

# Research Paper: Comparing Time Use Between Mothers of Pre-School and School-Aged Children With Cerebral Palsy



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## ABSTRACT

**Introduction:** The time use of people in the occupation areas is affected by conditions, such as disability, environment, and family changes. One of these disabilities is Cerebral Palsy (CP), which requires long-term care. This study aimed to determine the difference between time use of mothers of school-aged children with CP with mothers of pre-school children with CP.

**Materials and Methods:** The present study is a descriptive/analytical study. A total of 64 mothers of children with CP along with their children, aged 4-12 years, were participated in this study. They were divided into two groups; mothers of pre-school and mothers of school-aged children. In this study, mother's time use form was used to collect data. Then, the obtained data were analyzed by SPSS-19 conducting the Independent t test and Mann-Whitney tests to compare the two groups.

**Results:** There was a significant difference between two groups with respect in working days of the week ( $P=0.009$ ). This study indicated that mothers of the schoolgoer children allocated more time for their children. There was no significant difference between the two groups with respect to their time use on holidays and weekends.

**Conclusion:** According to the findings, particular attention must be paid to the quality of life of mothers with school-aged children who have CP.

## 1. Introduction

Occupational therapy's interest in the time use of patients dates back to 70 years ago [1]. "Time use" relates to the individual's ability to perform his physical activities and personal care, to enjoy life, and eventually to have adequate sleep [2]. Sometimes time

use is affected by some factors, such as disability, family and environmental conditions, and imbalance in the occupational areas. One of the common disabilities which changes the time use of clients of occupational therapy is Cerebral Palsy (CP) [3].

CP is one of the most common causes of disability and motor impairment in an evolving child [4] that requires

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long-term care. Although parents should naturally rear and care their children, when the child has a functional limitation and long-term dependence, the task significantly changes and puts a lot of pressure on caregivers, especially mothers [5]. Thus, the child's disability affects both child's life and the lives of family members and caregivers. It causes problems such as disrupted sleep, physical complaints, collapse of social interactions, marital conflicts, financial pressures, time limits to address health issues, and long-term exposure to chronic stress. These issues affect the quality of life of caregivers in all aspects [5, 6]. Mothers of disabled children with special needs are always challenging with time use that sometimes lead to dissatisfaction with their lives [7]. The qualitative study of Helitzer and colleagues (2002) shows that caring women for children with disabilities are overwhelmed by the feelings of social isolation and lack of support [8]. Children with CP, who go to special schools spend there about 8 hours, need care and medical interventions due to their motor problems. Mothers of these children had to attend school and take care of their children because of the improper physical structure of schools and the resulted movement challenges for these children [9]. With regard to little information on time use of mothers of children with CP in school-aged and pre-school ones, this research aimed to study this topic.

## 2. Materials and Methods

### Participants

The present study is a cross-sectional and descriptive-analytic study. A total of 64 mothers of children with CP, 4-12 years old, were selected using convenience sampling method. Mothers were divided into two groups of 32. In each group, children were matched in terms of gross motor function and hand ability. The inclusion criteria comprised having a child diagnosed with CP, aged between 4-12 years, lacking severe depression, i.e. a score of less than 29 based on Beck Depression Test [10], and having an acceptable literacy level to complete the questionnaire. The study was approved by the Ethics Committee for Human Experiments, Tehran University of Medical Sciences, Tehran, Iran. The sample were conveniently selected from occupational therapy clinics. After explaining all the steps, the evaluations, and the purpose of this research, written consent was obtained from all study participants.

### Instruments

The study data were collected from the Persian version of the Mothers Time Use Questionnaire (MTUQ), SPAR-

CLE form, and a demographic questionnaire. MTUQ consists of three sections. The first section requires mothers to categorize their daily activities from 5:00 AM to midnight of a typical day into sleep/rest, household (including all activities except childcare), childcare, leisure and work. Total time for each category is calculated by adding up the amount of time spent on each activity. It also asks about the importance of occupations, quality of carrying out occupations, enjoyment derived from occupations, and satisfaction with the ability of balanced time use. The two other sections of the MTUQ, which pertain to leisure time and quality of time management of mothers, were not used in this study. According to the developers of the MTUQ, using each section of the MTUQ alone would not confound data gathering [11]. This questionnaire was translated into Farsi by Ahmadi and associates (2012). They reported its test-retest reliability between 0.78 and 0.89 [7]. SPARCLE form was designed and used by Allan Colver (2006) to estimate the cognitive level of children. The form was completed by their families, and children's IQ is classified at three levels: below 50, between 50 and 70 and over 70 [12].

### Procedures

After collecting the demographic information and informational profiles such as estimating the level of cognition, MTUQ was presented to the mothers and asked them to complete the routine tasks they do in a working day according to the timetable of the form. A Time Use form was also given to mothers to mark the chores they do on holidays and weekends. Moreover, had a mother reported tiredness, the assessment would be continued and postponed to another day. The data were analyzed by SPSS-19 using the Independent t test and Mann-Whitney test to compare two study groups.

## 3. Results

Tables 1 and 2 present the demographic information of mothers of children with CP. Children with CP are listed in Table 3, according to their type. In terms of age, children, aged 7-12 years, were in the school group and children, aged 4-7 years old, are in the non-school group. With regard to additional problems associated with the children of each group, 17 school-goer children with CP had at least one problem (seizures, language disorders, etc.) and 15 children without additional problems. The cognitive level of children with CP was estimated based on the SPARCLE test, summarized in Figure 1.

Comparing time use in working days of mothers of children with CP showed that, except in the area of child-

Table 1. Mothers' age and employment status

Variable		Mean±SD	
		School Group	Non-School Group
Age, y	Mean	39.72±6.70	32.12±4.32
Employment status	Number of employed	5	6
	Number of housewives	27	26

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Table 2. Demographic information of mothers of children with cerebral palsy

Educational Level of Mothers	School Group		Non-School Group	
	Number	Percentage	Number	Percentage
Academic education	23	71.8	18	56.2
Nonacademic education	9	28.2	14	43.8
All	32	100.0	32	100.0

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care, there is no significant difference in the other areas of activities between the two groups (Table 4). In the group of mothers whose children were attending school, more time was allocated to childcare, so that the average hours allocated to children's affairs was 7.13 hours, but in the group of mothers whose children did not attend school, an average of 5.31 hours was devoted to childcare (P=0.009). Comparing two groups with respect to the variables of the importance of occupations, quality of carrying out occupations, and enjoyment from occupations did not reveal any significant difference. Comparing the satisfaction with the ability of balanced time use did not differ significantly between the two groups.

Comparison of the time use during holidays and weekends of mothers of CP children showed no significant difference in the areas of occupation between the two groups (Table 5). Comparing two groups with respect to the variables of the importance of occupations, quality of carrying out occupations, and enjoyment from occupations did not show any significant difference. The satisfaction of two groups with the ability of balanced time use had no significant difference.

#### 4. Discussion

Although past studies indicate that mothers of children with disabilities devote more time in caring for their

Table 3. Type of children with cerebral palsy in each group

Groups	Gender	Type	Number	Percentage	Type	Number	Percentage	
School (7-12 years)	Boy	Diplegia	13	40.6	Ataxic	1	3.1	
		Hemiplegia	7	21.9	Athetoid	1	3.1	
	Girl	9	Quadriplegia	12	37.5	Spastic	30	93.8
Non-school (4-7 years)	Boy	Diplegia	9	28.1	Ataxic	2	6.3	
		Hemiplegia	8	25.0	Athetoid	1	3.1	
	Girl	14	Quadriplegia	15	46.9	Atonic	1	3.1
						Spastic	28	87.5

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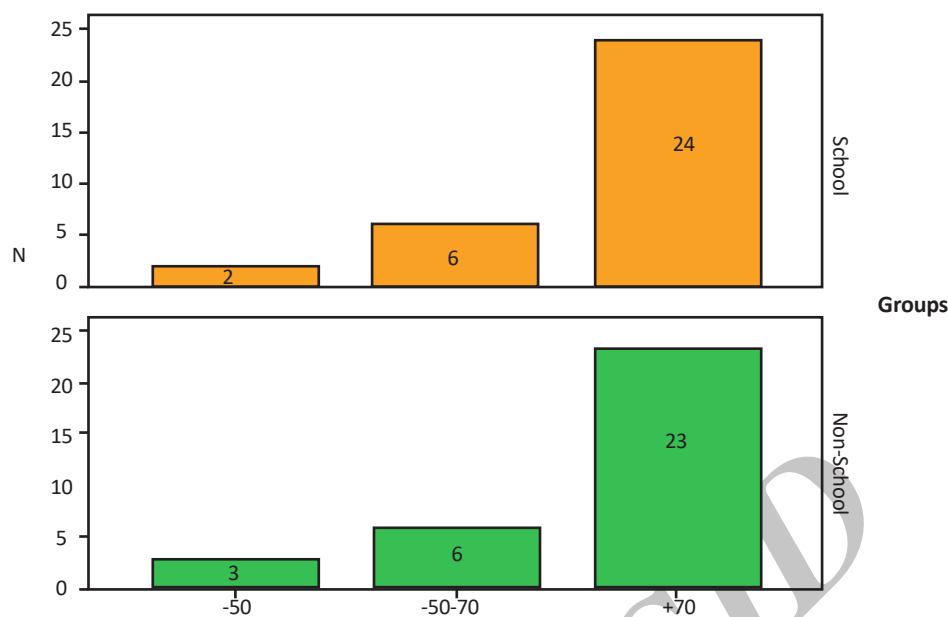


Figure 1. Children's IQ in each group

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children, there is no evidence of the school's impact on mother's time use. Most previous studies compared the mothers' time use of children with disabilities with mothers of healthy children or measured the effect of the

level of gross motor function of the child on their mothers' time use [2, 13, 14]. Mothers of pre-school children with CP spend more time in sleep/rest, leisure, household and social participation than the mothers of children

Table 4. Comparing the mother's time use in typical days

Areas of Occupation	Group	No.	Mean of Hours Spent on Each Area of Occupation	SD	P
Self-care	School	32	1.91	2.085	0.642
	Non-school	32	1.69	1.635	
Sleep/rest	School	32	3.25	1.685	0.059
	Non-school	32	4.19	2.177	
Childcare	School	32	7.13	2.848	0.009
	Non-school	32	5.31	2.481	
Leisure	School	32	1.63	1.661	0.068
	Non-school	32	2.41	1.701	
Household	School	32	3.78	2.549	0.820
	Non-school	32	3.91	1.748	
Work	School	32	1.03	2.508	0.701
	Non-school	32	0.81	2.007	
Social participation	School	32	0.28	0.772	0.162
	Non-school	32	0.69	1.424	

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Table 5. Compare the mother's time use in the holidays

Areas of Occupation	Group	No.	Mean of Hours Spent on Each Area of Occupation	SD	P
Self-care	School	32	2.22	1.827	0.945
	Non- school	32	2.25	1.760	
Sleep/rest	School	32	5.44	1.883	0.570
	Non- school	32	5.16	2.050	
Childcare	School	32	2.97	2.403	0.592
	Non- school	32	3.28	2.232	
Leisure	School	32	2.91	2.115	0.330
	Non- school	32	3.38	1.680	
Household	School	32	4.56	2.770	0.368
	Non- school	32	4.00	2.155	
Social participation	School	32	0.91	1.594	0.878
	Non- school	32	0.97	1.656	

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with CP who attend school in typical days. Comparison of two groups showed that mothers of pre-school age children spend less time on self-care and work (although the number of employed mothers in the two groups was equal). Therefore, attending school increases the need for child-care and mothers try to spend more time for their children. For example, children with CP and mental problems have more troubles in learning, so mothers have to spend more time for such children teaching lessons. On the other hand, some children at school have problems (such as writing, restlessness at school because of distance from the mother, lack of independence in doing personal-care like going to the bathroom, inadequate facilities at the school to move safely in the school environment) that make mothers to attend school with their children. This result of our study differs from the study result of Crowe, who concluded that when the child grows older, child-care decreases [15]. Perhaps the reason for this difference is related to the age difference of the study groups.

In weekends, there was no significant difference between both groups with regard to the mean hours of mothers' activities. On weekends, mothers seem to spend more time on the school homework and child care, still no significant difference was observed between the two groups. Therefore mothers of children with CP, regardless of their attending at the school or not, have the same activities on holidays. In both days (weekdays and

weekends), the results showed that the school did not affect other sections in Time Use Questionnaire.

In this study, access to our target sample was difficult and some mothers were not willing to cooperate for personal reasons. It is suggested that future studies examine the school's impact on time use of children and compare it with pre-school children, also compare mother's time use of children with CP and various accompanying symptoms.

Children with CP require special care due to their physical and mental disabilities. This care increases with the age of the child and their going to school; so that the mothers of these children spend more time for the childcare. Hence, mothers do not have enough time to deal with other areas of work. In terms of the amount of time devoted by mothers to occupation areas, there was a difference between working days and holidays. Mothers of children with CP are more likely to be involved in the childcare and work issues, while on holidays they were similar to mothers whose children didn't go to school. Evaluating the strengths and weaknesses of educational policies, psychology, and rehabilitation of children with CP can reduce the problems of these children and their caregivers.

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### Conflict of Interest

The authors declared no conflicts of interest. Contribution of authors is as follows: Parvin Raji: Designing research, approving the protocol, and editing the manuscript; Mahmood Mahmoodian: Approving the protocol; Ahmad Reza Baghestani: Analyzing the data; and Moein Qeytasi: Collection the data and analysing method

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