregivers as well as their performance and satisfaction in these activities.

Materials and Methods: A total of 60 children with specific learning disability (34 males and 26 females) and their caregivers (12 males and 48 females) were included to the study. The demographic information of both the children and the caregivers were recorded. Data regarding the self-identified and caregiver-identified problematic activities as well as the performance and satisfaction in these activities, the Canadian Occupational Performance Measure were used.

Results: The mean age of the children was 10.7 ± 2.38 and the mean age of the caregivers was 33.5 ± 3.27 . The self-reported problematic activities were most frequently related to productivity (86.67%), followed by recreation (66.67%) and self-care (53.33%). The caregiver-reported problematic activities were most frequently related to self-care (90%), followed by productivity (73.33%) and recreation (60%). The mean self-reported performance and satisfaction from the reported activities were 5.49 ± 2.4 and 4.14 ± 2.5 , respectively, and the caregivers scores performance and satisfaction from their reported activities as 3.55 ± 1.5 and 3.08 ± 1.1 , respectively.

Conclusion: It is valuable to work toward a consensus between the children and the caregivers when determining the problematic activities of children with specific learning disability in order to establish a truly person-centered approach and cause meaningful and valuable improvements in activity performance and satisfaction.


Keywords: Specific learning disability, rehabilitation, activity, caregivers, occupational therapy

Introduction

Specific learning disability (SLD) was classified by the World Health Organization in 2013 in a comprehensible manner. According to this classification SLD was defined as not being able to adequately perform in fluent reading, writing, and mathematical operations even though having normal or high intelligence and sociocultural opportunities as well as continuing to age-appropriate education.^{1,2} It was shown that children with SLD experience problems not only in reading or writing, but also in physical and social tasks (taking part in team sports), completing mathematical operations in a given time, other academical tasks and activities of daily living such as getting dressed, tying shoes, eating, brushing teeth, and forming casual social relationships with peers.³⁻⁵ Health professionals working with children with SLD are in accordance with each other in acknowledging the need for rehabilitation regarding such activity performance problems.⁶⁻⁸

Carswell et al defines activity performance as being able to determine, plan, and realize goals that are age-appropriate and meaningful for the individual. Activity performance happens in harmony with the individual's cultural, social, and physical contexts within 3 domains: self-care, productivity, and recreation.⁹ Facilitating and increasing individuals' participation to the activities of daily living in these domains is one of the main goals of rehabilitation. Planning and realizing intervention programs that don't focus on increasing academic skills such as reading and include comprehensive analyses of the activities of daily living in order to increase activity performance with a holistic approach is considered to be more and more important.

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A majority of studies focus on the cognitive and educational aspects when trying to explain the disrupted activity performance of children with SLD, but some studies were conducted with a focus on the atypical development of the sensory and physical systems as a possible cause of lowered activity performance.¹⁰ Therefore, if the notion that children with SLD have problems in sensory, cognitive, and physical development which affects disruption in activities of daily living and the academic life is to be considered, it becomes important to determine the problematic activities with precision and in a person-centered manner in order to design the most appropriate rehabilitation approach. It can be seen that the required data for designing an intervention program are usually collected with a caregiver-reported method, and the priorities of the caregivers are often what directs rehabilitation approaches. However, when the prognosis of SLD is taken into consideration, it cannot be reliably said that the priorities, opinions, and views of caregivers are fully in accordance with the children.

Studies on caregivers of children with SLD shows that the primary caregiver is usually women and most often mothers.¹¹ The definition and scope of motherhood change entirely when it includes providing care aimed at and shaped by sensory, cognitive, and physical problems; performance limitations in activities of daily living, social activities, and long-term dependence.^{11,12} In this context, the literature emphasizes the importance of considering the priorities and opinions of caregivers. Sahin et al discussed children with cerebral palsy's and their parents' perspective of daily life activities. According to the result of this study, children's perspective focus on leisure activity on the one hand parent's perspective focus on self-care activity.¹³ However, there are not an adequate number of studies, which are intended for children with SLD, investigating the problematic activities from the perspectives of both the caregivers and the children.

Methods

A total of 60 children and their caregivers who applied to the University of Health Sciences, Antalya Health Application Center, Child and Adolescent Mental Health polyclinics between February and May 2022 were included in the study in full accordance with the Helsinki Declaration. The included children all had an SLD diagnosis given by a child and adolescent psychiatrist according to the DSM-V. This descriptive, cross-sectional study was ethically approved by the University of Antalya Research and Education Hospital's Health Sciences, Clinical Studies Ethical Committee (decision number: 2022-61).

The inclusion criteria were (i) having an SLD diagnosis, (ii) living with parents, (iii) being between 7 and 12 years of age. From the children who met the inclusion criteria, the ones who were (i) not continuing to formal education and (ii) not willing to participate to the study were excluded.

All participants were presented with the sociodemographic form and the Canadian Occupational Performance Measure (COPM). The COPM was separately applied to both the children and their parents by different authors (second and first authors, respectively).

Data Collection Tools

Sociodemographic Information Form. The sociodemographic form was developed by the authors in order to collect data regarding children's and caregivers' gender, age, and education as well as the caregivers' relation to the children.

Canadian Occupational Performance Measure (COPM), The COPM is a semistructured interview that is aimed at detecting the experienced activity problems in individual's daily living and scoring the

performance and satisfaction from that performance. The measure inquires about the problematic activities the individual's report with a semistructured interview. The reported activities are then prioritized and scored for performance and satisfaction from that performance.¹⁴ The COPM consists of 3 performance domains; self-care, productivity, and recreation, and it is applied within 3 stages.¹⁵ In the first stage, the individuals are asked to talk about their daily living and their activities. This is followed by determining the problematic activities that the individual deems important. In the second stage, the reported activities are prioritized by giving them an importance score from 1 to 10 (1: Least important, 10: Most important). This is followed by the third stage in which the 5 most important activities are selected and scored from 1 to 10 for performance (1: Can't perform at all, 10: No problems while performing) and satisfaction (1: I am not satisfied with my performance at all, 10: I am fully satisfied with my performance). The mean performance and satisfaction scores for 5 activities are then calculated.¹⁶ The measure's psychometric properties were tested and shown to be adequate in different diagnostic groups and languages, including Turkish.¹⁶⁻¹⁹

Statistical Analysis

All analyses were conducted with the Statistical Package for Social Sciences 22.0 for Windows (SPSS) (IBM Corp., Armonk, NY, USA). The data were summarized using the appropriate central tendency and dispersion calculations. Discrete variables were summarized by calculating the frequencies and percentages, and the continuous variables were presented as mean and SDs. G*Power program was used in order to calculate the required sample size for this study, and with a 5% rate of error, it was detected that a minimum of 98 participants (49 children and 49 caregivers) were needed to reach a statistical power of 80%. With a 10% unresponsiveness rate, the final minimum sample size was determined to be 110 (55 children and 55 caregivers).

Results

A total of 60 children with SLD and their parents participated in this study to make up a sample of 120 individuals. The mean age of the children was 10.7 ± 2.38 (Minimum: 7, Maximum: 12) and the mean age of the caregivers was 33.5 ± 3.27 (Minimum 24, Maximum: 40). Eighty percent of the caregivers were mothers ($n=48$), and the rest were fathers ($n=12$). The sociodemographic information of all the participants are summarized in Table 1.

The self-reported problematic activities were most frequently related to productivity (86.67%), followed by recreation (66.67%) and self-care (53.33%). The caregiver-reported problematic activities were most frequently related to self-care (90%), followed by productivity (73.33%) and recreation (60%) (Table 2, 3, and 4).

When the children were asked to score their reported activities for performance and satisfaction, the mean self-reported performance and satisfaction from the reported activities were 5.49 ± 2.4 and 4.14 ± 2.5 , respectively. The caregivers scored their reported activities for

Table 1. Sociodemographic Information

	Children, n (%)	Caregiver, n (%)
Gender (female/male)	26 (43.33) / 34 (56.67)	48 (80) / 12 (20)
Education		
Not literate	0 (0)	0 (0)
Primary school	42 (70)	2 (3.33)
Middle school	18 (30)	6 (10)
High school	0 (0)	16 (26.67)
University	0 (0)	36 (60)

Table 2. COPM Self-Care Performance Domain Results

COPM	Child Reported		Caregiver Reported	
	N (60)	% (100)	N (60)	% (100)
Self-care domain	32	53.33	54	90
Self-care	18	30	50	83.33
Tying shoes	12	20	8	13.33
Brushing teeth	0	0	12	20
Cutting fingernails	4	6.67	16	26.67
Tidying bedroom	2	3.33	8	13.33
Taking a bath	0	0	6	10
Functional mobility	6	10	0	0
Going out at recess	6	10	0	0
Community management	8	13.33	4	6.67
Finding the neighborhood and home	2	3.33	0	0
Shopping	6	10	4	6.67

COPM, Canadian Occupational Performance Measure.

Table 3. COPM Productivity Performance Domain Results

COPM	Child Reported		Caregiver Reported	
	N (60)	% (100)	N (60)	% (100)
Productivity domain	52	86.67	44	73.33
Play	40	66.67	4	6.67
Desktop play (boardgames)	6	10	0	0
Playing with friends	10	16.67	0	0
Team sports	24	40	4	6.67
School	12	20	40	66.67
Writing	2	3.33	10	16.67
Reading a book	6	10	8	13.33
Mathematical operations	4	6.67	2	3.33
Acting timely	0	0	8	13.33
Doing homework	0	0	12	20

COPM, Canadian Occupational Performance Measure.

the child's performance and caregivers' satisfaction from that performance as 3.55 ± 1.5 and 3.08 ± 1.1 , respectively.

Discussion

In this study which investigated the reported problematic activities of children from the children's perspective and the caregiver's perspective; it was found that according to the children, the most problematic

domain of activity performance was productivity, while caregivers reported the self-care domain being most problematic. This study provides important information regarding the difference between the caregivers' and children's perspectives when it comes to activity performance problems, and it highlights the importance of including the children to the decision-making processes within comprehensive rehabilitation programs.

It is known that children with SLD show atypical development in sensory, perceptual, cognitive, social, and physical skills and their problems in these fields cause performance and participation limitations.^{3,4} Skill development and activity performance-focused rehabilitation approaches are constantly being conducted in the light of this information.²⁰ This study showed that the perspectives of children with SLD differs from that of their parents, and this needs to be considered while developing intervention programs and future rehabilitation approaches that need to be based-on both child-reported and caregiver-reported problem areas and goals.

Children with SLD experiences problems not only in commonly known reading and academical skills but also in activities that require motor skills such as sports and activities of daily living such as getting dressed, tying shoes, eating, and brushing teeth.^{21,22} According to the results of this study, in addition to these problems, children with SLD reported to experience problems and show a limited performance in shopping, swimming, and socializing. The caregivers, on the other hand, most reported problems in cutting fingernails, writing, and following social norms and rules. These results show that from a common point of view of both children and caregivers, children with SLD experience problems in all domains of activity performance while the children prioritized play activities (classified in productivity) and caregivers prioritized self-care activities. On the other hand, problematic self-care activities were given the least priority by the children. It is hypothesized that children focus more on play (productivity) activities due to them enabling rapid learning and socialization, while caregivers focus on self-care activities with the assumption that the children's self-care needs will only become more intense and complex with time. This discord between the caregivers and the children shows the importance of collective contribution between the children and their caregivers within the goal setting processes in order to achieve a person-centered approach while considering the caregiver's burden and responsibilities.

In a study that investigates the activity choices of children with cerebral palsy and their caregivers, the problematic activity performance domains showed similarity to our study; however, the rates in which participants reported problems were considerably higher in children with SLD even though cerebral palsy is a congenital neurological condition.¹³ This shows that the developmental problems in SLD cause significant problems in activity performance, and the rehabilitation programs should address the problematic activity performance domains and reported activities.

Even though studies that investigate the activity selections and self-reported problematic activities of children SLD are challenging to come by, other studies investigating children's activity participation in other diagnostic groups show that the most reported problems are in academic activities, followed by in-home activities and social participation. The measures used in these studies usually do not provide information regarding the performance in specific activities and the studies focus on the physical and social context of the activities. Our findings are valuable in that they are able to show the performance and satisfaction of children in specific activities they reported to be problematic alongside with caregiver-reported activities and caregiver-reported performance and satisfaction.

Table 4. COPM Recreation Performance Domain Results

COPM	Child Reported		Caregiver Reported	
	N (60)	% (100)	N (60)	% (100)
Recreation domain	40	66.67	36	60
Silent recreation	8	13.33	4	6.67
Watching videos	2	3.33	0	0
Reading a book	6	10	4	6.67
Active recreation	12	20	2	3.33
Swimming	6	10	0	0
Social participation	2	3.33	2	3.33
Playing football	2	3.33	0	0
Playing basketball	2	3.33	0	0
Socializing	20	33.33	30	50
Emotionally reflecting	20	33.33	14	23.33
Following social norms and rules	0	0	16	26.67

COPM, Canadian Occupational Performance Measure.

When the activity performance and satisfaction scores were analyzed, it was seen that the mean scores in child-reported assessments were higher than in caregiver-reported assessments. It can be important and valuable to monitor clinical improvements by both child-reported and caregiver-reported measures in order to assess subjective betterment separately from the caregiver-reported improvements and therapist's own opinions.

It is known that environmental and contextual factors influence activity performance and participation, and they need to be addressed in order to depict a complete understanding about the children's performance and participation. The fact that no environmental or contextual assessment was used in this study is our limitation and should be addressed in future studies.

Conclusion

According to the results of our study which are valuable in that they provide a detailed investigation into the activity performance of children according to themselves and their caregivers, children with SLD experience activity performance problems in all activity performance domains according to themselves and their caregiver; however, the reported and prioritized activities are different. In order to enable adequate performance in activities of daily living and satisfactory participation, it is important to collect data regarding the activity performance problems and problematic activities from both the children and the caregivers.

Availability of Data: The data were collected after obtaining written informed consent from the participants. This informed consent included that the participants' personal information and data would not be shared with any person or institution under any circumstances except for the case of ethical reviewing conducted by ethical committees. This measure was necessary since there were variables that are not suitable for deidentification (i.e., place of residence, age, and gender) in this study. Unveiling those participants' personal information was not something we found to be on par with ethical codes.

Ethics Committee Approval: Health Sciences University, Antalya Research and Education Hospital's Clinical Research Ethical Committee on February 17, 2022 with the registration number, 2022-061 decision number 4/15.

Informed Consent: Written consent was obtained from all participants regarding their participation in this study. All participants were informed about the study and all possible future applications with the data (including publication in a scientific journal) obtained from them before giving written consent.

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