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The Relationship between Maternal Overprotection and Anxious Beliefs with Child Anxiety: The Mediating Role of Child Inhibition in Clients Referred to Urmia Police Force Counseling Center, Iran

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Quantitative Study

Abstract

Background: It seems that children's anxiety is affected by parental factors and the child's personality characteristics. The objective of this study was to develop a model of child anxiety based on maternal overprotection, anxious beliefs, and the mediating role of child inhibition in clients referred to the Urmia Police Force Counseling Center, Urmia, Iran.

Methods: In this modeling type of correlational study, among the clients referring to the Urmia Police Force Counseling Center in 2021-2022, 218 mothers with children aged 2 to 8 years were selected using a convenience sampling method. Mothers completed the Roth Manual of Mother-Child Relationship Evaluation (MCRE), Spence et al. Preschool Anxiety Scale (PAS), Francis and Chorpita Parental Beliefs about Anxiety Questionnaire (PBA-Q), and Bishop et al. Behavioral Inhibition Questionnaire (BIQ). The obtained data were analyzed in SPSS [mean, standard deviation (SD), and correlation] and Amos software using the path analysis method.

Results: A significant positive relationship was found between maternal overprotection ($r = 0.49$, $P < 0.001$), anxious beliefs ($r = 0.54$, $P < 0.001$), child inhibition ($r = 0.48$, $P < 0.001$), and child anxiety. Moreover, overprotection had an indirect and positive effect ($\beta = 0.41$, $P < 0.02$) on the child's anxiety given the mediating role of the child's inhibition ($\beta = 0.073$, $P < 0.01$). Anxious beliefs directly ($\beta = 0.41$, $P < 0.01$), indirectly, and positively affected a child's anxiety given the mediating role of the child's inhibition ($\beta = 0.098$, $P < 0.001$). It should be noted that the root mean square error of approximation (RMSEA) index was 0.09 and the comparative fit index (CFI) was 0.987, which were acceptable.

Conclusion: Based on the results, the mother's cognitive and behavioral characteristics can affect anxiety through the child's behavioral inhibition characteristic. In addition to

parents' cognitive and behavioral characteristics, the child's temperament and parents' response based on the children's temperament should be also considered in the diagnosis and treatment of children's anxiety disorders.

Keywords: Anxiety; Anxious beliefs; Inhibition; Parental overprotection

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Introduction

Anxiety disorders are the most common mental health problems reported in children and young people. A national survey on the mental health of young people aged 5 to 19 in the United Kingdom (UK) showed that 2.7% of people were diagnosed with an anxiety disorder (NHS Digital, 2017). The study by Hasanzadeh et al. (2020) revealed that the prevalence of anxiety disorders in first-grade children was 22.1%. It seems that parenting components are effective factors in the initiation and continuation of anxiety in children (King, Vidourek, & Merianos, 2016; Ryan & Ollendick, 2018; Pyar et al., 2022).

In this regard, Breinholst et al. (2012) and Jewell et al. (2022) believe that involving parents in the treatment of childhood anxiety disorders can improve the child's mental health outcomes. Accordingly, parents learn methods more about how to think, behave, and respond to their child's anxiety, which can have a positive impact on their child's treatment outcomes. Eley et al. (2015) also reported a significant relationship between parental anxiety and the occurrence and persistence of anxiety in children. Anxious parents may model or reinforce anxious and/or avoidant thinking and behavioral patterns for their children (Murray, Creswell, & Cooper, 2009; Subar & Rozenman, 2021).

An increasing number of studies have recently sought to investigate parenting variables, including parental beliefs, which have focused on how parents react to their child in situations that the parents perceive as anxiety-provoking, regardless of whether the child may perceive that situation and anxiety (Pereira, Muris, Mendonça, & Barros, 2016; Francis & Roemhild, 2012). According to Creswell and O'Connor (2006), mothers who misinterpret their anxiety symptoms as harmful or threatening expect their children to present threatening interpretations of their anxiety symptoms. In this regard, Lester et al. (2009) found that anxious parents interpreted their children and their ambiguous situations as more threatening. Manley and Francis (2022) also revealed that parents' anxious beliefs indirectly affected anxiety in the relationship between the child and parental anxiety.

Additionally, recent studies have focused on maternal parenting factors, which look at anxiety in the process of intergenerational transmission through factors such as maternal overprotection (Affrunti & Woodruff-Borden, 2015; Miller, Borelli, & Margolin, 2018; Wu, Zhang, & Slesnick, 2020). Parental overprotection also known as overcontrol is considered as excessive involvement in the child's daily activities and experiences while encouraging dependence on parents (Spokas & Heimberg, 2009).

Although these behaviors are probably resulting from good intentions, they often signal to children that the environment is threatening. Hence, it prevents them from accurately perceiving the danger in the environment and limits their children's opportunities to explore the environment and solve their problems. Thus, parental overprotection is often associated with children's anxiety symptoms, especially in the long term (Affrunti & Woodruff-Borden, 2015; Miller et al., 2018). Additionally, it seems that, behavioral inhibition is associated with silence and anxiety (Hudson, Murayama, Meteyard, Morris, & Dodd, 2019). Behavioral inhibition originates from a person's temperament and is mainly characterized by features such as shyness, withdrawal, avoidance, discomfort, and fear of unfamiliar situations, people, and events. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) diagnostic system considers behavioral inhibition as a temperamental factor that predisposes the child to disorders such as attention deficit-hyperactivity, selective mutism, and anxiety. It seems that behavioral inhibition has two social and

non-social components; the social component is characterized by silence in interaction with unfamiliar and the non-social component is characterized by reluctance to approach unfamiliar situations and fear in threatening situations (Pini et al., 2022).

The results of studies suggest that high inhibition in early childhood is associated with an increased risk of anxiety disorders throughout life (Pini et al., 2022).

The diathesis-stress model also indicates that children who are behaviorally inhibited are more susceptible to the negative impacts of the stressful environment of parents and consequently psychological damage (Zuckerman, 1999). Several studies indicate that educational behaviors and family environmental factors are associated with child psychopathology (Otto, Kolmorgen, Sierau, Weis, von Klitzing, & Klein, 2016; Yap & Jorm, 2015). Meta-analytic studies suggest that parenting predicts a very small share of variance in child psychopathology (Kawabata, Alink, Tseng, van Ijzendoorn, & Crick, 2011). Thus, researchers have stated that the fit between the child's temperament and parenting behaviors may have a higher impact on the child's condition. Based on the diathesis-stress model, parents' behaviors have a higher impact on the child's psychological development when the child has a certain vulnerability to stress (for example, certain temperamental characteristics) (Ryan & Ollendick, 2018). When anxious parents identify their children's temperamental tendencies associated with anxious behaviors, they may try to protect their children from possible distress (Van Zalk, Tillfors, & Trost, 2018).

There is a two-way relationship between parental behavior and a child's temperament. In this regard, Van Zalk and Kerr (2011) investigated temperament and parenting in a longitudinal study. They indicated that adolescent shyness at the age of 14 predicted higher levels of parental interventional control at the age of 15, which predicted an increase in shyness at the age of 16. Besides, Vreeke et al. (2013) found that children with high behavioral inhibition had higher levels of anxiety when they experienced parental overprotection. A review of the research literature suggests that parental behaviors and beliefs affect the child's anxiety. In addition, a child's behavioral inhibition affects anxiety.

Some studies have investigated the moderating role of parenting in the relationship between anxiety and a child's temperament (Karreman, de Haas, van Tuijl, van Aken, & Deković, 2010; Asselmann, Wittchen, Lieb, Hofer, & Beesdo-Baum, 2015). Further, there is a two-way relationship between the child's temperament and parenting. Therefore, it seems that children's anxiety is affected by parental factors and the child's personality characteristics. The objective of this study was to develop a model of child anxiety based on maternal overprotection, anxious beliefs, and the mediating role of child inhibition in clients referred to the Urmia Police Force Counseling Center, Urmia, Iran.

Methods

The present study was a correlational research. The statistical population of the present study included all the mothers of children aged 2 to 8 living in Urmia City, in 2022, who were referred to the Counseling Center of the Urmia Police Force and completed the questionnaires. The study sample included 230 people, selected using a convenience sampling method. In this regard, 12 samples were removed from the analysis as outliers and the final sample was determined to be 218 people. In determining the sample size, Hoo (2015) suggests that to examine the structural model in which 2-4 agents participate, the researcher should plan on collecting at least 100 to 200 cases. The use of smaller samples can cause inconvergence and

inappropriate results or low accuracy of parameter estimation, especially standard errors (Homan, 2015). The inclusion criteria of the study were willingness to participate in the study, living with the mother, mothers having higher than secondary level of education, and lack of mental problems in the child. The exclusion criterion of the study was the incomplete completion of the questionnaire.

Procedure

To implement this study, people who had children aged 2-8 years were selected among those who were referred to the police counseling center. After explaining the objectives of the study, the questionnaire was submitted to the mothers. The principle of confidentiality of information was also emphasized.

Preschool Anxiety Scale (PAS): This scale was designed by Spence et al. (2001). It has 28 items that assess the symptoms of separation anxiety disorder, generalized anxiety, social phobia, fear of physical damage, and obsession. A total score is obtained from the sum of the scores. It is scored on a Likert scale (0 = never to 4 = always). Spence et al. (2001) reported the reliability of the scale above 0.7 using Cronbach's alpha coefficient and 0.60 using the test-retest method with a 12-day interval. In the study by Ghanbari et al. (2011), Cronbach's alpha coefficient for the whole scale was obtained at 0.88.

The Parental Beliefs about Anxiety Questionnaire (PBA-Q): This questionnaire was designed by Francis and Chorpita (2010). It is a self-report tool assessing the mothers' beliefs about child anxiety. The questionnaire includes 17 items scored on a Likert scale (1 = strongly disagree to 4 = strongly agree). The range of scores is between 17 and 68, and a high score indicates more irrational beliefs. In their study, Francis and Chorpita (2010) reported the internal consistency of this tool at 0.81 using Cronbach's alpha method. The convergent validity of this tool with the Revised Child Anxiety and Depression Scale (RCADS) of Chorpita et al. was reported at a good level for anxiety (r = 0.29) and the construct validity of this questionnaire with the Child Behavior Checklist of Achenbach and Rescorla (2001) was not significant for externalizing problems (r = 0.18). In the study by Zeinali et al. (2020), the coefficient of internal consistency was obtained at 0.83 and 0.58 by Cronbach's alpha method and by split-half method, respectively.

Manual of Mother-Child Relationship Evaluation (MCRE): The manual of MCRE was designed by Roth (1961). It evaluates mothers' points of view regarding 4 styles of interaction with the child. In the present study, the overprotection subscale was used, which includes 12 questions scored on a Likert scale (5 = strongly agree to 1 = strongly disagree). The range of scores is between 12 and 60. The cut-off point of this subscale is reported at 34. Roth (1961) reported the validity of this scale between 0.41 and 0.57 and its reliability between 0.28 and 0.68. In the study by Zamiri (2006), Cronbach's alpha coefficient was obtained at 0.78.

Behavioral Inhibition Questionnaire (BIQ): This scale was developed by Bishop et al. (2003). It measures the child's behavioral inhibition in two areas: inhibition of social novelty and inhibition of situational novelty. This scale has 30 questions scored by parents on a Likert scale (1 = never to 7 = always). The range of scores is between 30 and 210. Questions 16, 26, 2, 7, 6, 10, 9, 11, 5, 14, 15, 23, 24, 13, and 19 are scored in reverse. To assess its convergent validity, the correlation of BIQ forms with the inhibition subscale of the Temperament Assessment Battery for Children-Revised was reported at a desirable level. Further, internal consistency by Cronbach's alpha method was reported at 0.87 for mothers and 0.85 for fathers. In the present study, internal consistency was obtained at 0.93 by Cronbach's alpha method.

The obtained data were analyzed in SPSS software (version 22; IBM Corp., Armonk, NY, USA) and Amos software using the path analysis method.

Results

The mean and standard deviation (SD) of mothers' age was 32.69 ± 4.20 and the mean children's age was 4.50 ± 1.20. Regarding the frequency of children's gender, 49.5% were girls and 50.5% were boys. Regarding the frequency of maternal education, 31.2% of the mothers had a diploma and under diploma, 47.7% had a bachelor's degree, 14.7% had a master's degree, and 5.5% had a PhD. Moreover, 61% of mothers were housewives and 39% were employed. The results of the study are presented below.

Based on the results in table 1, the values of skewness and kurtosis of the research variables in the sample group were in the range of -1 to 1, indicating that the variables have a normal distribution.

Based on table 2, there was a positive and significant relationship between all research variables at the level of $P < 0.01$.

To test the research model, path analysis using the maximum likelihood method was used in Amos software. Before using path analysis, univariate outliers were examined using a boxplot, and multivariate outliers were examined using Mahalanobis statistics and excluded from the data set.

The skewness and kurtosis of the distribution of variable scores were calculated using SPSS software. The results showed that none of the values of skewness and kurtosis were outside the range of ± 1. Thus, the data follow a normal distribution. After examining the assumptions and ensuring their fulfillment, path analysis was used to evaluate the studied model. Figure 1 presents the results.

Figure 1 shows the standard coefficients of the proposed model to investigate the mediating role of child inhibition in the relationship between overprotection and anxious beliefs with child anxiety. The table below shows the indices related to the fit of the model.

Table 3 presents the fit indices of the model. The chi-square ratio index on the degree of freedom (χ^2/df) was a value between 1 and 5, confirming the fit of the model. Incremental fit index (IFI), comparative fit index (CFI), and normed fit index (NFI) indices were also greater than the desired criterion (0.9) and were in the range of 0-1 and the root mean square error of approximation (RMSEA) index was 0.09, which was acceptable. The obtained coefficients indicate the optimal fit of the model.

Table 1. Descriptive results of research variables

	Mean ± SD	Skewness	Kurtosis
Overprotection	34.10 ± 8.39	-0.003	-0.45
Anxious beliefs	45.55 ± 7.72	0.140	-0.34
Child inhibition	112.11 ± 23.07	-0.220	-0.76
Child anxiety	39.56 ± 17.44	0.730	-0.26

SD: Standard deviation

Table 2. Correlation matrix of research variables

	1	2	3	4	5
1) Overprotection	1				
2) Anxious beliefs	0.61**	1			
3) Child inhibition	0.46**	0.50**	1		
4) Child anxiety	0.49**	0.54**	0.48**	1	

**Significant at 0.01 level

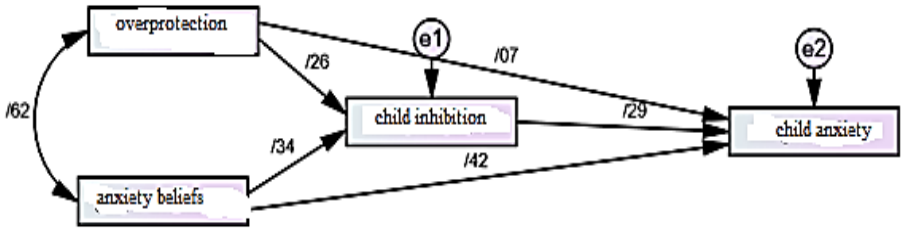

Figure 1. Coefficients of path analysis in the relationship between overprotection and anxious beliefs with child anxiety given the mediating role of child inhibition

Table 4 shows the direct, indirect, and total effects between the model variables. According to the obtained results, overprotection had a direct and positive effect ($\beta = 0.25$, $P < 0.001$) on the child's inhibition. Overprotection had an indirect and positive effect ($\beta = 0.41$, $P < 0.01$) on the child's anxiety given the mediating role of the child's inhibition ($\beta = 0.073$, $P < 0.01$).

Anxious beliefs directly ($\beta = 0.41$, $P < 0.01$), indirectly, and positively affected a child's anxiety given the mediating role of the child's inhibition ($\beta = 0.098$, $P < 0.001$).

Based on the results of table 5 and the upper and lower bounds, the results of the indirect effect of overprotection and anxious beliefs on the child's anxiety through the mediating role of the child's inhibition did not include zero, indicating that the indirect effect of overprotection at the $P < 0.001$ level and anxious beliefs at the $P < 0.001$ level were significant.

Discussion

The objective of this study was to develop a model of child anxiety based on maternal overprotection, anxious beliefs, and the mediating role of child inhibition in clients referred to the Urmia Police Force Counseling Center. The results revealed a positive relationship between the child's anxiety and the mother's anxious beliefs and overprotection. A significant and positive relationship was also found between child inhibition and child anxiety. The results of the present study are in line with those of studies conducted by Ryan and Ollendick (2018), Pyar et al. (2022), Subar and Rozenman (2021), Pereira et al. (2016), Van Zalk et al. (2018), Pini et al. (2022), and Howard et al. (2016) which showed that mother's overprotection and child behavioral inhibition predicted anxiety in children.

In explaining how parents' behaviors and cognitions affect children's anxiety, it can be stated that anxious parents may have relatively high standards for their parenting behaviors and constantly try to correct their misbehaviors by over-controlling them. This type of over-controlling behavior by parents may show children that mistakes are annoying and that children should have high standards for themselves and be very careful about their mistakes, leading to increased anxiety in children (Affrunti & Woodruff-Borden, 2015).

Table 3. Goodness of fit indices (GFIs) of the tested research model

Fit index	χ^2/df	NFI	CFI	IFI
Accepted range	1-5	> 0.9	> 0.9	0-1
Observed value	2.760	0.980	0.987	0.987

χ^2/df: Chi square to degree of freedom ratio; NFI: Normed fit index; CFI: Comparative fit index; IFI: Incremental fit index

Table 4. Direct, indirect, and total effects of variables

From the variable of	To the variable of	Direct effect	Indirect effect	Total effect
Overprotection	Child inhibition	0.250	-	0.250
Anxious beliefs		0.340	-	0.340
Overprotection		0.070	0.073	0.143
Anxious beliefs	Child anxiety	0.417	0.098	0.515
Child inhibition		0.287	-	0.287

The results also showed that the causal model of the relationship between anxious beliefs and the overprotection of the mother with the mediating role of children's anxiety inhibition was significant. These results are consistent with those of some of the studies (Manley & Francis, 2022; Karreman et al., 2010; Asselmann et al., 2015). In social anxiety, parents' fear of their child's negative evaluation is related to parents' and children's social anxiety. It has also been observed that a mother's fear of a child's negative evaluation significantly mediates the relationship between the mother's and children's social anxiety (Schreier & Heinrichs, 2010).

Therefore, there is evidence that parents' own fear beliefs and fears toward their child may affect the child's behavior and the intergenerational transmission of anxiety (Francis & Roemhild, 2021). Côté et al. (2009) also showed that depression during the mother's life was the most significant predictor of the developmental trajectories of children's internalizing symptoms after considering the child's temperament.

Based on the results, it can be stated that a part of the child's anxiety is due to educational and environmental factors. Among them, the mother's behaviors and cognitions have a significant effect. In other words, mothers' anxious beliefs and overprotection make them have an irrational perception of anxiety or ambiguous stimuli and show overprotection. Further, On the other hand, due to the fact that some of the causes of child anxiety are rooted in genetic and personality factors, a child who has a genetic and personality inhibition trait, the mother's anxious behaviors and beliefs can stimulate behavioral inhibition in the child and thus intensify the child's anxiety.

In this regard, Barnett and Scaramella (2015) showed that negative parenting for 2- to 4-year-old children was associated with increased behavioral problems one and two years later only for children who showed a level of fear higher than the mean level. Leve et al. (2005) also showed that higher levels of aggressive maternal discipline in 5-year-old boys who were timid and shy predicted higher levels of internalizing disorders at 17 years of age.

Based on the diathesis-stress model, it can be stated that the child's behavioral inhibition provides vulnerability or diathesis for the development of psychopathology.

Table 5. The results of the bootstrap method of indirect relationships in the whole sample

Path index	Standard coefficients	Non-standard coefficients	Lower bound of standard coefficients	Upper bound of standard coefficients	P-value
The indirect effect of overprotection on child anxiety through child inhibition	0.073	0.162	0.029	0.11	0.001
The indirect effect of anxious beliefs on child anxiety through child inhibition	0.098	0.235	0.054	0.14	< 0.001

However, parents' negative behaviors are stressful factors that increase the likelihood of developing psychopathology in vulnerable children (Ryan & Ollendick, 2018).

Previous theoretical models have also suggested that parental behaviors are not independent of children's temperament. Shy children are likely to receive more protective responses from their parents, and these parental behaviors reinforce the child's anxiety and the parent's anxiety.

The results confirm the hypothesis that the intergenerational transmission of anxiety is possible through maternal behaviors and the child's temperament plays a key role in this regard (Buss, Zhou, & Trainer, 2021). Additionally, this result is consistent with the anxious-coercive model (Dadds & Roth, 2001), in which children with maladjusted fear temperament elicit maternal overprotection. These behaviors unintentionally reinforce fear and caution in children and increase the risk of anxiety.

Finally, the results of the present study are consistent with those of previous theoretical studies as they showed that maternal anxious beliefs and maternal overprotection due to the child's inhibition could affect the children's anxiety. Like some other studies, the present study had some limitations. The children's inhibition was evaluated through a questionnaire completed by the parents. Hence, parents' beliefs and cognitions may affect the results of this questionnaire. The lack of evaluation of the fathers' beliefs and behaviors was another effective factor in this regard. In future studies, the behavioral inhibition of preschool children should be measured through tools other than questionnaires. The same model should also be investigated in older children who have the possibility of self-assessment of behavioral inhibition. The cognitive and behavioral characteristics of the fathers should also be evaluated.

Conclusion

The results of the present study show that the mother's behaviors and beliefs can predict the child's anxiety, and among them, the child's own personality traits also play a mediating role, a mother who has anxious beliefs about all stimuli and over-protected to her child, provides the ground for anxious behaviors for a child with inhibited personality traits and therefore in theoretical and practical studies, these components should also be considered.

Conflict of Interests

Authors have no conflict of interests.

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