

## Maternal Stress and Mother-Child Interaction Style Among the Mothers of Cerebral Palsy Children – A Qualitative Study

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**Abstract:** - **Objective:** To study the relationship between parenting stress and mother-child interaction style among the mothers of cerebral palsy children. **Methods:** The study was conducted in Samvedna Trust for handicapped in the Allahabad city. A purposive sample of 38 children with cerebral palsy within the age group of 5- 12 years was selected. Parenting stress was measured by using Parenting Stress Index Short-Form (Abidin, 1995) Mother-child interactions were videotaped for 7 minutes during an unstructured play and was rated on three dimensions of responsiveness, affect and directive-ness, which are the subscales of the Maternal Behavior Rating Scale (MBRS, Mahoney 1992). Qualitative analysis was used to study the relationship. Each mother-child dyad was observed separately for the quality of interactions demonstrated in relation to mothers' stress level in each dyad. **Results:** The findings from this qualitative analysis suggested that the mothers who were experiencing a high stress level were found to be less effective during interaction. This means that mothers were less responsive to their child's behavior and actions; exhibited less warmth, enjoyment and approval of the child during interaction; and more controlling than the mothers who were not under much stress. **Conclusion:** Strong association between parenting stress and interaction style suggests the need for the therapists to develop and implement interventions to enhance the quality of mother-child interaction along with other rehabilitation services provided to these children with cerebral palsy.

**Keywords:** - *Cerebral Palsy, Maternal Stress, Mother-Child Interaction.*

### I. INTRODUCTION

Parenting stress is defined as the negative mental response parents ascribe to themselves and/or their child, created by a series of appraisals made by each parent in the context of his or her level of commitment to the parent role. One factor that has been reported to affect the level of stress that parents experience is severity of their children's disability (Keller & Hong 2004; Margalit, Leyser, Ankonina & Avraham, 1991). Thus the cerebral palsy which is the most severe disabilities children can have, is generally believed to place parents at even greater risk for debilitating level of stress than parents of children with, developmental disabilities (Bouma & Schweitzer, 1990; Hasting & Johnson, 2005; Herring, Gray, Taffe, Tonge, Sweeney & Einfeld, 2002). Psychological state of mothers and primary caregiver is a significant consideration for early development of children with disabilities because this is another factor that appears to affect parents interaction with their children (Konstantareas & Homatides, 1992). Results from an observational study of mothers of children with disabilities who had high and low levels of depression indicated that more depressed mothers interacted less with their children and were less contingently responsive more irritable and had more negative affect and were likely to use harsh discipline than mothers with low level of depression. There is increasing research evidence that the developmental and socio emotional outcomes that children attain in their lives are greatly affected by style of interaction they have with their mothers or other primary care giver through-out the course of their routine activities (Bronfenbrenner, 1992; Kochanska, Forman & Coy, 1999; Shonkoff & Phillips, 2000). This evidence indicates that a parent - child interaction is not only critical to the development of typically functioning children, but is also critical to the developmental outcomes attained by children who have disabilities like cerebral palsy.

Until now, various studies have been reported on the stress of mothers of the children with Cerebral palsy, which have evidenced the increased levels of stress among these mothers. Several studies have shown the negative correlations between parenting stress and various measures of child development. Although, these studies do not directly assess parent-child interaction, they either postulate or imply that the observed relationships between parenting stress and child development are mediated by the negative impact that high levels of stress have on parent-child interactions. Only a few studies have been reported that have attempted to determine whether the relationship between parenting stress and child behavior are mediated by reliable and valid measures of parent-child interaction. The assumption that parent-child interaction does in fact mediate the cause and effects of parenting stress (Sameroff & Feil, 1985), remains to be validated empirically. Although, few studies have reported the results, in support of this assumption, but those studies were based on the children with socio-emotional, and behavioral disorders. This study has attempted to determine the relationship between parenting stress and parent-child interaction through a reliable and valid measure of parent child interaction, in order to add to the literature.

**Purpose:** The purpose of this study was to examine how the mother's psychological status is related to mothers' style of interacting with their children.

## II. HYPOTHESIS

**Hypothesis 1:** mothers with high levels of stress will be less responsive to their child's behavior during interaction than the mothers with low levels of stress.

**Hypothesis 2:** mothers with high levels of stress will demonstrate low degree of affect during interaction than the mothers with low levels of stress.

**Hypothesis 3:** mothers with high levels of stress will be more directing to their child's behavior during interaction than the mothers with low levels of stress.

## III. METHOD

The study was conducted in Samvedna Trust for handicapped in the Allahabad city where the cerebral palsy children visit from various regions as well as states. A purposive sample of 38 children with cerebral palsy within the age group of 5- 12 years was selected from a population of nearby 80 cases of multiple disorders who were visiting the Samvedna trust and were getting various kinds of rehabilitation therapies. Data used in this study was collected in two phases. In the first phase mothers were asked to complete the demographic questionnaire and assessed for their stress level using the Parenting Stress Index-short form (PSI-SF) by Abidin, 1995. In the second phase mother-child interaction was videotaped for 7 minutes in the special education room where mother interacted with their children during an unstructured play using various physical and cognitive games and activities. This videotaping was done for rating the interaction style on three dimensions of responsiveness, affect and directive-ness, which are the subscales of the Maternal Behavior Rating Scale (MBRS, Mahoney 1992). The rating was done by the research practitioners in the field of psychology.

Data Analysis: First of all the Pearson's correlation coefficient ( $r = 0.60$ ) was computed to determine the inter-rater reliability between the raters of maternal behavior patterns on MBRS (Mahoney, 1992). Second, the videos recorded for mother-child interaction patterns were subjected to qualitative analysis in relation to the mothers' stress level for each case under study.

## IV. RESULTS

### Demographic characteristics:

The sample comprised of mothers in their early adulthood period (Age group 20-40 years). The mean score for mother's age (30.92) suggests that most of the mothers belong to early adulthood period. Findings for the Mother's educational qualification indicate that 13 % mothers were educated up to primary school, 19 % up to high school, 21 % up to secondary education and 47% up to higher education, which means that maximum no. of mothers were well qualified as graduate and postgraduate. Mean score for the educational qualification (12.18) suggests that most of the mothers are educated up to secondary education and higher education. Findings for the no. of children indicate that 23 % mothers have one child, 45 % mothers have two children, and 24 % mothers have more than three children to take care in their routine.

The children's chronological ages ranged from 5 to 12, where 29 % children belonged to early childhood period (2-6 years), 66 % children belonged to middle childhood period (6-11 years), and only 5 % children belonged to adolescent age (12-18 years). The mean value for children's age (8.3) suggested that most of the children belonged to middle childhood period. The findings for the gender of the children indicate that more than 68% of the children were boys and 32 % of the children were girls.

### Mother's Characteristics on Parenting Stress Index

The findings in Table 1 present the Frequency and percentages of levels of stress the mothers experience. The findings in the table indicated that in sample, 34 % mothers lies in the normal range, 6 % mothers lies in the risk range and 50 % mothers lies in the clinical range, which suggests that more than 50 %, i. e. most of the mothers are either in the risk of developing depressive symptoms or suffering from depressive symptoms. The mean score for total stress, (92.9) was found to be above the normative value and is above normative range (90), which suggests that according to the norms of the PSI-SF, mother's level of stress is in the clinical range.

### V. QUALITATIVE ANALYSIS:

In this study mother child interaction was videotaped for seven minutes in order to assess the quality of maternal interaction style through an unstructured play. The qualitative analysis was done on the basis of the ratings, given by the research practitioners in psychology. These raters gave their ratings on each item of the maternal behavior rating scale (MBRS Mahoney, 1992), according to the interaction patterns observed in video recording. The ratings used for the qualitative analysis are based on the consistency of the ratings of these three raters. The maternal and child related factors behind the problem of the child as indicate by the qualitative analysis are; delayed cry after birth, obstructed labor, vacuum delivery, forceps delivery, fall accidents, jaundice after birth and maternal infection during pregnancy. The children in the sample were suffering from the distinct types of cerebral palsies such as, spastic quadriplegia, spastic paraplegia, dystonia; and the problems associated commonly with the type of cerebral palsy were dysarthria and seizures. As these children were receiving the special education for gross motor and fine motor activities through various types of block games, the video recording was based on the mother's behavior patterns with the child, while playing and doing activity on these block games, which was an unstructured process. After analyzing all the mother-child dyads (n=38) distinctly, in relation to mother-child interaction patterns following results were found.

**First**, the moderate degree of responsiveness was demonstrated by mothers with a stress level within the risk group. Low degree of responsiveness was demonstrated by the mothers with clinically significant, as well as normal levels of stress. Some mothers with high levels of stress demonstrated an effective responsive behavior. These findings indicated that the degree of responsiveness in parenting behavior was not found to be associated typically with any of the three levels of maternal stress. Responsiveness was associated with maternal stress in distinct ways.

**Second** the degree of affect demonstrated by most of the mothers was low to moderate. A few mothers demonstrated a high level of affect also. When these trends of affect were analyzed in relation to the maternal stress it was found that moderate and low degree of affect was demonstrated by the mothers who were experiencing stress level within the range of risk group or the clinical significant. The high degree of affect was demonstrated by the mothers with a stress level within the normal range. Though a few mother demonstrated a high degree of affect with increased stress level, but their frequency was negligible. All these findings suggested that the most of the mothers, who were experiencing a high level of stress, were not effective in demonstrating warmth, enjoyment and approval of the child.

**Third**, the findings observed from the mother-child interaction indicated that most of the mothers demonstrated a moderate and high degree of directive-ness. The low degree was also demonstrated by few mothers whose stress level was within the normal range. On relating each mother's degree of directive-ness with their stress level it was found that mothers demonstrating moderate and low degree of control were experiencing a stress level with in the risk group range or the clinical range. These findings suggested that mothers who were experiencing a high level of stress were more controlling than the mothers who were experiencing stress level within the normal range.

To summarize the findings of all three components of interaction style, mothers stress level was associated with quality of parenting style during mother-child interaction. The findings from this qualitative analysis suggested that the mothers who were experiencing a high stress level were found to be less effective during interaction. This means that mothers were less responsive to their child's behavior and actions; exhibited less warmth, enjoyment and approval of the child during interaction; and more controlling than the mothers who were not under much stress.

The findings from the qualitative analysis are consistent with study based on quantitative analysis depicting the relationship between child's functional disability, maternal stress and mother-child interaction style (Nisha Rani, Dr. Nishi Tripathi, 2013) which showed that parenting stress was having significant negative correlation ( $r=-0.48$ ,  $p<0.01$ ), with maternal affect and a significant positive correlation ( $r=0.40$ ,  $p<0.05$ ), with maternal directive-ness. However, there was non-significant correlation with maternal responsiveness. These findings suggest that highly stressed mothers are less effective in expressing their feelings, enjoyment, warmth, and are less inventive and less accepting to the actions of their children during their interaction, than the mothers who experience low levels of stress. Likewise, mothers experiencing high levels of stress are more likely to

control and direct their children during one to one interaction, than the mothers with low levels of stress. The findings of this study also suggest that parenting stress is unrelated to the maternal responsiveness which means that mothers are appropriately sensitive to their children's needs and effective in expressing her responsiveness while interacting with their children irrespective of their levels of stress they experience. These findings from both quantitative and qualitative analysis are highly compatible with results that have been reported in the literature which suggest that the high levels of parenting stress interfere with the ability of mothers to interact effectively with their children (Guralnick, 2005; Woolfson & Grant, 2006). This belief is most commonly based on the research findings which indicate the high levels of parenting stress are associated with lower levels of child development (Landry, et al., 2001; Neece & Baker, 2008; Noel, et al., 2008). Authors of these studies have proposed that highly stressed parents may be unable to engage in the quality or frequency of one to one interactions that are needed to support and nurture children's development which results in decreased child development and increased social emotional problems (Floyd & philippe' 1993; Hastings & Beck, 2004).

## VI. CONCLUSION

One major finding of this study was that parenting stress was related to the mother's style of interaction (affect and directive-ness) with their children, which means that high level of maternal stress interferes with mother's effectiveness at engaging in quality interaction with their children Children with cerebral palsy are at extremely high risk for academic failure, and/or special education placement as well as dropping out of school. Since there is increasing evidence that the first five years of children's lives are critical period for addressing these developmental, and social emotional problems it becomes crucial to enhance the effectiveness of parents. Strong association between parenting stress and interaction style suggests the need for the therapists to develop and implement interventions to enhance the quality of mother-child interaction along with other rehabilitation services provided to these children with cerebral palsy.

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**Table I: Sample characteristics on Parenting Stress Index Short-form.**

Level of Parenting Stress	Percentile Score Range	Frequency	Percentage
Normal Range	15-80 <sup>th</sup>	13	34
Risk Range	<90 <sup>th</sup>	6	16
Clinical Range	>90 <sup>th</sup>	19	50

**Appendix**

**Sample Illustration of Mother-Child Dyad**

- Mother’s prenatal & intranatal history...Antenatal history was normal but intra-natal history of vacuum delivery was present.
- History of the child’s problem...Birth history of oxygenation and much delayed cry. Problem was identified at the age of one year.
- Diagnosis...Spastic quadriplegia.
- Associated problems...Visual impairment.
- Maternal stress level (PSISF Score)...Normal range.

**Interaction Patterns observed in video-recording:**

1. Degree to which mother monitors child’s behavior and all verbal and non-verbal subtle communication-----  
-----**High.**
2. Frequency of mother’s responses to child’s play, social activities, facial expressions, vocalizations and gestures-----**High.**
3. Effectiveness in engaging children in reciprocal interaction- whether the interactive sequences are dominated by either mother, child or there is balanced reciprocal exchange of turns-----  
----**Moderate.**
4. Degree to which mother shows (by gesture, facial expressions, or tone of voice) or talks directly about feelings, thought, pleasure, or pain) -----**High.**
5. Degree to which mother enjoys interaction with the child; display playfulness and humor; takes pleasure in child’s accomplishments and express happiness either verbally or non-verbally-- -----**High.**
6. Degree of expression of warmth through touches and Positive regard and affection for the child; emotional support and encouragement in an ego-enhancing way-----**Moderate.**
7. Degree to which mother is creative in her interaction with the child (comes up with novel ideas or suggestions) and degree of absence of stereotyped and repetitive actions-----

**Moderate.**

8. Degree of delight, admiration and positive affect for the child's actions and communicate in legitimate and worthwhile manner-----**High.**
9. Degree of physical activity and manipulation of the objects during interaction; and degree to which mother talks to the child and is engaged with the child-----**Moderate.**
10. Degree of interruptions (instructions, training, eliciting and control) during the child's free play and interaction-----**Moderate.**

**CONCLUSION**

Mother –child interaction patterns demonstrated a high degree of responsiveness and moderate degree of affect and directive-ness. Though the mother's stress level is within the normal range and the child here has modified functional dependence (need supervision), the degree of control demonstrated is high. These findings suggest that mother with normal stress level is more controlling, while being highly responsive and warm and enjoying and approving of the child.