ORIGINAL ARTICLE

Determinants of the Psychological States of Mothers of Children With Cerebral Palsy: A Cross-sectional Study in Bangladesh

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ABSTRACT

Introduction: Cerebral palsy is a group of early childhood chronic mobility disorders. Parenting a child with cerebral palsy is often challenging, especially for mothers. This research aimed to identify the determinants of the psychological states of mothers of children with cerebral palsy in Bangladesh. **Methods:** A cross-sectional study was conducted from December 2019 to February 2020. A total of 344 mothers of children with cerebral palsy was recruited using a simple random sampling technique and guided questionnaires. The data were analysed using the Chi-square test and logistic regression models. **Results:** The overall response rate was 98.29%. The median (IQR) age of respondents and the children with cerebral palsy were 30 (13) and 6 (6), respectively. The proportions of mothers with good knowledge on cerebral palsy and having higher negative family impact were 57.8% and 41.9%, respectively. Fifty-nine per cent of mothers of children with cerebral palsy had higher levels of maternal psychological stress. The predictors of maternal psychological stress were the mother's age, marital status, types of family, family income, age of children, gender, and higher levels of the negative maternal appraisal. **Conclusions:** Mothers of children with cerebral palsy in Bangladesh had a higher level of maternal psychological stress. The factors identified in this study could help to develop policies and strategies to minimise maternal psychological stress associated with parenting children with cerebral palsy in Bangladeshi households.

Keywords: Maternal psychological stress, Children with physical disorder, Maternal appraisal, Parenting, Bangladesh

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INTRODUCTION

Cerebral palsy (CP) is a permanent neurological disorder of movement and posture and causes childhood disability (1). Globally, the average prevalence of CP was 2.11 per 1,000 children, with a higher prevalence in males compared to female children (2). Bangladesh is the most densely populated country in the world (3). Population-based surveillance of CP estimated that the prevalence of CP was 3.4 per 1,000 children (4). An estimated 61.8% of children with CP in Bangladesh were male children (4), and there are inadequate supports and rehabilitation services to cater for the affected children (5).

Mothers of children with CP have challenges with physical, emotional, social circumstances and finances in their daily lives (6,7). Furthermore, maternal psychological stress and emotion among mothers

of children with CP were two and five times higher compared to mothers who had healthy children (8,9,10). High stress in mothers of children with CP can be seen as neurological stress such as physical weakness, neuralgia, seizures, nervousness, depression, and empathetic stress reactions (6,7,11). Mothers are mostly responsible for the care of children with CP, and such care is challenging especially in the long-term due to the cognitive problems experienced by the children (12,13). These conditions might adversely affect the physical health and psychology of parents of permanently disabled children (9,14). Besides, the problems precipitate familial effects on family income and social stability (14,15). Previous literature revealed that lower satisfaction with family life and reduced mental well-being are linked to higher maternal psychological stress (16,17). Factors such as family support, isolation, increased relationship support, and rehabilitation services have been reported as ways to manage maternal psychological stress in mothers of children with CP (18,19).

Maternal psychological stress is a multifactorial condition, which is influenced by factors such as

maternal characteristics (20), child characteristics and actions (12,16), and impaired motor control (13). Some researchers have proposed that child causes, including impairment severity (17), child care, and motor control (21) are associated with higher rates of psychological stress. At the same time, others did not disclose any connexion with these variables (10,22). Supportive reinforcements from the family played a critical role in the management of maternal stress among mothers of children with CP (23). In contrast, lower family support resulted in lower satisfaction among mothers (24) and lower parental self-esteem (25).

In Bangladesh, the majority of mothers of children with CP are the primary caregivers and are more likely to be affected psychologically (7). Children with disabilities are treated or managed at home using approaches that are not widely accessible (i.e., wheelchair and walking frames) (26). Low-income families are concerned about the physical, social, and educational aspects of raising a child with CP and often see them as a burden. Families usually keep them sequestered at home with little instruction and assistance (27). Few studies conducted in Bangladesh have investigated the level of maternal psychological stress among mothers of children with CP. A cross-sectional study of 91 mothers of children with CP was performed in Bangladesh to classify maternal psychological stress associated with behavioural issues of children and living in rural areas (28). Another research identified mental well-being among mothers of adolescents with CP associated with motor disability and maternal knowledge using socio-economic status proxies (7, 15). However, there is data paucity on the level of maternal psychological stress and related factors among mothers of children with CP in rural Bangladesh. To assist mothers with children with CP, it is important to investigate the extent of the issue and associated factors so that the appropriate methods and strategies can be enforced.

Therefore, the objectives of this study were to (1) describe the sociodemographic factors of mothers and children with CP, knowledge on CP, and maternal factors among mothers of children with CP, (2) to assess the association between sociodemographic factors, knowledge, and maternal factors among mothers of children with CP, (3) to determine the predictors of maternal psychological stress among mothers of children with CP.

MATERIALS AND METHODS

Study Design, Settings, and Participants

A cross-sectional study was conducted from November 2019 to February 2020 in Rishilpi International Onlus, Satkhira, Bangladesh. This is an international non-profit organization that provides rehabilitation and education services. A total of 344 mothers of children with CP was recruited from the Department of Physiotherapy. The sample size was calculated using the Lemeshow formula

(29). Moreover, a proforma was designed for the medical details and other relevant documents of children with CP followed by the number of hospitals, the number of samples, diagnosis, and period of admittance. A pre-test was conducted among 10% of the study population to assess the reliability and validity of each statement and section of the instrument. Further, public health experts evaluated the content validity of the questionnaire. For easy understanding of the items in the questionnaire, the forward-backwards translation method was used from English to the Bengali language. The translated version was also validated during the pre-test in the study.

The respondents were selected using a simple random sampling technique and guided questionnaires were administrated for the data collection. The inclusion criteria employed to select eligible respondents were as follows: (i) age group of children with CP ranging from 1 to 21 years old (ii) mothers as the primary caregivers of children with CP (iii) A written consent from the mother to participate in the study. The researcher assisted the participants in understanding, reading, and filling out the questionnaires. The general formalities, such as having a pen, pencil, food, and toys for the children, were maintained in this research. Besides, the mothers were provided with the respondents' inform sheets and consent forms and kept up the respondents' confidentiality for this study. The average time was 25 minutes to fill up the questionnaires. The questionnaires were distributed to mothers of children with CP before and after treatment. A reminder phone call was given three times to the respondents who were unable to participate on the day of questionnaire distribution. A questionnaire was collected after being filled up by the respondents.

Study Instrument and Measure

Sociodemographic Information of Mothers and Children with CP

The study covered sociodemographic information of mothers, including the age of mothers, education, occupation, marital status, types of family, and family income. Moreover, child characteristics consisted of age, gender, cost of treatment for the child, and the number of children.

Knowledge of CP

Participants were asked to measure their knowledge on CP by using the Knowledge of Cerebral Palsy Questionnaire (KCPQ) (30). The questionnaire consisted of 20 items based on four subscales including definition of CP (1,2 and 3 items), aetiology (4,5,6,7,8 and 9 items), clinical symptoms (10,11,12,13 and 14 items), and management of CP (15,16,17,18, 19 and 20 items). Responses to these items were presented using a 3-point Likert scale (yes, no, and not sure). Respondents were awarded 2 points when the right option was selected, one point if the wrong was selected, and zero points

when the "not sure" option was selected. The total score ranged from 20 to 40, and the cumulative score for each subscale was computed. The knowledge score was dichotomised into good and poor knowledge based on the median score of 27. A Cronbach's alpha value of 0.74 was obtained following the reliability analysis.

Maternal Appraisal

The Family Impact of Childhood Disability Scale (FICD) was used to measure the maternal appraisal, and the aspects included family relationship, emotion, time, and satisfaction (25). The section consisted of 20 items with ten items each to assess the positive and negative appraisal. A 5-point Likert scale was used to present the responses, ranging from 1 (i.e., not at all) to 5 (i.e., substantial degree). The possible total scores for each subsection ranged from 10 to 40. Thereafter, the positive appraisal was categorised based on the median scores of 24, considering the high score of positive appraisal, while the scores of 22 indicated a high score of the negative appraisal. The reliability analysis revealed acceptable internal consistency as the Cronbach's alpha values for the positive and negative family impact were 0.74 and 0.81, respectively.

Maternal Psychological Stress

Psychological stress among mothers of children with CP was assessed using the Parental Stress Scale (PSS). The PSS consisted of 18 item scales with 8 positive items (i.e., emotional benefits and personal development) and 10 negative items (i.e., demand on resources and restrictions) as described by (31). The responses were presented using a 5-point Likert scale ranging from 1 (i.e., strongly disagree) to 5 (i.e., strongly agree). The negative items were scored and rated (from 1 to 5), while the positive items were reversed coded (1 = 5, 2 = 4, 3 = 3, 4 = 2, and 5 = 1). The total possible scores ranged from 18 to 90, and a median score of 51 and above was considered the cut-off value for mothers experiencing psychological stress. The Cronbach's alpha value of the items considered in the PSS was 0.79.

Statistical Analysis

Statistical Package for Social Sciences (IBM SPSS, Version 25) was used for the data analysis. The minimum and maximum values for each variable were compared using descriptive statistics. The normality of data was evaluated using the Shapiro-Wilk test statistically. Depending on the normality results, median, interquartile range (IQR), frequency, and percentages were used to summarise the categorical data. Chi-square tests were carried out to determine the association between all independent and dependent variables. The simple logistic regression model was conducted to determine their association between each factor and the dependent variable. The enter method was applied, and crude odds ratios (OR) were generated. Factors with a p-value less than 0.25 were considered for the multiple logistic regression models. By using a forward method, multiple logistic regression models were built, adjusted OR were obtained at 95% confidence interval (CI). The final model fit was assessed using the goodness of fit and Hosmer and Lemeshow test (32). A p-value < 0.05 was considered for significant associations in the final model.

Ethical Approval

Ethical permission for the study was obtained from the Ethics Committee for Research Involving Human Subject, Universiti Putra Malaysia, Ref. No UPM/TNCPI/RMC/JKEUPM/1.4.18.2 (JKEUPM). Mothers of children with CP received verbal information and explanation about the research. The written informed consent was obtained from all participants before data collection.

RESULTS

Descriptive Results

Table I show the demographic information of the mothers and children with CP. The median age of mothers was 30 (IQR = 13). The majority of the respondents 141(41%) were between 18-28 years old. The study

Table I: Sociodemographic Information of Mothers and Children in this Study (N=344)

Variables	Frequency (n)	Percentage (%)
Age of mother Median (IQR), 30(13)		
18-28 years	141	41.0
29-38 years	127	36.9
39-48 years	55	16.0
49-58 years	21	6.1
Education of mothers		
Primary school	166	48.3
Secondary school	122	35.5
Bachelor or above	56	16.3
Occupational status		
Employed	88	25.6
Unemployed	256	74.4
Marital Status		
Single	16	4.7
Married	290	84.3
Divorced/ Widowed	38	11.0
T		
Types of Family Nuclear family	140	40.7
Extended family	204	59.3
,	204	33.3
Family Income	0.6	27.0
<bdt10,000 BDT 10,000 to 20,000</bdt10,000 	96 154	27.9 44.8
Above BDT 20,000	94	27.3
	94	27.3
Age of children		
Median (IQR), 6(6)	200	60.5
1-7 years 8-14 years	208 89	60.5 25.9
15-21 years	47	13.7
,	47	13.7
Gender of child		
Male	214	62.2
Female	130	37.8
Cost of treatment		
<bdt 3000<="" td=""><td>114</td><td>33.1</td></bdt>	114	33.1
BDT 3000 to 5000	127	36.9
Above BDT 5000	103	29.9
Number of children		
1-2	195	56.7
3-4	128	37.2
5-6	21	6.1

Note. IQR= interquartile range, BDT= Bangladeshi taka

showed that 48.3% of mothers had primary school educational qualifications, and 74.4% of the mothers were housewives. Two-thirds of mothers were married, while 59.3% of them lived in an extended family. A higher proportion of the mothers (44.8%) earned BDT 10,000 to 20,000. For the children, the median age of children was 6 (IQR = 6), and the majority 208(60.5%)of them were between 1-7 years old. The proportion of male children with CP (62.2%) was higher compared to female children (37.8%), while 56.7% of the mothers cared for more than one child. In the present study, the median score of knowledge on CP was 27 (IQR = 8), which was relatively higher than the earlier study (30). More than half of mothers, 199(57.8%), showed good knowledge on CP, and the rest 145(42.2%) of them had poor knowledge. The median scores of positive maternal appraisal (positive family impact) were 24 (IQR= 8), whereby 42.2% of mothers experienced lower positive maternal appraisal. Furthermore, 59.3% of the respondents experienced higher maternal psychological stress for having children affected with CP (Table II).

Table II: Distribution of Knowledge, Maternal Appraisal, and Maternal Psychological Stress (N=344)

Variables	Frequency (n)	Percentage (%)	Median (IQR)
Knowledge on CP			27(8)
Poor	145	42.2	
Good	199	57.8	
Maternal appraisal			
Positive appraisal			24(8)
Low appraisal	145	42.2	
High appraisal	199	57.8	
Negative appraisal			22(8)
Low appraisal	200	58.1	
High appraisal	144	41.9	
Psychological Stress			51(9)
Low	140	40.7	
High	240	59.3	

Note. KCPQ=Knowledge of Cerebral Play Questionnaire

Bivariate Analysis

Based on the Chi-square statistics, factors such as the occupation of mothers, cost of treatment, number of children, knowledge on CP, and positive appraisal were not associated with maternal psychological stress. Table III shows the significant factors associated with maternal stress based on the simple logistic regression model. The crude OR revealed that mother's age, marital status, types of family, income, child's age, gender, and negative maternal appraisal influenced maternal psychological stress.

Multivariate Analysis for Prediction of Maternal Psychological Stress

According to the final model obtained from the multivariate analysis, the significant predictors for maternal psychological stress among mothers of children

Table III: Binary Logistic Regression Showing the Factors Associated with Maternal Psychological Stress

Characteristics	Beta	Wald Statistics	df	Crude OR (95 % CI)	p-value
Age of mothers (years)					
18-28				Ref	
29-38	1.711	39.498	1	5.534(3.246- 9.435)	<0.001***
39-48	1.924	25.680	1	6.846(3.253- 14.407)	<0.001***
49-58	0.633	1.808	1	1.883(0.749- 4.735)	0.179
Education of mothers					
Primary	0.612	3.662	1	1.844(0.985- 3.450)	0.056*
Secondary	-0.518	2.530	1	0.596(0.315- 1.118)	0.112
Bachelor/Above				Ref	
Marital status					
Single				Ref	
Married	-0.016	0.001	1	0.984(0.357- 2.715)	0.976
Divorced/Sepa- rated	1.636	5.525	1	5.133(1.312- 20.079)	0.019*
Types of family					
Core	0.662	8.306	1	1.939(1.236- 3.043)	0.004**
Combined				Ref	
Family Income					
<bdt 10,000<="" td=""><td>1.548</td><td>30.599</td><td>1</td><td>4.702(2.717- 8.137)</td><td><0.001***</td></bdt>	1.548	30.599	1	4.702(2.717- 8.137)	<0.001***
BDT 10,000 to 20,000	0.680	5.317	1	1.974(1.107- 3.520)	0.021*
Above BDT 20,000				Ref	
Age of children (years)					
1-7	0.551	2.853	1	1.736(0.915- 3.291)	0.091
8-14	1.414	13.558	1	4.111(1.937- 8.726)	<0.001***
15-21				Ref	
Gender of child					
Male	0.464	4.213	1	1.590(1.021- 2.475)	0.040*
Female				Ref	
Negative family impact					
Low				Ref	
High	0.956	16.717	1	2.610(1.645- 4.111)	<0.001***

Note. df: degrees of freedom, OR: odds ratio, CI: confidence interval, Ref: references $\rho < .05^*$; $\rho < .01^{**}$; $\rho < .001^{**}$

with CP included mother's age group, marital status, family type, family income, and age of children affected with CP. Relative to mothers within the 18 - 28 age groups, those within 29-38 years old (OR = 3.665, 95% CI=1.765-7.607) and 39-48 years old had higher odds of experiencing maternal psychological stress (OR=5.190, 95% CI= 2.120-12.703). Mothers who were divorced/separated had higher odds of perceiving maternal psychological stress compared to single mothers (OR

=59.316, 95% CI=3.295-378.512). Mothers who had a core family were three times more likely to experience maternal psychological stress relative to mothers from an extended family (OR=2.905, 95% CI = 1.553 - 5.434). The odds of maternal psychological stress were higher among mothers who earned less than BDT 10,000 (OR=2.159, 95% CI = 1.01-4.662) than those with above BDT 20,000 monthly. Based on the characteristics of children, mothers who had children aged between 8 to 14 years old (OR= 3.403, 95% CI=1.188- 9.748) experienced higher odds of psychological stress compared to mothers who had children aged between 15 to 21 years old. Mothers having a male child with CP were 3 times more likely (OR=2.067, 95%CI= 1.124-3.799) to have psychological stress than mothers with a female child affected with CP. Lastly, mothers who recorded a higher level of negative maternal appraisal (negative family impact) were 3 times more likely to experience maternal psychological stress than mothers with a lower level of negative maternal appraisal (OR=2.340, 95% CI = 1.309-4.185) (Table IV).

DISCUSSION

This study presents that the various demographics and maternal factors play an important role in influencing maternal psychological stress among mothers of children with CP. From this study, the majority of respondents showed higher maternal psychological stress, 59.3%. The finding is consistent with reports from a previous study conducted in Sri Lanka (33). The high percentage of maternal psychological stress could be attributed to the poor relationship between mothers and families, behavioural problems of children and poor knowledge about CP (8, 34). Other studies reported that a high prevalence of maternal psychological stress among mothers of children with CP was due to neglect by the community and family members (9, 35). Overall, maternal psychological stress is multifactorial and could be influenced by demographic factors, family factors and maternal factors (15,17,20).

In the present study, the mother's age is a significant predictor of maternal psychological stress. The median age of mothers was 30 ± 13 , relatively lower than the previous study (7). The respondents aged between 18-28 years old perceived higher maternal psychological stress due to time-demanding and challenging caring for their children with CP. These children need a long time caring for their daily activities (breastfeeding, sleeping, toileting, and regular exercise), and the result supported the previous study (6,17). Findings revealed that mothers above 39 years and older were more likely to have maternal psychological stress than younger mothers. The study in Bangladesh corroborates the current findings, which stated that older mothers were more likely to develop psychological stress (7). It was found from the study that mothers depended on their family and partners. Sometimes mothers need to manage

Table IV: Multivariate Logistic Regression Models for the Prediction of Maternal Psychological Stress

Characteristics	Beta	Wald Statistics	df	Adjusted OR (95 % CI)	p-value
Age of mothers (years)					
18-28				Ref	
29-38	1.299	12.146	1	3.665(1.765- 7.607)	<0.001***
39-48	1.647	13.001	1	5.190(2.120- 12.703)	<0.001***
49-58	0.445	0.555	1	1.560(0.484- 5.025)	0.456
Marital status					
Single				Ref	
Married	1.114	2.586	1	3.047(0.784- 11.846)	0.108
Divorced/Sepa- rated	4.083	18.643	1	59.316(3.295- 378.512)	<0.001***
Types of family					
Core	1.066	11.141	1	2.905(1.553- 5.434)	0.001**
Combined				Ref	
Family Income					
<bdt 10,000<="" td=""><td>0.770</td><td>3.843</td><td>1</td><td>2.159(1.00- 4.662)</td><td>0.050*</td></bdt>	0.770	3.843	1	2.159(1.00- 4.662)	0.050*
BDT 10,000 to 20,000	-0.381	0.519	1	0.683(0.242- 1.927)	0.471
Above BDT 20,000				Ref	
Age of children (years)					
1-7	0.840	3.850	1	2.316(1.001- 5.360)	0.050*
8-14	1.225	5.200	1	3.403(1.188- 9.748)	0.023*
15-21				Ref	
Gender of child					
Male	0.726	5.462	1	2.067(1.124- 3.799)	0.019*
Female				Ref	
Negative family impact					
Low				Ref	
High	0.850	8.223	1	2.340(1.309- 4.185)	<0.004**

Note. $p < .05^*$; $p < .01^{**}$; $p < .001^{***}$

their child's health issues and daily requirements, which influenced higher maternal psychological stress (33). This study informed that mothers' occupation and educational status were not significant predictors of maternal psychological stress. The majority of mothers were unemployed and had completed primary school. Previous studies reported that working mothers with higher education had a lower psychological stress level due to developing knowledge and financial solvency (8,9).

Another factor associated with higher odds of maternal psychological stress in the present study was the mother's marital status. The higher probabilities were recorded in mothers who were divorced or separated relative to married mothers. This could be explained by

the fact that divorced or separated mothers were already emotionally traumatised. The condition might become more complicated when they are primary caregivers for the affected children. However, previous studies reported contradicting associations as married mothers of children with CP were more likely to experience psychological stress than widowed, separated, and divorced mothers. Factors such as inadequate family and financial support may be responsible for the disparity in results (9, 36, 37).

The sociodemographic characteristics of mothers showed that types of the family were significant independent predictors of maternal psychological stress. This investigation manifested the family status that 60% of mothers had an extended family, whereas these findings were similar to those of a previous study (20). Mothers from a core family were more likely to perceive maternal psychological stress compared to those from extended families. Other authors observed that maternal psychological stress was associated with family status (38, 39). In Bangladesh, mothers of children with CP engage in several household activities, and they spend time caring for their unhealthy children. Mothers from extended families may be assisted by family members, thereby reducing the stress on the mother. However, such assistance may not be available in a nuclear family made up of a few members.

Furthermore, the level of income was an independent predictor of maternal psychological stress. Most of the family earned the average income (44.8%), whereby the previous study supported the present study (20,34). Mothers who earned less income had higher maternal psychological stress compared to those that earned higher income (BDT 20,000 and above). A good and sustainable income is important to meet up with the costs of healthcare services to cater to children with CP. This finding suggests that mothers with low income may be unable to acquire the medical and socio-economic costs necessary for the upbringing of children with CP. Earlier studies have demonstrated that low-income is associated with higher maternal psychological stress (9,35).

From the sociodemographic characteristics of children, the median age of the children was six, relatively lower than in the prior study (5). This institution offers treatment and rehabilitation services for children with disabilities. The study found that children affected by CP come to take rehabilitation follow up using devices such as wheelchairs and walking frames. Hence, their age ranges from 1 to 21 years old, and they appear as a child. In the actual situation of the study, we included them and did not follow the Bangladeshi child act of the age group. The status of the age group was one of the predictors of maternal psychological stress. Mothers who had children with CP less than seven years old were more likely to experience maternal psychological

stress compared to those having children of higher age groups. This result is in agreement with studies reporting positive associations between maternal stress and having younger children with various disabilities or underlining health problems (12,33). Accordingly, the early diagnosis of CP highlights the need for intensive caring for the affected child. As such care is prolonged, the cumulative effects on the mother may result in emotional trauma and higher likelihoods of psychological stress (12, 23). In other words, children with fourteen years old influenced higher psychological stress. Moreover, the financial implications of taking care of a CP child from the early days of childhood may predispose caregivers to emotional disturbance and stressful states (15,17).

Another predictor of maternal psychological stress in this study was mothers having a male child with CP. There are contradicting reports in available literature regarding the influence of a child's gender on maternal psychological stress. For instance, previous studies found that a female child with CP was significantly associated with higher maternal psychological stress (9,35). However, our result might be related to the socio-cultural lifestyle inherent amongst Bangladeshi households. An example is a fact that male children are highly treasured in most Bangladeshi families, which could exacerbate the emotional and psychological decline faced by mothers (34). Factors such as cost of treatment, number of children, and knowledge on CP were not associated with maternal psychological stress. Some studies reported that mothers of children with CP obtained knowledge from the internet, professional, or books and adequate knowledge helped them cope with all matters of caring for children (22, 40). There is also a lack of training activities which contribute to inadequate care enforcement and interferes with the recovery process (41, 42). Factors such as study population, socio-economic attributes, cultural lifestyle, and access to education may explain the disparities in the results (22, 30).

The study has examined that the higher positive maternal appraisal (positive family impact) was 57.8%, and 41.9% indicated higher negative maternal appraisal (negative family impact). The per cent was similar to the prior study sample of mothers of children with CP (43). The final model of this study reveals that negative appraisal is found as a significant predictor of psychological stress. The novel findings showed that a higher level of negative maternal appraisal influenced maternal psychological stress. The negative family impact was considered with less satisfaction with the family members, restriction, negative view of raising children, and disruption of the regular family routine. This statement was consistent with the earlier study (23,25).

We identify the strengths and limitations of the present study. The strength of this study was the higher response rate. Besides, the respondents were randomly selected, and the instrument was validated. The respondents were principal caregivers of children with CP, which made them suitable in the assessment of maternal psychological stress. The limitations include the cross-sectional nature of this study; only one district of Bangladesh and caregivers (i.e., mothers) were studied. There is a chance of an over-estimation of the results due to the severe form of children with CP. Moreover, a few mothers could not disclose family-related information. This study recommends future research to include the socio-economic status and fathers of children with CP.

CONCLUSION

The present study revealed a higher level of maternal psychological stress among mothers of children with CP in Bangladesh. The predictors of maternal psychological stress among mothers of children with CP included the age of mothers, types of family, family income, child's age, child's gender, and negative family impact. The factors identified in this study could help to develop policies and strategies to minimise maternal psychological stress associated with parenting children with CP in Bangladeshi households.

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