

Comparison of Severity of Anxiety and Depression in Caregivers of Children with Cerebral Palsy and Its Relation to the Type of Cerebral Palsy

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ABSTRACT

Background & Objective: Children with cerebral palsy require long term special care both physically and mentally. Consequently, care giving for a child with CP is often associated with anxiety, stress and depression in caregivers due to continuous intensive assistance they need to give to these children for their safety and effective treatment and prognosis. The purpose of this study is to evaluate if the type of Cerebral Palsy affects the anxiety and depression level of caregivers of those children differently. In the current study cerebral palsy was classified into four type based on the structured involved in the brain i.e. Spastic, Ataxic, Athetoid and Hypotonic cerebral palsy.

Method: A cross-sectional study was conducted where the primary caregivers (mother and father) of the children (aged between 4-10 years) with cerebral palsy were invited to participate in the study. The caregivers were divided into four groups (20 subjects on each) according to the type of CP their children suffer from. The subject's level of anxiety and depression were identified using Beck anxiety inventory and Beck depression inventory scale.

Result: The result showed that the level of anxiety and depression has significant relation with the type of cerebral palsy. Highest level of anxiety was found in caregivers of children with hypotonic cerebral palsy, followed by caregivers of children with Athetoid cerebral palsy, then spastic and then ataxic cerebral palsy. Whereas

the level of depression was found to be more in caregivers of children with hypotonic cerebral palsy, followed by caregivers with athetoid, ataxic and then spastic cerebral palsy.

Conclusion: Psychological status of both father and mother should be considered by health professionals, so that target therapy for the cerebral palsy child can be conveniently accomplished.

Keywords: Cerebral palsy, anxiety and depression.

INTRODUCTION

Happiness in life always keeps us mentally and physically fit. The birth of a child into a family tends to give us that kind of happiness. For instant we forget all our worries and any kind of negativity. But then, what happens when a child is born challenged. Many parents accept it with their open heart, as they believe it to be a part of their world. But the fact that as a parent they get so much into it, their life changes and they may often stress out. Cerebral palsy is one of these challenging births that affect the child as well as the parents', right from the time they get to know about the condition.

The term 'cerebral' refers to the brain and 'palsy' refers to lack of control in muscle. The problem associated with CP in children involves muscle weakness, shakiness,

balance problems, and slow response, with symptoms ranging from mild to severe. [1] It describes a gaggle of disorders of the event of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances that occurred within the developing foetal or infant brain. The motor disorders of spastic paralysis are often amid disturbances of sensation, cognition, communication, perception, and/or behaviour, and/or by a seizure disorder. [2] High incidence level of above 2/1000 live births worldwide have been recorded. [3,4] The prevalence of cerebral palsy is shown to be 2.3:1 with incidence higher in male than in female. [5] Cerebral palsy can be divided into various types depending on different forms of classification. According to the topographical classification Cerebral Palsy is divided as Quadriplegia, Triplegia, Diplegia, Monoplegia and Hemiplegia. It can also be classified based on the severity of disability using Gross Motor Functional Classification System. In the current study cerebral palsy is classified based on the structured involved in the brain i.e. Spastic, Ataxic, Athetoid and Hypotonic cerebral palsy.

Consequently, care giving for a child with CP is often associated with anxiety, stress and depression in caregivers due to the continuous intensive assistance they need to give to these children for their safety and effective treatment. Moreover, children with CP often suffer from sleep disturbances which affect their caregiver's quality of sleep as well. [6]

Anxiety Disorders are the foremost prevalent of psychiatric morbidities and are the sixth leading explanation for disability worldwide with 4% of all years lived with disability. it's seen more commonly in females as compared to males. According to national health portal roughly 273 million had an anxiety disorder as of 2010. Anxiety reflects the anticipation of fear and represents an adaptive plan to prevent the

fear-provoking circumstance from occurring. [7,8]

Depression being a common psychological ailment, usually marked with state of sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness and poor concentration. [9] According to the WHO, it is the most important precursor of suicide and will be the second cause of Global Burden by the year 2020. The World Health Organisation itself has stated, females of being more prone to develop depression to an extent of 50% more than that of males and of which Indians are reported to be more depressed among the global population. Depression is quite common in India with its prevalence ranging from 1.5/1000 to 37.74/1000. Depressions in parents have shown to negatively affect their ability to care for their children. [10, 11, 12]

According to a study in mothers of child with cerebral palsy indicated that having a child with disability leads to social isolation, which may one of the major causes for depression. [13] Caregivers of children with cerebral palsy experience increase time burden, reduced physical wellbeing, stressful routine, [14] low social support, low caregiver self-efficacy, [15] poor maternal sleep [16] which can be associated with symptoms of mental illness like depression, insomnia, and demotivation.

MATERIALS AND METHODS

This cross-sectional study was conducted on 80 caregivers (father and mother) of children with cerebral palsy. The selection of subjects was based on the inclusion criteria and ruling out the exclusion criteria. All subjects were informed about the study and informed consent was taken. It was a single setting study. The inclusion criteria for the subjects included: primary Caregivers (Father/Mother) of children with cerebral palsy whose age ranged between 4-10yrs and caregivers who will be comprehensible to

English language. The subjects were excluded when the caregivers with disabled child other than CP, caregivers suffering from any systemic illness as reported by the patient, maids were the primary caregivers, participants with a history of divorce or death of any relative, participants with a history of depression with the onset before the diagnosis of cerebral palsy, caregivers on antianxiety or antidepressant treatment, chronic alcoholic or on any type of narcotic drugs. Demographic data for both caregivers as well as the child was filled, so as to identify the inclusion and exclusion criteria and also to identify the type of cerebral palsy. Caregivers level of anxiety was assessed using Beck Anxiety Inventory (BAI) and the level of depression was assessed using Beck Depression Inventory (BDI). The Beck anxiety inventory scale ($r = 0.75$) is a self-report scale developed by Beck to measure the severity of anxiety symptoms in adults. It is a Likert-type scale and comprises 21 items that are scored between “0” and “3.” Scores range between “0” and “63”. [17] The Beck depression inventory scale ($r = 0.75-0.92$) is a self-report scale that was developed by Beck to determine the severity of depression symptoms in individuals. The scale is composed of 21 questions and every item is scaled from “0” to “3” to obtain total scores of between “0” and “63”. [18] Statistical analysis was performed using SPSS (Version 20.0), Microsoft EXCEL (Professional Edition 2007; Microsoft Corp, Redmond, WA). ANOVA has been used to find out the comparison between level of anxiety and depression for all type of cerebral palsy.

RESULTS

In the total sample of 80 subjects, 20 subjects were included in each type of cerebral palsy. The mean age and standard deviation of the parents were 33.34 ± 5.332 . The results of this study showed that the level of anxiety was found to be more in caregivers of children with hypotonic cerebral palsy followed by caregivers of

children with Athetoid cerebral palsy, then spastic and then ataxic cerebral palsy. The mean value for the score of BAI for each group namely spastic, hypotonic, ataxic and Athetoid came out to be 23.00 ± 15.183 , 30.55 ± 6.287 , 22.80 ± 7.127 and 28.00 ± 10.397 respectively (Table 1). Between the group comparison for the level of anxiety was conducted using ANOVA test, with level of significance ‘p’ set at 0.05. The comparison of baseline readings for the score of BAI between all the groups was found to be statistically significant.

	Mean (in years)	Standard deviation	F	P value
Spastic	23.00	15.183	2.905*	0.04
Hypotonic	30.55	6.287		
Ataxic	22.80	7.127		
Athetoid	28.00	10.397		

Table 1: Comparison of level of Anxiety of the caregivers of the children suffering from different forms of CP

Whereas the level of depression was found to be more in caregivers of children with hypotonic cerebral palsy, followed by caregivers with athetoid, ataxic and then spastic cerebral palsy. The mean value for the score of BDI for each group namely spastic, hypotonic, ataxic and Athetoid came out to be 23.00 ± 15.183 , 30.55 ± 6.287 , 22.80 ± 7.127 and 28.00 ± 10.397 respectively (Table 2).

	Mean (in years)	Standard deviation	F	P value
Spastic	17.30	11.221	6.499**	0.001
Hypotonic	30.45	10.123		
Ataxic	20.85	10.816		
Athetoid	28.35	11.268		

Table 2: Comparison of level of depression of the caregivers of the children suffering from different forms of CP.

Between the groups comparison for the level of depression was conducted using ANOVA test, with level of significance ‘p’ set at 0.05. The comparison of baseline readings for the score of BDI between all the groups was found to be statistically significant.

The result in both the case was found to be significant. No any article was found to be supporting this result. Sajedi et.al, have mentioned that having a cerebral

palsy child makes mothers experience more depression, but it has no relationship with the type of cerebral palsy in children.

The study also compared the level of anxiety (Table 3) and depression (Table 4) between fathers and mothers in different type of cerebral palsy.

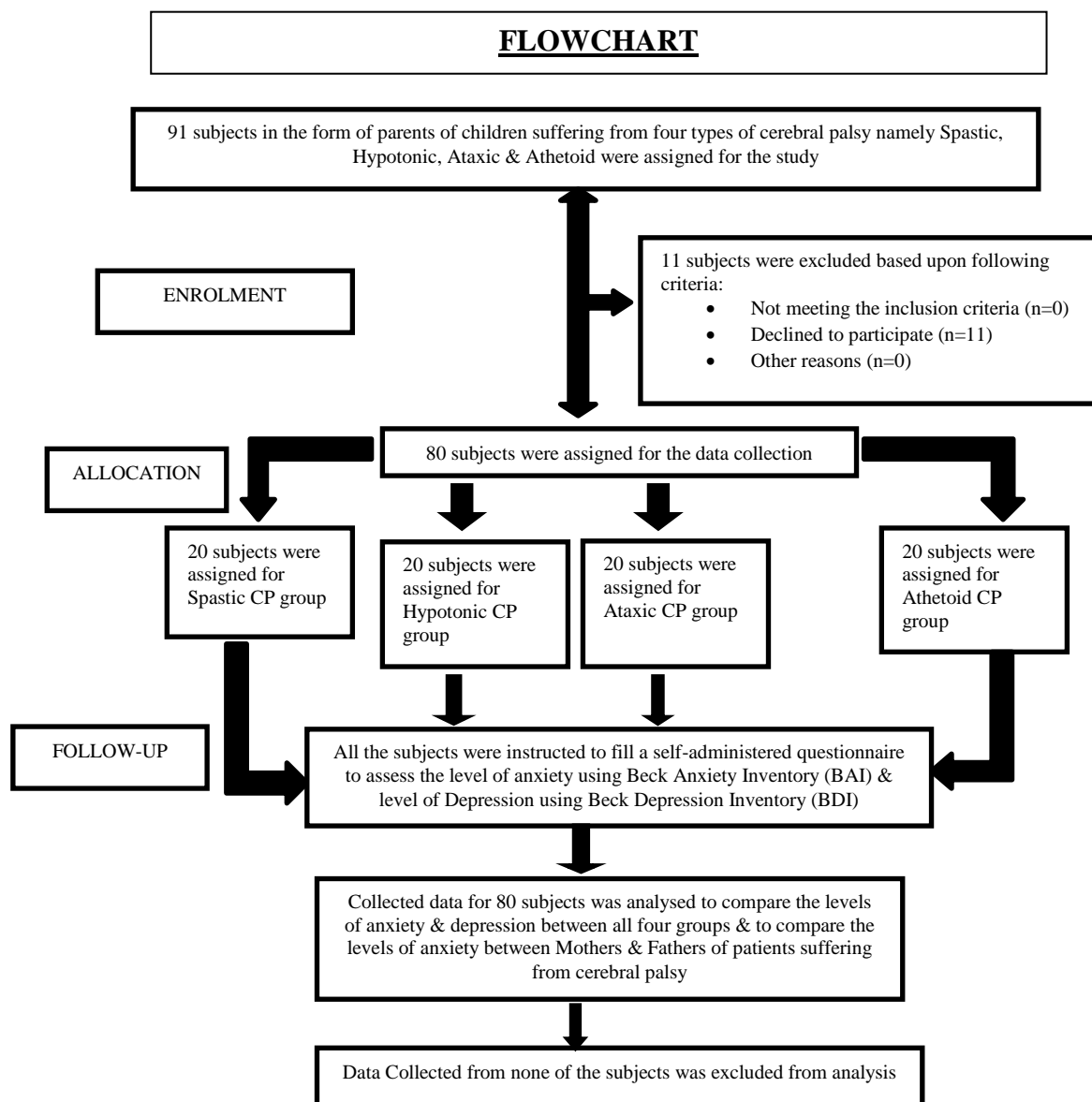
	Mean	Standard deviation	F	P value
Fathers	24.62	11.269	1.537	0.219
Mothers	27.49	9.416		

Table 3: Comparison of level of anxiety between fathers and mothers of children with cerebral palsy

	Mean	Standard deviation	F	P value
Fathers	18.95	10.523	18.149**	0.001
Mothers	29.27	11.113		

Table 4: Comparison of level of depression between fathers and mothers of children with cerebral palsy

The result showed higher anxiety level in mothers when compared to fathers of children with cerebral palsy, but was non-significant. Also, the level of depression in mothers when compared to fathers was found to be higher and showed significant. Many previous studies have reported significant increase in anxiety and depression in mothers with a cerebral palsy child.



DISCUSSION

The result showed that the level of anxiety and depression have significant relation with the type of cerebral palsy, which was the opposite to Sajedi et.al, [19] whose result mentioned that having a cerebral palsy child makes mothers experience more depression, but it has no relationship with the type of cerebral palsy in children. Many studies have reported significant increase in depression in fathers and mothers of children with cerebral palsy. Rajesh Kumar et.al, have concluded in his study frequency and severity of depression in mothers of cerebral palsy children that depression is very much prevalent among mothers of CP children. Similar study by Marcia Andreyra et.al, said that the caregivers of children with cerebral palsy, do not have a good quality of life which presents them with high anxiety and considerable depressive value. Another study by Rashida Begum et.al [20] and Altindag et. al., [21] compared the psychological status of mothers of children with cerebral palsy and mother of normal children. The study revealed that mother of children with cerebral palsy suffered from more psychological distress than mother with normal children. Ankush K et.al, [22] studied the social, psychological and financial burden on caregivers of children with chronic illness like anemia, cerebral palsy, epilepsy, haemophilia etc. The author concluded that chronically diseased patients' caregivers suffer from high psychological, financial and social burden due to which they report moderate to severe depressive and anxiety symptoms.

In the current study, a significant relationship was found between the level of anxiety and depression in caregivers of children with cerebral palsy and the type of cerebral palsy. The study also showed that mothers of CP child had more anxiety and depressive symptoms when compared to the fathers. It was also found that few caregivers showed very less anxiety or depressive symptoms on the BAI and BDI scores as they were very much aware of the

services available for their child like service by physiotherapist, occupational therapist, speech therapist etc which increased their hope for their child's future.

The limitation to the current study was:

1. Both outcome measure are subjective scales and hence hinders the study.
2. Subject not comprehensible to English language was excluded.
3. The study was conducted in urban area, which hindered accuracy of result as it might have been different in rural areas.
4. Small sample size

The caregivers' co-operation with the therapist regarding the home exercise for cerebral palsy child is very much needed so that the target of the treatment can't be achieved. Therefore a good state of mind of the caregivers of children with cerebral palsy is important so that they get involved with these children in the best way possible to give them a better life. Treatment or prevention of depression in caregivers of children with cerebral palsy is highly recommended for improving the rehabilitation process and achieve better results in these children.

Conflict Of Interest

There were no conflicts of interest in the study.

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