


# Occupational Priorities in Children with Cerebral Palsy Based on Gross Motor Function and Manual Ability Levels: A Comparison Between Children's and Caregivers' Perspectives

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## ABSTRACT

**Objectives:** The aim is to compare the occupational priorities of children with Cerebral Palsy (CP) who have mild to moderate motor impairments with those of their caregivers. Additionally, the goal is to explore the connections between these priorities—considering occupation, occupational performance, and satisfaction with performance—and the children's levels of gross motor function and manual ability.

**Materials & Methods:** This cross-sectional study included 58 children with CP aged 6-12 years (mean  $\pm$  SD:  $9.2 \pm 2.2$ ) and their 58 caregivers (mean  $\pm$  SD:  $38.5 \pm 7$ ). Assessments were conducted using the Canadian Occupational Performance Measure, the Manual Ability Classification System, and the Gross Motor Function Classification System. Data was analyzed using descriptive statistics, Pearson correlations, Fisher's exact tests, and multiple linear regression.

**Results:** The top three occupational priorities, in order, were personal care and functional mobility for both children and caregivers, with active recreation for children and school/study-related activities for caregivers. Significant associations were found between children's occupational priorities areas and manual ability ( $V = 0.43$ ,  $p < 0.001$ ) and gross motor function level's ( $V = 0.32$ ,  $p = 0.016$ ), caregivers' occupational priorities areas and manual ability level's ( $V = 0.49$ ,  $p < 0.001$ ), and children's satisfaction with both caregivers' satisfaction ( $r = 0.416$ ,  $p = 0.031$ ) and performance ( $r = 0.413$ ,  $p = 0.032$ ) score.

**Conclusion:** Although children with CP, presenting mild to moderate motor impairment, and caregivers shared two top occupational priorities, differences in other priority emphasize the need to consider children's perspectives in interventions. Children's motor function influenced occupational priorities selection, and their satisfaction was more affected by caregivers' perceptions than by their own performance, highlighting the need to raise caregivers' awareness during therapy.

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## Introduction

Cerebral Palsy (CP) is one of the most common causes of motor disability in children (1). It requires long-term therapeutic and rehabilitative services (2) aimed at identifying and enhancing their abilities to increase independence and participation in daily life (1,

2). Over the past three decades, the role of clients, including children and their caregivers, has become more prominent in the delivery of rehabilitation services, particularly in occupational therapy, with a growing emphasis on client-centered practice (3). One of the fundamental principles of client-centeredness is

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the collaborative formulation of therapeutic goals with clients (2).

Setting therapeutic goals collaboratively with clients ensures that occupational therapy interventions are grounded in clients' actual needs. It increases their likelihood of engagement in the planning and implementation of the therapeutic process (4). In occupational therapy, goal setting for children with CP is grounded in client-centeredness, adherence to the top-down approach, and the design and implementation of interventions at the level of the child's occupational activities (2, 5).

Developing therapeutic goals at the level of occupational priorities enables occupational therapists to apply occupation-based interventions more effectively, resulting in improved client performance and outcomes (6). However, implementing this approach involves several challenges (7). In pediatric occupational therapy, it is recommended that therapeutic goals or occupational priorities be established through joint participation between children and their caregivers to ensure interventions remain meaningful for the child (7). Despite practical challenges, such as time constraints, the necessity for therapist training, limited communication abilities in some children, and difficulty expressing their preferences (4, 7), therapists often end up setting goals mainly in collaboration with caregivers, focusing on caregivers' priorities. Consequently, the children's own occupational priorities are frequently overlooked or marginalized in the goal-setting process (8). This tendency can reduce children's motivation to participate actively in therapy (7). Hence, identifying and understanding occupational priorities from the perspective of children with CP is essential. Furthermore, investigating the factors associated with occupational priorities may facilitate better alignment with these priorities. Few studies have explored occupational priorities through the eyes of children with CP. Additionally, a lack of research comparing their perspectives with those of their caregivers or analyzing the factors contributing to these viewpoints (9, 10). Among these, Maggs et al. (9) and Torkan et al. (10) compared the perspectives of children and adolescents with CP with those of their parents (as caregivers). Although these studies contributed to a better understanding of occupational priorities in children with CP and their caregivers, their limited number does not provide a comprehensive understanding of the similarities and differences between the two groups. Moreover, these studies did not analyze the factors determining these occupational priorities. They primarily focused on identifying and comparing occupational priorities, but overlooked two crucial elements: Occupational performance and

satisfaction. (11). Additionally, previous studies have not considered essential variables, such as levels of gross motor function and manual ability, in determining priorities (9, 10). Notably, motor abilities are recognized as key factors influencing independent performance in activities of daily living (12) and may influence occupational priorities for children with CP.

Therefore, conducting a study that identifies and compares the occupational priorities of children with CP and their caregivers at the levels of occupation, occupational performance, and satisfaction with occupational performance, while examining the associations between gross motor function and manual ability levels and these priorities, can provide a deeper and multidimensional understanding of occupational priorities among children with CP and their caregivers. Such insights could guide therapists in designing more comprehensive and individualized intervention programs. Accordingly, the present study aimed to identify and compare the occupational priorities of children with CP who have mild to moderate motor impairments, along with those of their caregivers. The comparison focuses on three aspects: The levels of occupation, occupational performance, and satisfaction with occupational performance. Additionally, the research explores how gross motor function and manual ability levels relate to these priorities.

## Material & Methods

This cross-sectional study was part of a doctoral dissertation in Occupational Therapy at Iran University of Medical Sciences. It aimed to identify the occupational priorities of children with CP who have mild to moderate motor impairments, along with their caregivers. Additionally, the study explored how these occupational priorities spanning occupation, occupational performance, and satisfaction with performance relate to gross motor function and manual ability levels in these children.

Participants included children diagnosed with spastic CP, presenting mild to moderate motor impairment, aged 6–12 years, and their primary caregivers those responsible for the child's daily care and supervision. Participants were recruited from outpatient pediatric rehabilitation centers in Tehran city based on predefined inclusion and exclusion criteria. The inclusion criteria were a confirmed medical diagnosis of spastic CP, age between 6 and 12 years, normal cognitive level according to the SPARCLE cognitive checklist (13), classification at levels I–III of the MACS, and the ability to independently participate in completing the Canadian Occupational Performance Measure (COPM), as determined by a trained occupational therapist familiar

with administering the measure to children. Exclusion criteria included insufficient cooperation during the research process (e.g., absence from interview sessions, inability to provide verbal or nonverbal responses, or incomplete COPM scoring), coexisting neurological disorders, or additional diagnoses such as attention-deficit/hyperactivity disorder or autism spectrum disorder. Convenience sampling was employed across ten pediatric rehabilitation centers in Tehran, Iran. The sample size was determined using the statistical formula for estimating a mean,  $n = \left(\frac{z_{\alpha/2}(\sigma)}{E}\right)^2$ , based on the standard deviation (SD) of COPM scores reported in previous studies (14), assuming a 95% confidence level ( $\alpha = 0.05$ ) and an estimation error margin of 0.5 points, resulting in a required sample of 55 participants.

To implement the research protocol, after reviewing the inclusion and exclusion criteria and obtaining informed consent from the participants, children with spastic CP presenting with mild to moderate motor impairment and their caregivers were enrolled in the study. At this stage, the researcher collected the participants' relevant background information through a demographic questionnaire and assessed the children's manual ability and gross motor function level using the Manual Ability Classification System (MACS) and the Gross Motor Function Classification System (GMFCS), respectively.

Then, both caregivers and children were individually interviewed in separate rooms by an occupational therapist familiar with administering the COPM, and data for each participant were recorded. During the interview, if the child spoke a language other than Persian, experienced separation stress from the caregiver, or had a speech stutter, the caregiver was present in the interview room. In such cases, the caregiver was asked to refrain from any interference in determining the child's occupational priorities or scoring and to convey the child's responses only. Furthermore, to facilitate children's rating of the "occupational performance" and "satisfaction with occupational performance" criteria in the COPM, the pictorial rating system proposed by Verkerk et al. (15) was used. Accordingly, the children assessed their occupational performance and satisfaction with occupational performance related to their occupational priorities using cards with corresponding numbers and images.

**SPARCLE:** A short checklist for assessing the cognitive level of children with CP, developed during the implementation of a large, multi-center project of the same name across nine European countries. SPARCLE was developed based on ICD-10, and in this checklist, the therapist, by asking six separate questions

from the parents of a child with CP, evaluates and classifies the child's approximate IQ into three levels: Below 50 (severe intellectual disability), between 50–70 (learning disability), and above 70 (no cognitive impairment). The questions in this checklist are designed to assess the child's learning, play, and ability to make friends with other children. If, according to the parents' report, the child's learning, ability to make friends, and play with peers are similar to those of children the same age, the child is considered to have no cognitive impairment (13).

**COPM:** The COPM is a client-centered tool in the field of occupational therapy, designed to identify changes in the client related to the "self-perception" of occupational performance. This measure evaluates occupational performance in three areas: Personal care, productivity, and leisure. For its administration, the therapist first asks the client to identify the tasks that they need to do, want to do, or are expected to do but are unable to perform, do not perform, or are not satisfied with how they perform them, then rates these tasks according to their importance in daily life. In the next step, the client selects the five problems that are crucial to them, and for each of these problems, rates their usual level of occupational performance and their satisfaction with its execution using a 10-point Likert scale. At the end, according to the measure's manual, the therapist calculates and reports the individual's scores in the two areas of "occupational performance" and "satisfaction with occupational performance." The psychometric properties of the Persian version of this measure were examined and confirmed by Dehghan et al. (2015) among parents of Iranian children with CP. It was introduced as a valid instrument for children with CP (11, 15).

**MACS:** The MACS reflects the usual level of hand performance of children in daily life and classifies children with CP based on their ability to handle objects into five levels (one to five) (16). In this system, level one includes children with fewer limitations, and levels four and five comprise children with more severe limitations. This classification system is designed for children with CP aged 4–18 years, and its Persian version was psychometrically evaluated and confirmed by Riahi et al. (16).

**GMFCS:** The GMFCS is a standardized and observational classification system categorizing children with CP based on the levels of limitations in gross motor function, and the need for assistive devices into five levels; such that level 1 indicates maximum independence in motor function, and level 5 indicates minimum independence in motor function (17). GMFCS is a valid, simple system widely used worldwide. The psychometric properties of the Persian

version for both parents and professionals were examined and confirmed by Riahi et al. (17).

Data analysis in this study was performed using SPSS 27. For this purpose, the interview data were categorized according to the research team's review and the COPM manual into three main areas: Self-care, including three subcategories: Personal care, functional mobility, management of community activities, productivity (including three subcategories: Paid and unpaid work, household management, school-related activities), and leisure (including three subcategories: Quiet Recreation, active Recreation, Socialization). The data were described using mean, standard deviation, frequency percentage, minimum, and maximum values.

To determine the relationship between children's and caregivers' COPM scores, the Pearson correlation coefficient was calculated. Moreover, the strength of the correlation was interpreted using Munro's interpretive levels. Accordingly, the correlation strength (based on  $r$  values) was interpreted as follows: 0–0.24 as no correlation, 0.25–0.49 as low correlation, 0.5–0.69 as moderate correlation, 0.7–0.89 as high correlation, and 0.9–1.0 as very high correlation.

To examine the relationships among gross motor function and manual ability levels, children's age with CP, and the results from the COPM, a standard multiple linear regression analysis was conducted using the enter method. Occupational performance and satisfaction with occupational performance scores from the COPM were considered dependent variables. Furthermore, the children's age, gross motor function, and manual ability levels were entered simultaneously as predictor variables in the multiple linear regression model. The assumptions of the linear regression model were evaluated.

Furthermore, the relationships between gross motor function and manual ability levels and the occupational activity areas identified by the COPM were examined using Fisher's exact test. The strength of the relationship in this test was assessed using Cramer's  $V$ , and its interpretation was based on Rea and Parker's (1992) levels, where  $V$  values of 0–0.10 were considered very weak, 0.10–0.20 weak, 0.20–0.40 moderate, 0.40–0.60 relatively strong, 0.60–0.80 strong, and 0.80–1.00 very strong. The significance level for all statistical tests was set at 0.05; values below this threshold were considered statistically significant.

**Table 1.** Demographic characteristics of the participants (Children: 58, Caregivers: 58)

Participants		Frequency (Percentage)	Age (years) Mean (SD)	Age (years) Min-Max
Children Age	Under 8 years	15 (25.9%)	7.1 (0.5)	6-7.7
	Over 8 years	43 (74.1%)	10.3 (1.6)	8-12.9
Type of CP	Hemiplegia	21 (36.2%)	10.2 (2.1)	6.5 -12.9
	Diplegia	22 (37.9%)	8.2 (2)	6-12.3
	Quadriplegia	15 (25.9%)	9.2 (2)	6.5-12.9
MACS	I	7 (12.0%)	10.4 (2,5)	6-12.8
	II	27 (46.6%)	9.0 (2.3)	6-12.9
	III	24 (41.4%)	9.0 (2)	6.3-12.9
GMFCS	I	15 (25.9%)	9.3 (2.3)	6.1-12.9
	II	21 (36.2%)	9,4 (2.4)	6-12.9
	III	22 (37.9%)	8,5 (1.7)	6.1-11.7
COPM		11 (19%)	6.8 (0.6)	6-7.7
Completion Process	With Caregivers	7 (12%)	9.5 (1.3)	8-11.3
		18 (31%)	7.6 (1.5)	6-11.3
	Without Caregiver	4 (6.9%)	6.9 (0.9)	6–7.7
		36 (62.1%)	10.6 (1.6)	8-12.9
		40 (69%)	10.2 (2)	6–12.9
Educational Level of Caregivers	Degree Holders	10 (17.2%)	36.3 (5.5)	22-41
	High School Diploma	25 (43.1%)	38.2 (6.6)	30-58
	Less Than High School	23 (39.7%)	39.8 (7.8)	25-61
Caregiver-Child Relationship	Mother	44 (75.9%)	38.4 (6.4)	25-61
	Father	11 (19%)	37.6 (4.1)	31-46
	Other Caregivers	3 (5.1%)	43.7 (19.1)	22-58

Note. SD: Standard Deviation; CP: Cerebral Palsy; MACS: Manual Ability Classification System; GMFCS: Gross Motor Function Classification System; COPM: Canadian Occupational Performance Measure. Other Caregiver: grandparents or siblings

## Results

Fifty-eight children with spastic CP presenting with mild to moderate motor impairment (mean age  $\pm$  SD:  $9.2 \pm 2.2$  years) and their 58 caregivers (mean age  $\pm$  SD:  $38.5 \pm 7$  years) participated in the study. The demographic characteristics of participants are presented in Table 1.

The COPM results for these participants revealed that, among children with CP, the most frequently chosen occupational goals were personal care (29%), functional mobility (23.5%), and active recreation

(23.1%). On the other hand, their caregivers most often selected goals related to personal care (46.5%), functional mobility (19.4%), and school-related activities (15.9%). Among personal care occupations, both these children and their caregivers most frequently selected dressing activities. Details of the COPM results for participants (children with CP, presenting mild to moderate motor impairment, and their caregivers) are presented in Table 2, and the detailed results for all areas are provided in the Supplementary Table.

**Table 2.** Occupational performance priority (Children: n=58, Caregivers: n=58)

Children's Occupational Performance Priorities	Caregivers' Occupational Performance Priorities
Personal-care 69 (29%)	Personal-care 135 (46.5%)
Dressing 21(31.3%)	Dressing 45 (33.1%)
Eating 17 (25.4%)	Toileting 42 (30.9%)
Bathing 12 (17.9%)	Eating 25 (18.4%)
Toileting 8 (11.9%)	Bathing 16 (11.8%)
Face Washing 7 (10.5%)	Hair Tying 4 (2.9%)
Nail Trimming 2 (3%)	Nail Trimming 2 (1.5%)
	Brushing Teeth 1 (0.7%)
	Sleep-Related Activities 1 (0.7%)
Functional Mobility 56 (23.5%)	Functional Mobility 55 (19.4%)
Active Recreation 55 (23.1%)	School or Study 46 (15.9%)
School or Study 25 (10.5%)	Active Recreation 25 (8.7%)
Quiet Recreation 17 (7.1%)	Socialization 18 (6.2%)
Household Management 13 (5.5%)	Quiet Recreation 5 (1.7%)
Socialization 2 (0.9%)	Household Management 4 (1.4%)
Paid and Unpaid Work 1 (0.4%)	Paid and Unpaid Work 0 (0%)

The correlation analysis between children's and caregivers' COPM scores indicated no significant correlation between occupational performance and satisfaction with performance in this group of children with spastic CP ( $p = 0.916$ ,  $r = 0.095$ ). However, a strong positive correlation between performance and satisfaction with performance was observed in their caregivers ( $p < 0.001$ ,  $r = 0.81$ ). Furthermore, the analysis of cross-group correlations between this group of children and their caregivers revealed a moderate correlation between children's satisfaction with occupational performance and caregivers' satisfaction with occupational performance ( $p = 0.031$ ,  $r = 0.416$ ), as well as between children's satisfaction with occupational performance and caregivers' occupational performance ( $p = 0.032$ ,  $r = 0.413$ ).

Multiple regression analysis examining relationships between children's age, GMFCS levels, MACS levels, and COPM scores revealed direct, but

statistically non-significant ( $p > 0.05$ ) relationships between caregivers' COPM occupational performance and satisfaction with occupational performance scores and the age of participating children. Additionally, non-significant associations were found between children's and caregivers' satisfaction with occupational performance and manual ability levels. In contrast, inverse relationships were observed between caregivers' COPM occupational performance scores and children's MACS and GMFCS levels, and similarly between caregivers' satisfaction with occupational performance and children's GMFCS levels. Inverse relationships were also identified between children's COPM occupational performance scores and their age, MACS, and GMFCS levels, as well as between children's satisfaction with occupational performance and their age and GMFCS level. None of the inverse relationships, nor the overall

regression model, reached statistical significance ( $p > 0.05$ ). All of this data is fully reported in Table 3.

Fisher's exact test demonstrated statistically significant and relatively strong associations between manual ability levels and the occupational areas selected in the COPM for both CP children, with mild to moderate motor impairment ( $V = 0.43$ ,  $p < 0.001$ ) and caregivers ( $V = 0.49$ ,  $p < 0.001$ ). With increasing MACS levels (indicating reduced ability), the frequency of selecting self-care occupations as a priority increased in both groups. Additionally, a statistically significant, moderate association was

found between GMFCS levels and the occupational areas selected by children with mild to moderate motor impairment ( $V = 0.32$ ,  $p = 0.016$ ), indicating that lower GMFCS levels were associated with a higher frequency of self-care priorities. No significant association was observed between caregivers' selected areas and children's GMFCS levels ( $V = 0.21$ ,  $p = 0.358$ ). However, analysis of the frequency distribution of caregivers' selections showed that self-care activities were the most frequently selected category across I to III GMFCS levels; of 289 total activities selected, 190 (65.7%) were self-care activities.

**Table 3.** Results of multiple linear regression analysis examining the relationship between age, GMFCS, MACS, and COPM

Outcome Variables	COPM_CP			COPM_CS			COPM_PP			COPM_PS		
	B	SE	P-value	B	SE	P-value	B	SE	P-value	B	SE	P-value
predictor Variables	(Std B)			(Std B)			(Std B)			(Std B)		
Childe's Age	-0.139 (-0.151)	0.171	0.425	-0.030 (-0.03)	0.187	0.875	0.174 (0.255)	0.089	0.056	0.041 (0.050)	0.111	0.713
GMFCS	-0.317 (-0.15)	0.410	0.446	-0.201 (-0.085)	0.446	0.656	-0.408 (-0.227)	0.235	0.089	-0.092 (-0.043)	0.290	0.753
MACS	-0.322 (-0.128)	0.471	0.499	0.021 (0.008)	0.513	0.967	-0.439 (-0.191)	0.304	0.155	0.074 (0.027)	0.372	0.843

Note. COPM-CP: Canadian Occupational Performance Measure – child performance; COPM-CS: Canadian Occupational Performance Measure–Child Satisfaction; COPM-PP: Canadian Occupational Performance Measure–Parent Performance COPM-PS: Canadian Occupational Performance Measure–parent satisfaction; GMFCS: Motor Function Classification System; MACS: Manual Ability Classification System; B: Beta Coefficient; Std B: Standardized Beta Coefficient; SE: Standard Error

## Discussion

This study examined the occupational priorities of children with spastic CP presenting with mild to moderate motor impairment and their caregivers. It explored how these priorities relate to gross motor function and manual ability levels. Findings showed that both groups of participants in this study identified personal-care activities specifically dressing and functional mobility, as their main priorities, reflecting a shared understanding of the need for independence and participation in daily life. However, discrepancies in other priorities highlight the importance of including the child's direct perspective during therapeutic goal-setting.

Recognizing that the wider context of everyday life shapes personal needs and decisions is essential(18). Factors such as cultural, social, economic, and political conditions significantly shape individuals' occupational priorities (18). As a result, the alignment between the priorities of children with CP and their caregivers may partly stem from their shared life context and caregivers' understanding of children's functional and daily needs. Additionally, beyond contextual factors, personal characteristics such as developmental stage, cognitive abilities, and

perceptions of one's roles also affect how occupational priorities are determined (2). This point may explain the difference observed in the third and subsequent areas of occupational priorities between children and their caregivers: Children prioritized play, whereas caregivers placed productivity-related activities (particularly school) as their third priority. Play, as a means of exploring the environment, has a special role in children's daily activities, through which they interact with objects and people around them (2). Although play is also essential from the parents' perspective, caregivers' attitudes toward its importance change over time. With children's entry into school, caregivers' concerns shift more toward academic learning and structured education (19). Therefore, this change in perspective may lead to a shift in caregivers' prioritization of play. Accordingly, it is essential that, in setting rehabilitation goals, the child's priorities be examined independently and from a client-centered perspective, since caregivers' preferences, although based on their understanding of the child (7), may not align with the child's intrinsic motivations and desires.

In this regard, the findings of Torkan et al. (10), consistent with the results of the present study, also showed that children with CP selected self-care as their

first occupational priority and exhibited substantial alignment with their parents at the activity-area level. However, differences were observed in the sequence of activity selections between children and their caregivers, underscoring the importance of including children's voices in treatment planning.

On the other hand, the identified priorities reflect the participants' real needs in daily life (15). Engagement in personal care activities has been recognized as a key factor in improving the quality of life for children with CP (20). Consistent with the findings of Torkan et al. (10), the present study also found that activities related to personal care and functional mobility were the most frequently prioritized by both children with spastic CP presenting mild to moderate motor impairment and their caregivers. The recurrence of these priorities highlights a shared desire for independence in daily activities and mobility within the home and community, emphasizing the clinical importance of addressing these areas in rehabilitation programs. In contrast to the present study, however, Livingston et al. (21) identified play as the primary therapeutic priority for individuals with CP. This difference can be attributed to the age range of the participants in that study and, consequently, to variations in roles, expectations, and perceptions. In the study by Livingston et al., adolescents with CP aged 12 to 19 years participated, most of whom were classified at GMFCS levels I and II. At these ages, individuals spend less time with their parents than in childhood and devote more time to friends and peers. Therefore, their main concerns are participation in social activities and acceptance within peer groups, for which play can serve as an appropriate means to achieve these goals (9). In addition, individuals at these ages generally possess higher cognitive, communication, and autonomy abilities (22) and are better able to express their own preferences. This factor may also help explain the difference observed between the present study's results and those of Livingston et al.

Children with CP, due to their functional limitations, are generally more dependent on their caregivers than their typically developing peers and spend more time with them (23). The link between occupational performance and satisfaction with occupational performance scores among caregivers showed a direct relationship, indicating that caregivers who report higher performance levels tend to feel more satisfied with their occupational performance. However, the significant caregiving duties required to support children with CP often limit caregivers' opportunities to participate in other areas of life, including leisure and self-care, which can negatively affect their overall satisfaction (23). Furthermore, the

analysis showed that children's satisfaction with their occupational performance was associated with caregivers' occupational performance and satisfaction with occupational performance, but not with the children's own occupational performance. This finding supports the idea that satisfaction is an abstract and complex concept that may be difficult for children to express (24). Although this study used visual aids and the pictorial scoring system developed by Verkerk et al. (15) to assist understanding, the complexity of the satisfaction concept might still have influenced children's responses. In this regard, Chong et al. (25), in a study consistent with the present research, also showed that the satisfaction of children with CP is not necessarily related to their physical function and, rather than being dependent on physical abilities or walking capability, is influenced by their attitude toward CP. Caregivers, who spend more time with the child, play an essential role in shaping children's attitudes (26). Their parenting style, along with other environmental factors, significantly influences children's sense of motivation and competence (27). These points highlight the need to educate caregivers of children with CP and raise awareness, and emphasize the role of their beliefs and parenting approaches in shaping the child's subjective experience and satisfaction.

Satisfaction and performance are complex, multidimensional concepts shaped by the interplay of personal and environmental factors; therefore, they cannot be fully explained solely by physical disability or gross motor function (2). In this study, no significant relationships were observed between occupational performance and satisfaction with occupational performance scores reported by children with spastic CP presenting with mild to moderate motor impairment, or between these scores and their caregivers, or with variables such as age, GMFCS, or MACS levels. Likewise, Kolehmainen et al. (28) observed only a weak correlation between children's motor function and their participation in play activities. Consistent with these findings, Chong et al. (25) also demonstrated that factors like GMFCS level and chronological age are not reliable predictors of satisfaction in children with CP. Conversely, Hawawi et al. (29) found that older children tend to have higher parental satisfaction, attributing this to parents' gradual adaptation and changing coping strategies over time. Collectively, these findings highlight the importance of considering factors beyond physical ability when aiming to improve meaningful participation and satisfaction for both children and caregivers in daily life.

Examining the relationship between children with CP's level of physical function and the activities they

select and their caregivers' selections can clarify various aspects of the decision-making process in setting therapeutic goals. The present study found that manual ability in spastic CP children with mild to moderate motor impairment influences the occupations selected by children and their caregivers. In interpreting this finding, it should be considered that the MACS categorizes children based on the extent to which they use their hands in daily activities. Accordingly, children with weaker levels of hand function are classified into higher MACS levels (16). With increasing MACS level, the need for caregiver assistance and support increases to the point that independent performance of even basic self-care activities becomes difficult, or even impossible, for the children (16). The constant need for caregivers to assist with even the simplest self-care tasks—essential daily activities—can result in fatigue and place a significant psychological and physical strain on them. This situation may also cause discomfort for the children receiving care (20). As a result, both children with severe impairments and their caregivers might prioritize self-care activities when setting therapeutic goals. Moreover, this study identified the influence of gross motor function level on occupational priorities among spastic CP children with mild to moderate motor impairment. As gross motor ability decreased, the number of occupations selected in productivity and leisure areas declined, while selections in the self-care area increased. To explain this finding, notably, a decrease in children's gross motor function may reflect the impact of environmental barriers on participation in children with CP. It may negatively affect their engagement in peer-play activities (30). Furthermore, as mobility decreases, the child's dependence on caregivers for mobility and for performing personal care activities increases (12). As mentioned earlier, this dependence may, in turn, direct children's occupational priorities toward self-care occupations, including personal care, functional mobility, and community activity management. Previously, Ghaffari et al. (30), conducted a study aimed at determining the predictive factors of participation in recreational activities among children with CP, consistent with the present research. They demonstrated that the gross motor function level of children with CP was significantly related to their participation in leisure activities and could be considered a predictive factor of participation in recreational occupations. On the other hand, to explain the non-significant relationship between caregivers' occupational priorities and children's gross motor function level, caregivers across all GMFCS levels selected the self-care area as their primary occupational priority. This finding underscores the importance of independent performance in this area from caregivers'

perspectives. However, this same factor may have contributed to the non-significant association between the selected occupational areas and children's gross motor function levels, as Fisher's exact test is sensitive to differences in frequency across the compared categories. In this analysis, the frequency of selections in the self-care area was the highest across all GMFCS levels.

One limitation of the present study was the presence of some parents during the interview sessions. Their presence was intended to help reduce the children's stress and assist in expressing their thoughts. Although the conditions were thoroughly explained to the parents and they were asked only to help communicate their children's viewpoints, their presence may have unintentionally influenced their children's selection and prioritization of occupations. Therefore, it is recommended that future studies conduct interviews independently, without the parents present. Moreover, given the complexity and abstract nature of the concept of satisfaction, and the difficulty children have in expressing it, the participation of children under seven years of age may have affected the accuracy of the COPM scoring results. Therefore, these findings should be interpreted with caution, and future studies should be conducted with older age groups. In addition, satisfaction is a multidimensional and complex concept influenced by various factors, including an individual's mental health. Although the main objective of this study was to compare the occupational priorities of children with CP and their caregivers, assessing participants from this perspective may contribute to a more precise interpretation of their satisfaction with occupational performance scores. Hence, it is recommended that future research take this factor into account. Notably, this investigation was also conducted exclusively with spastic CP children who had mild to moderate motor impairment. Therefore, its findings cannot be generalized to all groups of children with CP. Accordingly, it is recommended that future studies include participants with different types of CP and across various GMFCS and MACS levels.

## In Conclusion

This study showed that children with CP and their caregivers share similar occupational priorities, with personal care and functional mobility ranking as the top two crucial areas. Since both groups live in the same environment, it is likely that the environmental context—on which daily activities are based—helps align their occupational priorities. However, from the third priority onward, significant differences emerged between children's and caregivers' views, highlighting the need to assess children's perspectives separately

during goal-setting to promote truly client-centered intervention planning.

While caregivers' satisfaction with their occupational performance was significantly associated with their reported occupational performance scores for their children, children's satisfaction with their occupational performance was not associated with their own occupational performance. Instead, it was related to their caregivers' occupational performance and satisfaction with occupational performance. This suggests that caregivers' attitudes and beliefs may greatly influence children's perceived self-efficacy and overall psychological well-being. The study also showed that both children's and caregivers' occupational priorities were affected by the severity of motor involvement and manual ability levels, with greater physical limitations shifting the focus of therapy toward achieving independence in self-care. These results underscore the importance of including children's direct perspectives in OT assessment and goal setting to boost motivation, engagement, and relevance. Likewise, caregiver education and empowerment should be key components of intervention planning, as caregivers' perceptions greatly influence children's functional performance and their own satisfaction. Since this research is one of the few comparative studies of occupational priorities

between children with CP and their caregivers, it is highly recommended that it be replicated in different cultural settings to confirm and expand these findings.

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### **Authors' Contribution**

Conceptualization: Samira Boroumand, Afsoon Hassani Mehraban, Malek Amini, Akram Azad. Data Collection: Samira Boroumand. Formal and Statistical Analysis: Yahya Salimi, Samira Boroumand. Manuscript Drafting: Samira Boroumand, Malek Amini, Akram Azad. Supervision: Akram Azad. All authors have read and approved the final version of the manuscript.

### **Conflict of Interest**

The authors state that they have no conflicts of interest related to this publication.

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