

ORIGINAL ARTICLE

Assessment of Depression in Mothers of Children with Cerebral Palsy

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*Department of Paediatrics, Children Hospital and Institute of Child Health Lahore**Correspondence to Dr. Husnain Athar, Consultant Paediatrician, Email: hussnain.khan1224@gmail.com, Cell:0334-4615046***ABSTRACT****Background:** Mothers of children with various degrees of impairment may bear a high amount of stress. Children with chronic medical disorders lead their moms to experience sadness, mental distress, and behavior problems.**Aim:** To determine the frequency of depression in mothers of children with cerebral palsy.**Methodology:** This cross sectional study was conducted in OPD of Neurology and Development Department, Children's Hospital Lahore in six months after the approval of synopsis August 20, 2020 till Feb 20, 2020. After taking written informed consent, 196 CP children's mothers were enrolled. Demographic information (including name, age) was also recorded. After admission to hospital detailed history and thorough clinical examinations were carried out to reach the provisional diagnosis.**Results:** The mean age of children was 6.65 ± 2.23 years with age range of 3 and 10 years. There were 109(55.6%) male and 87(44.4%) female cases with higher male to female ratio. The mean age of mothers was 37.92 ± 7.69 years with age range of 25 and 50 years. There were 115(58.7%) mothers who had depression and 81(41.3%) mothers did not have depression. There were 81(41.3%) mothers who had normal, 33(16.8%) had mild mood disturbance, 24(12.2%) mothers had borderline clinical depression, 23(11.7%) mothers had moderate depression and 35(17.9%) mother had severe depression.**Practical implication:** This study identifies a greater risk of depression in mothers of CP children, so by the help of this study we can identify such mothers at follow up of CP children and can give them psychiatric attention which can decrease mental health issues in them and would be beneficial for both the mother and their CP children.**Conclusion:** Depression among mothers of CP child was higher in this study, so these mothers must be given attention through psychiatric education and mental health programs to reduce their depression at the time of their CP children follow up.**Keywords:** Depression, care taker, disability, cerebral palsy, mental health**INTRODUCTION**

Cerebral palsy (CP) is a neurological phenomenon, a collection of signs and symptoms that may develop in neurodegenerative or metabolic illnesses, especially those that manifest in the first two years of life¹. The incidence of CP is reported as 2–3 per 1,000 live births². The primary types of CP are spastic hemiplegia, spastic diplegia, spastic quadriplegia, and extrapyramidal or dyskinetic³⁻⁵. Based on a combination of information from the medical history, neuroimaging, and standardised individually delivered neurological and motor testing methods, CP may be identified early and accurately⁶. Although it is probable that CP may be reliably diagnosed in early infancy based on a thorough clinical history, findings on an MRI scan, and a standardised neuromotor evaluation by individuals specially trained and skilled in utilising the techniques, a definitive diagnosis of CP in most primary care or paediatric practise settings is difficult to establish with confidence within the first 1-2 years of life⁷.

Along with movement impairments, children with CP usually have cognitive, behavioural, and seizure issues⁸. Depression is a severe mental illness that has a significant impact on families, particularly those with children with disabilities. The most typical childhood impairment is cerebral palsy. Because they are more devoted and concerned about their child's wellbeing, mothers of CP children experience depression extremely often⁹. The mother's health state may be improved by lessening the strain of caring on other family members and improving psychological support¹⁰.

The purpose of this research is to quantify the rate of maternal depression in families where a child has been diagnosed with cerebral palsy. Despite the fact that several researches have been conducted on a global scale, there is inconsistency among the published international studies and no studies conducted on a regional or national scale. Understanding the illness burden in our community, paving the way for new research procedures, and prioritizing patient care are all possible outcomes that may be informed by the findings of this study.

MATERIALS AND METHODS

This cross-sectional study was conducted in OPD of Neurology and Development Department, Children's Hospital Lahore during

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six months after approval from Institutional Ethical Review Committee from August 20, 2020 till Feb 20, 2020. Data was collected using Consecutive Sampling. A total of 196 mothers were estimated using 95% confidence level with 7% margin of error and taking an expected percentage of depression as 49.3% in mother's cerebral palsy children¹¹.

Inclusion Criteria

- Primary caregiver mothers aged between 25-55 years
- Known diagnosis of CP for their children for at least last 6 months (as per operational definition)
- Age of CP children between 3-10 years.

Exclusion Criteria

- Mothers whose kids have other neurological disorders like Down syndrome, Leukodystrophy and Autism
- Mother themselves having chronic illness (diabetes mellitus as fasting blood sugar >126, chronic obstructive pulmonary disease, hypertension as blood pressure >140/90 mmHg)

Data collection procedure: After taking written informed consent, 196 CP children's mothers were enrolled. Demographic information (including name, age) was also recorded. After admission to hospital detailed history and thorough clinical examinations were carried out to reach the provisional diagnosis. Cerebral Palsy was defined if children had upper motor neuron signs (hypertonia, hyperreflexia, positive Babinski or clonus) or choreoathetoid movements (choreic movements, dystonic posturing, athetosis) that are permanent in nature with onset of symptoms before 3 years of age was labeled as cerebral palsy. To assess maternal depression, the frequency of depression was statistically same among 1-5 years old children (54%) and 6-10 years old children (60.9%), p -value >0.50. The frequency of depression was statistically same among mothers having male children (64.2%) and having female children (51.7%), p -value >0.05. The frequency of depression was statistically higher among 42-55 years old mother (70.1%) when compared with 25-41 years old mothers, p -value < 0.05. The frequency of depression was also statistically same with respect to duration of CP of children and with respect to mother's education. scale was used. Score more than 10 was considered as depression. Depression was considered as per operational definition. To classify depression,

scale was categorized into mild, moderate and severe. All the data was entered and processed by using SPSS v23.0. The age of CP child, duration of CP diagnosis, age of mother and depression score was described by using Mean±S.D. Depression, gender of CP child and education of mother was described by using frequencies and percentages. Data was stratified for age of CP child, age of mother, gender of CP child, education of mother and duration of CP to deal with effect modifiers. Post-stratification, chi-square test was used. P-value if ≤0.05 was considered significant.

RESULTS

The mean age of children was 6.65±2.23 years with age range of 3 and 10 years. There were 63(32.1%) children who were 1-5 years old and 133(67.9%) cases were 6-10 years of age. There were 109(55.6%) male and 87(44.4%) female cases with higher male to female ratio. The mean age of mothers was 37.92±7.69 years with age range of 25 and 50 years. There were 129(65.8%) mothers who were 25-41 years of age and 67(34.2%) mothers were 42-55 years of age. The mean duration of CP of children was 5.02±2.52 years. There were 111(56.6%) cases who had CP since 1-5 years and 85(43.4%) children had CP since > 5 years.

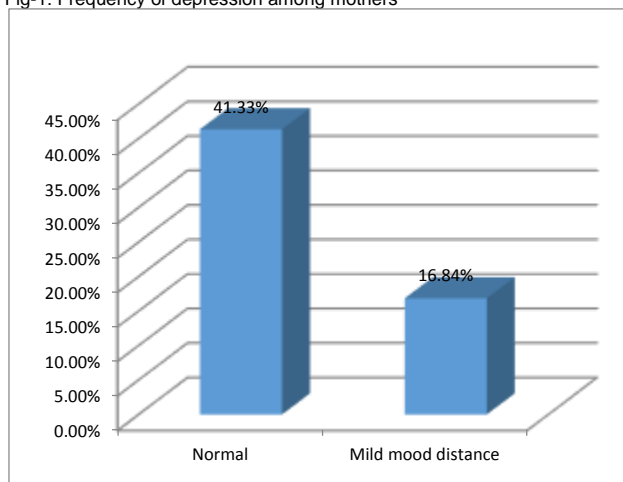
Table-1: Descriptive statistics of age of child, mothers (years) and depression score

	Age of child (years)	Age of mothers (years)	Duration of CP (years)	Depression score
Mean	6.65	37.92	5.02	16.26
S.D	2.23	7.69	2.52	11.48
Range	7.00	25.00	8.00	39.00
Minimum	3.00	25.00	1.00	1.00
Maximum	10.00	50.00	9.00	40.00

Table 2: Comparison of depression with respect to age (years), gender, age of mothers (years), duration of CP (years) and mother's Education status

		Depression		Chi-square	p-value
		Yes	No		
Age of child (years)	1-5	34(54%)	29(46%)	0.848	0.357 (Insignificant)
	6-10	81(60.9%)	52(39.1%)		
Gender of child	Male	70(64.2%)	39(35.8%)	3.116	0.078 (Insignificant)
	Female	45(51.7%)	42(48.3%)		
Age of mother (years)	25-41	68(52.7%)	61(47.3%)	5.529	0.019 (Significant)
	42-55	47(70.1%)	20(29.9%)		
Duration of CP (years)	1-5	59(53.2%)	52(46.8%)	3.217	0.073 (Insignificant)
	>5	56(65.9%)	29(34.1%)		
Education Status	Matriculation	37(68.5%)	17(31.5%)	3.401	0.334 (Insignificant)
	Intermediate	24(55.8%)	19(44.2%)		
	Graduation	31(57.4%)	23(42.6%)		
	Masters	23(51.1%)	22(48.9%)		

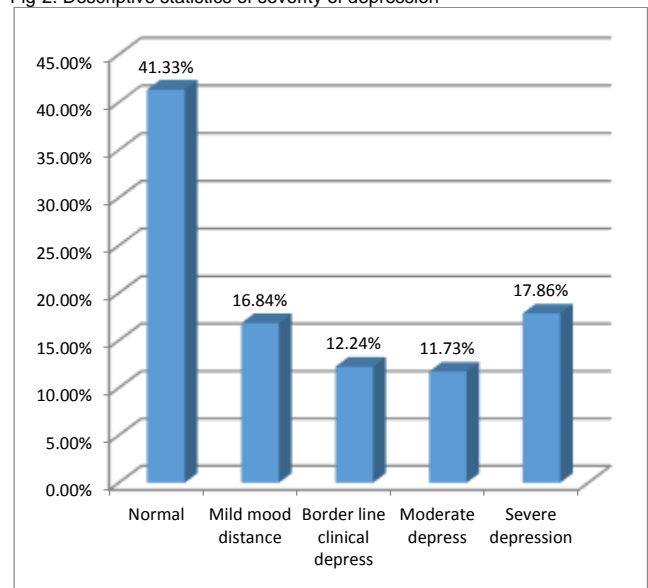
Fig-1: Frequency of depression among mothers



A total of 54(27.6%) mothers had matric education, 43(21.9%) mother had intermediate, 54(27.6%) mothers had graduations and 45(23%) mothers had master degree. The mean depression score of mothers was 16.26±11.48 with minimum and maximum score as 1 and 40. There were 115(58.7%) mothers who had depression and 81(41.3%) mothers did not have depression. There were 81(41.3%) mothers who had normal, 33(16.8%) had mild mood disturbance, 24(12.2%) mothers had borderline clinical depression, 23(11.7%) mothers had moderate depression and 35(17.9%) mother had severe depression.

The frequency of depression was statistically same among 1-5 years old children (54%) and 6-10 years old children (60.9%), p-value > 0.50. The frequency of depression was statistically same among mothers having male children (64.2%) and having female children (51.7%), p-value > 0.05. The frequency of depression was statistically higher among 42-55 years old mother (70.1%) when compared with 25-41 years old mothers, p-value < 0.05. The frequency of depression was also statistically same with respect to duration of CP of children and with respect to mother's education.

Fig-2: Descriptive statistics of severity of depression



DISCUSSION

Disability in childhood often puts emotional and social burdens on children and mothers.¹² When a woman gives birth to a child with a disability, she reports experiencing complicated emotions, including the sense of losing a loved one. A kid with a handicap presents unique challenges for his or her mother. Typically, this illness starts with a shock. Sometimes she feels guilt, sadness, and helplessness. When a kid is diagnosed with a handicap, his or her mother may face a psychological issue comparable to that of suicidal folks¹³. There are currently inadequate research to evaluate the fundamental challenges pertaining to the care of a kid with cerebral palsy (CP), with some arguing that parental emotional distress impedes health care and diminishes the child's wellness.¹⁴

In current study the mean age of females was 37.92±7.69 years while one study reported mean age of the participants were 29.85 years⁹. In current study mean depression score of mothers was 16.26±11.48 with minimum and maximum score as 1 and 40. There were 115(58.7%) mothers who had depression and 81(41.3%) mothers did not have depression. There were 81(41.3%) mothers who had normal, 33(16.8%) had mild mood disturbance, 24(12.2%) mothers had borderline clinical depression, 23(11.7%) mothers had moderate depression and 35(17.9%)

mother had severe depression. In one study prevalence of depressive disorders in the community population was reported as 34%¹⁵. Globally, including Pakistan, published epidemiological studies have found a vastly varying incidence of depression among moms of CP children, ranging from 6% to 45%^{16,17}. Depressive symptoms were seen in 49.3% of moms of children diagnosed with cerebral palsy. 30% had mild depression, 60% had moderate depression, and 10% had severe depression¹¹. We also found higher frequency of depression among these mothers.

The mothers of 45 boys diagnosed with CP were surveyed in a separate descriptive cross-sectional study that looked at the prevalence of depression in this population (sex ratio 2:6). Mothers were assessed using the Hospital Depression and Anxiety Scale (HADS). Mothers' depression scores ranged from "normal" (29%), "borderline" (25.8%), to "pathological" (45.2%). Only 13% of mothers scored normally on anxiety, 27% scored borderline, and 59% scored abnormally. Comparing the average depression scores of the two groups, there was a statistically significant difference ($P=0.002$). According to the data, there was no correlation between the HADS and GMFCS severity ($P=0.230$). There was no correlation between CP clinical manifestation and HADS ($P = 0.129$). This research indicated that having a child with CP is probably linked to a greater frequency and severity of depression in moms. As the mother of a child with CP, she may have a much higher risk of experiencing emotional distress due to the demands of caring for a kid with CP, regardless of the clinical type¹⁸. We also found higher male to female ratio and also found higher frequency of depression as they reported.

Another research looked at whether or not mothers of children with CP had higher rates of depression than mothers of children without CP. There was no difference in depressive symptoms experienced by mothers across CP subtypes. Parental depression was unrelated to Gross Motor Function Classification System score. Having a child with CP who has speech difficulties was shown to substantially impact mothers' depressive level ($P = 0.036$), and a negative association was discovered between BDI scores and income ($P=0.007$). To ensure the efficacy of the rehabilitation programme and to accomplish its goals, it is crucial to focus on the mothers' mental health and to provide psychological and social assistance to the families¹⁹.

Another research looked at the connection between maternal sadness and anxiety and their children's disability. The participating moms were randomly split into two groups. Mothers with disabled children should get consistent psychological assistance, according to the authors²⁰. In current study we found higher frequency of depression among older mothers. Giving assistance to parents of handicapped children has been shown to significantly decrease mental health issues including sadness, stress, and rage. Given the mother's central role in the upbringing and stability of the family, this is especially crucial. Even when dealing with very trying circumstances, not all moms of disabled children have difficulty adjusting. It has been argued, however, that when moms are unable to maintain a healthy work-life balance, they put their children and themselves at risk for stress-related health issues²¹.

CONCLUSION

Depression among mothers of CP child was higher in this study, so these mothers must be given attention through psychiatric education and mental health programs to reduce their depression at the time of their CP children follow up. By reducing the risk of

their depression we can directly reduce of the of mental health issue in such mothers.

Conflict of interest: Nil

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