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Original Article

Prevalence of Depression among Mothers of Children with Cerebral Palsy (CP) Enrolled in Occupational Therapy Unit at Lady Reading Hospital Peshawar, Pakistan

Ayaz Ayub[1*], Tariq Rahim[2], Sher Bahadar[3] and Muhammad Saleem[4]

[1]Khyber Medical University, Peshawar, Pakistan
[2]National Institute of Medical Sciences, Kohat, Pakistan
[3]Khyber Institute of Child Health, Peshawar, Pakistan
[4]Institute of Public Health & Social Science, Peshawar, Pakistan

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***Corresponding Author:**

Ayaz Ayub
Khyber Medical University, Peshawar, Pakistan
ayub111@hotmail.com

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ABSTRACT

Cerebral Palsy (CP) is one of the most prevalent physical disorder in developmental disabilities among children. This condition may prone the parents for development of depression and anxiety especially the mothers. **Objective:** To assess the prevalence of depression among mothers of children with CP in Peshawar, Pakistan. **Methods:** A descriptive cross sectional study was conducted prior to randomize control trials in Occupational Therapy Department of Lady Reading Hospital Peshawar. The sample was calculated through Openepi, consisted of 240 participants through consecutive sampling technique. The quantitative data were collected through Hospital Anxiety and Depression (HADS) scale from mothers whose score was greater than 3 on the general health questionnaire (GHQ-12). **Results:** The mean age of the participants was 31.63± 7.09 years. In a sample of 240 participants, married were 230 participants followed by 6 divorced and 4 widows. Furthermore, 58% participants have male children affected followed by 42% female children. The mean score of the participants' depression was 12.49 ± 3.18 in a total score of 21, which was moderate to severe in the current study. **Conclusions:** The study concluded that mothers of CP child have moderate to severe level of depression. Furthermore, the study highlighted that majority of the participants were married and the prevalence rate of CP was higher male children as compared to female.

INTRODUCTION

There is a wide spectrum of physical and cognitive problems that manifest during early childhood development and persist throughout an individual's lifespan are collectively referred to as "developmental disabilities" [1]. Cerebral Palsy (CP) is one of the most prevalent developmental disability that developed among children having low birth weight, lower parental education levels, incomes ≤200% of the national poverty threshold [2]. In addition to this, children and adolescents with CP and spina bifida have been identified as a factor limiting social involvement and community participation such as school, social, recreational, and physical activities are affected [3]. The term "cerebral palsy" (CP) refers to a group of disorders that arise from primary non-progressive brain damage in fetuses or infants. The impairment of the developing brain affects muscle tone and strength, which restricts movement and physical activity [4]. It is one of the most common causes of motor impairment in children that leads to long-term abnormalities of posture and motor development that result in limitation of activities [5]. It is estimated that 80% of CP cases worldwide occur in Low and middle Income Countries (LMICs), where people and their families are usually caught in the vicious cycle of poverty and bigger populations [6]. The majority of children

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with CP have severe versions, which make them mostly dependent on their parents for everyday tasks and hinder their ability to speak [7]. According to a report, 60% of family caregivers of children with CP in China reported having difficulties at work and with money, and 45% reported having depressed symptoms. There have also been reported of family caregivers of children with CP experiencing noticeably more psychological and social pressures than in the general population [8]. Literature has shown that parents having CP child lowers the probability of having more children, particularly for older women and parents with less education [9]. Caregivers' physical, psychological, and mental health may suffer as a result of the stress of providing care to CP child [10]. Mental diseases may be responsible for 418 million disability-adjusted life years (DALYs) in 2019 and estimated that this load has an economic worth of USD 5 trillion [11]. Depression and anxiety are two of the most prevalent mental disorders in the general population. However, the rate of depression is increased in mothers of CP child [12]. The incidence was higher in women than in men and in those between the ages of 18 and 49 years than in those over the age of 50 years [13]. Age-standardized rates of depressive disorders were 3.9% throughout South Asia in 2016, followed by 4.4% in Bangladesh, 4.0% in Nepal, 3.9% in India, 3.7% in Bhutan and 3.0% in Pakistan [14].

Pakistan is a developing country, and the requirements of the people, particularly in Khyber Pakhtunkhwa, are not well met by mental health care. The depression and anxiety levels of mothers of children with cerebral palsy (CP) should be considered for an effective rehabilitation program connected to these children after results of this study.

METHODS

A descriptive cross sectional study was conducted in Occupational Therapy department of Lady Reading Hospital (LRH) Peshawar. This study was conducted prior to a planned randomize control trials in the same department on the mothers with CP child. The sample size was calculated through Openepi software, with the prevalence of depression in Pakistan was 39.9% [15], population of 680 and 95% confidence interval. This study was started in 2021 and completed in 2023. Date of issuance of IRB letter was 15/06/2021 with reference number was 44/OTPM&R/LRH-MH. The sample consisted of 240 participants selected through consecutive sampling technique from the OPD register at Occupational Therapy Department of LRH Peshawar. The study sample included mothers with CP child irrespective of level of their CP, enrolled in Occupational therapy department of LRH. Furthermore, those mothers were enrolled for participation who accompanied the children at the unit for therapy and exhibit level of more than 3 mental disorders (Depression and Anxiety) score on General Health Questionnaire (GHQ-12). Those mothers were excluded who already diagnosed with any mental health related problems and or formally obtaining psychological therapy.

RESULTS

SPPS version 22.0 was used to analyze the data. Tables, charts, and graphs were used to portray the findings more effectively. Descriptive analysis of the selected demographics and depression was done. In this research, there were a total of 240 respondents in the study sample. The mean age of the participants was 31.63 ± 7.09 years in a sample of 240 in the current study as shown in the below Table 1. Similarly, the participants mean score of family income was 455441.67 ± 47870.44 PKR as shown in the Table 1. The mean score of the participants' depression was 12.49 ± 3.18 in a total score of 21 as shown in the Table 1.

Table 1: Mean Age and Mean Family Income in PKR

Variable	Frequency	Mean ± SD
Age (Years)	240	31.63±7.09
Mean Family Income (PKR)	240	45541.67±47870.44
Mean Score of Depression	240	12.49±3.18

The below Figure 1 described that 6 participants were divorced, followed by 230 married, and 4 widow in a sample of 240 participants. In this study, 176 (73.3%) participants had formal level of education and 64 (27%) had informal level of education. In a sample of 240 participants, 88% of participants said they were not paid while 12% said they were paid. Furthermore, 93% participants responded that they were keeping house, while 7% responded that they were not keeping house.

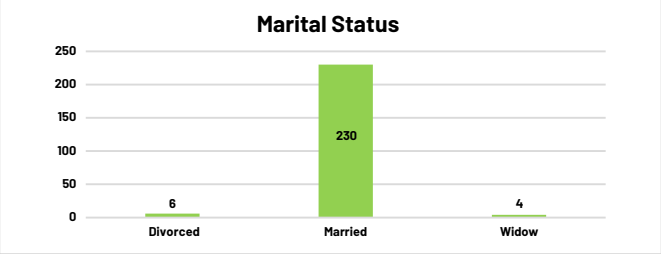

Figure 1: Participants Marital Status

The Figure 2 below shows that 35% of participants belonged to a joint family system and 65% of participants were part of a nuclear family system in the study sample.

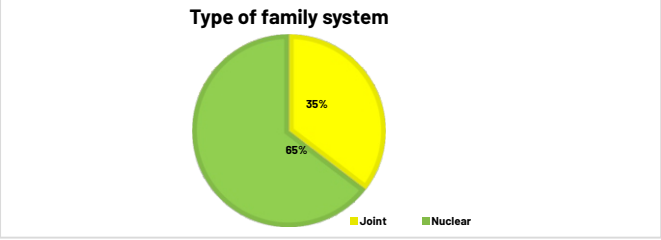

Figure 2: Participants Type of Family System

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The below Figure 3 described that 58% male and 42% female children of the participants were disabled in this study.

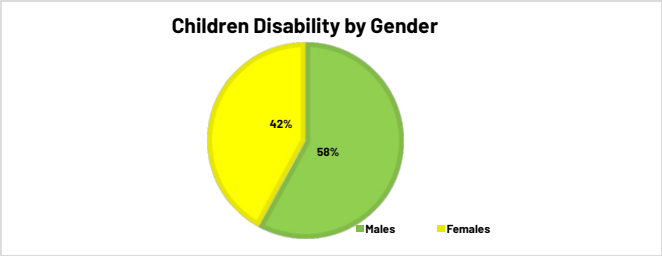

Figure 3: Children Disability by Gender

In the study sample, 11.7% (28) participants responded mild level of depression, followed by 11.77% (28) moderate level and 76.7% (184) severe level of depression as shown in the below Table 2.

Table 2: Categories of Depression

Categories of Depression	
Categories	**Number (%)**
Mild	28 (11.77)
Moderate	28 (11.77)
Severe	184 (76.7)

DISCUSSION

The mean age of the participants in the current study was 31.63 ± 7.09 years, whereas the study conducted by Smith et al., has mean age was 33.3 ± 15. 5 years [12]. This showed that the age of the participants in current study was nearly same with the age of the study conducted by Smith et al., Similarly, a study by Jain et al., in United States has mean age of the participants was 39.9±14.1 years which was not same as in the current study [13]. The study participants in the current has 73% formal education and 27% informal education whereas the study conducted by Hasan Alam et al., had 13.33% basic education, followed by 53.33% secondary education and 33.33% university education [16]. In the current study there was not found an association between depression and level of participants' education. A study by Shevell et al., analyzed that there was a correlation between lower Measure of Process of Care-56 subscale scores and greater socioeconomic level [17]. Lower scores on the subscales measuring providing general information about the children and providing specific information about the child were substantially correlated with higher levels of parental education and household income, respectively. Similarly, in the current study, the majority of the participants responded that they have severe depression while a systematic review by Scherer et al., concluded that almost every research revealed a favorable correlation between anxiety and depressive symptoms and raising children with intellectual and developmental disabilities (IDD) [1]. Lower household income and the severity of the handicap were factors linked to greater degrees of IDD depressive symptoms. The clinical cut-off score for moderate depression is reached by almost one-third (31%) of parents of children with IDD. Similarly, a study Gladstone et al., suggested that, children are less likely to benefit from psychosocial therapies for anxiety and depression while their parents are already experiencing depressive symptoms [18]. Prospects for further investigation are deliberated, including mediators and mechanisms of the correlation between parental depressed symptoms and the results of child intervention. The current study analyzed that there was found severe level of depression among mothers of children with CP. A study by Umar et al., highlighted that needs of family having child with CP [19]. These includes "need for mothers to discuss their feelings (depression, stress, etc.) with someone who has similar experience," "need for questions to be answered honestly," "need for parents to be actively involved in their child's treatment and therapies," "need for standard medical care to be provided," and "need for questions to be answered honestly" are all important points to consider. The result of this study is supported by Bourke-Taylor et al., that fathers of disabled children reported having significant levels of stress (61%), anxiety (37%), and depression (58%). Fathers reported engaging in fewer than weekly activities that promote health at a low rate. The result of the current study was also supported by Ahmad Zam Zam et al., study results revealed that 28.8% mothers had depression followed by 9.2% anxiety [20]. Similarly, Boztepe et al., study examined predictor of caregiver burden among mothers of children with leukemia and CP [21]. The result of the current study did not consist with the study of Boztepe et al., as there were not found differences in the groups' levels of depression or burden. The mother's depression and the severity of the disease in both groups were predictive of burden. If the child was younger or male, mothers in the leukemia group reported a larger load; no such association was seen in the CP group.

CONCLUSIONS

Pakistan is a developing country, and the requirements of the mothers, particularly in Khyber Pakhtunkhwa, were not well met by mental health care services. The study concluded that mothers of CP child have moderate to severe level of depression. Furthermore, the study highlighted that majority of the participants were married and majority percentage of their male child developed CP.

Authors Contribution

Conceptualization: AA
Methodology: TR
Formal analysis: SB, MS

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Writing-review and editing: AA
All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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