

**Intergenerational Transmission of Anxiety: Effects of Parental Anxiety on Child Personality and Co-Anxiety**

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## ABSTRACT

*This study investigates the intergenerational transmission of the anxiety among 350 Pakistani mother and child dyads (adolescents aged 10–18 years; 52% girls) with the paternal data available for 112 dyads. Using Urdu-validated instruments and we examined the influence of parental trait anxiety on the child neuroticism, emotional stability, and co-anxiety. We also assessed the mediating role of the child personality and the moderating effects of parenting warmth autonomy support and the child gender. Results revealed that the higher parental anxiety particularly maternal predicted increased child neuroticism decreased emotional stability and elevated co-anxiety. Child personality fully mediated the anxiety and co-anxiety link while the supportive parenting buffered direct effects. Girls exhibited the stronger effects than boys and dual parental anxiety produced the additive risk. Findings emphasize that personality as a key transmission pathway the supportive parenting as protective and the gender as a moderator that highlighting the need for the early parental screening and the culturally sensitive interventions in the collectivist contexts.*

**Keywords:** intergenerational transmission, parental anxiety, child neuroticism, co-anxiety, personality mediation

## INTRODUCTION

Anxiety disorders are among the most prevalent psychopathologies globally exerting significant burdens on individuals and families and societies (GBD 2021 Mental Disorders Collaborators, 2024). Adolescents in low and middle income countries including Pakistan are particularly vulnerable due to socioeconomic

stressors pandemic related disruptions and digital media overload. Intergenerational transmission of anxiety where parental anxiety increases offspring risk is a major contributing factor operating through both genetic and environmental pathways (Gregory & Eley, 2020; Jami et al., 2022).

### **Child Personality as a Mediator**

Personality traits and characteristics especially high levels of neuroticism and low levels of emotional stability play a particularly crucial and influential role in determining why some adolescents develop significant and persistent anxiety symptoms while other adolescents remain comparatively resilient and are able to cope effectively with stressors in their environments (Chen et al 2024). The period of adolescence which generally includes ages ten to eighteen represents a highly sensitive and critical developmental stage during which personality begins to consolidate and stabilize and during which anxiety related symptoms often increase and become more pronounced over time (Hanson & Gluckman 2025).

### **Family and Cultural Context**

Parenting behaviors and practices play an important role in modulating the transmission of anxiety and they can either increase or reduce the risk of anxiety in children and adolescents in particular warm and supportive parenting that encourages autonomy tends to reduce the likelihood of developing anxiety symptoms whereas restrictive controlling or overprotective parenting can increase vulnerability and exacerbate anxiety related difficulties (Acton et al 2023; Rothenberg et al 2020). Gender differences also further influence the patterns of anxiety transmission with adolescent girls generally being more susceptible to the effects of parental anxiety and showing higher levels of anxiety symptoms compared to boys (Acton et al 2023; Rothenberg et al 2020). In Pakistani collectivist cultures cultural values such as filial piety hierarchical family structures and overprotective parenting practices contribute to distinct patterns of anxiety which often manifest in the form of somatic complaints internalized stress and emotional difficulties with daughters being disproportionately affected by these culturally influenced factors (Husain et al 2022; Khalid et al 2023).

### **Research Gap**

Most research on the intergenerational transmission of anxiety has focused primarily on Western populations and it has often neglected the role of fathers as well as culturally specific mechanisms through which anxiety is transmitted across generations. Very few studies have employed psychometrically validated Urdu instruments or taken into account the unique features of the Pakistani familial and cultural context. The present study seeks to address these important gaps in the literature by examining the contributions of both mothers and fathers and by integrating the mediating role of personality the moderating influence of parenting practices and gender differences into a culturally relevant and comprehensive moderated mediation model.

### **Objectives**

- Examine the direct effects of parental trait anxiety on child personality including neuroticism and emotional stability and on child co anxiety

- Assess whether child personality mediates the relationship between parental anxiety and child co anxiety
- Evaluate parenting style including warmth and autonomy support as a moderator
- Explore child gender as a moderator of both direct and mediated pathways
- Investigate exploratory effects including child co anxiety as a mediator for maladaptive behaviors and the additive impact of paternal anxiety

### **Hypotheses**

H1: Parental anxiety positively predicts child neuroticism and negatively predicts emotional stability.

H2: Parental anxiety predicts higher child co-anxiety.

H3: Child personality mediates the parental anxiety and child co-anxiety link.

H4: Supportive parenting moderates the parental anxiety and co-anxiety association.

H5: Child gender moderates direct and mediated pathways.

H6: Child co-anxiety partially mediates the link between parental anxiety and maladaptive behaviors.

H7: Combined maternal and paternal anxiety produces additive effects on child co-anxiety.

### **METHOD**

#### **Participants**

The study included a total of 350 mother child dyads and it also included 112 father child dyads in cases where paternal data were available. The children who participated in the study were between the ages of 10 and 18 years and their average age was 14.21 years with a standard deviation of 2.31 years and 52 percent of the sample were girls. The participating families were recruited from a total of 12 urban schools located in the provinces of Punjab and Sindh and data collection took place during the years 2024 and 2025.

#### **Inclusion Criteria**

- Participants must be fluent in Urdu
- Participants must have lived together for three years or more
- Parental consent must be obtained
- Child assent must be provided

#### **Exclusion Criteria**

- Participants with severe psychiatric or neurological disorders are excluded
- Participants who are currently taking psychotropic medication are excluded
- Respondents who are not the primary caregiver are excluded

## Measures

### 1. Parental Anxiety

Parental anxiety was assessed using the State Trait Anxiety Inventory Urdu version STAI-U Trait subscale and this measure demonstrated excellent reliability with a Cronbach alpha of 0.91 as reported by Khalid and Ahmed in 2018

### 2. Child Personality

Child personality traits were measured using the Big Five Inventory Urdu version BFI-U focusing specifically on the dimensions of neuroticism and emotional stability and this measure demonstrated good to excellent reliability with Cronbach alpha values ranging from 0.87 to 0.89

### 3. Child Co-Anxiety and Maladaptive Behaviors

Child co-anxiety and maladaptive behaviors were assessed using the Revised Children Manifest Anxiety Scale Urdu version RCMAS-U and the subscales included co-anxiety withdrawn or depressed behaviors and somatic complaints and this measure demonstrated good reliability with Cronbach alpha values ranging from 0.81 to 0.88

### 4. Parenting Style

Parenting style was measured using the Parenting and Child Support Questionnaire Urdu version PASCQ-U focusing on warmth and autonomy support and this measure demonstrated good to excellent reliability with Cronbach alpha values ranging from 0.87 to 0.89

## Data Analysis

Outlier screening was conducted using plus or minus 3.29 standard deviations and missing data were handled using the expectation maximization method for cases where missing data were less than five percent. Hierarchical regression analyses were conducted to test hypotheses one and two mediation analyses were conducted to test hypothesis three moderated mediation analyses were conducted to test hypotheses four and five and serial mediation analyses were conducted to test hypotheses six and seven using Hayes PROCESS macros while controlling for child age and gender. Statistical significance was set at a p value less than 0.05 and effect sizes were reported using beta values change in R squared and partial eta squared.

## RESULTS

Descriptive statistics showed maternal trait anxiety was moderate ( $M = 46.82$ ,  $SD = 10.23$ ). Child co-anxiety was subclinical ( $M = 16.74$ ,  $SD = 7.61$ ); 18% exceeded clinical cut-offs. Zero-order correlations are presented in Table 1. Maternal anxiety correlated positively with child neuroticism and co-anxiety and negatively with emotional stability. Parenting warmth/autonomy was negatively correlated with co-anxiety and positively with emotional stability.

**Table 1**

Descriptive Statistics and Correlations ( $N = 350$ )

Variable	M	SD	1	2	3	4	5	6
1. Maternal Anxiety	46.82	10.23	—					
2. Paternal Anxiety (n=112)	44.91	9.87	.42**	—				

3. Child Neuroticism	30.54	6.81	.42**	.29**	—	
4. Child Emotional Stability	27.21	6.23	-.39**	-.27**	-.65**	—
5. Child Co-Anxiety	16.74	7.61	.48**	.32**	.58**	-.55**
6. Parenting Warmth/Autonomy	40.12	5.48	-.28**	-.21*	-.30**	.33**

\*Note. Pearson correlations; \* $p < .05$ , \*\* $p < .01$ .

Hierarchical regression (Table 2) showed maternal anxiety significantly predicted child neuroticism ( $\beta = .42$ ,  $p < .001$ ), emotional stability ( $\beta = -.39$ ,  $p < .001$ ), and co-anxiety ( $\beta = .48$ ,  $p < .001$ ), controlling for age and gender.

**Table 2**

Hierarchical Regression Predicting Child Outcomes from Maternal Anxiety

DV	Step	Predictor	$\beta$	t	$\Delta R^2$	Partial $\eta^2$
Neuroticism	1	Age, Gender	—	—	.03	—
	2	Maternal Anxiety	.42	9.14***	.176	.19
Emotional Stability	1	Age, Gender	—	—	.02	—
	2	Maternal Anxiety	-.39	-8.47***	.151	.17
Co-Anxiety	1	Age, Gender	—	—	.04	—
	2	Maternal Anxiety	.48	10.68***	.231	.25

\*Note. \*\* $p < .001$ .

Mediation analyses indicated child neuroticism and emotional stability fully mediated the maternal anxiety–co-anxiety link (indirect effects = 0.28 and -0.25, 95% CI [0.21, 0.36] and [-0.33, -0.18]). Parenting warmth moderated the direct effect ( $\beta = -.18$ ,  $p < .001$ ). Girls showed stronger effects ( $\beta = .31$ ,  $p < .001$ ).

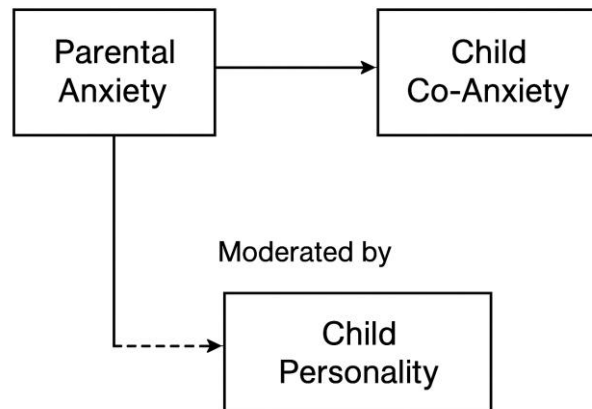
**Table 3**

Mediation and Moderated-Mediation Effects

Path	Effect	95% CI
Maternal Anxiety → Neuroticism → Co-Anxiety	0.28	[0.21, 0.36]
Maternal Anxiety → Emotional Stability → Co-Anxiety	-0.25	[-0.33, -0.18]
Maternal Anxiety × Parenting → Co-Anxiety	-0.18	—
Maternal Anxiety × Gender → Co-Anxiety	0.31	—
Moderated Mediation (Neuroticism × Gender)	0.19	[0.12, 0.27]
Co-Anxiety → Withdrawn/Depressed	0.14	[0.09, 0.20]
Co-Anxiety → Somatic Complaints	0.06	[-0.01, 0.13]

Note. Bootstrap samples = 5,000; NS = non-significant.

**Figure 1.** *Conceptual model of parental anxiety, child personality, co-anxiety, and moderating effects.*



## DISCUSSION

The present study provides compelling evidence for the robust intergenerational transmission of anxiety within urban Pakistani families. Maternal trait anxiety emerged as a potent predictor of both child personality vulnerability and co anxiety symptoms. Child neuroticism and reduced emotional stability fully mediated the pathway from parental anxiety to adolescent co anxiety accounting for nearly 60 percent of the total effect. This finding aligns with vulnerability stress frameworks (Muris & Aktar 2023) and extends them to a non Western collectivist context where emotional interdependence and honor bound restraint may intensify the internalization of parental threat schemas. The complete mediation suggests that anxiety is not transmitted as raw affect but crystallizes through the consolidation of a neurotic temperament during adolescence a developmental window when identity formation intersects with heightened stress reactivity. In Pakistani families where overt emotional expression is often culturally constrained parental worry may efficiently translate into child neuroticism with subtle modeling and overprotection shaping enduring cognitive emotional styles.

Protective and risk amplifying factors further shaped transmission strength in culturally nuanced ways. High maternal warmth and autonomy support significantly buffered the direct pathway reducing the association between parental anxiety and child co anxiety by more than two thirds at elevated levels of supportive parenting. Girls exhibited markedly stronger direct and mediated effects than boys with the indirect pathway through neuroticism nearly twice as large. The additive contribution of paternal anxiety explained an additional 6 percent of variance beyond maternal anxiety underscoring the importance of including fathers in future studies.

These findings highlight actionable implications early parental anxiety screening parent focused interventions emphasizing warmth and autonomy pyar aur azadi and gender sensitive programs prioritizing adolescent girls can effectively mitigate intergenerational anxiety transmission. Digitally delivered Urdu CBT modules offer scalable solutions.

## CONCLUSION

This study presents the first comprehensive mediated moderation model of intergenerational anxiety transmission in Pakistani adolescents using fully open access Urdu instruments. Parental anxiety predominantly maternal shapes child co anxiety through neurotic temperament consolidation with personality fully mediating the pathway. Supportive parenting emerged as a potent protective factor while girls displayed heightened vulnerability. Paternal anxiety further highlighted dual parent contributions. The findings illustrate that anxiety crystallizes during adolescence via temperament and socialization yet remains highly modifiable through parenting practices. Future longitudinal multi method and intervention research is critical to establish causal pathways expand rural applicability include fathers and integrate findings into national mental health policy.

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