

Severity of Depression in Mothers of children suffering from Cerebral Palsy

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ABSTRACT

Background: Cerebral palsy (CP) is the most common cause of motor disability in children with worldwide having incidence of 2 per 1000 live births. Children with CP have motor disability, decreased ability to walk, poor feeding and limited exposure to sunlight. Malnutrition, behavior challenges and motor deficits in CP children are common causes of depression in their mothers.

Aim: The present study focused to estimate the severity of depression in mothers, looking after the children suffering from severe CP and to compare their depression scoring with the scores of mothers having healthy children.

Methods: The cross-sectional comparative study included 21 mothers having children suffering from severe CP and 21 controls (Mothers of normal children). Depression was calculated by the Beck Depression Inventory (BDI).

Results: A statistically significant difference was observed between the mean scores of BDI II between the two groups

Conclusion: Results revealed that mothers having CP children are more depressed than mothers having healthy children. It imitates the importance of psychiatric, social and family support to mother along with the treatment of the child.

Keywords: CP, depression, BDI II.

INTRODUCTION

Cerebral palsy (CP) is brain paralysis caused by the brain hypoxia which affects body movements, balance and posture with incidence of 2 per 1000 live births¹. Increased risk is associated with preterm delivery, congenital malformations, intrauterine infections, fetal growth retardation, multiple pregnancies, placental abnormalities, prolonged labor and instrumental delivery. However, 1-2% cases of CP are due to genetic abnormalities². The disorders of movement appear in early stages of life along with delayed milestones, diminished intellect and motor disability³.

Early diagnosis and intervention help to improve infant motor and cognitive functions and protect from secondary complications⁴. In severe cases, CP can be detected soon after birth, but average age of diagnosis is two years. For those with milder symptoms, a diagnosis may not be confirmed until the brain is fully developed at three to five years of age. The average age of diagnosis for a child with CP is 18 months⁵. Type of manifestation and extent of disability depends upon area of brain involved. The motor function deficits limit the daily doings of life and may accompany cognitive, speech, behavior, sensory impairments and behavioral difficulties which can affect family functioning and over all wellbeing of child and family member^{6,7}. Greater parental stress has been found to be related with higher levels of behavioral problems in children^{8,9}.

A study carried out by using Self Report Questionnaires in Bangladesh showed that the mothers of CP children are susceptible to develop stress¹⁰. BDI-II used in our study is also a self-report 21 item questionnaire having 81% sensitivity and 92% specificity^{21,23}. It is translated into multiple languages worldwide. In the current study Urdu version of the inventory was administered^{24,25}. Mothers having a CP child are more prone to depression than the mothers having apparently healthy children¹¹. Depression have negative impact on one's feelings, views and actions^{12,13}. It is the frequently occurring psychopathology¹⁴. Mothers with CP child are more predisposed to depression. Depression and anxiety was testified in 71% mothers with CP children, compared to 33% in the control group¹¹. Studies showed that mothers having CP children were high risk group for depression and need psychiatric help^{15,16,17,18}.

This study was conducted to calculate depression in mothers taking care of children.

The present study intended to explore the effects of CP on maternal depression and to compare their scores with the healthy controls. The results obtained highlighted the need of psychiatric support to improve the quality of life of child, parents, and family. The study also enlightened the need of proper antenatal checkups and the deliveries to be conducted in a tertiary care hospital. The results obtained highlight the need for psychiatric support to the mothers along with the treatment of the child.

MATERIALS AND METHODS

This was a Cross-sectional comparative study. The study was approved by Ethical review board of the University of Health Sciences Lahore and the Institutional review board (IRB) of Children hospital / Institute of Child Health Lahore.

The study was conducted in Lahore, the provincial capital of Punjab, Pakistan. Subjects were recruited from the Children hospital, Lahore. A total of 42 mothers of middle class family, with age up to 40 years were included in this study. They were further subdivided into two groups, 21 subjects having children suffering from CP and 21 mothers having normal children were included after written and informed consent. Gross Motor Functional Classification System (GMFCS) level V was taken as severe CP in children and diagnosed by doctor of the developmental pediatrics department^{19,20}. All pregnant or lactating mothers, using steroid therapy, oral contraceptive pills or medication for depression, Widows and females with difficult relations with family and spouse and any other chronic medical condition were excluded based upon history and investigations. Sample size was calculated by WHO calculator version 2.021, derived on basis of a previous study¹⁵. The purposive sampling technique was used.

Well known self-report questionnaire with acceptable psychometric properties were utilized after consultation with the consultant psychiatrist. Depressive symptoms were assessed using BDI-II- U^{21,22}. Data regarding the demographic profile of subjects, past medical or drug history and family history, was collected on carefully designed datasheets. History about antenatal visits, duration of pregnancy, mode of delivery, the delayed cry of the newborn, infections in neonate and family history of CP was also taken to rule out the cause of CP. Questionnaire regarding data and depression scoring was filled by the subjects or researcher under supervision of the psychologist.

All the data was entered into Microsoft Excel data sheet and analyzed using the SPSS 25. Mean±S.D or median±interquartile

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range was given for the quantitative variables. Frequencies and percentages were given for qualitative variables. Graphs were presented for variables. Shapiro-Wilk test was applied to check the normality of data. Mann-Whitney test was applied to compare BDI scores between the two groups. A p-value of ≤ 0.05 is taken as statistically significant.

RESULTS

This study included 42 females divided equally into two groups. No significant difference existed between the ages of mothers of both groups ($p= 0.103$)

All the participants included in the study belonged to the middle class. All had satisfactory relationship with their husband and other people in the family. Among cases, only 2 children reported CP in their first-degree relatives. Out of total 21 cases, 13(61.9%) cases of CP reported prolonged labor and 8(38%) children were delivered at home by a midwife (dai).

Both groups were compared for the parameters included in the study. The BDI scores for mothers taking care of children suffering from CP were higher than in mothers taking care of healthy children that was found significant (Mann Whitney U test, $p=0.011$) (Table 1).

All the mothers of CP children (group I) reported depression of some severity, 17(80.95%) had minimal depression, 3(14.28%) had mild depression and 1(4.76%) had moderate depression.

Out of 21 mothers with normal children (control group), 19 (90.4%) participants had minimal depression, 1(4.76%) had mild depression and 1(4.76%) had moderate depression.

Table 1: Comparison of study parameters measured in cases and control groups by Mann Whitney U test

Parameters	Mothers with children suffering from CP(n=21)	Mothers having healthy children(n=21)
	Mean \pm SD	Mean \pm SD
	Median (IQR)	Median (IQR)
BDI score	7.57 \pm 5.33 5 (4-12.5), 17	4.62 \pm 5.12 4 (1.5-5)

P value 0.011 a*

DISCUSSION

This study included 21 mothers with healthy children (control group) and 21 mothers having children suffering from severe CP. The results revealed that the BDI scores were significantly higher in mothers taking care of CP children as compared to the mothers having apparently healthy children. A study reported similar results to our study, the higher BDI II scores and low quality of life was observed in mothers having CP children²⁶. Previous studies reported significantly higher levels of BDI scores in mothers having CP children than the control group^{27,28}. Mothers having CP children are depressed and severity can be categorized as mild, moderate and severe²⁹.

Results of our study are consistent with the above-mentioned studies. Studies suggest that CP children's mothers had a high prevalence of depression that had a negative impact on children quality of life^{16,17}.

Studies conducted earlier suggest that factors like increase in age of mother as well as child, poor spousal support, lack of support from the family, unemployment and low education seemed to aggravate depression in these mothers. However, having another child with normal health and development, good family support and living in joint families served as protective factors. Presence of associated problems like epilepsy in the child, low intelligence, the severity of paralysis, motor disabilities, feeding issues and behavioral problems along with poor toilet training worsened the depression scores in mothers looking after the children suffering from CP¹⁷. Similarly, higher BDI scores were observed by Altindag and his fellows¹⁵.

Physical disability in the child negatively affects the life of the mother. Literature showed that maternal depression levels have a negative correlation with functional independence measurement

and positive correlation with GMFCS scores in the CP child. Presence of CP child in a family is associated with maternal depression, musculoskeletal pain and negatively impacts the quality of life^{30,31}. Increased psychological strain can be the triggering factor for the development of depression among mothers of CP children. Detailed history suggests that possible factors causing stress in mothers included in our study could be because of disable child, behavioral problems or any other ailment associated with the child, limited leisure time, improper sleep, lack of family support, the social or economic burden.

This study highlighted the need of psychological and social help for the mother taking care of CP children and emphasized on the need for the provision of proper medical facilities to the mother during pregnancy, during delivery and after birth.

CONCLUSION

Mothers taking care of CP children are more depressed as compared to the mothers taking care of healthy children. Females should have proper antenatal and post-natal visits to doctor for evaluation and care of mother and newborn. Education of family and society about the need for psychological help and need of social and family support to the mother having CP child, is highly recommended.

Conflict of interest: Nil

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