



RESEARCH ARTICLE

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**Parental Involvement and Children's Positive and Negative Emotion: The Mediating Role of Academic Stress**

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**Abstract**

In education, it is easy to ignore children's emotional needs, which affects physical and mental health. A quantitative study randomly distributed a questionnaire among selected primary school children who reported academic stress, emotional state, and parental involvement. The study's findings indicated a correlation between parental involvement, academic stress, and positive and negative emotions. Academic stress played a partial mediating role in the influence of parental involvement on emotion. Children's emotional state can be improved with parents' involvement in their lives and studies; however, children should be given relief from academic stress to make them happy indirectly. The study aims to investigate parental involvement's influence on children's positive and negative emotions and whether academic stress plays a mediating role.

**Keywords:** Parental involvement, Positive Emotion, Negative Emotion, Academic stress, Primary school students, Mediating effect

**INTRODUCTION**

Emotion is people's attitude and experience toward objective things and corresponding behavioural responses. It is an advanced human brain function that interacts with other psychological processes (Yu & Dong, 2005). Studies have shown that emotions significantly impact individuals' learning, memory, decision-making, other cognitive activities, and physical and mental health (Yu & Dong, 2005; Hao, 2006). As one of the internal indicators of mental health, emotion will affect a series of psychosomatic activities of individuals (Peng et al., 2020). Childhood is a critical period for developing individual emotional experiences, and emotions significantly impact children's memory, decision-making and even physical and mental health (Yu & Dong, 2005). Since positive and negative emotions are closely related to children's mental health, exploring the psychological mechanisms that affect positive and negative emotions is particularly important.

The influencing factors of emotions can be generally divided into exogenous and endogenous (Peng et al., 2020). Ecological systems theory, proposed by Bronfenbrenner, focused on understanding the complex interactions between persons, processes, and contexts in child development (Bronfenbrenner & Ceci, 1994; Darling, 2007). In the childhood stage, the family is the central place for children to live, and parents are the most important members of the family. Children's interactions with their parents are mainly influenced by their parents (Cox & Paley, 1997). Therefore, parents are



an essential exogenous factor affecting children's emotions. The different degrees of parental involvement will affect the emotional state of children. Stress is a significant cause of emotional problems (Hammen, 2005), an endogenous factor. Pressure breaks the relationship between the individual and the environment under the state of balance (Lazarus et al., 1985). With the increase in pressure, the level of individual negative emotion tends to rise (Andrews & Wilding, 2004). Suppose it is challenging to adjust to academic stress promptly. In that case, it may lead to anxiety, depression and other negative emotions (Andrew et al., 2015), as well as physiological problems such as hypertension and cardiovascular disease (Ang & Huan, 2006; Brady & Matthews, 2006; Hystad et al., 2009; Conley & Lehman, 2012), resulting in adverse consequences for students' physical and mental development.

Previous studies mostly took emotion as an independent variable to explore the influence of emotion. After reading the literature, we found that we better understand the generation of emotional problems and cultivate positive emotions, and we must start from both internal and external aspects. Alternatively, discuss the endogenous or exogenous factors which affect emotion separately and rarely combine the internal and external factors—the better way to solve children's emotional problems and help them grow healthy.

Studies have been conducted on the relationship between parental involvement and children's emotions, pointing out that high-quality parental involvement is conducive to the good emotional development of children (Fanlin et al., 2001), while the absence of parental involvement may be an important reason for the generation of children's destructive emotions and difficult to regulate them effectively. It is more likely to lead to feelings of inferiority and withdrawal (Yang & Liu, 2014). In this study, we focused on parental involvement in various aspects.

## LITERATURE REVIEW

### *Parental Involvement*

Parental involvement is essential to children's learning (Wilder, 2014; Boonk et al., 2018). Parents are essential in children's daily lives and play a significant role in their children's education. Parental involvement is a complex concept. Although the term has an intuitive meaning, a consensus has yet to be reached on defining this construct (Xiong et al., 2021). In the narrow sense, parental participation only refers to the education in which parents participate in their children's learning. In a broad sense, it refers to parents' participation in all activities conducive to their children's learning and development, including a series of behaviors such as life care, learning support, emotional communication and behavior discipline (Xiuhong, 2020).



### ***Academic Stress***

Academic stress refers to the psychological pressure and tension caused by academic tasks, mainly the psychological pressure caused by learning results such as exams, competition with classmates and expectations from parents and teachers (Xu et al., 2010; Ullah et al., 2022). Factors that can lead to academic stress include learning burden, grades, expectations, hopelessness, and assignments (Sun et al., 2011). Based on severity, academic stress can be classified into mild, moderate, and severe. The more severe the stress level can lead to negative emotions (Dwi Utari & Hamid, 2021). Studies have shown that parents have higher learning expectations of teenagers with good academic performance, resulting in more significant academic stress, while the family size can also significantly influence students' academic performance (Ullah et al., 2022). However, an academic performance that does not match expectations can create negative emotions, leading to deviant behaviors (Ma et al., 2018).

### ***Children Emotion***

In the two-factor emotional model, Watson divided emotions into positive and negative ones (Watson & Tellegen, 1985). Positive emotion refers to the happy feeling that an individual obtains satisfaction from internal and external stimuli. In contrast, negative emotion refers to the negative experience when the body's mechanism is maladjusted due to the negative behavior (Russell & Barrett, 1999). The more positive emotions an individual experiences, such as happiness and happiness, the more psychologically healthy they are. On the contrary, the more negative emotions, such as anxiety and depression, the more detrimental to mental health and functional development (Ning, 2014). Furthermore, individuals with positive emotions are more likely to recall happy things and make optimistic choices and judgments, whereas individuals with negative emotions are more likely to recall sad memories and make pessimistic choices and judgments (Gaudine & Thorne, 2001; George & Dane, 2016).

### ***Research Framework***

Based on ecological systems theory and the endogenous and exogenous influencing factors of positive and negative emotions, this research study proposes the following hypothesis: Parental involvement affects children's emotions, and academic stress plays a mediating role (Figure 1).

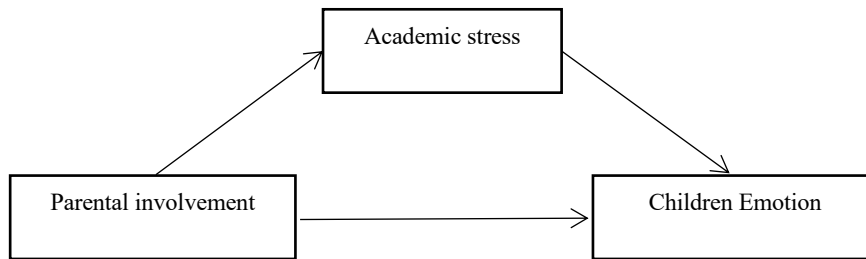


Figure 1: Conceptual Model

## METHODOLOGY

This study was conducted at Huibo Primary School and Qi Pan Primary School, Jinan City, Shandong Province. All students in grades three to six in both primary schools participated in the study. The researcher sought ethical approval from the two schools before distributing the questionnaire among the student. The Schools Division Superintendent granted the ethical approval in written informed consent from each participant.

### *Data Gathering Procedure*

Students reported academic stress and emotional state, and their parents reported parental involvement. Student questionnaires were completed offline, with trained investigators guiding students to complete them independently. Student questionnaires were collected by class. A trained researcher assisted each class. Moreover, a parental questionnaire was completed online by sending to their parents. Each class director could contact the principal investigator if they have questions.

A total of 1204 questionnaires were sent. However, 84 incomplete questionnaires were excluded, and 1117 valid questionnaires were obtained, with an effective recovery of 92.77%.

### **Research Content and Tools**

The research content included parental involvement, students' academic stress and emotional state. Parental involvement was assessed with a twenty-seven-item measure (Zhao, 2016). Item responses were rated along a 6-point scale, ranging from 1 (rarely) to 6 (almost always). The mean of the items was taken so that higher scores indicated higher levels of involvement ( $\alpha=0.93$ ).

'Stress in Homework' and 'Stress in Achievement' were used to express 'Stress in School'. Students' academic stress was evaluated with a seven-item measure (Liu & Lu, 2012), with answers on a 4-point scale. The item responses ranged from 1 (absolutely disagree) to 4 (absolutely agree). The sum of the items was taken, with higher numbers reflecting more significant academic stress ( $\alpha=0.85$ ).



The positive and negative emotions positive and negative emotions of the students were assessed by the Positive and Negative Affective Schedule (Watson et al., 1988). It has a total of twenty items, including positive and negative emotions. Item responses were rated along a 4-point scale, ranging from 1 (rarely) to 4 (almost obvious). Positive and negative emotion was summed up separately, with higher scores indicating more positive( $\alpha=0.89$ ) or negative emotion( $\alpha=0.85$ ).

**Quality Control**

Two quality control measures were adopted in this study: 1) Before each survey, the project leader trained the investigators uniformly to ensure the survey quality. 2) In order to ensure that the content of the questionnaire is correctly understood, if students have questions about the content of the questionnaire during each survey, the investigator will answer them on the spot but will not induce students to fill in the questionnaire; If parents have questions about the content of the questionnaire, they can give feedback online, and the investigators will answer them online through social software.

**Treatment of Data**

After students completed the questionnaire, the investigator collected the questionnaire and inputted the data into SPSS. After parents completed the questionnaire, the electronic data would be automatically exported and imported into SPSS. SPSS 25.0 was used for descriptive statistics and correlation analysis of the data, and the PROCESS program in SPSS was used to test the mediating effect of the data.

**RESULTS AND DISCUSSION**

**Demographic Information**

A total of 1117 primary school students were included in this study, including 617 boys (55.24%) and 500 girls (44.76%). The mean age was (12.89±1.7) years. The mean value and standard deviation of each variable are shown in Table 1.

**Table .1 Demographic Characteristics, parental involvement, academic stress and Children's emotion of primary school Student.**

Variables	Primary school student
Gender	
Male	617 (55.24%)
Female	500 (44.76%)
Age (y)	12.89±1.7

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Parental involvement	4.52±0.68
Academic stress	1.75±0.61
Children emotion	
Positive emotion	3.05±0.70
Negative emotion	1.70±0.61

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Source: Author survey, 2022

### ***Common Method Deviation Test***

In order to exclude the common method bias caused by the questionnaire method, Harman's single-factor analysis was used. The results show ten factors with characteristic root values greater than 1, among which the variance explained by the first factor is 20.61%, far less than the critical value of 40%. It indicates no serious common methodology bias in this study (Podsakoff et al., 2003).

### ***Correlation Analysis***

Correlation analysis was conducted on parental involvement, academic pressure and positive and negative emotion. The results showed that: 1) There was a significant negative correlation between parental involvement and academic stress, and negative emotion ( $r=-0.11$ ,  $-0.12$ ;  $P<0.01$ ), was significantly positively correlated with positive emotion ( $r=0.14$ ;  $P<0.01$ ). 2) There was a significant negative correlation between academic stress and positive emotion ( $r=-0.30$ ;  $P<0.01$ ), which was positively correlated with negative emotion ( $r=0.43$ ;  $P<0.01$ ). (3) Positive emotion was negatively correlated with negative emotion ( $r=-0.38$ ;  $P<0.01$ ). Look at Table 2 for details.

**Table 2. Descriptive Statistics and correlation analysis.**

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	M±SD	1	2	3	4
1 Parental involvement	4.52±0.68	1			
2 Academic stress	1.75±0.71	-0.11**	1		
3 Positive emotion	3.05±0.70	0.14**	-0.30**	1	
4 Negative emotion	1.70±0.61	-0.12**	0.43**	-0.38**	1

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Note: \*\* At level 0.01 (double-tailed), the correlation was significant



The study found that parental involvement and academic stress predicted children's emotions. Parental involvement was significantly negatively correlated with negative emotions and positively correlated with positive emotions. The more parents are involved, the fewer children will have depression and other negative emotions, consistent with previous studies (Pomerantz et al., 2006; Branje et al., 2010). There was a significant negative correlation between parental involvement and academic stress. Growing up in a protective environment can be an effective buffer against academic stress and prevent the adverse effects of stress. That is to say; parental support can reduce and relieve students' academic pressure (Mattingly et al., 2002; Li & Zhang, 2014). Ecological systems theory divides the environment around an individual into four systems in which parental participation plays an important role. Parental participation also promotes the interaction among multiple micro-systems around children and creates a three-dimensional environment for children. Therefore, the influence of parental participation on children is not only reflected in their studies but also in their emotions.

### ***Mediating Effect***

This study further explores the relationship between parental involvement, academic pressure and emotion and uses the plug-in Process within SPSS 25.0 to analyze the mediating effect. With parental involvement as the independent variable, academic pressure as the mediating variable, and positive emotion and negative emotion as the dependent variable, they were put into Model 4, respectively. Bootstrap was used for the test, and the sample size of Bootstrap was set as 5000. The results show that the direct prediction effect of parental involvement on emotion is significant. When the intermediate variable of academic stress is added, the prediction effect of parental involvement on emotion is still significant. Parental involvement can significantly predict academic stress, and academic stress can also significantly predict emotion. Bootstrap test results show that 95%CI of direct and indirect effects of parental involvement on emotion does not include 0. Academic stress plays a partial mediating role between parental involvement and emotion. When positive emotion is the dependent variable, the effect value is 0.03, accounting for 21.43% of the total effect. When negative emotion was the dependent variable, the effect value was -0.04, accounting for 40% of the total effect. Look at Table 3~6 for details.

**Table 3. Analysis of the mediating effect of positive emotion as the dependent variable.**

Equation of regression		Overall fit index			Significance of regression coefficient	
Dependent variable	Independent variable	R	R2	F	$\beta$	t
Positive emotion	Parental involvement	0.14	0.02	21.17***	0.14	4.60***
Academic stress	Parental involvement	0.11	0.01	13.81***	-0.12	-3.72***
Positive emotion	Parental involvement	0.31	0.10	60.63***	0.11	3.67***
	Academic stress				-0.28	-9.91***

Note: \*\*\* in 0.001 level (double tail), the correlation is significant, the same below.

**Table 4. Bootstrap analysis of positive emotion as the dependent variable.**

Path of influence	Normalized effect value	Standard error	95%CI	Ratio (%)
Total effect	0.14	0.03	[0.08, 0.20]	--
Direct effect	0.11	0.03	[0.05, 0.17]	78.57%
Indirect effect	0.03	0.01	[0.01, 0.05]	21.43%

**Table 5. Analysis of the mediating effect of negative emotion as the dependent variable.**

Equation of regression		Overall fit index			Significance of regression coefficient	
Dependent variable	Independent variable	R	R2	F	$\beta$	t
Negative emotion	Parental involvement	0.12	0.01	15.35***	-0.12	-3.92***
Academic stress	Parental involvement	0.11	0.01	13.81***	-0.12	-3.72***
Negative emotion	Parental involvement	0.44	0.12	132.15** *	-0.06	-2.57***



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Academic stress	0.36	15.67***
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**Table 6. Bootstrap analysis of negative emotion as the dependent variable.**

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Path of influence	Normalized effect value	Standard error	95%CI	Ratio (%)
Total effect	-0.10	0.03	[-0.16, -0.05]	- -
Direct effect	-0.06	-2.57	[-0.11, -0.01]	60%
Indirect effect	-0.04	0.01	[-0.07 , -0.02]	40%

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Academic stress partially mediates the relationship between parental involvement and emotion, proving that there is a specific relationship between parental involvement and emotion, and the probability and degree of its occurrence are also affected by academic stress. In addition, academic stress partially mediates the predictive effect of parental involvement on children's emotional state; that is, parental involvement not only directly affects children's emotional state but also indirectly affects children's emotions through academic stress. Parental involvement is critical to children's academic performance and can significantly reduce negative attitudes (Li et al., 2018). Once the pressure is too much, it will produce negative emotions and affect physical and mental health.

## CONCLUSION AND RECOMMENDATIONS

Based on the endogenous and exogenous factors of emotion, this study researched parental involvement and children's emotional problems. This study provides a basis for emotion's endogenous and exogenous influencing factors. From the perspective of endogenous factors, academic stress can affect academic emotion. Specifically, academic stress is negatively correlated with positive emotion and positively correlated with negative emotion. From the perspective of exogenous factors, parental involvement has an essential impact on children's emotions. Parental involvement is positively correlated with positive emotions and negatively correlated with negative emotions. Moreover, academic stress mediates the emotional effects of parental involvement.

Therefore, future research should not only focus on one aspect of emotional factors but should intervene in children's emotions internally and externally. First, parents, as the most important companions and supporters of children, should actively communicate with their children and guide them to establish a healthy and upward mental state. Parents should take the initiative to give appropriate learning and interpersonal communication advice and guide them to remove negative emotions



properly. Secondly, moderately reducing children's perceived academic stress can also keep them in a positive emotional state. Children should be able to handle the increased academic burden, which makes them under too much pressure. Children can be appropriately increased within a controlled range to play with their peers or during other entertainment.

There are also limitations. This study was based on a cross-sectional design, so no causal inference could be made. It was also impossible to verify the dynamic effects of parental involvement and academic pressure on emotional states. Therefore, longitudinal data analysis should be considered in future studies to verify the influencing factors of children's emotions.

#### **Authors contribution**

Yangyang Liu is responsible for the paper's conception, writing and revision.

Yangyang Liu, Minghui Xiong and Ran Mo are responsible for data collection and statistical analysis.

Lu Song is responsible for the comprehensive guidance of the paper.

Junsheng Liu is responsible for project construction and comprehensive guidance of the paper.

#### **Data availability**

Necessary data are available upon request to the author.

#### **Declaration of competing interest**

The author declares that there are no competing interests in this work.

#### **Grant information**

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#### **Ethical statement**

The researchers sought approval from the participants' schools, before conducting questionnaires and experiments on each eligible participant. Written informed consent was obtained from all the participants prior to enrollment in this study.

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