

Parental Psychological Control and Childhood Anxiety: The Mediating Role of Perceived Lack of Control

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Abstract Parental psychological control has been found to relate to the development of childhood anxiety; however, this relation has not been thoroughly examined. The purpose of this study was to understand the nature of the relation between parental psychological control and anxiety symptoms in children, as well as to understand whether this relation is mediated by children's perceived control. Questionnaires were administered to children ages 8–11. Results indicated a significant relation between parental psychological control and child anxiety symptoms. Results further indicated that this relation was fully mediated by children's perceptions of how much control they feel they have over events in their lives. These findings suggest that although parental psychological control and a child's perceived control both contribute to the development of anxiety, it is possible that parental psychological control contributes to the development of anxiety by affecting a child's perception of control.

Keywords Parental psychological control · Parenting · Child anxiety · Perceived control · Locus of control

Introduction

Research on the prevalence of anxiety disorders in children has found that approximately 5.5–21.0% of children have a

diagnosable anxiety disorder (Gurley et al. 1996; Kashani et al. 1989; Shaffer et al. 1996) and the median age of onset is 11 years old (Kessler et al. 2005). Additionally, a child diagnosed with an anxiety disorder is at increased risk for developing other psychiatric disorders such as depression or another anxiety disorder (Pine et al. 1998). Furthermore, anxiety disorders in children are associated with significant negative correlaries, such as interference with school, peer-related activities and with the attainment of stage-related developmental tasks (Albano and Detweiler 2001; Bell-Dolan and Brazeal 1993). Although their symptoms may not reach the threshold for a clinical diagnosis, children with elevated anxiety symptoms face similar challenges as those diagnosed with an anxiety disorder, and may experience difficulties in the areas of school, social functioning, and development (Grover et al. 2007). The presence of sub-clinical anxiety symptoms could also signal the development of an anxiety disorder later in life (Hirshfeld et al. 1992). Thus, understanding the etiology and development of childhood anxiety has important implications for prevention of both immediate and long-term impairment.

Many models have been proposed to explain the development of anxiety, with the most comprehensive models including factors pertaining to genetic predisposition, environmental factors, and significant life events (Barlow 2002). Because family is one of the largest environmental factors impacting a child's life, it is important to understand how a child's family affects the development of anxiety symptoms in children. Furthermore, since it is a child's parents who usually create the family environment, it is essential to understand which characteristics of parents or parenting contribute to the development of anxiety in children. Attachment style (Muris et al. 2001; Warren et al. 1997), parental anxiety (Beidel and Turner 1997; Schreier et al. 2008) and general parenting style (Muris and

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Merckelbach 1998) have all been associated with the development of childhood anxiety. With respect to parenting behaviors, parental control and parental rejection have both been theorized to contribute to the development of anxiety in children (Chorpita and Barlow 1998; Wood 2006; Gottman et al. 1997); however, of the two constructs, parental control has a more consistent association with childhood anxiety (McLeod et al. 2007).

Parental control is a broad construct that consists of multiple subdimensions such as overinvolvement, autonomy granting, psychological control, and behavioral control. A number of studies have found significant positive relations between levels of anxiety and high levels of parental control, broadly defined (De Man 1986; Greco and Morris 2002; Hudson and Rapee 2001; Petit et al. 2001; Siqueland et al. 1996). For example, a meta-analysis of 47 studies measuring the association between parenting and childhood anxiety found that parental control accounts for 6% of the variance in childhood anxiety, a medium effect (McLeod et al. 2007). In an observational study where fathers and their socially anxious children completed a task together, Greco and Morris (2002) found that fathers of high socially-anxious children exhibited more controlling behavior than those of low socially anxious children. Similarly, Hudson and Rapee (2001) found that mothers of anxious children displayed more intrusive involvement with their children while completing a joint task than mothers of non-anxious children. Siqueland et al. (1996) found that parents of anxious children were rated as granting less autonomy than parents of non-anxious children while completing various family interaction tasks.

Collectively, these studies provide evidence that parental control as a broadly defined construct is related to childhood anxiety. The current study, however, focuses on parental *psychological* control, a specific aspect of parental control, and its relation to child anxiety (Barber et al. 1994; Silk et al. 2003). Psychological control refers to influencing children's behaviors through the use of covert strategies such as guilt induction, invalidating feelings and forming an environment where the parents' acceptance of their children is contingent upon their behavior (Barber 1996; Silk et al. 2003). In other words, psychological control refers to parental strategies that attempt to control their children's behavior through the use of "coercive, passive-aggressive, intrusive control characterized by hostility" (p. 115, Silk et al. 2003). Furthermore, psychological control tends to interfere with a child's psychological development by affecting a child's thoughts and emotions (Barber 1996). This is in contrast to behavioral control, which consists of overt strategies, such as discipline and monitoring, used to control a child's behaviors.

Barber et al. (1994) and Silk et al. (2003) have established a relation between parental psychological control and

internalizing problems, including anxiety, during childhood. Additionally, these studies suggest that parental psychological control may be more associated with internalized problems in childhood than parental behavioral control or parental autonomy granting. Furthermore, both studies suggest that parental psychological control could be a significant contributor to the development of child anxiety. However, more research is needed to replicate the empirical association between psychological control and child anxiety symptomatology.

Although a relation between parental control and anxiety symptoms has been established, how this relation actually operates is still unclear. Many theoretical models (e.g., Chorpita and Barlow 1998; Rubin and Mills 1991; Wood 2006) propose that highly controlling parents may deprive their children of opportunities to develop independence during appropriate developmental times. As a result, children fail to develop a sense of themselves as competent, efficacious, or in control over events in their lives. This may reflect underlying cognitive schema related to decreased self-competence, self-efficacy, or a lack of control over various aspects of their lives, thus contributing to experienced anxiety. For example, Chorpita and Barlow (1998) hypothesize that early life experiences involving excessive parental control can cause an individual to believe that events in one's life are uncontrollable and unpredictable, which then contributes to the development of anxiety. That is, children who experience excessive parental control may believe that they have no internal control over their lives, since their parents are the ones who control everything; this, in turn, can lead to the development of anxiety. Likewise, Wood et al. (2003) propose that parents' controlling behaviors prevent children from developing age-appropriate behaviors and boundaries. Therefore, they experience themselves as lacking control, mastery, and independence.

A similar model is proposed by Rapee (1997), who suggests that excessive parental control teaches children that events are beyond their own control. This conveys to the child that threat and danger are ever-present, leading them to hypervigilance and anxiety. Additionally, this control limits a child's opportunity to learn how to successfully and independently cope with their problems, which consequently prevents a child's development of realistic expectations about events in his or her life. This anxiety and perceived lack of control can then generalize to other aspects of the child's life. Vasey and Dadds (2001) propose that overprotective parenting causes the child to feel vulnerable by alerting him or her to potential dangers in the environment, and creating a cognitive bias towards threat. This suggests that overprotective parents may not see their child as capable or consider the world to be so unsafe that they need to protect their child. As a result,

children of overprotective parents may develop a sense of themselves as vulnerable, and a sense of the world as dangerous.

Only a few studies have empirically investigated the role that such cognitions play in the relation between parental control and anxiety (e.g., Ballash et al. 2006; Chorpita et al. 1998; Gallagher and Cartwright-Hatton 2008). In a mixed sample of clinically referred and non-clinical children, Chorpita et al. (1998) found that an external locus of control mediated the relationship between family environments that limit a child's experience with personal control and negative affect, which included depression, anxiety, and internalizing behaviors. They suggested that such family environments contribute to the development of a cognitive predisposition marked by a lessened sense of control, which then leads to an increased vulnerability for anxiety symptoms. In their study, Ballash et al. (2006) examined family functioning, perceptions of control over anxiety symptoms, and anxiety symptoms among college students. Their findings indicated that familial over-involvement, dysfunctional communication patterns consisting of unclear and indirect communication, and higher levels of behavioral control were all related to college students' perceived lack of control, which then was related to greater levels of anxiety symptoms. Similarly, Gallagher and Cartwright-Hatton (2008) found that cognitive distortions mediated the relation between parental discipline style and anxiety in a sample of non-clinical adolescents. They suggest when parents respond harshly to their children's transgressions, children interpret their environment negatively and develop a bias towards interpreting ambiguous events as threats. These biases can then lead these children to become anxious from believing that events in their life will end badly.

The existing literature has established that there is an association between parental psychological control and child anxiety. However, the path between psychological control and child anxiety has not been thoroughly investigated. More research is needed to replicate the empirical association between psychological control and child anxiety symptomatology, as well as to identify the specific mechanisms that underlie this association. The literature also highlights the considerable variation in how parental control is conceptualized and measured, which may contribute to a possible underestimation of the association between this construct when broadly defined and childhood anxiety. This is particularly problematic if one of these dimensions of parental control, such as psychological control, is actually related to anxiety more so than other sub-dimensions; if that is the case, then the overall association may be weaker than the true association between specific facets of parental control and childhood anxiety. Although it has been hypothesized that negative cognitions

mediate the relation between parenting, including parental control, and anxiety, very few studies have attempted to investigate this association empirically (Ballash et al. 2006; Chorpita et al. 1998; Gallagher and Cartwright-Hatton 2008; McGinn et al. 2005). Furthermore, these studies have not investigated the mediating roles of specific cognitions that appear to be central in anxiety (such as cognitions of lack of control), have not examined specific subdimensions of parental control (such as psychological control), or have only investigated this model in adolescents or adults, not children.

It is the purpose of this study to examine how parental psychological control contributes to the development of childhood anxiety. Furthermore, the current study examines whether cognitions of lack of control mediate the relation between parental psychological control and anxiety symptoms in children. The following hypotheses were proposed: First, there would be a significant positive association between parental psychological control and levels of anxiety symptoms in children. Second, the relation between parental psychological control and levels of anxiety symptoms would be mediated by perceived control, such that greater levels of parental psychological control would be associated with lower levels of perceived control, which would be associated with increased levels of anxiety symptoms.

Method

Participants

This study operated in accordance with the ethical guidelines set forth by the American Psychological Association and the Loyola College Human Subjects Review Board. The participants were recruited from after-school programs servicing public elementary schools throughout the Baltimore Metropolitan area. Parental consent was obtained for 118 children to participate in this study. Data was collected from 110 of those children who were present during data collection times. The final sample consisted of 107 participants who provided valid data for the three questionnaires used in the mediation analyses. Students who participated in this study ranged from age 8 to 11 years old ($M = 9.32$, $SD = 0.94$) and from grade three through five ($M = 3.79$, $SD = 0.79$). An examination of the gender and race of the sample indicated that boys ($n = 50$) made up 45.5% of the sample. Fifty-nine percent of the sample were Caucasian ($n = 65$), 24% were African-American ($n = 26$), and 17% were in the "other" ethnic category ($n = 19$), which included Asian ($n = 12$), Hispanic ($n = 5$), Bi-Racial ($n = 1$), and Other ($n = 1$).

Instruments

Demographic Sheet

Two demographic sheets were used during this study. One was given to parents immediately after they consented for their child to participate and included questions regarding the child's ethnicity and household structure and parents' age, marital status, and education level. The second form was administered to the child after the assent process and asked age, grade, and gender.

Child Report of Parent Behavior Inventory, Short Version (CRPBI: Schludermann and Schludermann 1988)

Parental psychological control was measured using the Psychological Control vs. Autonomy subscale of the short version of the CRPBI. This measure consists of 10 questions. Participants were asked to respond to questions about their mothers and fathers on separate questionnaires (e.g. "My mother/father will avoid looking at me when I have disappointed her/him") using a three-point Likert scale to indicate the degree to which each statement describes that parent, where 1 = *not like*, 2 = *somewhat like*, and 3 = *a lot like*. Responses were summed to compute the total score for each parent; higher scores indicated that children view their parents as more psychologically controlling.

Analyses of internal consistency of a short version of the CRPBI yielded alphas of 0.87 for the Psychological Control vs. Autonomy subscale for both mothers and fathers (Safford, Alloy and Pieracci 2007). Safford et al. (2007) examined the convergent validity of the CRPBI and the Parental Bonding Instrument (PBI) and found moderate to high correlations between the PBI Overprotection scale and the CRPBI Psychological Control scale for both mothers ($r = 0.56$) and fathers ($r = 0.57$).

Estimates of internal consistency of the Psychological Control vs. Psychological Autonomy scale for the current study found alphas of 0.74 for the report of mother and 0.77 for the report of father. The correlation between children's reports of parental psychological control for mothers and fathers was also examined. Since the two reports were significantly and positively correlated ($r = 0.78$, $p < 0.05$), the total scores of each measure were combined by computing a mean parental psychological control score ($\alpha = 0.85$ for report of both parents combined). Total scores of children who only had one parent were not significantly different from the total score of those with two parents. For all children, their total score on the CRPBI psychological control scale was used to reflect an overall parental psychological control construct.

The Spence Children's Anxiety Scale (SCAS: Spence 1997)

The SCAS is a 45-item questionnaire measuring overall symptoms of anxiety. It includes 38 anxiety items, six filler items, and one open-ended, non-scored question. Participants were asked to respond to short statements regarding how often they experience certain symptoms of anxiety (e.g. "I worry about being away from my parents.") on a four-point Likert scale ranging from "*never*" to "*always*." It contains six subscales of anxiety that correspond to the primary dimensions underlying anxiety disorders as outlined in the DSM IV-TR (i.e., Panic and Agoraphobia, Separation Anxiety, Physical Injury Fears, Social Phobia, Obsessive Compulsive, and Generalized Anxiety/Over-anxious; APA 2000). In addition, an overall assessment of anxiety is provided by summing scores across all subscales. Because the intention of the current study was to explore the mechanism through which parental control related to child anxiety in general, rather than specific aspects of anxiety, only the overall assessment (total score) for the SCAS was used as the outcome variable for all analyses.

Spence et al. (2003) found the internal consistency coefficient alpha for the Overall Anxiety scale to be 0.92. In the same study, they found the overall test-retest reliability to be 0.63 when measuring scores on the SCAS from adolescents over a 12 week period. Estimates of internal consistency for the current study found an alpha for the Overall Anxiety scale to be 0.90.

The Nowicki-Strickland Locus of Control Scale for Children (NSLCS: Nowicki and Strickland 1973)

The NSLCS is a 40-item questionnaire with a yes or no response format for children and adolescents in grades 3 through 12. For this study, a shortened version consisting of 19 questions selected for children in grades three to six by Nowicki and Strickland (1973) was used. It measures the child's generalized expectancies over his or her control of reinforcement. In other words, this scale evaluates whether a child perceives that events in his or her life are contingent upon his or her behavior (internal control) or if these events are under the control of some other force (external control). The items describe interpersonal and motivational situations in areas including affiliation, achievement, and dependency.

Nowicki and Strickland (1973) determined split-half reliability for children in grades three through five to be 0.63 and test-retest reliability for third graders at a 6-week interval to be 0.63. Nowicki and Duke (1983) found a test-retest reliability of 0.63 over a 9-month interval when administering this scale to children in grades three through six. In support of the scale's construct validity, Nowicki and Strickland (1973) found significant correlations with

several other measures of locus of control. Estimates of internal consistency for the current sample indicated an alpha of 0.69 for the 19 items of the shortened version. However, the corrected item-total correlation for one item (Item Number 4: *Do you believe wishing can make good things happen?*) was quite low (−0.0591), so it was decided to remove this item from all subsequent analyses due to its low correlation with the other items and the ambiguous nature and context of the question. The alpha coefficient for the remaining 18 items within the current sample was 0.71.

Procedure

Twelve after-school programs servicing Baltimore area public schools were selected for participation based on location and convenience. At each site, parents and guardians were approached during pick-up time and informed about the study. If parents were interested in having their children participate, the researcher explained the informed consent form to the parent and asked them to sign. The researcher then asked the parent to fill out a short demographic form.

After 1 day of recruiting at each after-school program, a master list of students’ names for which parental consent was obtained was developed for each site. Each student was assigned a unique identifying number to ensure anonymity. Within 1 week of obtaining consent, initial data collection took place for approximately 1 h during days and times designated by each after-school program. Depending on student availability, a second round of data collection took place at sites where students with parental consent were absent during the initial round of data collection.

At the time of data collection, students for whom parental consent was obtained were identified by the program staff and called to sit together as a group. Students sat away from the other after-school program participants not partaking in this study. Each group consisted of 2–11 students.

The researcher read, explained, and had the children sign the child assent form. After obtaining child assent, the researcher instructed the participants to fill out the demographics sheet. Upon completion of the demographics sheet, the researcher read a general set of instructions to the participants. The researcher then read the instructions out loud for the first questionnaire and then read each question out loud, giving students an appropriate amount of time to respond. Once all of the students completed the first questionnaire, this procedure was repeated until all four questionnaires were administered. This procedure was the same for each group at all sites; however, the order of presentation of the questionnaires was counterbalanced for

each group administration in order to minimize order effects. Administration and completion of the questionnaires took approximately 30–45 min. Upon completion of the questionnaires, all participants and their parents were given a more detailed information packet regarding their participation in this study.

Results

Descriptive Analyses

Means and standard deviations for the predictor and criterion variables are presented in Table 1. Anxiety scores appeared to be consistent with norms presented in the literature (Spence 1998).

A set of preliminary correlations was performed to identify potential confounds as well as possible collinearity between the predictors; the variables examined included participant’s age, parental psychological control score, perceived control score, and total anxiety score (see Table 2). Results of the analysis of the correlation between parental control and perceived control indicated a significant relation; however, the correlation between the two predictors did not exceed the threshold for requiring corrective action to reduce collinearity (Meyers et al. 2006).

Furthermore, a series of one-way ANOVAs and *t* tests were performed to determine whether, parents’ education, or child gender was related to the predictor or criterion variables (see Table 3). There was a significant main effect for ethnicity on parental psychological control; post-hoc Tukey HSD tests demonstrated that Caucasian children reported significantly lower mean levels of parental psychological control than African-American children. Ethnicity was not significantly related to either perceived control or anxiety.

Table 1 Descriptive analyses of predictor and criterion variables

	N	Range	Mean	Median	Standard deviation
CRPBI	107	0 to 20	5.93	5.0	3.81
NSLCS	107	0 to 16	6.82	7	3.48
SCAS	107	1 to 85	28.69	27	14.25

Table 2 Pearson Correlations to Identify Confounders, Moderators, or Collinearity

	CRPBI	NSLCS	SCAS	Age
CRPBI	–	0.59*	0.30*	−0.03
NSLCS	–	–	0.50*	−0.16
SCAS	–	–	–	−0.10

**p* < 0.05

Table 3 ANOVA *F*-scores and *T*-test scores to identify confounders or moderators

	CRPBI	NSLCS	SCAS
Race	$F(2, 106) = 4.16^*$	$F(2, 106) = 2.92$	$F(2, 106) = 2.38$
Mother Education	$F(3, 102) = 0.56$	$F(3, 101) = 0.88$	$F(3, 102) = 0.76$
Father Education	$F(4, 99) = 1.40$	$F(4, 98) = 0.45$	$F(4, 99) = 1.67$
Gender	$t(107) = 0.67$	$t(106) = 0.73$	$t(107) = -1.21$

* $p < 0.05$

Primary Analysis

A series of multiple linear regression analyses as proposed by Baron and Kenny (1986) were conducted in order to test the relationship between parental psychological control and child anxiety, and the mediating effects of perceived control. Figure 1 below illustrates the proposed model and reports the standardized regression coefficients between variables. All conditions of mediation were met. Parental psychological control was a significant predictor of child's perceived control $\beta = 0.59$, $t(106) = 7.40$, $p < .05$; $R^2 = 0.34$, $F(1, 105) = 54.78$, $p < .05$, and of child anxiety symptoms, $\beta = 0.30$, $t(106) = 3.26$, $p < .01$; $R^2 = 0.09$, $F(1, 105) = 10.60$, $p < .05$. Perceived control was a significant predictor of child anxiety symptoms, $\beta = 0.50$, $t(106) = 6.00$, $p < .05$; $R^2 = 0.25$, $F(1, 105) = 35.50$, $p < .05$. Finally, the relation between parental psychological control and child anxiety symptoms disappeared when controlling for perceived control, $\beta = 0.01$, $t(106) = 0.12$, ns ; $R^2 = 0.25$, $F(1, 105) = 17.59$, $p > 0.05$, suggesting full mediation.

Because a significant difference in parental psychological control was detected between Caucasian and African American children, all analyses were recomputed controlling for child ethnicity; results did not change when ethnicity was controlled, and thus the findings from the analyses without that control variable included are highlighted here for ease of interpretation.

Discussion

The results of this study indicate that there is a significant relation between parental psychological control and child

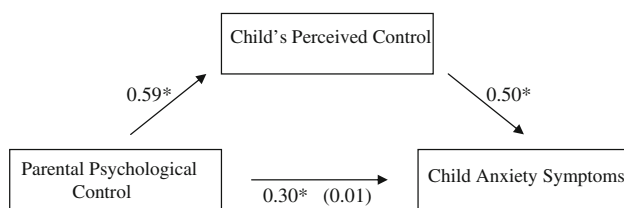


Fig. 1 Mediation Model and Standardized Regression Coefficients. The standardized regression coefficient between Parental Psychological Control and Child Anxiety Symptoms when controlling for Child's Perceived Control is indicated in parentheses

anxiety symptoms. These findings are similar to Barber et al. (1994) and Silk et al. (2003) studies, which both found that parental psychological control was significantly and positively related to child internalizing symptoms. The results of the current study give us further insight into the nature of their findings suggesting that parental psychological control may be specifically related to child anxiety symptoms.

The current data further suggests that the relation between parental psychological control and child anxiety symptoms is mediated by cognitions regarding perceived control. The literature has shown that parental control is related to anxiety and that children with anxiety tend to have a more externalized locus of control, and the results of this study are consistent with those findings. However, the unique contribution of this study is that it attempts to organize these factors into one comprehensive theoretical model that posits that the relation between parental psychological control and child anxiety symptoms is formed through the development of specific cognitions of uncontrollability. These findings are consistent with cognitive models of anxiety, which suggests that faulty schemas are a central feature of anxiety (Beck et al. 1985). In this case, the target schema is one of uncontrollability over life events. Additionally, these findings are consistent with other findings that suggest that individuals with higher levels of anxiety tend to believe that they have less control over their environment and situations in their life (Finch and Nelson 1974; Nunn 1988).

Other studies (Ballash et al. 2006; Chorpita et al. 1998; Gallagher and Cartwright-Hatton 2008; McGinn et al. 2005) have suggested a similar mediation model where the relation between parenting and anxiety is mediated through negative cognitions. Furthermore, several authors (e.g., Chorpita and Barlow 1998; Rubin and Mills 1991; Wood 2006) have proposed similar models suggesting that controlling parents prevent their children from developing independence, which may contribute to feelings of incompetence, helplessness, or uncontrollability, which are then associated with symptoms of anxiety. The results of this study provide important empirical evidence in support of these proposed mediational models.

A possible interpretation of the current findings suggests that parents who engage in higher levels of psychologically controlling behavior somehow convey to their children that

they have no control over life events. Because parents are the ones who are controlling their children's lives, their children do not believe they have any internal control themselves (Chorpita and Barlow 1998). Additionally, these psychologically controlling behaviors may be hindering their children from developing age-appropriate behaviors (Wood et al. 2003). Therefore, when these children are faced with situations that require any sort of independence, they may feel a sense of uncontrollability, inadequacy, or incompetence because they do not feel in control and are unable to independently perform the task at hand. Consequently, a cognitive schema of uncontrollability and incompetence develops, which in turn causes the child to have a more external locus of control. Since these children have this perceived lack of control, they respond anxiously in novel or ambiguous situations. Similar findings have been supported in the existing literature where Chorpita et al. (1998) have found that an external locus of control mediated the relation between controlling family environments and internalizing behaviors. Ballash et al. (2006) also found that individuals with less perceived control had greater anxiety symptoms, which were both also related to familial over involvement and control. However, because of the correlational methods used in this study, it is possible that the three variables are not related through a sequential path, where a child's perceived control mediates the relationship between parental psychological control and anxiety. Additionally, it is impossible to determine whether parental psychological control contributes to the development of anxiety, or if children who are highly anxious elicit more psychologically controlling parental behavior. Although the results do not necessarily imply a causal path, it is still important to note that a relation among the three variables does exist.

The current results underscore the importance of involving parents in the treatment and prevention of child anxiety. The results of this study suggest that an increased focus should be placed on reducing specific behaviors of psychological control as well as having parents learn methods of being more encouraging of a child's independence, competency, and control. This could be done through didactic training sessions, role playing, as well as through identifying specific behaviors during observation sessions and working to change them during family therapy and individual therapy with the parent. Teaching parents to be less psychologically controlling will allow parents to implement new behaviors that can convey to their children that they are competent and have control over events in their lives, thus reducing anxiety. Additionally, the current study indicates that it may be more important to focus on the child's sense of control and mastery over events in his or her life. Cognitive behavioral therapy has been shown to be highly effective in treating childhood anxiety (Kendall 1994; Kendall and Southam-Gerow 1996); the results of

the current study suggest that adding a focus on confidence building in order to increase a child's sense of control and mastery over events in his or her life may further enhance the therapy's effectiveness.

Since a community sample was used in the current study, it is important to interpret these results with caution when applying them to a clinical sample. It is possible that the results of the current study are only valid for children with sub-clinical levels of anxiety because the mechanisms that underlie the development of an anxiety disorder may differ from those that explain the generation of less severe anxious features. It is also possible that the relation between parental psychological control, child perceived control, and child anxiety symptoms could be altogether different for children diagnosed with an anxiety disorder, where the three variables are not related via a path of mediation, but rather in some other manner. Additionally, the sample used in this study was fairly small and homogenous; the majority of participants came from Caucasian, educated and working, intact families. The sample was selected from youth in after-school programs, who tend to come from busy, working families. Accordingly, these results may not be valid for a more general population including families of different cultures or socioeconomic statuses. Also, this study only examined the hypothesized relations among children ages 8–11. Therefore, the current data may not give us insight into the development of anxiety in younger children or older adolescents.

Finally, although self-report methods of data collection have been traditionally used in psychological research, there still exist many inherent limitations. It is possible that the participants did not understand what the questions were asking or they may not have been responding honestly, thus increasing the chances of error in the results. This may not have been an issue if an observational method was used. Furthermore, all variables were assessed from the perspective of the child, leading to potential confounding by common method variance. However, the self-report method was able to maximize participants within a limited time constraint as well as provide a sensitive examination of constructs such as perceived control and anxiety that may have been difficult to obtain using other methods.

Due to the significant findings of this study, it is important that future research continue to examine the relation among parental psychological control, child's perceived control, and child anxiety symptoms. Future studies should focus on testing these hypotheses on a clinical population in order to determine if these conclusions generalize among that population. If so, it is important to develop empirically supported treatments that focus on children developing their sense of control over life events and parent training that centers on reducing

psychologically controlling behaviors and increasing encouraging behaviors and child independence. In addition, future research should investigate whether the relations among parental psychological control, child perceived control, and child anxiety symptoms is applicable to all subtypes of anxiety or to only a select few in order to identify the most effective approaches to prevention and treatment.

It is also important to understand the relation among parental psychological control, child's perceived control, and child anxiety symptoms among children and parents in the context of race and ethnicity as culture can contribute to a difference in what is considered an appropriate parenting style, which may or may not contribute to the development of anxiety. For example, Bean et al. (2006) found a significant negative relation between paternal psychological control and child delinquency among African American youth, and Mason et al. (1996) found a significant negative relation between maternal psychological control and child delinquency among African American families. In these cases, psychologically controlling parenting may not contribute to the development of anxiety, but rather works as a protective factor. Additionally, parents in Asian cultures appear to be more controlling and restrictive than parents from European-American cultures; however, this represents a cultural norm of emphasizing family relationships and obedience (Chao 1994). It is therefore unclear whether high levels of parental control would result in the development of anxiety or other psychosocial symptoms when it is not viewed as intrusive or excessive. In addition, socioeconomic status has been found to be a significant predictor in the onset and course of anxiety, where lower income and less education are associated with a greater likelihood for the development of an anxiety disorder as well as a longer course (Kessler et al. 1994). These findings suggest that it is crucial to further understand diversity factors in relation to the development and treatment of anxiety.

In conclusion, the results of this study suggest that parental psychological control is related to the development of child anxiety symptoms, and that this relationship exists through the presence of perceptions of lack of control. Although limitations in the design of this study and the application of the results exist, the significant findings of this study warrant future research to further understand the relation among these three variables as well as other factors relating to clinical anxiety, its treatment, and diversity factors.

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