



Comparison of depression and quality of life of mothers and fathers of children with cerebral palsy

Serebral palsili çocukların anne ve babalarının depresyon ve yaşam kalitelerinin karşılaştırılması

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ABSTRACT

Introduction: In the present study, quality of life (QoL) and depression levels of the fathers of children with cerebral palsy (CP) were investigated and compared with mothers of children with CP and fathers of healthy children.

Materials and Methods: A total of 30 children with spastic cerebral palsy and their fathers and mothers were included in the study. Control group comprised fathers of 30 healthy children. Gross Motor Function Classification System (GMFCS) was used for evaluating the functional status of the children. Spasticity was measured by using Modified Ashworth scale. QoL of the parents was assessed by using Nottingham Health Profile (NHP) and depression by Beck Depression Scale (BDS).

Results: Differences among groups were significant in BDS, energy, social isolation and emotional reactions subgroups of NHP according to Kruskal-Wallis test ($p < 0.05$). Scores of BDS and NHP energy, social isolation and emotional reactions subscores were significantly higher in mothers than in fathers ($p < 0.05$). BDS and NHP energy subscores of fathers were found as significantly higher than that of controls ($p < 0.05$).

Conclusion: In the light of these findings, it was concluded that mothers of children with cerebral palsy have worse functioning than their fathers on QoL in terms of mood and social relations. When social roles of men and women in Turkey were taken into account, these were expected results. In our country, women generally take care of house working and children, and men are responsible for family income. Although fathers are not affected as much as mothers; a disabled child has negative effects on QoL of all individuals in the family, particularly mothers, with respect to emotional and social functions.

Keywords: Cerebral palsy, depression, quality of life

ÖZ

Giriş: Bu çalışmada, serebral palsili çocukların babalarında yaşam kalitesi [quality of life (QoL)] ve depresyon araştırılarak serebral palsili çocukların anneleri ve sağlıklı çocukların babaları ile karşılaştırıldı.

Materyal ve Metod: Çalışmaya spastik serebral palsili toplam 30 hasta ile anne ve babaları alındı. Kontrol grubu ise 30 sağlıklı çocuğun babasından oluştu. Çocukların fonksiyonel durumunu değerlendirmede Kaba Motor Fonksiyon Sınıflandırma Sistemi "Gross Motor Function Classification System (GMFCS)" kullanıldı. Spastisite, Modifiye Ashworth Skalası ile ölçüldü. Hastaların yaşam kalitesi Nottingham Sağlık Profili "Nottingham Health Profile (NHP)" ile depresyon ise Beck Depresyon Skalası "Beck Depression Scale (BDS)" ile değerlendirildi.

Bulgular: Kruskal-Wallis testine göre, gruplar arasındaki farklılıklar BDS ve NHP'nin enerji, sosyal izolasyon ve emosyonel reaksiyonlar alt gruplarında anlamlıydı ($p < 0.05$). Annelerin BDS ve NHP enerji, sosyal izolasyon ve emosyonel reaksiyonlar alt skorları, babalara göre anlamlı olarak daha yüksekti ($p < 0.05$). Babaların BDS ve NHP enerji alt skorları kontrollere göre anlamlı olarak yüksek bulundu ($p < 0.05$).

Sonuç: Bu bulguların ışığında, serebral palsili çocukların annelerinin, babalarına göre duygu durum ve sosyal ilişkiler açısından daha kötü yaşam kalitesine sahip oldukları sonucuna varıldı. Türkiye'deki kadın ve erkeklerin sosyal rolleri göz önüne alındığında bunlar beklenen sonuçlardı. Ülkemizde kadınlar genellikle ev işleri ve çocukların bakımıyla ilgilenirken, erkekler ailenin gelirinden sorumludur. Babalar anneler kadar etkilenmese de, engelli çocuğun başta anneler olmak üzere tüm aile bireyleri üzerinde emosyonel ve sosyal fonksiyonlar açısından olumsuz etkileri bulunmaktadır.

Anahtar Kelimeler: Serebral palsi, depresyon, yaşam kalitesi

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INTRODUCTION

Cerebral palsy (CP) is among the most common disorders of childhood, with an incidence of approximately 0.2-0.3% (1). Children's long term rehabilitation, requirements for special care and regular check-ups have negative impact on quality of life (QoL) of children and their parents (2,3). Mothers are primary and natural care givers of children and bear the major responsibility for child care. Previous studies in the literature have mostly concentrated on psychological status and QoL of mothers of children with CP. Dehghan et al. reported poor physical and mental health in the mothers of children with CP in their study where 424 Iranian mothers were assessed (4). In another study conducted in Turkey, high depression levels were reported in Turkish mothers of spastic CP patients when compared with mothers of healthy children (5). Although there are sufficient numbers of studies focusing on mothers of children with CP; fathers have been rarely mentioned in the literature.

The main objectives of our study are to analyze QoL and depression levels of the fathers of children with CP and to compare with mothers of children with CP and fathers of healthy children.

MATERIALS and METHODS

A total of 30 children (12 girls and 18 boys) with spastic CP aged between 2-18 years and their fathers and mothers were included in the study. All of the mothers were housewives and in the marital relationship with fathers. Control group consisted of fathers of 30 healthy children. Fathers and mothers having any severe or chronic disease such as diabetes mellitus, stroke and chronic psychological disease were excluded.

Demographic data including age, gender and type of CP (quadriplegia, diplegia or hemiplegia), education level of the parents and type of family (core or combined family), and number of children in the family were noted.

Functional status of the children was evaluated by using Gross Motor Function Classification System (GMFCS) (6). Spasticity was assessed by using Modified Ashworth scale, with a score range between 0 and 4. QoL of the parents was evaluated by using Nottingham Health Profile (NHP) and depression by Beck Depression Scale (BDS) (7-9).

The present study conforms to the provisions of the World Medical Association's Declaration of Helsinki. The study protocol was approved by the Medical Research Ethics Committee of training and research hospital. All of the participants signed informed consent form.

Statistical Analyses

Demographics and clinical parameters were assessed by using descriptive statistics [mean, median, SD (Standard deviation), minimum, maximum and frequencies]. Since variables were not normally distributed, Kruskal-Wallis and Mann-Whitney U tests with Bonferroni correction were performed to evaluate differences among groups. A value of $p < 0.05$ was accepted to be statistically significant. IBM Statistical Package for the Social Sciences (SPSS) for Windows, Version 21.0 (Armonk, New York, USA) was used for analyses.

RESULTS

Demographics and Clinical Characteristics Of The Participants

A total of 30 children with CP (18 males and 12 females) and their mother and fathers and controls (fathers of health children) were included in the study. Mean age of the children was 13.08 ± 4.71 (2.5-18) years. Mean age was 36.90 ± 9.43 (20-58) years for the mothers; 39.56 ± 8.35 (27-57) years for the fathers and 36.96 ± 7.43 (26-57) years for the controls. Age did not differ among the groups ($p > 0.05$). Demographic and clinical data of children with cerebral palsy and their fathers are shown in Table 1.

The Comparison of Depression, and Quality of Life Among the Groups

Kruskal-Wallis test revealed that differences among groups were significant in BDS, energy, social isolation and emotional reactions subgroups of NHP ($p < 0.05$). According to Mann-Whitney U test with Bonferroni correction; scores of BDS and energy, social isolation and emotional reactions subgroups of NHP were significantly higher in mothers than in fathers ($p < 0.0167$). BDS and NHP energy scores of fathers were found as significantly higher than that of controls ($p < 0.0167$). Mean \pm standard deviation and median scores of groups are given in Table 2.

DISCUSSION

Depression and QoL regarding physical, psychological and social functioning of the fathers of children with CP is a topic rarely mentioned in the literature. Our study focused on depression and QoL levels of fathers of children with CP. We compared them with both mothers of children with CP and fathers of healthy children.

In our study, depression levels in the fathers of children with CP were higher than in the fathers of healthy children, but lower than in mothers of children with CP. This finding was previously reported by Mehmedinovic et al. who conducted a study on Bosnian mothers and fathers of children with CP (10). They found the rate of

Table 1. Demographic and clinical data of children with cerebral palsy and their fathers

Demographic and clinical data of fathers		Mean ± standard deviation/n (%)
Age [years; mean ± SD (min-max)]		39.56 ± 8.35 (27-57)
Education	Primary school	7 (23.3)
	Secondary school	16 (53.3)
	High school	4 (13.3)
	University	3 (10.0)
Number of children [mean ± SD (min-max)]		2.47 ± 0.97
Sex	Girls	12 (40)
	Boys	18 (60)
Age	2.5- ≤ 6	3 (10)
	6- ≤ 12	8 (26.6)
	12- ≤ 18	19 (63.3)
Type of CP	Hemiplegia	6 (20.0)
	Diplegia	11 (36.7)
	Quadriplegia	13 (43.3)
GMFCS	1	8 (26.7)
	2	7 (23.3)
	3	4 (13.3)
	4	3 (10.0)
	5	8 (26.7)
Modified ashworth scale	0	5 (16.67)
	1	8 (26.67)
	1+	9 (30)
	2	5 (16.67)
	3	2 (6.67)
	4	1 (3.33)

CP: Cerebral palsy, GMFCS: Gross Motor Function Classification System.

depression as 95.7% in mothers and 83.3% in fathers in their study where depression was evaluated by using Zung self-rating depression scale (11). They determined this rate as 16.7% in the fathers of children without

disorders. They suggested that chronic state of a child affects all family members, not only mothers and disturbs family relations. Similarly, in a study conducted in Turkey, the frequency of depressive symptoms was found as 45% in mothers and 40% in fathers (12). It was suggested that these findings might be due to the primary role of mothers in child care. On the other hand, Bemister et al. demonstrated that mothers had slightly higher depression levels than fathers in the study performed in USA (13). In contrast to these findings, Al-Gamal et al. reported no difference on depression levels of mothers and fathers of children with CP (14). They suggested that Jordanian fathers and mothers shared equal responsibilities in the care of children.

Depression observed in both mothers and fathers might be result from pressure on marital relationships. Davis et al. suggested that caring for a child with CP might change the dynamics of familial and marital relationships (15). In their study, parents reported that they cannot do anything as a couple because of the responsibility of their child and this condition negatively affect their marital relations. Difficulty in social interactions, limited freedom, limited time for hobbies and financial burden also contribute to depression (15).

In our study, we found that mothers had poorer quality of life in terms of energy, and social and emotional functioning when compared with fathers. Our results were comparable with the findings of Mugno et al. who reported higher impairment of physical and psychological well-being in the mothers compared to fathers in the study conducted in 212 Italian parents (16). They assessed QoL by using World Health Organization QoL-BREF. Similarly, in the study of Bemister et al. (13) where QoL was evaluated by Parent Health-related QoL Score, it was demonstrated that mothers had slightly worse QoL compared to fathers. Similarly, Byrne et al. found poorer health status in physical and mental components of Short Form- 36 in

Table 2. The comparison of depression and quality of life between the mothers and fathers of children with cerebral palsy and controls

	Mother group (n= 30) mean ± standard deviation (median)	Father group (n= 30) mean ± standard deviation (median)	Control group (n= 30) mean ± standard deviation (median)	Chi-square (Kruskal-Wallis)	p value (Kruskal-Wallis)	p value X	p value Y
BDS	14.60 ± 16.41 (11)	6.36 ± 6.92 (0)	2.70 ± 5.27 (0)	17.798	< 0.0001*	0.015**	0.011**
NHP-pain	5.23 ± 5.54 (0)	4.76 ± 4.66 (0)	1.90 ± 6.19 (0)	3.242	0.198	0.939	0.104
NHP-physical mobility	5.00 ± 5.43 (0)	5.83 ± 5.12 (0)	3.33 ± 10.35 (0)	3.189	0.203	0.745	0.085
NHP-energy	65.00 ± 39.72 (75)	31.67 ± 35.92 (25)	8.33 ± 23.06 (0)	29.582	< 0.0001*	0.002**	0.003**
NHP-sleep	17.33 ± 26.12 (0)	8.66 ± 13.57 (0)	6.00 ± 14.04 (0)	3.757	0.153	0.318	0.272
NHP-social isolation	42.66 ± 34.33 (50)	11.33 ± 17.16 (0)	4.67 ± 11.37 (0)	27.700	< 0.0001*	< 0.0001**	0.078
NHP-emotional reactions	35.83 ± 34.69 (12.5)	5.83 ± 8.52 (0)	3.33 ± 7.99 (0)	26.990	< 0.0001*	< 0.0001**	0.122

BDS: Beck Depression Scale, NHP: Nottingham Health Profile, p value X: p value between fathers and mothers, p value Y: p value between fathers and controls,

* p value < 0.005 (significant),

** Bonferroni-corrected p value < 0.0167 (significant).

mothers than in fathers in their study conducted in Irish population (17). Also in a study from Japan, similar results were found and it was suggested that mothers' reactions to diagnosis of CP were emotional; however fathers were realist in problem management (18). Also they added that the mothers are more affected because they take care of the children while fathers provide family income. On the contrary, Davis et al. and El-Gamal et al. reported no difference in QoL scores among these two groups (14,15). They asserted that caring for children with CP affects both mothers and fathers equally with respect to physical, psychological and social well-being.

In our study, we found that fathers had poorer scores only in vitality subgroup of QoL when compared to controls; however no difference was observed in QoL in terms of social and emotional functions. Our findings were comparable with previous studies in the literature. Mugno et al. found no difference in four domains of World Health Organization QoL-BREF including physical, psychological, social relationships and environment between fathers in CP group and controls (16).

There were several limitations in our study. The first one was relatively small number of subjects. And second is lack of other parameters including family income and employment of the fathers that may affect the psychological and social status. And lastly, BDS does not diagnose depression just helps to diagnose depression and to assess its severity.

Based on the results of this study, mothers of children with CP have worse functioning than fathers on QoL in terms of mood and social interactions. These results were expected because of sociocultural context of our country. In Turkey, women in the family play role in children care and house working, and men bear financial responsibilities. Staying at home permanently and caring for a disabled child negatively affect them. Although fathers are not affected as much as mothers; a disabled child has a negative impact on QoL of all individuals in the family regarding mood and social interactions.

CONFLICT of INTEREST

None declared.

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