

Research Article

The Mediating Role of Parental Emotional Regulation in the Relationship between Parenting Stress and Parent-Child Attachment

Rabia Arshad¹, Saba Umar², Nudrat Rashid^{3*}, Sana Imtiaz⁴, Mohammed Murtada⁵, Dr. Sadaf Aijaz⁶

¹MS Clinical Psychology, Government College University Faisalabad, Pakistan.

²MS Clinical Psychology, University of Lahore.

^{3*}PhD Scholar, Psychology & Counselling Program, School of Applied Psychology, Social Work and Policy, College of Arts and Science, University Utara Malaysia, Malaysia.

⁴BS Psychology, University of Wah.

⁵Medical Doctor (MD), Tbilisi State Medical University, Georgia

⁶Assistant Professor Psychiatry, Department of Psychiatry, Faculty of Medicine, Northern Border University Arar, Saudi Arabia.

Correspondence Author: Nudrat Rashid

PhD Scholar, Psychology & Counselling Program, School of Applied Psychology, Social Work and Policy, College of Arts and Science, University Utara Malaysia, Malaysia.

Email: ¹rabiaarshad789@gmail.com, ²sabaumar444@gmail.com, ^{3*}rashid_nudrat@ahsgs.uum.edu.my, ⁴si8005742@gmail.com, ⁵m5idr@live.com, ⁶Sadafaijaz@gmail.com

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ABSTRACT

Parenting stress is one of the key factors that impact the quality of parent-child relationships and negatively impact on the emotional and psychological development of children. It is thought that emotional regulation is a key parental competence and is important to lessen the impact of parenting stress on attachment outcomes. This study was designed to investigate the mediation effect of the parental emotional regulation between parenting stress and parent-child attachment. A total of 250 parents of children aged 3-12 years were sampled for the cross sectional correlational research over a 4 month period. The Parents Stress Index-Short Form (PSI-SF), Emotion Regulation Questionnaire (ERQ), and Parent-Child Attachment Scale (PCAS) were used to collect data. SPSS was used to conduct descriptive statistics, Pearson correlation, multiple regression and mediation analysis. Results showed that parenting stress significantly associated with poorer parent-child attachment, while better parenting emotional regulation is significantly associated with better parent-child attachment. Mediation analysis indicated that the relationship between parenting stress and parent-child attachment was partially mediated by parental emotional regulation, suggesting that parents who had higher emotional regulation skills had less negative association between parenting stress and parent-child attachment. The results of this study highlight the need for interventions that aim to improve parental emotional regulation processes in order to build a more positive parent-child relationship and to mitigate the negative effects of parenting stress.

Keywords: Parenting Stress, Parental Emotional Regulation, Parent-Child Attachment, Mediation Analysis, Emotional Well-Being, Parenting, Child Development, Family Relationships.

INTRODUCTION

Parenting is a multifaceted, dynamic, and crucial element in the development of children's emotional, behavioural and social competence. Parenting as a reward can be great, but there are also many psychological requirements of parenting that can create parenting stress. Parenting stress is the burden that parents feel when they feel their parenting stress goes beyond their capabilities. Parenting stress has been consistently linked to negative parenting practices, less parental

responsiveness and poor family functioning. Prolonged stress can also impact the emotional connection between parents and children, which can impact children's psychological adjustment and developmental outcomes (Deater-Deckard, 2004; Spinelli et al., 2020).

Parent-child attachment represents one of the most important aspects of early child development. Secure attachment, in turn, is fostered when caregivers are consistently warm, sensitive and emotionally available to

their children, allowing them to build trust and emotional security. Secure parent-child attachment has been linked to a range of positive outcomes including better emotional regulation, higher self-esteem, academic success, and good interpersonal relationships across the lifetime. In contrast, insecure attachment with behavior problems, anxiety, depression, and social problems in childhood and adolescence has been associated (Bowlby, 1988; Ainsworth, 1989; Pallini et al., 2021).

There is growing evidence that parent-child attachment is negatively related to parenting stress. Chronic stress can cause parents to feel emotionally drained, impatient, and irritable, making it difficult for them to be sensitive to their children's emotional needs. This can lead to children feeling less supported and responsive, which can make attachments feel more insecure. Increased parental stress has been shown to have a significant negative effect on positive parent-child interactions and emotional and behavioral issues among children in recent studies, following the COVID-19 pandemic (Prime et al., 2020; Chung et al., 2022).

The importance of parental emotional regulation as a psychological factor that can affect parental responses to stressful situations has become apparent. Emotional regulation is the ability to recognise, regulate and express emotions appropriately in stressful situations. Parents who have the ability to effectively manage their emotions tend to be more likely to manage demands of parenting, have supportive relationships with their children and show positive parenting behaviors even under stress. Conversely, emotional dysregulation has been linked to harsh parenting, parental emotional withdrawal and a poor quality of parent-child relations (Gross, 2015; Crandall et al., 2021).

Recent study has begun to examine the parenting stress-parent-child attachment mechanism more than ever. A suggested mechanism is the role of parental emotional regulation as a mediator between stress and attachment outcomes. A parent who can control his or her own emotions is better equipped to stay calm, speak positively and respond sensitively to his or her child's emotional needs, even in the face of stress. These adaptive responses promote secure attachment and healthy emotional development. In contrast, parents who have low emotional regulation skills can be impulsive or emotional, leading to an increase

in conflict and a decrease in the quality of parent-child interactions (Morelen et al., 2022; Zimmer-Gembeck et al., 2023).

While a few studies have studied parenting stress, emotional regulation and parent-child attachment separately, the few studies that have explored the relationship between parenting stress and emotional regulation with parent-child attachment in the context of mediation have done so individually. There has been relatively little research that has examined the mediating role of parental emotional regulation in the relationship between parenting stress and parent-child attachment, especially within the context of an under-researched population of developing countries, where family structures, parenting practices, and socioeconomic conditions differ significantly from those in Western countries. This intermediary relationship can be explained to guide the identification of modifiable psychological variables which could be targeted with parenting education and family-based interventions. Improving parents' emotional regulation skills can mitigate negative impacts of parenting stress and support positive relationships between parents and children, which will lead to better emotional and psychological development in children (Wu et al., 2023; Coyne et al., 2021). Hence, the goal of the present study was to explore the mediating effect of parents' emotional regulation between parenting stress and parent-child attachment. The results will help build a body of knowledge on parenting and child development and supply evidence for healthcare professionals, psychologists, counselors and policymakers to create interventions that improve parental coping skills and foster positive family dynamics.

METHODOLOGY

A cross-sectional correlational research design was used to explore the mediation effect of parental emotional regulation in the relationship between parenting stress and parent-child attachment. This design was chosen since it allows for the examination of the relationships between more than one psychological variable at a single point in time and for the purposes of mediation analysis. The study was carried out for a period of 4 months from in the various departments of the paediatric outpatient department, community health centers, and selected primary schools of the study area. Parent data was gathered when parents were accompanying children

during their normal visits or when the children were participating in school related activities. Parents/caregivers of children between the ages of 3 and 12 years were the target population. The study involved a total of 250 participants. The sample size was calculated with OpenEpi Version 3.01, with a 95% confidence level, a 5% margin of error, and an expected prevalence value of moderate parenting stress, as determined in the literature. The sample size was slightly increased to 250 participants, as the questionnaires were not completed and some may not have been returned.

The recruitment of eligible participants was undertaken via a non-probability convenience sampling technique. Those parents who met the inclusion criteria and agreed to participate in the study were recruited sequentially until the desired sample size was met.

The inclusion criteria were: biological parents/primary caregivers aged 20 years or older with at least one child in the age range of 3-12 years, who were able to understand either Urdu or English and who consented to provide written informed consent. Children with severe developmental disorders, intellectual disability, ASD, major psychiatric disorders, or chronic neurological disorders were excluded as these conditions could impact parenting stress, emotional regulation, and parent-child attachment independently. The parents of children with a known history of severe psychiatric disorders and those who could not complete the questionnaire alone were not included in the study.

The data have been collected by a structured questionnaire with four sections. Socio-demographic data included parent age, gender, educational level, socioeconomic status, child's age, child's gender, and educational status of the child's school. The second section is the parenting stress measured by Parenting Stress Index – Short Form (PSI-SF) developed by Abidin (1995). The PSI-SF is made up of 36 items that are organized into three subscores: Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. Responses are given on a 5-point Likert scale with 1 being Strongly Disagree and 5 being Strongly Agree. The higher the scores on the total scale, the more parenting stress. Some previous studies have found high internal consistency (Cronbach's alpha around 0.90).

Parental emotional regulation was assessed with the Emotion Regulation Questionnaire

(ERQ; Gross and John 2003). The ERQ consists of 10 items that measure two aspects of emotional regulation, Cognitive Reappraisal (6 items) and Expressive Suppression (4 items). An item is scored on a 7 point Likert scale from 1 (Strongly Disagree) to 7 (Strongly Agree). Higher scores mean higher levels of emotional regulation strategies usage. The questionnaire has shown acceptable psychometric properties (Cronbach's α between 0.74 and 0.89).

The Parent-Child Attachment Scale (PCAS) was used to measure the attachment of parents to their children, using a validated scale to measure the emotional closeness, trust, communication, and quality of the relationship between parents and children. The scale has 24 items rated from 1(Never) to 5(Always). The higher scores the more strong and healthy parent-child attachment. The previous validation studies have showed good reliability with Cronbach's alpha values > 0.85. A pre-test or pilot study was carried out with 25 participants (10% of the total sample size) which was conducted before the data collection to check the clarity, feasibility and comprehensibility of the questionnaire. The above mentioned participants were excluded from the final analysis. The minor wording changes were in response to the participants' feedback. The reliability of the questionnaire was done by Cronbach alpha method and the internal consistency of all study instruments was satisfactory.

The principal investigator collected data, along with two trained research assistants. The research assistants were trained in standard ways of recruitment of participants, informed consent, questionnaire administration, confidentiality and ethical behavior. Eligible parents were approached one by one and told the purpose of the study, the confidentiality of the study, that they were free to participate and could withdraw at any time without consequences. Questionnaire administration was preceded by written informed consent. The questionnaires took about 15-20 minutes to fill out. Completed questionnaires were checked on the spot for completeness and consistency, and entered into the study data base.

In addition, permission was granted by the administration of the schools and healthcare centers involved. Confidentiality and anonymity of participants was ensured throughout the research process by attaching unique identification codes which were not

replaced by personal identifiers. All data gathered was applied only in a research context and kept in password protected electronic data files which were available only to the research team.

Once data were collected, all responses were entered into SPSS Statistics version 26.0 for statistical analysis. Data cleaning and coding were done prior to analysis. Demographic variables and study measures were computed using descriptive statistics: frequencies, percentages, means, and standard deviations.

The relationships between parenting stress, parenting emotional regulation and parent-child attachment were measured using Pearson correlation analysis. Multiple linear regression analysis was performed on the variables that would predict parent-child attachment. The mediation model was tested by using PROCESS Macro (Model 4) developed by Hayes (2012) with the 5,000 bootstrapped resamples and 95% confidence intervals. In the analysis, p value < 0.05 was regarded as statistically significant.

RESULTS

Table 1. Demographic Characteristics of Parents and Children (N=250)

Variables	Frequency (N)	Percent (%)
Parent Age 20–29	74	29.6
30–39	96	38.4
40–49	58	23.2
≥50	22	8.8
Parent Gender Male	102	40.8
Female	148	59.2
Education Secondary	48	19.2
Intermediate	67	26.8
Graduate	89	35.6
Postgraduate	46	18.4
Economic Low	69	27.6
Middle	132	52.8
High	49	19.6
Child Age 3–5	61	24.4
6–8	92	36.8
9–12	97	38.8
Child Gender Male	128	51.2
Female	122	48.8
School Preschool	54	21.6
Primary	139	55.6
Middle	57	22.8
Total	250	100.0

Demographic information for the 250 parent-child pairs participating in this study showed in Table 1. Most parents (38.4%) were aged 30–39 years, followed by 29.6% aged 20–29 years. Most of the sample (59.2%) was female parents. In terms of educational status, 35.6% of parents were graduates, and 52.8% of

them were from middle-class families. Of the children, 38.8% aged 9-12 years, 51.2% male and over half (55.6%) were in primary school. The results show that the study respondents were predominantly middle aged, educated and had school going children as parents.

Table 2. Descriptive Statistics of Study Variables

Variable	N	Min	Max	Mean	SD
Parenting Stress	250	20	72	46.84	9.12
Emotional Regulation	250	25	63	45.27	7.51
Attachment	250	38	93	71.35	8.43



Table 2 showed the descriptive statistics of the study variables. The overall mean parenting stress score was 46.84 ± 9.12 , which is in the moderate level range of parenting stress. Overall, parents had a mean emotional regulation score of 45.27 ± 7.51 , indicating

that they generally had satisfactory emotional regulation abilities. The mean score for the parent-child attachment was 71.35 ± 8.43 , which indicated a relatively good level of attachment between parents and their children.



Table 3. Parenting Stress Level among Participants

Level	N	%
Low	46	18.4
Moderate	128	51.2
High	76	30.4
Total	250	100

Table 3 showed the results of the parent stress questionnaire for participants. The majority of parents (51.2%) had moderate parenting stress, 30.4% had high parenting stress and 18.4% had low parenting stress.

The results indicate that parenting stress is prevalent among the parents of the participants and could impact family dynamics and parent-child relationships.

Table 4. Pearson Correlation between Parenting Stress, Emotional Regulation and Parent-Child Attachment

Variables	Stress	Emotion	Attachment
Stress	1	-.548**	-.621**
Emotion	-.548**	1	.593**
Attachment	-.621**	.593**	1

** Correlation is significant at the 0.01 level (2-tailed).

Parenting stress was significantly negatively correlated with emotional regulation ($r = -0.548$, $p < 0.01$) and parent-child attachment ($r = -0.621$, $p < 0.01$), suggesting that higher stress to parents was related to lower emotional regulation and attachment.

However, emotional regulation showed a significant positive correlation with parent-child attachment ($r = 0.593$, $p < 0.01$), indicating that parents who demonstrated high levels on the emotional regulation showed high levels of attachment with their children.

Table 5. Multiple Linear Regression Predicting Parent-Child Attachment

Predictor	B	SE	Beta	T	P
Constant	84.37	3.14	-	26.86	<0.001

Stress	-0.48	0.07	-0.45	-6.87	<0.001
Emotion	0.39	0.08	0.36	5.41	<0.001

Model Summary: $R = 0.694$, $R^2 = 0.482$, Adjusted $R^2 = 0.478$, $F = 115.03$, $p < 0.001$
The results of multiple linear regression analysis (MLRA) are displayed in Table 5. In turn, parenting stress was a significant negative predictor of parent-child attachment ($\beta = -0.45$, $p < 0.001$), while emotional regulation of the parents was a significant

positive predictor ($\beta = 0.36$, $p < 0.001$). The model accounted for 48.2% ($R^2 = 0.482$) of the variance in parent-child attachment, demonstrating that the combination of parenting stress and emotional regulation provided a significant prediction of parent-child attachment.

Table 6. Mediation Analysis of the Role of Parental Emotional Regulation

Path	Beta	SE	T	P
Stress→Emotion	-0.55	0.05	-10.94	<0.001
Emotion→Attachment	0.36	0.07	5.18	<0.001
Stress→Attachment	-0.45	0.07	-6.87	<0.001
Indirect	-0.20	0.04	-	<0.001

Parenting stress predicted significantly emotional regulation, which significant predicted parent-child attachment. Indirect effect was statistically significant ($\beta = -0.20$, $p < 0.001$), thus supporting the partial mediation of the parent-child attachment by parental emotional regulation between parenting stress and parent-child attachment. The results indicate that enhancing parents' emotional regulation skills may have a dampening effect for the stress of parenting on parental-child attachment.

DISCUSSION

The present study aimed to explore the mediating effect of parents' emotional regulation in the relationship between parenting stress and parent-child attachment. The results showed that parenting stress significantly negatively correlated with parent-child attachment and that emotional regulation of the parents significantly positively correlated with parent-child attachment. In addition, the emotional regulation of parents partially mediated the parenting stress to attachment, indicating that parental emotional regulation is a mediator between the parenting stress and attachment even when parenting stress is present. These results align with recent studies highlighting emotional regulation as a buffer in the family system (Rutherford et al., 2021).

This negative correlation between parenting stress with parent-child attachment is consistent with the previous findings that overloaded parenting can decrease the levels

of parental sensitivity, warmth, and responsiveness. When parents are stressed chronically, they have limited resources emotionally to respond to their children's needs, which means they have a poor quality of attachment. The same has been observed by Taraban et al. (2022) who reported that parenting stress was negatively connected with parental responsiveness and attachment security in young children.

This current study also found that there was a strong positive correlation between parental emotional regulation and parent-child attachment. They are more likely to be able to communicate clearly, have positive interactions when conflict arises, and to be emotionally available to their children, thus fostering relationships. The results are consistent with Lorber et al. (2021) which found that adaptive strategies of emotional regulation are associated with better parenting quality and children's emotional security.

The mediation analysis is a valuable contribution as it shows that parental emotional regulation accounts for a portion of the pathway between parenting stress and attachment. The results of the present study indicate that parenting stress can have negative impacts on family relationships which can be mitigated by interventions that target emotional regulation skills. Emotional awareness, stress management, and adaptations to coping, therefore, are areas of parenting education that could improve parent-child attachment and support healthy child development. Hajal and Paley (2020) and

Borelli et al. (2023) also concluded that by enhancing parents' emotional competence, family functioning and child psychological well-being would also be improved. Overall, the findings underscore the role of parental emotional regulation as a critical pathway between parenting stress and attachment outcomes, and call for the creation of family-based interventions aimed at fostering positive parenting practices.

CONCLUSION

The study found that parenting stress negatively affects parent-child attachment, while parent emotional regulation is an important protective factor to enhance the parent-child relationship. Mediating effect of emotional regulation suggests that strengthening parents' emotion regulation skills could alleviate negative parenting stress impacts and foster positive attachment and child development. The results are in line with the recommendation for implementing parenting interventions aimed at emotional regulation and stress management.

Limitations

The study design was cross-sectional design, which restricts the ability to determine causal relationship between the study variables. Self-reported questionnaires to obtain data might be subject to recall and social desirability bias. Moreover, participants were drawn from selected settings with convenience sampling, thus these results may not be generalizable to other populations.

Future Suggestions

Longitudinal or experimental research designs should be employed in future studies to improve understanding of the causal relationship between parenting stress, emotional regulation and parent-child attachment. To enhance generalizability, larger and more diverse samples across geographic areas are recommended. In the future, the effectiveness of emotional regulation and parenting skills interventions on strengthening parent-child attachment and enhancing children's psychological well-being should also be assessed.

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