

The Relationship Between Parenting Style and Childhood Anxiety in an
Ethnically Diverse South African Sample

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(ABSTRACT)

The role of parenting variables in the etiology of child anxiety has received significant attention in recent years. Parental control, in particular, has emerged as a significant predictor of child anxiety. Parental rejection and one of its components, parental warmth, have also been linked to child anxiety. It has been suggested that the interaction of these two variables may be especially important, such that the combination of high parental control and high parental rejection of low parental warmth will result in particularly elevated risk for anxiety. Furthermore, some researchers propose that ethnicity should be investigated as a moderator of the relationship between parenting style and child anxiety. This is further supported by research that suggests that parenting styles are culturally-bound and that, within an authoritarian culture, authoritarian parenting may have only minor negative effects or perhaps even positive effects. Authoritarian parenting has been associated more so with black than white ethnicities. The present study examined whether parental warmth and/or parental rejection moderates the relationship between parental control and child anxiety in an ethnically diverse sample of black, white, and mixed-race children in South Africa. It was predicted that high parental control when paired with either low parental warmth or high parental rejection would be associated with varying degrees of anxiety in ethnically diverse children. In particular, under such conditions, it was predicted that black children would report the lowest levels of anxiety, mixed-race children would report intermediate levels of anxiety, and white children would report the highest levels of anxiety.

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Chapter 1

Introduction

Anxiety disorders are among the most common psychological difficulties experienced in childhood (Cartwright-Hatton, McNicol, & Doubleday, 2006). In addition to remaining stable and problematic for many children well into adolescence and sometimes adulthood (Last, Perrin, Hersen, & Kazdin, 1996), child anxiety may incur elevated risk for other disorders in adulthood, such as depression (Kovacs, Gatsonis, Paulauskas, & Richards, 1989) and substance use and abuse (Kushner, Sher, & Beitman, 1990). This combination of prevalence and detrimental effects has led to a recent increase in the amount of research investigating possible etiological models of childhood anxiety.

1.1 Parenting and Child Anxiety

A large number of the etiological models of childhood anxiety have included parenting as an important contributing factor (Chorpita & Barlow, 1998; Manassis & Bradley, 1994). More specifically, researchers have posited a positive relationship between childhood anxiety and parental control, a construct that can be broadly defined as the regulation of children's activities, overprotection, discouragement of independence and autonomy, and instruction to children on how to think, feel, and behave (Barber, 1996). Scholarly reviews indicate that high levels of parental control account for a significant proportion of the variance in children's anxiety scores (Rapee, 1997; van der Bruggen, Stams, & Bögels, 2008; Wood, McLeod, Sigman, Hwang, & Chu, 2003). A recent meta-analytic review concluded that the parenting dimension of control was not only associated with childhood anxiety, but it possessed a medium effect size (McLeod, Wood, & Weisz, 2007). The general theory behind this association is that controlling parents give their children the message that the world is a scary and unsafe place in which they should be vigilant. Moreover, this theory suggests that controlling parents prevent their children from learning that they can successfully cope with situations on their own. This leads the child to feel a diminished sense of personal competency, which can then lead to anxiety (Bögels & Brechman-Toussaint, 2006).

A second parenting variable that has received attention is that of rejection. Parental rejection has varyingly been operationalized as comprising neglect, indifference, hostility, aggression, withdrawal, and a lack of warmth, affection, approval, and responsiveness (McLeod et al., 2007; Rohner, Khaleque, Cournoyer, 2005). High levels of this parenting variable are

believed to heighten a child's sensitivity to anxiety, thus putting them at greater risk for developing an anxiety disorder. Supporting this notion, Rapee (1997) reported that anxious adults rated their parents as being more rejecting when they were children than non-anxious individuals. Some researchers have conceptualized parental rejection and parental warmth as two ends of a continuum, similarly linking a lack of parental warmth with child anxiety (Bögels & Brechman-Toussaint, 2006; Parker, Tupling, & Brown, 1979). However, lack of warmth is better conceptualized as a facet of rejection, and the opposite of rejection is generally thought to be acceptance (McLeod et al.; Rohner et al.) As both rejection and warmth have been implicated in child anxiety, however, they are both deserving of attention. It should be noted that the relationship between parental rejection and child anxiety is less substantiated than the relationship between parental control and child anxiety, with some researchers positing that parental rejection may be more closely linked to child depression.

Bögels and Phares (2008) recently demonstrated that the vast majority of research on the relationship between parenting variables and child anxiety has focused on mothers, at the exclusion of fathers. They argue that mothers and fathers are uniquely involved in the development of child anxiety, and it is thus imperative that future studies include both caregivers. Nonetheless, most of the studies included in their review provide evidence that paternal control and paternal lack of affection are similarly related to child anxiety.

In addition, the majority of this research has relied upon mothers' report of their own parenting behavior, with few studies employing child self-report or observational measures. This is a potential limitation as at least one study has shown that children's reports of their mother's warmth was corroborated by independent observers' ratings, whereas mothers' reports were not substantiated by either (Siqueland, Kendall, & Steinberg, 1996). More specifically, mothers rated themselves as warmer than both their children and the observers did.

Although several studies have looked at how these parenting variables individually impact upon child anxiety, there is a lack of knowledge as to how these variables interact with each other in their relationship to child anxiety. As noted by Bögels and Brechman-Toussaint (2006), the interaction of control and rejection may warrant especially close inspection, as early work in parenting styles described the combination of high overprotection (i.e., high control) and low warmth as "affectionless control," a pattern highly predictive of anxiety in children (Parker et al., 1979). No research to date has investigated whether parental rejection and/or its sub-

component of parental warmth might moderate the relationship between parental control and child anxiety such that the combination of high control and high rejection or high control and low warmth results in the highest levels of anxiety.

1.2 Ethnicity, Parenting, and Child Anxiety

Ballash, Leyfer, Buckley, and Woodruff-Borden (2006) propose that ethnicity is another important variable that has yet to be thoroughly examined in the effects of parenting on anxiety. They stress the importance of investigating how parental control may differ across cultures and ethnicities, and how that difference may impact upon child anxiety. Thus, ethnicity is another important moderating variable that has yet to receive proper attention.

Numerous research studies carried out with different cultures have shown that the relationship between parenting practices and child psychopathology varies widely. A large portion of this literature follows Baumrind's (1971) classification of authoritative versus authoritarian parenting. Authoritative parents tend to be democratic, non-coercive, and to encourage individuality, while authoritarian parents tend to be harsh, restrictive, and use psychological methods of control that inhibit autonomy. The former style of parenting is associated with low levels of parental control and improved mental health in children (Wenar, 1994), whereas the latter is associated with high levels of parental control and mental health problems in children (Baumrind). However, other researchers have cautioned against this broad conclusion and have suggested that the meaning associated with authoritarian or authoritative parenting is culturally-bound and that, within an authoritarian culture, authoritarian parenting may have only minor negative effects or perhaps even positive effects on the developing child (Dwairy, Achoui, Abouserie, & Farah, 2006). Evidence for this position comes from research showing that mental health problems are associated with authoritative rather than authoritarian parenting in Egyptian adolescents (Dwairy & Menshar, 2006) and that authoritarian parenting is associated with higher academic achievement among Chinese children (Leung, Lau, & Lam, 1998). These findings are counter to those found in the European American population.

Furthermore, research with African-American families shows that within single-parent families of low socio-economic status living in dangerous neighborhoods, an authoritarian parenting style is associated with higher levels of academic achievement (Baldwin, Baldwin, & Cole, 1990). A large scale study that also examined parenting style and academic achievement found that authoritative parenting was positively associated with school grades among White and

Latino adolescents, but not among Asian or African American adolescents (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Steinberg, Mounts, Lamborn, & Dornbusch, 1991).

Based on these findings, culture might be posited to further moderate the hypothesized relations among parental control, parental rejection, parental warmth, and child anxiety. The reasoning is as follows: if one's culture promotes authoritarian parenting as the style of choice, perceived parental control, rejection, and warmth might have the opposite effect to that typically found in the European American population. For example, Deater-Deckard and Dodge (1997) showed that a moderate level of physical punishment does not result in externalizing behavior in African American children as much as in Caucasian children because this disciplinary style is more normative in African American communities.

The increased commonality of this behavior may mean that it is perceived differently by African American children. Two studies are consistent with this idea. Mason, Walker-Barnes, Tu, Simons, and Martinez-Arrue (2004) showed that various parenting behaviors were associated with different levels of affect (hurt/anger, concern/love, and control/manipulation) for children of different ethnic backgrounds. More specifically, they found that African American children, while feeling controlled and manipulated by parents who used guilt-based control, also associated this behavior with feeling loved and cared for. European American adolescents did not associate this behavior with the latter feeling. In addition, adolescents' reports of harsh discipline and a parent-privileged authority philosophy were associated with lower perceived maternal warmth, but more consistently and pervasively for European American youth as compared to African American youth (Jackson-Newsom, Buchanan, & McDonald, 2008). These results indicate that Parker et al.'s (1979) category of "affectionless control" in parenting may not have the same detrimental effects across all cultures or ethnicities. In fact, for some cultures, this categorization might actually be re-labeled "affectionate control."

Although findings for Asian, Middle Eastern, and African American children have been examined, studies with African children are largely nonexistent. A notable exception to this is a recent study that looked at perceived parental rearing behaviors and anxiety symptoms in South African children (Muris, Loxton, Neumann, du Plessis, King, & Ollendick, 2006). Three main findings emerged from this research: 1) black and mixed-race children had more anxiety symptoms than white children, 2) black and mixed-race children rated their parents as more overprotective and less emotionally warm as compared to white children, and 3) across all three

ethnic groups, mothers' and fathers' ratings of overprotection, anxious rearing, and rejection each accounted for a unique proportion of variance in children's anxiety scores.

In sum, while it has been demonstrated that parental control, rejection, and warmth are individually linked to child anxiety, no research to date has looked at how these variables interact, and more specifically, whether or not parental rejection and/or parental warmth moderates the relationship between parental control and child anxiety. In addition, the majority of research thus far has relied on mothers' report of their parenting behaviors when reports from children might actually be more accurate. Furthermore, while it has been demonstrated that controlling parenting has differential effects in various cultures and ethnicities, most of this research has focused on academic achievement and externalizing behaviors, and much less so on anxiety symptoms. Therefore, the issue of how ethnicity moderates the relations among parental control, parental rejection, parental warmth, and child anxiety has yet to be addressed. And lastly, cross-cultural work in this area is particularly lacking in Africa. With South Africa having a population of black, white, and mixed-race ethnic groups, and being one of the most racially and ethnically diverse societies in the world (Afolayan, 2004), it would yield particularly rich information about cultures within the African continent.

1.3 Hypotheses

According to the proposition put forth by Bögels and Brechman-Toussaint (2006), in a cross-cultural sample of black, white, and mixed-race children in South Africa, it was first hypothesized that children's perceptions of parental rejection and parental warmth would moderate the relationship between their perceptions of parental control and self-reports of anxiety (Figure 1). Secondly, it was hypothesized that ethnicity would further moderate this relationship. Specifically, it was predicted that for those ethnicities that are more authoritarian in parenting style, the combination of high parental control and high parental rejection/low parental warmth would lead to lower anxiety levels than in those ethnicities that tend to use more authoritative parenting styles. In this sample, it was predicted that the more authoritarian ethnicity would be black parents, and this was based on the findings of Muris et al. (2006) and the fact that African-American families tend to use this parenting style more so than European-American families (Deater-Deckard & Dodge, 1997). The white group, in contrast, was hypothesized to be the group associated with more authoritative parenting styles, again based on the findings of Muris et al. and the extant literature.

The mixed-race group is described as holding somewhat of an ambiguous position within the South African context (Afolayan, 2004). Family ties to whites historically gave them access to jobs that were not available to blacks, and, conversely, blacks were described as being suspicious of their ties to whites during the Apartheid era. On the other hand, they also suffered grave injustices under that regime. Given their uncertain social status, the mixed-race group was hypothesized to fall in between the black and white groups in terms of their parenting style. Therefore, it was predicted that when parental control and rejection are high or when parental control is high and parental warmth is low, the mixed-race group of children would have anxiety scores intermediate between the more anxious white group and the less anxious black group. In as much as Bögels and Phares (2008) found that child anxiety was related to paternal control and paternal lack of affection (similar to what has been found with mothers), it was predicted that the hypotheses noted above would hold for both mothers and fathers.

Chapter 2

Method

2.1 Participants

The present study consisted of a re-analysis of a subset of data collected by Muris et al. (2006) in South Africa. The original sample included 701 children and adolescents aged 8-18 years old, with a mean age of 12.28 years ($SD = 1.47$). Due to an uneven distribution of ages, the current investigation used only those children and adolescents aged 10-15 years old. This required eliminating the following participants from the analyses: one 8-year old, twelve 16-year olds, three 17-year olds, and two 18-year olds. The final sample therefore included 683 children and adolescents with a mean age of 12.19 years ($SD = 1.32$). There were 323 males (47.3%) and 360 females (52.7%). In terms of ethnic groups, 268 (39.2%) children were white, 208 (30.5%) were mixed-race, and 207 (30.3%) were black. Based on the occupation of both parents, 184 (26.9%) of the youth had low socio-economic status (SES), 181 (26.5%) had low-medium SES, and 318 (46.6%) had medium-high SES. All children attended one of four schools in the city of Stellenbosch, South Africa. Two hundred and ninety-two (42.8%) of the youth were in fifth grade and 391 (57.2%) were in seventh grade.

In terms of power analysis for study purposes, using the G*Power program, when a power of 0.8 and an alpha level of .05 are specified, and a small effect size of .14 is desired in

moderation analysis, a sample size of at least 395 participants is required. The present study therefore had enough power to detect small moderation effects.

2.2 Measures

EMBU-C (Gruner, Muris, & Merckelbach, 1999). The independent variable in this study was parental control, which was measured using a child self-report measure, the EMBU-C, a Swedish acronym for “My memories of upbringing.” This questionnaire measures perceptions of parental rearing behavior and has 40 items that correspond to 4 subscales of 10 items each, with each subscale representing a different aspect of parental rearing. The overprotection subscale is the one most often used to assess parental control (e.g., “Your parents think that they have to decide everything for you”), and it was used as the independent variable in the present study. All items are answered on a 4-point Likert scale (1 = No, never; 2 = Yes, but seldom; 3 = Yes, often; 4 = Yes, most of the time). Children can complete the EMBU-C on both mothers and fathers; data with regard to both parents was examined.

The moderating variables in the present study were parental rejection and parental warmth. The rejection (e.g., “Your parents wish that you were like somebody else”) and emotional warmth (e.g., “Your parents show that they love you”) subscales of the EMBU-C map onto these variables. Muris et al. (2006) found differing correlations between rejection and emotional warmth, and the SCARED total score (rejection, $r = .27$ for mothers and $.33$ for fathers; emotional warmth, $r = .03$ for mothers and $.02$ for fathers), further supporting the idea that rejection and warmth do not constitute opposite ends of a continuum.

The psychometric properties of the EMBU-C have been found to be acceptable. Muris, Meesters, and Von Brakel (2003) administered the measure to a large sample of 1681 children and found that it had a robust 4-factor structure in accordance with the predicted subscales. Test-retest reliability measured after 2 months was also adequate: overprotection, $r = 0.78$ for mothers and 0.81 for fathers; rejection, $r = .84$ for both mothers and fathers; and emotional warmth, $r = .80$ for mothers and $.79$ for fathers. Reliability was also demonstrated via acceptable internal consistency estimates: overprotection, $\alpha = .66$ for mothers and $.67$ for fathers; rejection, $\alpha = .77$ for mothers and $.78$ for fathers; and emotional warmth, $\alpha = .77$ for mothers and $.81$ for fathers. Furthermore, Muris et al. (2006) also demonstrated satisfactory internal consistency in the current sample of South African youth: overprotection, $\alpha = .67$ for mothers and $.69$ for fathers; rejection, $\alpha = .73$ for mothers and $.75$ for fathers; and emotional

warmth, alpha = .76 for mothers and .77 for fathers. In terms of validity, it has been shown that the EMBU-C correlates as expected with a measure of parental bonding (Gerlsma, Arrindell, Van der Veen, & Emmelkamp, 1991).

Screen for Child Anxiety Related Disorders (SCARED; Birmaher et al., 1997). The dependent variable in this study was self-reported child anxiety. It was measured by Muris et al. (2006) via the SCARED. This measure contains 41 items that can be allotted to five subscales, four of which parallel anxiety disorder diagnoses in the DSM-IV (American Psychiatric Association, 1994): panic/somatic, generalized anxiety, separation anxiety, and social phobia. The fifth scale assesses for school phobia, a common phenomenon in anxious children. Youth are asked to rate how often they experience the various symptoms using a 3-point scale (0 = not true or hardly ever true, 1 = somewhat true or sometimes true, 2 = very true or often true). In order to get a broad measure of anxiety, all scales can be summed to yield a total anxiety score, and this was the dependent variable in the present study.

The SCARED has been shown to have strong psychometric properties, especially with regard to reliably differentiating between anxious and non-anxious children, between anxiety disorders and other disorders, and even among various anxiety disorders (Birmaher et al., 1997). Furthermore, Muris et al. (2006) showed that in the present study, the SCARED revealed the expected 5-factor structure and had satisfactory internal consistency, with the exception of the school phobia subscale (total anxiety, alpha = .90; panic/somatic, alpha = .79; generalized anxiety, alpha = .71; separation anxiety, alpha = .74; social phobia, alpha = .75, and school phobia, alpha = .56).

2.3 Procedure

Children and adolescents were recruited from schools in the Stellenbosch area. Letters were sent home to 750 families, inviting their child to take part in the study. Most parents ($N = 701$, 93.47%) returned the consent forms giving permission for their child to participate. Participants were tested over a one hour period in their school classrooms. They completed the questionnaires in a pre-determined order: the EMBU-C and then the SCARED. Questionnaires were presented in either English or Afrikaans, depending on the language that was used in the particular school. Research assistants were present during the administration in the event that any questions arose about the items. Overall, 701 participants fully consented and completed the questionnaires and as noted above, a subset of 683 youth were included in the present study.

2.4 Data Analysis

As noted above, parental control, rejection, and warmth were assessed by the overprotection, rejection, and emotional warmth subscales of the EMBU-C, respectively. Reports on both mother and father parenting behavior were examined. Child anxiety was assessed by the total anxiety score on the SCARED.

In order to test the first hypothesis, which stated that both parental rejection and parental warmth would moderate the relationship between parental control and child anxiety for the whole sample, hierarchical regression analyses were conducted according to Holmbeck's (1997) guidelines. Continuous main effect variables were centered before entering them into the model in order to reduce multicollinearity between the two predictors and their interaction term (Holmbeck, 2002). For example, for rejection moderating the relationship between overprotection and SCARED total anxiety score, the demographic variables of gender and age were entered in the first step to control for their influence on anxiety, maternal overprotection was entered in the second stop, maternal rejection was entered in the third step, and their interaction term was entered in the fourth step. This analysis was repeated separately for emotional warmth as a moderator of this relationship. Both of these analyses were then independently replicated with paternal data.

The second hypothesis stated that the first relationship described would be moderated by ethnicity. This was tested by conducting the above hierarchical regression analyses within each of the three ethnic groups of black, mixed-race, and white children. As previously stated, it was predicted that the combination of high parental control and high parental rejection or low parental warmth would lead to the highest levels of anxiety in white children, followed by less anxiety in mixed-race children, and the lowest levels of anxiety in black children.

The presence of a significant interaction, after the main effects were controlled for, signaled the occurrence of moderation (Holmbeck, 1997). Post-hoc probing was then utilized to explore the moderational effects (Holmbeck, 2002). This entailed calculating the simple slopes and then evaluating them to determine if they were significantly different from zero. Due to the exploratory nature of the study, a correction for multiple tests was not undertaken.

Chapter 3

Results

3.1 Differences Among Ethnic Groups

Means and standard deviations are presented in Table 1 for the full sample, as well as for the black, mixed-race, and white groups. One-way ANOVAs and chi-square analyses were used to compare the black, mixed-race, and white groups. Initial analyses revealed that the black children were significantly older than both the mixed-race and white children, while in terms of gender, there were no significant group differences. Furthermore, large group differences were found among the three groups on socioeconomic status (SES), $\chi^2(4, N = 683) = 947.19, p < .001$. Black children were largely over-represented in the low SES group, mixed-race children in the low-medium SES group, and white children in the medium-high SES group. In relation to the main study variables of interest, white children reported both their mothers and fathers as more emotionally warm and less rejecting than black and mixed-race children rated their parents. The pattern was more gradated for overprotection, with black children evaluating their parents as the most overprotective, followed by mixed-race and then white children. Finally, black and mixed-race children were significantly more anxious than their white peers, but they did not differ from one another.

3.2 Correlations in the Whole Sample and Across the Three Ethnic Groups

Table 2 presents the Pearson zero-order correlations for the whole group and Tables 3, 4, and 5 display these correlations for each of the three ethnic groups separately. In the whole group, it was found that gender, SES, parental control, and parental rejection were associated with SCARED total score. All relationships were in the positive direction, except for SES. In addition, there was no relationship between parental emotional warmth and child anxiety.

A different pattern of correlations emerged in the black group such that only gender and mother's emotional warmth were associated with SCARED total score. Interestingly, higher perceived emotional warmth by mothers was related to higher levels of anxiety. Within the mixed-race group, there were significant correlations between SCARED total score and gender, SES, parental control, parental rejection, and parental emotional warmth. All of these correlations were positive except for SES. Lastly, within the white group SCARED total score was significantly correlated with gender, mother's control, and parental rejection, all being in the positive direction.

3.3 Main and Interactive Effects of Parenting Behaviors on Child Anxiety in the Whole Sample

In the analyses presented in Tables 6 and 7, age and gender (0 = male, 1 = female) were examined in the first block, the main effect of control in the second block, the main effect of

emotional warmth in the third block, and the interaction effect (control x emotional warmth) in the fourth block. This was repeated with rejection as the moderator entered in the third step and in the interaction term with control. These analyses were examined for both mothers and fathers. All results described below were taken from the final step of the associated analysis.

Table 6 displays the results for maternal data. In the analysis with emotional warmth as the moderator, gender, age, and control showed significant main effects on SCARED total score, while emotional warmth did not. Female gender, older ages, and higher perceived control by mothers were all associated with increased anxiety. The results also revealed that the control x emotional warmth interaction term was not significant. The overall model predicted 18% of the variance in SCARED total scores. In the analysis with rejection as the moderator, gender, control, and rejection showed significant main effects, while age did not. Female gender, perceived control, and perceived rejection were all positively associated with anxiety. In addition, the control x rejection term revealed a significant interactive effect. Figure 2 presents this two-way interaction, with low levels of each variable being defined as one standard deviation below the mean and high levels of each variable being defined as one standard deviation above the mean. Post-hoc probing revealed that while there was a significant relationship between maternal control and anxiety at all levels of rejection, this relationship was strongest at low levels of rejection. In addition, this model predicted 23% of the variance in child anxiety.

In the prediction of SCARED total scores from paternal behaviors in the whole sample (Table 7), the same sequence of variables was used for the regression analyses. When emotional warmth was entered as the moderator, gender, age, control, and emotional warmth showed significant main effects in the final step of the analysis. Female gender, age, and control were positively associated with anxiety, while emotional warmth revealed a negative association. The control x emotional warmth interaction term was not significant. This overall model predicted 19% of the variance in SCARED total scores. When rejection was entered as the moderator, gender, control, and rejection evinced significant main effects. Female gender, control, and rejection were all positively associated with child anxiety. Age was not significantly associated with child anxiety in this analysis and the control x rejection interaction term was also not significant. In addition, this model predicted 24% of the variance in child anxiety.

3.4 Main and Interactive Effects of Parenting Behaviors on Child Anxiety in the Black Group

As indicated by our hypotheses, we next ran the above four regressions within each of the three ethnic groups. Table 8 displays the results from maternal data in the black group. Regardless of whether emotional warmth or rejection was entered as the moderator, only gender emerged as a significant predictor of child anxiety in the final step of the analysis (females reported more anxiety). There was no main effect for age, control, emotional warmth, or rejection, although control approached significance ($p = .055$) when rejection was the moderator. Also, while neither of the interaction terms were statistically significant (control x emotional warmth and control x rejection), rejection was a marginally significant moderator of the relationship between maternal control and child anxiety ($p = .054$). Figure 3 presents this two-way interaction. Post-hoc probing revealed that there was a significant relationship between maternal control and anxiety, but only when maternal rejection was low. The model with emotional warmth as the moderator predicted 9% of the variance in SCARED total scores, while the model with rejection as the moderator predicted 10%.

In the prediction of SCARED total scores from paternal parenting behaviors in the black group (Table 9), the pattern of main effects was the same as with maternal behaviors; that is, gender was a significant predictor of SCARED total score (females evidenced more anxiety) and there was no main effect for age, control, emotional warmth, or rejection. Somewhat inconsistent with the maternal data, however, neither interaction term approached significance. The model with emotional warmth as the moderator predicted 5% of the variance in SCARED total scores, while the model with rejection as the moderator predicted 9%.

3.5 Main and Interactive Effects of Parenting Behaviors on Child Anxiety in the Mixed-race Group

Table 10 displays the results from maternal data in the mixed-race group. In the final step of the analysis with emotional warmth as the moderator, gender, age, and control showed significant main effects on SCARED total score. Female gender, older ages, and higher perceived control by mothers were all associated with increased anxiety. Emotional warmth did not demonstrate a significant main effect and the control x emotional warmth interaction term was not significant. This overall model predicted 20% of the variance in SCARED total scores. In the analysis with rejection as the moderator, gender, control, and rejection showed significant main effects. Female gender, perceived control, and perceived rejection were all positively associated with anxiety. On the other hand, there was no main effect for age. In addition,

rejection was a significant moderator of the relationship between maternal control and child anxiety. Figure 4 presents this two-way interaction. Post-hoc probing revealed that there was a significant relationship between maternal control and anxiety, but only at the mean of rejection and one standard deviation below the mean of rejection. In addition, this model predicted 25% of the variance in child anxiety.

In the prediction of SCARED total scores from paternal parenting behaviors in the mixed-race group (Table 11), the same sequence of variables was used for the regression analyses. When emotional warmth was entered as the moderator, gender and perceived control showed significant main effects. Female gender and control were positively associated with anxiety. There was no main effect for age or emotional warmth. In addition, the control x emotional warmth interaction term was not significant. This overall model predicted 21% of the variance in SCARED total scores. When rejection was entered as a moderator, gender, control, and rejection evidenced significant main effects on SCARED total score. Female gender, control, and rejection were all positively associated to child anxiety. In contrast, age was not a significant predictor of child anxiety and the control x rejection interaction term was also not significant. This model predicted 25% of the variance in child anxiety.

3.6 Main and Interactive Effects of Parenting Behaviors on Child Anxiety in the White Group

Table 12 displays the results from maternal data in the white group. In the final step of the analysis with emotional warmth as the moderator, gender and control showed significant main effects on SCARED total scores. Female gender and higher perceived control by mothers were associated with increased anxiety. Neither age nor emotional warmth demonstrated significant main effects. In addition, emotional warmth did not emerge as a moderator of the relationship between maternal control and child anxiety. The overall model predicted 17% of the variance in SCARED total scores. In the analysis with rejection as the moderator, gender, control, and rejection showed significant main effects. Female gender, perceived control, and perceived rejection were all positively associated with anxiety. Age was not a significant predictor of child anxiety and the control x rejection interaction term was not significant ($p = .181$). However, in order to determine whether the pattern in this group was consistent with the pattern in the black and mixed-race groups, the interaction term was graphed and is displayed in Figure 5. The graph did demonstrate a pattern similar, such that the combination of high control

and low rejection led to the highest levels of anxiety. This model predicted 19% of the variance in child anxiety.

In the prediction of SCARED total scores from paternal parenting behaviors in the white group (Table 13), the same sequence of variables was used for the regression analyses. When emotional warmth was entered as the moderator in the final step of the analysis, gender and perceived paternal control showed significant main effects. Female gender and control were positively associated with anxiety. Age and emotional warmth were not associated with SCARED total score. In addition, the control x emotional warmth interaction term did not reach significance. When rejection was entered as the moderator, gender and rejection evidenced significant main effects (female gender and rejection were positively associated with child anxiety), whereas age and control were not significant related to child anxiety. The interaction term was also not significant in this analysis. The model with emotional warmth as the moderator predicted 15% of the variance in SCARED total scores, while the model with rejection as the moderator predicted 18%.

3.7 Exploratory Analyses

Three-way Interaction. Since there was interest in how the analyses might differ among the three ethnic groups, the pertinent 3-way interaction (race x control x rejection) was also tested with maternal data in the whole sample. Unit weighted contrast codes were used to code the categorical variable of race. The resulting contrasts compared a combined black and mixed-race group to the white group, as well as the black group to the mixed-race group. This analysis was conducted by entering age and gender in the first block, the main effects of race, control, and rejection in the second block, the 2-way interactions between race and control in the third block, the 2-way interactions between race and rejection in the fourth block, the 2-way interaction between control and rejection in the fifth block, and the 3-way interactions between race, control, and rejection in the sixth block. The results revealed that neither of the 3-way interactions were significant. Consistent with the results from the 2-way analysis in the whole sample, there were significant main effects for gender, control, and rejection, as well as a significant control x rejection interaction term. There was also a significant main effect for race.

Controlling for SES. Given the large degree of overlap between race and SES (see Table 1), the analyses that produced significant interaction effects were repeated while controlling for SES. Due to the very small cell sizes for two categories (1 mixed-race child in the low SES

group and 0 white children in the low SES group), unit weighted contrast codes were not feasible. Instead, SES was dummy coded, with both the low and low-medium SES groups receiving a 1, and the medium-high SES group receiving a 0. In the analysis with maternal rejection as the moderator between maternal control and child anxiety in the whole sample, the same pattern of results emerged as when SES was not controlled for. That is, there were significant main effects for gender, control, and rejection, and a significant control x rejection interaction term. In addition, there was a significant main effect for race.

In the same analysis within the black group, a similar pattern of findings emerged when SES was controlled for compared to when it was not. That is, gender emerged as the only significant predictor of SCARED total scores and again the control x rejection interaction term was marginally significant ($p = .062$). It should also be noted that while control was marginally significant in the original analysis ($p = .055$), it no longer approached significance in the current regression ($p = .156$). In addition, there was also a significant main effect for race. When this interaction was conducted in the mixed-race group while controlling for SES, again a similar pattern appeared. There was a significant main effect for gender and rejection and the control x rejection interaction term was significant. However, there was no longer a significant main effect for control, although it did remain marginally significant ($p = .052$).

Relative Contributions of Race and SES. In an attempt to better parse out the contributing effects of race and SES, these variables were both controlled for in an analysis with maternal rejection as the moderator of the relationship between maternal control and child anxiety in the whole sample. Since the whole sample was used, dummy coding was no longer required and unit weighted contrast codes were used for both race and SES (i.e. a combined low/low-medium SES group was compared to the medium-high SES group and the low SES group was compared to the low-medium SES group). The results are depicted in Table 14. The analysis revealed that while there was a significant main effect for race (more specifically, when comparing the combined black/mixed-race group to the white group) when it was entered in block 2, this effect disappeared when SES was entered in block 3 (more specifically, when comparing the combined

low/low-medium SES group to the medium-high SES group). The same main effects were found for gender, control, and rejection, and the interaction term was still significant.¹

Chapter 4

Discussion

The present study utilized children's self-reports to examine the relationship between parenting behaviors and childhood anxiety. Although similar examinations have occurred in both clinical and non-clinical samples in other studies, this study is the first to explore the interactive relationship between control and warmth in an ethnically diverse African sample.

It was found that black and mixed-race children perceived their parents as being more rejecting and less emotionally warm than white children. In addition, black children evaluated their parents as the most overprotective, followed by mixed-race and then white children. These findings are consistent with studies that have demonstrated that authoritarian parenting practices are more common in African American than European American families (e.g., Brody & Flor, 1998). Black and mixed-race children were significantly more anxious than their white peers, although they did not differ from one another. This is somewhat surprising given that other researchers have found higher rates of anxiety in European American children as compared to African American children (Hill & Bush, 2001; Last & Perrin, 1993). However, it is consistent with research with African children that has shown elevated rates of fears compared to North American children (Ollendick, Yang, King, Dong, & Akande, 1996). The authors suggest that because African countries tend to emphasize obedience, self-control, emotional restraint, and compliance to societal rules, this may result in increased social-evaluative and safety fears. It is also plausible that the poorer social conditions for black and mixed-race children in South Africa result in an overall greater level of life stress, which in turn contributes to more fears and higher anxiety (Ingman, Ollendick, & Akande, 1999).

The pattern of correlations within the whole sample and across the three ethnicities revealed some interesting results. First, it was unexpected that in the whole sample there was no

¹ The analysis with maternal rejection as a moderator of the relationship between maternal control and child anxiety was also conducted within each of the three SES groups. The interaction term was only significant in the low-medium SES group. This is consistent with the findings when the whole sample is broken down by ethnicity, as most of the mixed-race children are in the low-medium SES group.

relationship between parental emotional warmth and child anxiety, as past research has shown a negative association between these two constructs (Bögels & Brechman-Toussaint, 2006). The black group, consistent with our hypothesis, did not evidence a relationship between parental overprotection and parental rejection, and child anxiety. Surprisingly though, the more emotionally warm mothers were, the more anxiety black children reported. The mixed-race group demonstrated correlations between both parental control and parental rejection, and child anxiety. Additionally, these correlations were higher than those in the white group, indicating that contrary to our hypothesis, anxiety appears to be most impacted by these parenting behaviors in the mixed-race group as opposed to the white group. Similarly to black children, mixed-race children also showed the unexpected positive relationship between parental warmth and child anxiety. Lastly, the white group demonstrated the expected positive relationship between parental rejection and child anxiety; however, control was only positively related to child anxiety for mothers and not fathers.

Overall, children's reports of the parenting behaviors of their mothers and fathers within the whole sample showed a fairly consistent pattern of main effects. The presence of female gender, control, and rejection were consistently and positively associated with child anxiety. In addition, when emotional warmth was included as a moderator, age was also associated with increased anxiety. However, there was some variability in the data in that only father's emotional warmth was negatively associated with child anxiety.

Main effects were also similar within each ethnic group. For example, there was only a main effect for gender for all analyses within the black group. Within the mixed-race group, the presence of female gender, control, and rejection were consistently and positively associated with child anxiety. However, there was some variability in the data in that age was positively associated with child anxiety, but only for reports on mothers when emotional warmth was the moderator. Finally, within the white group, female gender and rejection were consistently and positively associated with child anxiety. Also, control emerged as a significant predictor of child anxiety in every analysis except for reports on fathers when rejection was the moderator. The fact that emotional warmth was not consistently related with anxiety, whereas rejection was, provides further evidence that warmth is just one facet of rejection. It appears that a lack of warmth in and of itself is not sufficient to be linked with anxiety in this sample.

In terms of main effects across all ethnic groups, gender emerged as the most consistent predictor variable, with female gender being positively associated with child anxiety in every analysis. This is consistent with research that has shown that girls tend to report more fears than boys (Ollendick, Davis, & Muris, 2004). Age was not at all consistent in its predictive value, evincing significance in the final step of just one analysis. This was unexpected given that the relationship between parental control and child anxiety has been shown to be more evident in children than in adolescents (van der Bruggen et al., 2008). However, prior research with African children has failed to find an effect for age when investigating fears (Ingman et al., 1999). It similarly appears that in South Africa the relationship between control and anxiety exists more consistently across late childhood and early adolescence.

The mixed-race and white groups looked most similar on the parenting behaviors of interest. For both of these groups, control and rejection consistently emerged as significant predictors of child anxiety, whereas emotional warmth did not. The black group looked quite different as no parenting behaviors significantly predicted child anxiety, although control did approach significance when maternal rejection was the moderator. This is consistent with research on African American young adults who reported no relationship between parental control and self-reported anxiety (Carter, Sbrocco, Lewis, & Friedman, 2001). Conversely, these authors found a negative relationship between parental care and anxiety; however, it is difficult to compare across these studies given the older age of the sample. These results also fit with research by Ginsburg, Grover, and Ialongo (2004), who found no relationship between parenting behaviors and child anxiety among first grade African American children (mean age = 5.8 years). However, at six-year follow-up, the children with higher levels of anxiety were the same children whose mothers had exhibited higher levels of criticism and lower levels of granting of autonomy during the initial study.

The results of the regression analyses revealed limited evidence for the first hypothesis, that there would be a significant interaction between parental control and both parental rejection and parental warmth. More specifically, while no interaction was found when emotional warmth was entered as the moderator or when paternal data were used, there was a significant control x rejection interaction effect for children's report of maternal behaviors. However, the pattern elucidated by post-hoc probing was the opposite of what was anticipated. Rather than the

presence of high rejection increasing the strength of the relationship between control and anxiety, low rejection was found to have this effect.

The reason for this unexpected result is not immediately clear; however, attachment processes may play a pivotal role. Attachment can be defined as the ability to form a close, emotional bond with a caregiver (Bowlby, 1973). The type of attachment children have is characterized by the amount of security and trust they feel towards this person. More specifically, whether a child is securely or insecurely attached to their caregiver is directly related to how safe the child feels when interacting with their environment. Securely attached children tend to explore their environment more willingly and confidently, and feel like their caregiver is caring, loving, accessible, trustworthy, and responsive to their needs.

In as much as maternal rejection constitutes a constellation of criticism, disapproval, and unresponsiveness, it is likely that rejection negatively impacts upon the parent-child relationship, potentially leading to an insecure attachment. If the parent and child do not share a close, emotional bond, the acts of overprotective and controlling behavior may not have the same effect as when attachment is secure. In fact, the child may construe these behaviors as further examples of rejection. For example, an insecurely attached, rejected child may interpret the controlling behavior of being watched very carefully by their parents as criticism and disapproval of their own preferences and choices. This is opposed to an interpretation of controlling behaviors more in line with the theory linking control and anxiety, which would be to interpret this behavior as evidence that the child cannot successfully cope with situations on their own, thus leading to diminished personal competence. So in a sense, maternal rejection may serve to buffer the negative impact of maternal control on child anxiety. Conversely, when mothers are not highly rejecting, the child presumably feels securely attached to them. This close relationship then allows the intrusive nature of control to exert its full effect on child anxiety. In line with this reasoning, cross-cultural work has demonstrated the importance of not just parenting behaviors in determining child outcomes, but also the parent-child relationship (Wissink, Dekovic, & Meijer, 2006; Smetana, Crean, & Daddis, 2002).²

² Since it was decided not to correct for multiple tests given the exploratory nature of the study, it could be argued that the significant interaction was due to Type I error. However, when employing a Bonferroni correction

With regard to the second hypothesis, this moderating effect of rejection was only found in the mixed-race group and marginally so, in the black group. In the former, rejection at or below the mean was required for a relationship to form between control and anxiety. In the black group, there was only a relationship between control and anxiety when rejection was low. Given the finding that controlling parenting might be interpreted less negatively in groups where it is more common (Jackson-Newsom et al., 2008), and the fact that control was higher in the black and mixed-race groups in the current study, these findings were again unanticipated.

A possible explanation is that rejecting behaviors may be more pertinent for these ethnic groups, potentially leading to other difficulties not captured in the anxiety arena, such as depression and/or disruptive behavior disorders. In other words, the expected relationship between maternal control and anxiety may be “over-ridden” by high maternal rejection because this latter behavior leads to other forms of psychopathology. Parental rejection has been shown to increase children’s risk for depression (Cummings & Davies, 1999) and externalizing psychopathology (Carlson, Jacobvitz, & Sroufe, 1995).

Another plausible reason lies in the relatively normative nature of rejecting behaviors in African American families, as compared to European American families. Vendlinski, Silk, Shaw, and Lane (2006) showed that increased parent-child openness was associated with increased anxiety for African American children, whereas it had no impact on anxiety in European American children. They suggested that because openness is less normative in the former families due to the high value placed upon early development of autonomy in children, when parenting goes against this norm and high openness is present, it is less beneficial to the mental health of African American children. Extrapolating this reasoning to maternal rejection, it could be that because low rejection is fairly non-normative for black and mixed-race families, it has the negative effect of increasing anxiety when paired with maternal control.

4.1 Limitations

The current study, while adding substantially to the literature on ethnicity, parenting, and child anxiety, has a number of limitations that should be addressed. First, the findings are

and dividing the p-value of .05 by 20 (4 regressions x 5 variables in each), the result is still larger than the p-value for the significant interaction, indicating that this finding is likely not the result of Type I error.

somewhat restricted because of the high correlation between ethnicity and SES. In fact, exploratory analyses revealed that the main effect for race was completely erased when SES was entered into the regression model. However, because SES was coded categorically instead of continuously, there was a loss of important data. Prior research in this area has been plagued by the same issue. Hill, Bromell, Tyson, and Flint (2007) reported that rather than culturally-based beliefs about parenting leading to certain parenting styles, much of the research characterizing African Americans as being more authoritarian may be due to the greater likelihood of residing in less safe neighborhoods and coming from lower SES backgrounds. In an attempt to address this, Hill and Bush (2001) investigated African American and European American groups of similar SES. They found no differences between the two groups on the parenting measures related to control (harsh and punitive discipline and conditional love based on obedience) and child anxiety. However, they did find that the relationship between parental efficacy and anxiety was stronger for European American children. Conversely, Bean, Barber, and Crane (2006) found no SES differences in a study of the relationships among three dimensions of parenting (support, behavioral control, and psychological control) and measures of adolescent depression, delinquency, and academic achievement in African American youth.

Second, an important caveat in much of this cross-cultural research on parenting and child outcomes is its reliance on race or ethnicity as a proxy for more salient cultural, social, and psychological constructs such as values, beliefs, and behaviors (Wang & Sue, 2005). Proxy variables such as these are indirect and make assumptions that may not necessarily be founded. Furthermore, grouping individuals by race or ethnicity can often lead to overgeneralizations that fail to provide an appreciation for important within-group variation (Sue, 2006). The importance of ethnocultural identity has been examined in such diverse areas as trauma (Ford, 2008), substance abuse (Spein, Sexton, & Kvernmo, 2007), and anger (Carter, Pieterse, & Smith, 2008). More salient to the current study, McLoyd (2004) argues that in the study of racially and ethnically diverse children, we must move beyond this more rudimentary classification system and focus on groups differentiated by their experiences and perspectives. Hill and Tyson (2008) recently highlighted the importance of this issue, demonstrating that endorsement of ethnic socialization and identity among African Americans was associated with more adaptive parenting practices. Furthermore, Carter et al. (2001) found a negative association between trait anxiety and both ethnic identity achievement and ethnic behaviors, concluding that those who are

more “enculturated” in African American culture will perceive overprotective parenting as more caring.

Third, the present study used an imposed etic approach (Berry, 1989) to cross-cultural research, meaning that it began with a concept from North American culture, assumed that that concept was valid in South Africa, and compared across the two cultures. This is in opposition to an emic approach, which investigates a concept within the new cultural context. The imposed-etic approach has been criticized in the literature because it largely ignores important contextual differences across cultures (Bodas & Ollendick, 2005). In other words, the current measures and their associated scales may not have been culturally competent. For example, the items on the EMBU-C that assess parental rejection within North American culture might not validly assess parental rejection within South African culture.

Fourth, given the importance of the support of extended family (e.g., grandparents, aunts, uncles, and cousins) in African American culture (Hill & Bush, 2001), the current study could be missing essential protective factors that may serve to mitigate the negative effects of non-optimal parenting on child anxiety. For example, the presence of a particularly caring grandmother who helps substantially with the child-rearing responsibilities may buffer the relationship between a rejecting mother and child anxiety. In accord with this, some research has found that extended kinship systems among blacks and mixed-race adolescents appear to lessen the negative impact of disrupted nuclear families (Arnett, 2007). Future research should attempt to delve beyond the traditional European American family unit to assess relationships that may be more salient to other ethnicities and cultures.

Fifth, Barber (1996) suggests that researchers should differentially examine parental control that attempts to manage the child’s behavior (behavioral control) versus parental control that intrudes upon the child’s thoughts and feelings (psychological control). The overprotection subscale of the EMBU-C used in the current study appears to mainly tap into behavioral control. This is important because some research has shown that these are distinct forms of control which are associated with varying outcomes. For example, Barber (1994) found that psychological control was positively associated with youth internalizing problems, whereas behavioral control was negatively associated with youth externalizing problems. However, it should be noted that this study only considered symptoms of depression, not anxiety. It has also been shown that both behavioral and psychological control are positively associated to social withdrawal in children,

whereas only behavioral control is negatively associated to aggressive behavior (Mills & Rubin, 1998). A study that more specifically addressed anxiety and used multiple informant aggregate data found that behavioral and not psychological control was significantly associated to anxious symptoms in children (Bögels & van Melick, 2004). Furthermore, some researchers argue that the many facets of control form a coherent broad-based construct that represents a clear pattern of parental behavior (Wood et al., 2003). The literature in this area remains equivocal; however, it may be that psychological control is the variable more specifically related to child anxiety, which may partially explain the unexpected results.

Sixth, the current data are based solely on child-report, or children's perceptions of their mothers' and fathers' parenting style. Bögels and van Melick (2004) showed that the homogeneity of some rearing dimensions using a single informant (mother, father, or child) was insufficient, but became sufficient when using multiple informants. In this sense, aggregate data drawn from multiple informants could have strengthened the current study. On the other hand, Aluja, del Barrio, and Garcia (2006) found no substantial differences when parents and adolescents were compared on the common items of the EMBU-C and EMBU-P. Furthermore, because children's perceived control is thought to mediate the relationship between a controlling family environment and child anxiety (Chorpita, Brown, & Barlow, 1998), children's perceptions of parenting might be the more pertinent variable. And as noted earlier, children's perceptions of parenting behavior may actually be more accurate than mothers' report (Siqueland et al., 1996). Nonetheless, it would have been beneficial if the current study had also assessed parental perceptions of their own parenting style. It would also have been helpful to include observational measures of parenting behaviors, especially given that some studies have found a stronger association between parental control and child anxiety when using such assessment measures (van der Bruggen et al., 2008).

Seventh, while the current study did not find substantial differences between children's reports of maternal and paternal behaviors, combinations of these behaviors were not assessed and could potentially provide richer information. For example, Rogers, Buchanan, and Winchell (2003) showed that high paternal psychological control predicted higher adolescent internalizing symptoms, but only when mothers were also perceived as high in this parenting behavior. Other researchers suggest that outcomes are compromised if one parent is not able to compensate for the dysfunctional behavior of the other (Bögels & Phares, 2008). It would therefore have been

helpful to investigate specific anxiety levels in children with controlling mothers and rejecting fathers versus those with controlling mothers and non-rejecting fathers. Bögels and Phares further suggest that both the gender and age of the child may interact differentially with maternal and paternal behaviors, and we concur that this should be investigated in future studies. Given that the significant interaction term was found only for mothers in the current study, it seems all the more important to further investigate how paternal behavior impacts upon child anxiety.

Eighth, it is important to note that given the concurrent, cross-sectional nature of this study, no firm conclusions can be drawn about the direction of the relationship between parenting behaviors and child anxiety. While prevailing theory indicates that parenting behaviors come first, at least one study has shown that adolescents with higher internalizing symptoms are more likely to perceive parents as psychological controlling one year later, whereas earlier psychological control does not predict later internalizing symptoms (Rogers et al., 2003).

Lastly, it is possible that our unexpected findings are partly due to the presence of both non-clinical and clinical levels of anxiety in the participants. It would be helpful if future studies differentiated between these groups, preferably using a standardized diagnostic instrument to classify clinical status (Muris et al., 2006).

4.2 Future Directions

Given the limitations of the current study, several suggestions are offered for future research examining the relationships among ethnicity, parenting, and child anxiety. SES is an extremely important consideration and future studies would benefit from using a continuous SES variable as well as more evenly distributed samples across ethnicity and SES. Second, researchers should focus on measures of ethnocultural identity rather than relying on ethnicity or race as a proxy variable for more important variables such as identity, values, beliefs, experiences, and perspectives. Emic approaches, such as focus groups and open-ended questions, should also be applied to the study of parenting and childhood anxiety in South Africa (Bodas, Ollendick, & Sovani, 2008). In addition, both behavioral and psychological control should be measured, multiple informant aggregate data should be utilized, and observational measures of parenting behaviors should be collected. Looking at combinations of maternal and paternal behaviors and employing longitudinal designs will also be beneficial.

In light of our unexpected findings and their potential causes, it will also be important that future research assess attachment, the presence of depression and disruptive behavior

disorders, and use both clinical and non-clinical samples. It will also be crucial to investigate specific areas of anxiety to see if parenting behaviors might relate differentially to these domains. Given the high degree of trauma experienced by black children in South African (Lockhat & Van Niekerk, 2000), measuring posttraumatic stress might be particularly pertinent. And lastly, future research should examine potential mediators of the relationship between parenting behaviors and child anxiety, self-regulation being one such possibility (Kim & Brody, 2005).

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Table 1. Means/Standard Deviations and Counts/Percentages for the Full Sample, White Children, Mixed-race Children, and Black Children

Measures	Full Sample (N = 683)	Black (N = 207)	Mixed-race (N = 208)	White (N = 268)	F or χ^2	p	η^2
Age	12.19 (1.32)	12.76 (1.44) ^a	12.08 (1.30) ^b	11.82 (1.06) ^b	33.64	<.001	.09
Gender-F	360 (52.7%)	101 (48.8%)	111 (53.4%)	148 (55.2%)	1.99	.37	-
SES (L)*	184 (26.9%)	183 (88.4%)	1 (0.5%)	0 (0.0%)	947.19	<.001	-
SES (LM)	181 (26.5%)	16 (7.7%)	158 (76.0%)	7 (2.6%)	-	-	-
SES(MH)	318 (46.6%)	8 (3.9%)	49 (23.6%)	261 (97.4%)	-	-	-
Over-M	25.28 (5.21)	28.11 (4.95) ^a	25.57 (5.24) ^b	23.32 (4.46) ^c	46.34	<.001	.14
Over-F	23.53 (5.30)	26.46 (5.16) ^a	24.31 (5.37) ^b	21.36 (4.30) ^c	50.41	<.001	.16
Emot-M	31.35 (5.43)	30.12 (5.78) ^b	30.76 (5.67) ^b	32.54 (4.75) ^a	11.34	<.001	.04
Emot-F	30.34 (5.65)	29.22 (5.82) ^b	29.88 (5.44) ^b	31.29 (5.57) ^a	6.75	<.01	.02
Rej-M	18.22 (5.18)	19.54 (4.88) ^b	19.53 (5.54) ^b	16.41 (4.52) ^a	28.30	<.001	.09
Rej-F	17.67 (5.19)	19.38 (4.88) ^b	19.01 (5.54) ^b	15.76 (4.43) ^a	32.97	<.001	.11
SCARED	31.76 (13.21)	35.95 (10.65) ^b	35.44 (13.11) ^b	25.67 (12.79) ^a	54.33	<.001	.14

Note. Gender = Male (0) or Female (1), Over-M = Overprotection Mother, Over-F = Overprotection Father, Emot-M = Emotional Warmth Mother, Emot-F = Emotional Warmth Father, Rej-M = Rejection Mother, Rej-F = Rejection Father, SCARED = SCARED Total Score.

Means with different superscripts differ at least at $p < .05$. Cohen (1988) recommends the following interpretation of η^2 : small = .01 to .05, medium = .06 to .13, large = .14 or greater.

*Each of the possible 2 x 3 chi squares for race x SES were also conducted and all were significant.

Table 2. Zero-Order Pearson Correlations Among Age, Gender, SES, EMBU-C Scales, and SCARED Total Score for the Whole Group

Measure	1	2	3	4	5	6	7	8	9
Age	1								
Gender	-.140**	1							
SES	-.285**	.038	1						
Over-M	.064	-.009	-.399**	1					
Over-F	.085*	-.042	-.426**	.797**	1				
Emot-M	-.108*	.118**	.144**	.300**	.218**	1			
Emot-F	-.103*	.070	.103*	.277**	.317**	.768**	1		
Rej-M	.242**	-.104*	-.303**	.281**	.245**	-.284**	-.221**	1	
Rej-F	.220**	-.138**	-.293**	.223**	.352**	-.273**	-.255**	.806**	1
SCARED	.079	.276**	-.367**	.304**	.305**	.053	.037	.264**	.276**

Note: Gender = Male (0) or Female (1), Over-M = Overprotection Mother, Over-F = Overprotection Father, Emot-M = Emotional Warmth Mother, Emot-F = Emotional Warmth Father, Rej-M = Rejection Mother, Rej-F = Rejection Father, SCARED = SCARED Total Score.

*Correlation is significant at the .05 level (2-tailed).

**Correlation is significant at the .01 level (2-tailed).

Table 3. Zero-Order Pearson Correlations Among Age, Gender, SES, EMBU-C Scales, and SCARED Total Score for the Black Group

Measure	1	2	3	4	5	6	7	8	9
Age									
Gender	-.135								
SES	-.211*	.022							
Over-M	.029	.021	-.128						
Over-F	.002	-.005	-.097	.763**					
Emot-M	-.026	.141	-.015	.654**	.543**				
Emot-F	-.136	.111	.010	.569**	.634**	.796**			
Rej-M	.239**	.021	-.012	-.060	-.074	-.064	-.121		
Rej-F	.219*	-.020	-.002	-.003	.035	-.074	-.072	.833**	
SCARED	-.054	.229**	-.150	.140	.149	.185*	.165	.103	.115

Note: Gender = Male (0) or Female (1), Over-M = Overprotection Mother, Over-F = Overprotection Father, Emot-M = Emotional Warmth Mother, Emot-F = Emotional Warmth Father, Rej-M = Rejection Mother, Rej-F = Rejection Father, SCARED = SCARED Total Score.

*Correlation is significant at the .05 level (2-tailed).

**Correlation is significant at the .01 level (2-tailed).

Table 4. Zero-Order Pearson Correlations Among Age, Gender, SES, EMBU-C Scales, and SCARED Total Score for the Mixed-race Group

Measure	1	2	3	4	5	6	7	8	9
Age	1								
Gender	-.193*	1							
SES	-.222*	-.048	1						
Over-M	-.029	.137	-.330**	1					
Over-F	.080	.099	-.335**	.771**	1				
Emot-M	-.060	.184*	-.110	.392**	.221**	1			
Emot-F	.039	.101	-.132	.333**	.408**	.704**	1		
Rej-M	.157*	-.092	-.221**	.340**	.299**	-.165*	-.086	1	
Rej-F	.187*	-.145	-.188*	.233**	.407**	-.243**	-.102	.797**	1
SCARED	.087	.318**	-.405**	.318**	.357**	.177*	.158*	.257**	.273**

Note: Gender = Male (0) or Female (1), Over-M = Overprotection Mother, Over-F = Overprotection Father, Emot-M = Emotional Warmth Mother, Emot-F = Emotional Warmth Father, Rej-M = Rejection Mother, Rej-F = Rejection Father, SCARED = SCARED Total Score.

*Correlation is significant at the .05 level (2-tailed).

**Correlation is significant at the .01 level (2-tailed).

Table 5. Zero-Order Pearson Correlations Among Age, Gender, SES, EMBU-C Scales, and SCARED Total Score for the White Group

Measure	1	2	3	4	5	6	7	8	9
Age	1								
Gender	-.088	1							
SES	-.018	.151*	1						
Over-M	-.050	-.118	-.101	1					
Over-F	-.102	-.164*	-.148*	.763**	1				
Emot-M	-.117	.036	-.011	.228**	.270**	1			
Emot-F	-.123	.014	-.074	.249**	.282**	.791**	1		
Rej-M	.200**	-.178**	-.246**	.235**	.139*	-.456**	-.314**	1	
Rej-F	.121	-.192**	-.286**	.131*	.282**	-.331**	-.420**	.742**	1
SCARED	-.014	.342**	-.127	.172**	.083	.057	.024	.129*	.136*

Note: Gender = Male (0) or Female (1), Over-M = Overprotection Mother, Over-F = Overprotection Father, Emot-M = Emotional Warmth Mother, Emot-F = Emotional Warmth Father, Rej-M = Rejection Mother, Rej-F = Rejection Father, SCARED = SCARED Total Score.

*Correlation is significant at the .05 level (2-tailed).

**Correlation is significant at the .01 level (2-tailed).

Table 6. Effects of Maternal Behaviors on Child Anxiety in the Whole Group

Moderator	df Error	Effect	B	SE B	ΔR^2	Total R^2
Emot	579	Gender	7.379***	1.063		
		Age	1.241**	.412	.083***	
		Gender	7.448***	1.008		
		Age	1.083**	.391		
		Over	.779***	.096	.094***	
		Gender	7.667***	1.013		
		Age	.987*	.394		
		Over	.838***	.101		
		Emot	-.181	.098	.005	
		Gender	7.666***	1.014		
		Age	.987*	.394		
		Over	.840***	.103		
		Emot	-.184	.101		
		Over x Emot	-.002	.018	.000	.181***
Rej	579	Gender	7.379***	1.063		
		Age	1.241**	.412	.083***	
		Gender	7.448***	1.008		
		Age	1.083**	.391		
		Over	.779***	.096	.094***	
		Gender	7.869***	.993		
		Age	.634	.395		
		Over	.654***	.097		
		Rej	.495***	.101	.033***	
		Gender	8.070***	.983		
		Age	.557	.391		
		Over	.653***	.096		
		Rej	.578***	.102		
		Over x Rej	-.065***	.017	.019***	.228***

Note: Over = Overprotection, Emot = Emotional Warmth, and Rej = Rejection

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 7. Effects of Paternal Behaviors on Child Anxiety in the Whole Group

Moderator	<i>df</i>	Error	Effect	<i>B</i>	<i>SE B</i>	ΔR^2	Total <i>R</i> ²
Emot	546		Gender	7.638***	1.113		
			Age	1.239**	.434	.084***	
			Gender	7.796***	1.053		
			Age	.977*	.411		
			Over	.797***	.098	.098***	
			Gender	8.005***	1.053		
			Age	.847*	.414		
			Over	.880***	.104		
			Emot	-.230*	.098	.008*	
			Gender	8.067***	1.054		
			Age	.852*	.414		
			Over	.902***	.106		
			Emot	-.250*	.100		
			Over x Emot	-.018	.017	.002	.192***
Rej	546		Gender	7.638***	1.113		
			Age	1.239**	.434	.084***	
			Gender	7.796***	1.053		
			Age	.977*	.411		
			Over	.797***	.098	.098***	
			Gender	8.417***	1.027		
			Age	.523	.406		
			Over	.585***	.102		
			Rej	.636***	.106	.050***	
			Gender	8.443***	.983		
			Age	.517	1.026		
			Over	.580***	.102		
			Rej	.679***	.111		
			Over x Rej	-.024	.017	.003	.235***

Note: Over = Overprotection, Emot = Emotional Warmth, and Rej = Rejection

p* < .05, *p* < .01, ****p* < .001

Table 8. Effects of Maternal Behaviors on Child Anxiety in the Black Group

Moderator	df Error	Effect	B	SE B	ΔR^2	Total R^2
Emot	145	Gender	4.085*	1.737		
		Age	-.178	.588	.038	
		Gender	4.019*	1.722		
		Age	-.183	.583		
		Over	.336	.173	.024	
		Gender	3.736*	1.0728		
		Age	-.123	.583		
		Over	.131	.227		
		Emot	.271	.196	.012	
		Gender	3.627*	1.720		
		Age	-.059	.581		
		Over	.174	.228		
		Emot	.239	.196		
		Over x Emot	-.049	.030	.017	.091*
Rej	145	Gender	4.085*	1.737		
		Age	-.178	.588	.038	
		Gender	4.019*	1.722		
		Age	-.183	.583		
		Over	.336	.173	.024	
		Gender	3.834*	1.722		
		Age	-.404	.604		
		Over	.352*	.173		
		Rej	.246	.183	.011	
		Gender	3.894*	.983		
		Age	-.335	.599		
		Over	.332	.172		
		Rej	.228	.181		
		Over x Rej	-.081	.042	.024	.097*

Note: Over = Overprotection, Emot = Emotional Warmth, and Rej = Rejection

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 9. Effects of Paternal Behaviors on Child Anxiety in the Black Group

Moderator	<i>df</i>	Error	Effect	<i>B</i>	<i>SE B</i>	ΔR^2	Total <i>R</i> ²
Emot	128		Gender	4.092*	1.903		
			Age	-.106	.655	.036	
			Gender	4.024*	1.899		
			Age	-.105	.654		
			Over	.230	.182	.012	
			Gender	4.017*	1.924		
			Age	-.102	.664		
			Over	.225	.241		
			Emot	.006	.218	.000	
			Gender	4.061*	1.946		
			Age	-.100	.666		
			Over	.240	.255		
			Emot	-.003	.224		
			Over x Emot	-.006	.032	.000	.048
Rej	128		Gender	4.092*	1.903		
			Age	-.106	.6554	.036	
			Gender	4.024*	1.899		
			Age	-.105	.654		
			Over	.230	.182	.012	
			Gender	4.006*	1.883		
			Age	-.360	.664		
			Over	.218	.181		
			Rej	.352	.196	.023	
			Gender	3.877*	1.875		
			Age	-.230	.665		
			Over	.184	.181		
			Rej	.320	.196		
			Over x Rej	-.066	.043	.017	.088*

Note: Over = Overprotection, Emot = Emotional Warmth, and Rej = Rejection

p* < .05, *p* < .01, ****p* < .001

Table 10. Effects of Maternal Behaviors on Child Anxiety in the Mixed-race Group

Moderator	df Error	Effect	B	SE B	ΔR^2	Total R^2
Emot	181	Gender	9.052***	1.883		
		Age	1.631*	.719	.119***	
		Gender	8.030***	1.822		
		Age	1.701*	.690		
		Over	.705***	.171	.075***	
		Gender	8.000***	1.854		
		Age	1.074*	.692		
		Over	.699***	.185		
		Emot	.017	.173	.000	
		Gender	7.984***	1.861		
		Age	1.703*	.694		
		Over	.692***	.188		
		Emot	.035	.192		
		Over x Emot	.007	.031	.000	.195***
Rej	181	Gender	9.052***	1.883		
		Age	1.631*	.719	.119***	
		Gender	8.030***	1.822		
		Age	1.701*	.690		
		Over	.705***	.171	.075***	
		Gender	8.771***	1.812		
		Age	1.393*	.687		
		Over	.544**	.178		
		Rej	.463**	.170	.032**	
		Gender	8.522***	1.797		
		Age	1.157	.689		
		Over	.547**	.176		
		Rej	.540**	.172		
		Over x Rej	-.057*	.026	.019*	.246***

Note: Over = Overprotection, Emot = Emotional Warmth, and Rej = Rejection

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 11. Effects of Paternal Behaviors on Child Anxiety in the Mixed-race Group

Moderator	df	Error	Effect	B	SE B	ΔR^2	Total R^2
Emot	170	Gender	Gender	8.897***	1.989		
			Age	1.278	.759	.108***	
		Over	Gender	7.946***	1.886		
			Age	.974	.718		
			Over	.823***	.173	.104***	
	170	Emot	Gender	7.966***	1.895		
			Age	.976	.720		
			Over	.836***	.188		
			Emot	-.032	.185	.000	
		Over x Emot	Gender	8.060***	1.907		
			Age	.977	.722		
			Over	.842***	.189		
			Emot	-.049	.189		
			Over x Emot	-.016	.030	.001	.213***
Rej	170	Gender	Gender	8.897***	1.989		
			Age	1.278	.759	.108***	
		Over	Gender	7.946***	1.886		
			Age	.974	.718		
			Over	.823***	.173	.104***	
	170	Rej	Gender	8.865***	1.867		
			Age	.694	.708		
			Over	.593**	.185		
			Rej	.551**	.182	.040**	
		Over x Rej	Gender	8.826***	1.871		
			Age	.672	.710		
			Over	.581**	.186		
			Rej	.583**	.189		
			Over x Rej	-.018	.027	.002	.254***

Note: Over = Overprotection, Emot = Emotional Warmth, and Rej = Rejection

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 12. Effects of Maternal Behaviors on Child Anxiety in the White Group

Moderator	df Error	Effect	B	SE B	ΔR^2	Total R^2
Emot	241	Gender	8.840***	1.488		
		Age	.091	.705	.127***	
		Gender	9.568***	1.469		
		Age	.242	.690		
		Over	.575***	.163	.043***	
		Gender	9.567***	1.474		
		Age	.243	.695		
		Over	.575***	.168		
		Emot	.001	.157	.000	
		Gender	9.560***	1.477		
		Age	.228	.700		
		Over	.577***	.168		
		Emot	-.005	.160		
		Over x Emot	-.008	.037	.000	.170***
Rej	241	Gender	8.840***	1.488		
		Age	.091	.705	.127***	
		Gender	9.568***	1.469		
		Age	.242	.690		
		Over	.575***	.163	.043***	
		Gender	10.000***	1.476		
		Age	-.066	.703		
		Over	.489**	.168		
		Rej	.337*	.170	.013*	
		Gender	10.173***	1.479		
		Age	-.030	.703		
		Over	.519**	.169		
		Rej	.425*	.182		
		Over x Rej	-.042	.031	.006*	.189***

Note: Over = Overprotection, Emot = Emotional Warmth, and Rej = Rejection

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 13. Effects of Paternal Behaviors on Child Anxiety in the White Group

Moderator	df Error	Effect	B	SE B	ΔR^2	Total R^2
Emot	236	Gender	8.853***	1.517		
		Age	.116	.716	.125***	
		Gender	9.483***	1.515		
		Age	.354	.712		
		Over	.475**	.175	.026**	
		Gender	9.493***	1.523		
		Age	.348	.718		
		Over	.480**	.188		
		Emot	-.012	.141	.000	
		Gender	9.473***	1.526		
		Age	.355	.719		
		Over	.485**	.184		
		Emot	-.019	.142		
		Over x Emot	-.015	.030	.001	.152***
Rej	236	Gender	8.853***	1.51		
		Age	.116	.716	.125***	
		Gender	9.483***	1.515		
		Age	.354	.712		
		Over	.475**	.175	.026**	
		Gender	10.071***	1.503		
		Age	.056	.708		
		Over	.320	.180		
		Rej	.552**	.176	.031**	
		Gender	10.071***	1.507		
		Age	.056	.710		
		Over	.320	.181		
		Rej	.523**	.195		
		Over x Rej	.000	.027	.000	.182***

Note: Over = Overprotection, Emot = Emotional Warmth, and Rej = Rejection

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 14. Effects of Maternal Behaviors on Child Anxiety in the Whole Group, Controlling for Race and SES

Moderator	df Error	Effect	B	SE B	ΔR^2	Total R^2
Rej	575	Gender	7.379***	1.063		
		Age	1.241**	.412	.083***	
		Gender	7.581***	.981		
		Age	.524	.389		
		Race1	10.199***	.999	.140***	
		Race2	-.453	1.290		
		Gender	7.597***	.937		
		Age	.112	.377		
		Race1	1.232	1.875		
		Race2	-1.159	2.704		
		SES1	11.119***	1.938		
		SES2	3.523	2.835	.070***	
		Gender	7.811***	.923		
		Age	.026	.378		
		Race1	.716	1.844		
		Race2	.113	2.665		
		SES1	9.290***	1.940		
		SES2	2.537	2.803		
		Over	.358***	.098		
		Rej	.258**	.098	.029***	
		Gender	7.977***	.916		
		Age	-.003	.375		
		Race1	.285	1.833		
		Race2	.332	2.643		
		SES1	9.299***	1.923		
		SES2	2.766	2.780		
		Over	.373***	.097		
		Rej	.331***	.099		
		Over x Rej	-.055***	.016	.013***	.335***

Note: Over = Overprotection, Emot = Emotional Warmth, and Rej = Rejection

* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 1. Proposed Moderated Relationship

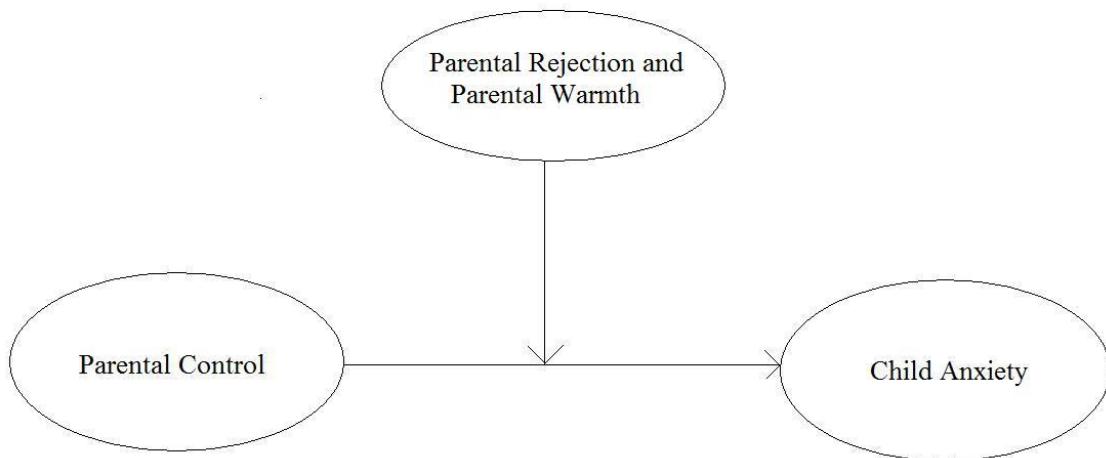


Figure 2. Child Anxiety as a Function of Maternal Control and Rejection in the Whole Group

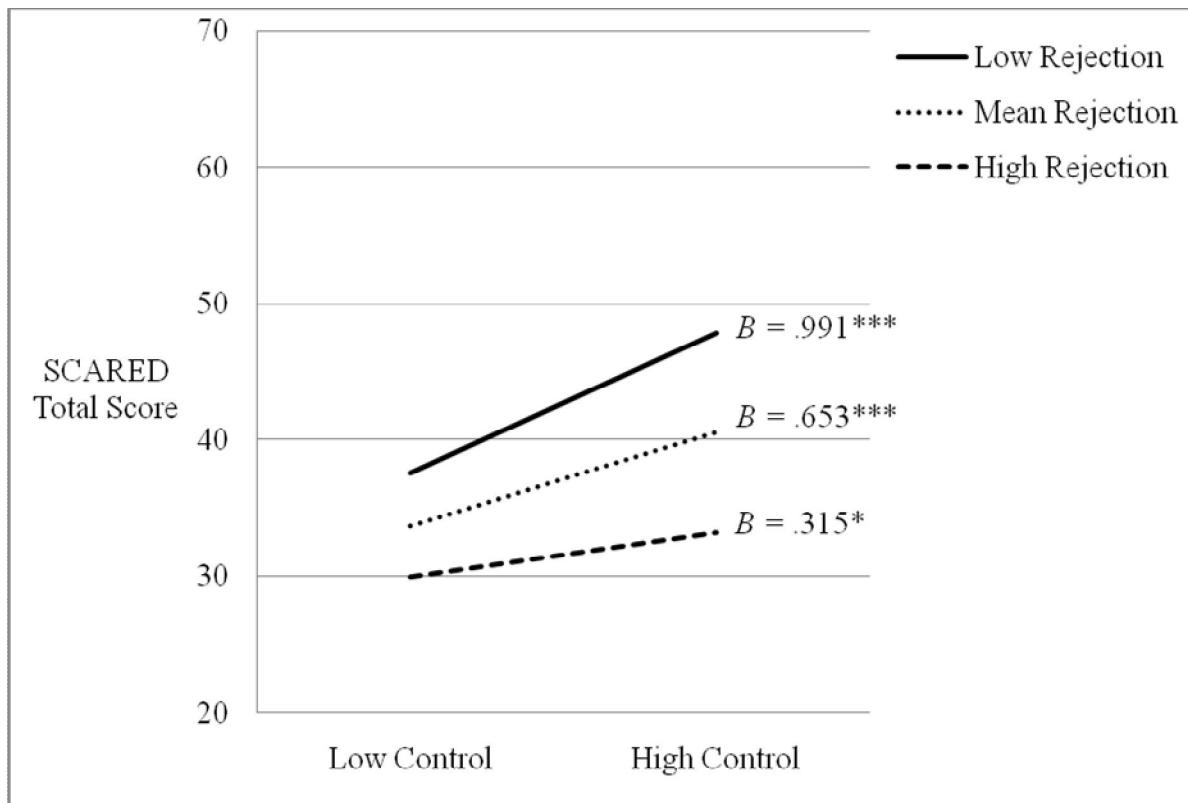


Figure 3. Child Anxiety as a Function of Maternal Control and Rejection in the Black Group

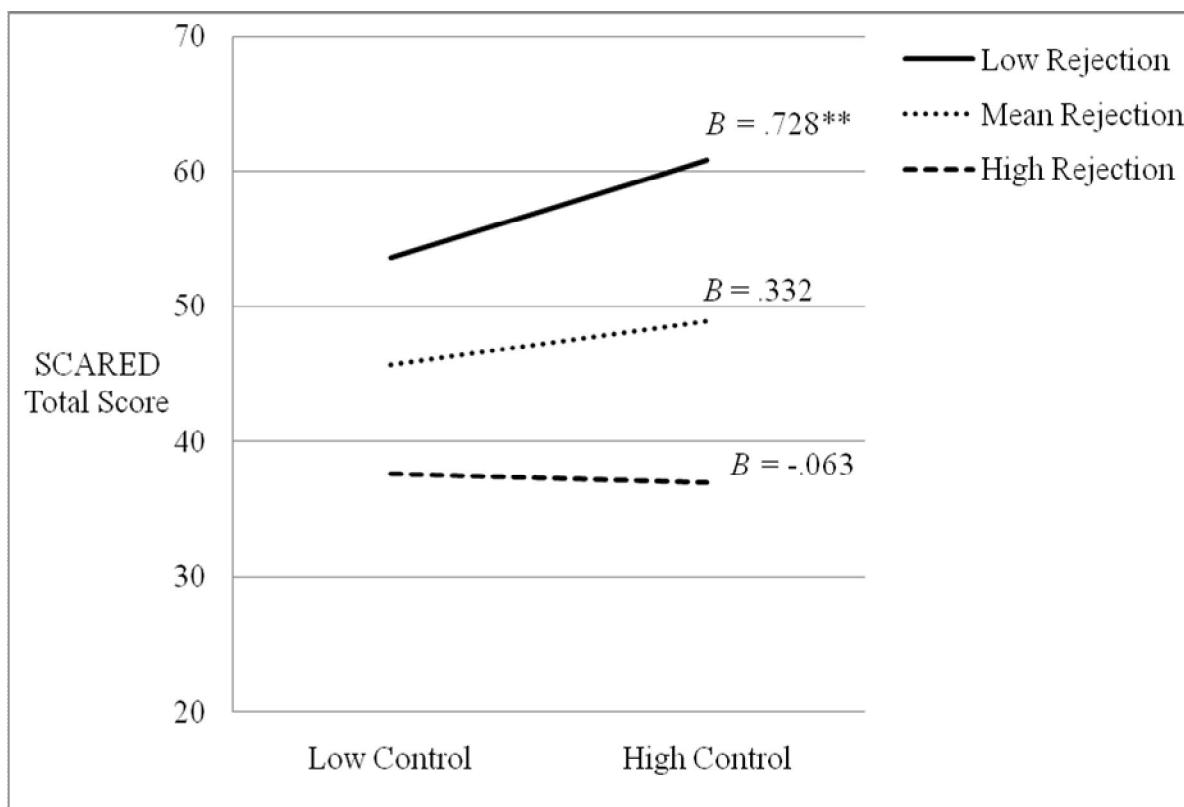


Figure 4. Child Anxiety as a Function of Maternal Control and Rejection in the Mixed-race Group

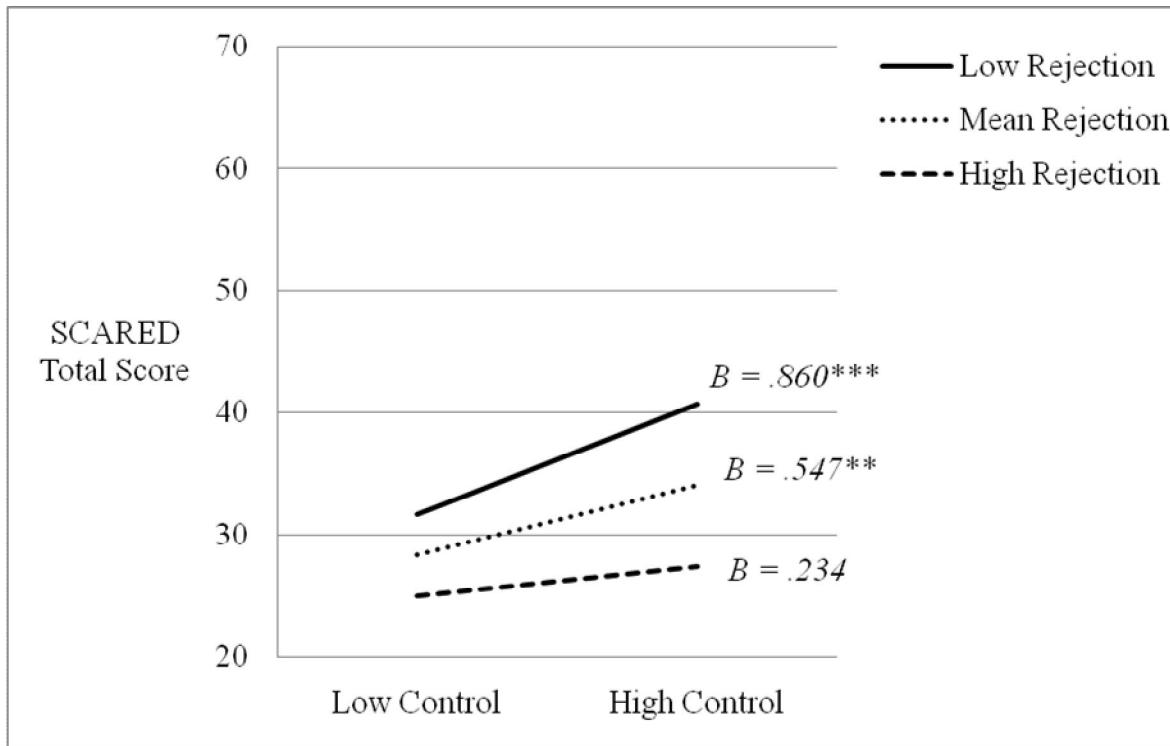


Figure 5. Child Anxiety as a Function of Maternal Control and Rejection in the White Group

