J Child Fam Stud (2011) 20:205–213
DOI 10.1007/s10826-010-9422-3

ORIGINAL PAPER

Anxiety Symptoms in African American Children: Relations with Ethnic Pride, Anxiety Sensitivity, and Parenting

Calonie M. K. Gray · Rona Carter · Wendy K. Silverman

Published online: 2 October 2010

Abstract This cross-sectional study examined the relations among children's ethnic pride, perceived parenting behavior (i.e., parental control, parental acceptance), anxiety sensitivity, and child anxiety symptoms (i.e., physical symptoms, social anxiety symptoms, separation anxiety symptoms, and harm avoidance symptoms) in 266 African American school children ($M = 9.98$ years old; 55% girls). Structural equation modeling results indicated that high ethnic pride was associated with high parental acceptance. High perceived parental acceptance, in turn, was related to children reporting low levels of social anxiety symptoms and high levels of harm avoidance. In addition, high parental control was related to high anxiety sensitivity. Anxiety sensitivity partially mediated the relation between parental control and separation anxiety symptoms, such that parental control was both directly and indirectly related to separation anxiety symptoms. Parental control was indirectly related to physical symptoms, social anxiety symptoms, and harm avoidance symptoms through its direct link to anxiety sensitivity. The study's results increment knowledge about factors influencing specific dimensions of anxiety in African American children.

C. M. K. Gray (✉)
Research, Analysis, and Planning, Children's Services Council of Broward County, 6600 West Commercial Boulevard, Lauderhill, FL 33319, USA
e-mail: cgray@cscbroward.org

R. Carter
Department of Psychology, University of Michigan, Ann Arbor, MI, USA

W. K. Silverman
Department of Psychology, Florida International University, Miami, FL, USA

Keywords Child anxiety · Anxiety sensitivity · African American children · Parenting behaviors · Ethnic pride

Introduction

Research has shown that African American and European American children have similar prevalence rates of anxiety symptoms (Angold et al. 2002); yet African Americans are less likely to present for treatment than European Americans (Neal and Ward-Brown 1994). Due to this differential in treatment seeking, African American children are not well represented in clinical research studies on anxiety. The primary aim of the present study was to broaden understanding of factors that are likely related to anxiety symptoms in African American children, but have not been studied within the same study and within the framework of a conceptual model. These factors were: children's ethnic pride, children's perceived parental acceptance and control, and children's anxiety sensitivity and anxiety symptoms. We begin by first providing definitions and brief background of the factors that were of interest in this study. We follow this with an explanation of how we view these variables relating to anxiety symptoms within our conceptual model.

Ethnic pride refers to having positive attitudes toward one's ethnic group, along with a feeling of belonging to, and affiliating with, one's ethnic group as a central part of one's ethnic identity (McCreary et al. 1996; Valk and Karu 2001). Ethnic pride is a salient construct among African Americans and has been shown to demonstrate protective properties with youth psychosocial factors (e.g., Gaylord-Harden et al. 2007; Marsiglia et al. 2001).

With respect to parenting, research has identified broad dimensions of parenting, acceptance versus rejection and

granting of autonomy versus control, as important in the development and maintenance of anxiety and its disorders (e.g., Chorpita et al. 1998; Craske 1999; Rapee 1997). Parental acceptance is defined as parents' expression of warmth and responsiveness to children's emotions and behavior, and is viewed as promoting children's emotion regulation and willingness to explore their environment and learn, thereby decreasing their anxiety (Gottman et al. 1997). Parental control is defined as low levels of parental encouragement of children's autonomy and independence, and is viewed as decreasing children's self-efficacy, thereby increasing their anxiety (Barber 1996; Chorpita and Barlow 1998).

Anxiety sensitivity refers to the fear that symptoms of anxiety (e.g., racing heart) are uncontrollable and have harmful somatic, psychological, or social consequences (Reiss 1991). Evidence suggests that anxiety sensitivity, including in children, is a risk factor for the development and maintenance of anxiety symptoms (e.g., Reiss 1991; Silverman and Weems 1998).

With respect to anxiety symptoms, we selected to study the above variables in relation to specific anxiety dimensions (not total anxiety scores). The anxiety dimensions we studied represent the subscales on the *Multidimensional Anxiety Scale for Children* (MASC; March et al. 1997), which include: social phobia, separation anxiety, harm avoidance, and physical symptoms. Our decision to use the MASC subscales was guided by research that specific anxiety symptoms or dimensions are manifested differently across ethnic groups (Compton et al. 2000). For example, Compton et al. (2000) found that African American children scored high on separation anxiety and low on social phobia; the opposite pattern was found with White children.

The conceptual model we formulated to guide this study is shown in Fig. 1. Our model shows directionality of predicted relations between variables based on extant theoretical and empirical research work; however, given the cross-sectional nature of the data, the model does not assume causality between any of the constructs. As shown in the model, we predicted children's ethnic pride would be related to perceived parental acceptance and perceived parental control (see Paths a and b). Specifically, we predicted that children who report high ethnic pride would perceive their parents as high on parental acceptance. We also predicted that children who report low ethnic pride would perceive their parents as high on parental control. These predictions are based on research findings showing that high ethnic pride is associated with low internalizing symptoms, including anxiety symptoms in African American youth (Gaylord-Harden et al. 2007), and is associated with high parental acceptance (Wills et al. 2007).

The relation between perceived parenting behavior and anxiety has been found to vary across ethnic groups. For example, in a clinic-referred sample of urban adolescent

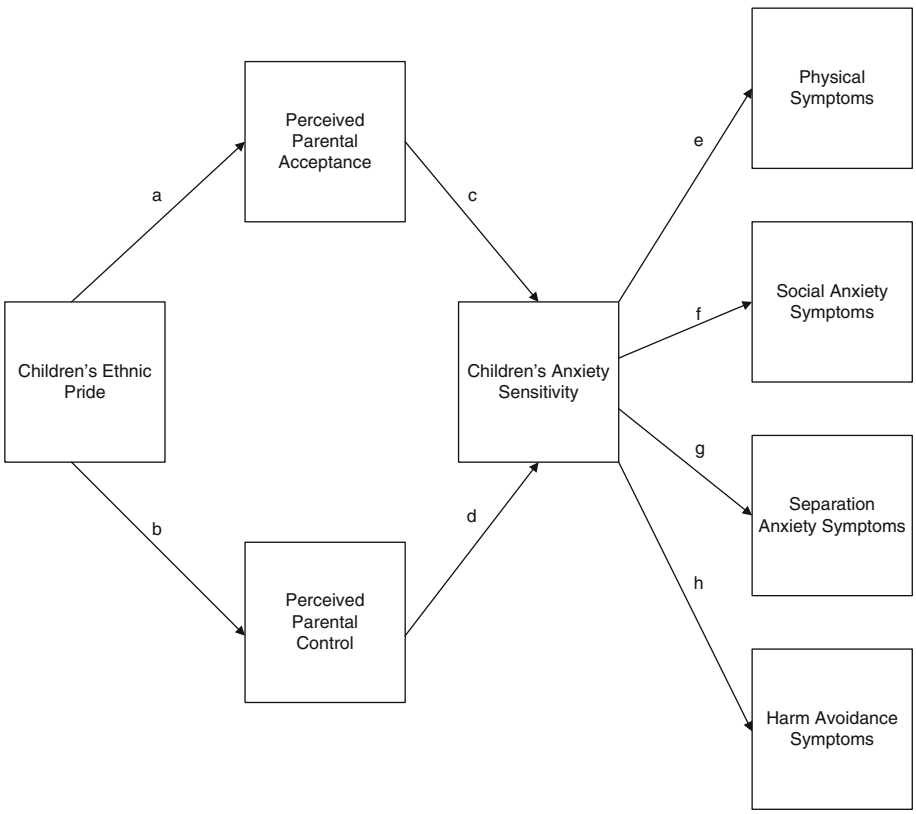

Fig. 1 Theoretical model. This figure does not show all estimated paths

girls, Finkelstein et al. (2001) found that youth perceived maternal control was significantly and positively related to youths' anxious-depressed affect in the White and Latina girls. In contrast, youth perceived maternal control was significantly and *negatively* related to youths' anxious-depressed affect in the African American girls. Such variations may be due in part ethnic variations in children's perceptions of appropriate childrearing (e.g., Finkelstein et al. 2001; Greenfield et al. 2003; Mason et al. 2004). We were interested in further examining the pattern of relations among ethnic pride, perceived parenting behavior, and anxiety symptoms in African American children given the possibility that ethnic variations in children's perceptions of their parents' behavior may present differential risk for the development and maintenance of anxiety symptoms (Finkelstein et al. 2001).

As the model shows, we also predicted that children's perceived parental control and perceived parental acceptance would be related to children's anxiety sensitivity (see Paths c and d). Specifically, we predicted that children who perceive their parents as high in parental control would report high levels of anxiety sensitivity, and children who perceive their parents high in parental acceptance would report low levels of anxiety sensitivity. These predictions are based on research showing links between certain aspects of parenting behavior and child anxiety sensitivity (e.g., retrospective reports of parental control in childhood linked to high anxiety sensitivity; Scher and Stein 2003).

We were further interested in examining anxiety sensitivity in African American children given research showing that African Americans, in general report more somatization symptoms (i.e., symptoms of physiological complaints that are the result of psychological distress) compared to other ethnic groups (e.g., Heurtin-Roberts et al. 1997; Neal and Turner 1991). Even though anxiety sensitivity is likely to be relevant to African American children, few studies have examined anxiety sensitivity using samples of African American children. The studies that have been conducted have focused mainly on the psychometric properties of anxiety sensitivity measures (Lambert et al. 2004).

Lastly, we predicted that children's anxiety sensitivity would mediate the relation between their perceived parental acceptance and perceived parental control, as well as their anxiety symptoms (see Paths e–h). Specifically, we expected the children's perceived parental acceptance and parental control would be differentially related to children's anxiety sensitivity and that anxiety sensitivity would, in turn, be positively related to anxiety across all symptom dimensions. Although no study to date has examined these mediated relations, our prediction is based on research indicating links between parenting behavior and child anxiety sensitivity (Scher and Stein 2003; Watt et al. 1998), and research indicating links between child anxiety sensitivity and child anxiety symptoms (Olatunji and Wolitzky-Taylor 2009).

Though parenting behavior (e.g., Wood et al. 2003) and anxiety sensitivity (e.g., Reiss 1991) are each identifiable risk factors for the development and maintenance of anxiety and its disorders in children, questions remain. Research has only focused, however, on how these variables operate independently without considering the more likely complex, multivariate dynamics among these variables. Moreover, this research has used predominantly White samples of children, which may or may not be generalizable to African American child samples.

In sum, we examined the relations among ethnic pride, parental acceptance, parental control, anxiety sensitivity and anxiety symptoms across all dimensions. Specifically, we examined these relations in a sample of African American school children, a subgroup not often studied in child anxiety research. Examining such relations in this sample can increment the existing literature.

Method

Participants

Participants were involved in a larger study on expressions of anxiety in minority school children. All parents were asked to sign an informed consent form if they gave permission for their child's participation, or to indicate if they declined child's participation. Children also were asked to sign the form to provide their informed assent. Contingency table and analysis of variance results indicated no significant differences on sociodemographic characteristics (i.e., child age, recipient of free or reduced lunch status) among children with consent/assent, children without consent/assent, and children who did not return consent forms.

Only the data of the African American children were included in the analyses. This led to the exclusion of data from 63 non-African American families. The final sample comprised 266 African American school children ages 8–13 years ($M = 9.88$ years, $SD = 1.10$; 55% girls). Thirty-three percent ($n = 88$) were in third grade, 29% ($n = 76$) in fourth grade, and 38% ($n = 102$) in fifth grade. According to school records, approximately 74% ($n = 198$) of the children received free or reduced lunch.

Measures

To reduce participant burden and to assist teachers by maximizing instructional time, we extracted items with highest factor loadings from previously validated measures. This method has been used in widely published national studies (e.g., Add Health; Udry 1998), and

represents a psychometrically sound approach, while reducing participant burden (e.g., Volpe et al. 2009). For all measures, reliability estimates were found to be comparable to estimates found in past research utilizing the full measures.

Child Anxiety Symptoms

The MASC is a 39-item self-rating scale that measures a range of anxiety symptoms in youth that are aligned with the DSM IV diagnostic categories for anxiety disorders (March et al. 1997). Four scale scores can be derived from the MASC: physical symptoms, social anxiety symptoms, separation anxiety symptoms, and harm avoidance symptoms. Children responded to each item on a 4-point scale: 1 (*never)*, 2 (*rarely*), 3 (*sometimes),* or 4 *(often)*, to yield four subscale scores (physical symptoms, social anxiety symptoms, separation anxiety symptoms, harm avoidance symptoms) with higher numbers indicating more symptoms. The internal consistency estimates for subscales in this study ranged from .71 to .85.

Child Anxiety Sensitivity

A brief version of the Childhood Anxiety Sensitivity Index (CASI; Silverman et al. 1991) was used to assess the extent to which children believe the experience of anxiety will result in negative consequences. The brief version of the CASI consisted of eight items: items 9 and 18 (for physiological concerns); 4 and 10 (for control concerns); 2 and 15 (for mental incapacitation concerns); and 1 and 17 (for social concerns). Children responded to these questions on a 3-point scale, 1 (*none*), 2 (*some*), or 3 (*a lot*), to yield a total score with higher numbers indicating more anxiety sensitivity. In this study, the CASI demonstrated acceptable internal consistency ($\alpha = .75$).

Perceived Parental Behavior

A brief version of the Children's Report of Parent Behavior Inventory acceptance and control subscales (CRPBI; Schludermann and Schludermann 1988) was used to assess the extent to which children perceive their parents' (mother and father) childrearing practices as accepting and/or controlling. The brief version of the acceptance subscale consists of two items: "My mother (father) is a person who enjoys doing things with me," and "My mother (father) is a person who often praises me." The brief version of the control subscale consists of two items: "My mother (father) is a person who is always telling me how I should behave," and "My mother (father) is a person who wants to control whatever I do". A separate rating was obtained for the mother and the father; and these ratings were then combined to create a parental acceptance score and a parental control score. Children responded to these questions on a 3-point scale [1 (*not like*), 2 (*somewhat like*), or 3 (*a lot)*], with higher numbers indicating more parental acceptance and more parental control. The psychometric properties for the CRPBI have been documented in over one hundred studies; estimates for internal consistency have been reported in previous research ($\alpha \geq .65$; Gaylord-Harden et al. 2007; Schludermann and Schludermann 1988) ($\alpha \geq .57$ in this study).

Ethnic Pride

Children's ethnic pride was evaluated using a measure adapted from the Multigroup Ethnic Identity Measure (MEIM; Phinney 1992), which assesses ethnic identity development, affirmation, belonging, and commitment. Children responded to three items: "I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs," "I am active in organizations or social groups that include mostly members of my own ethnic group;" and "I have a strong sense of belonging to my own ethnic group." Children responded to these questions on a 3-point scale from 1 (*none*) to 3 (*a lot*). Items were summed to yield a total score with higher numbers indicating higher ethnic pride. Previous studies with samples of school-age children reported internal consistencies ranging from .30 to .72 (Reese et al. 1998) ($\alpha = .41$ in this study).

Procedure

Students with signed parent consent and child assent forms were administered several questionnaires about the child's emotional functioning including the measures used in this study. The questionnaires were completed during school hours in a small group setting containing 5–8 students per group. Each questionnaire was read aloud by two African American female researchers while the children followed along, indicating their responses on a separate answer sheet. Total administration time of questionnaires was approximately 30 min. The data were collected over a 3-week period.

Results

Preliminary and Descriptive Analyses

There were small amounts of missing data in this study. The amount never exceeded more than 1% of the cases for any given variable. There was no systematic pattern found in the missing data. The minimal missing data was imputed

using the SPSS 16.0 missing value analysis, which utilizes Expectation–Maximization (EM) method with importance re-sampling as described in King et al. (2001). Outlier analyses included both non-model based and model based evaluations of variable data. No outliers were found in these data.

Table 1 presents the means and standard deviations for the study variables. There were some statistically significant sex differences on measures of children's anxiety sensitivity and childhood anxiety (see Table 1). The mean score for girls on anxiety sensitivity as measured by the CASI was 2.43 units higher than the mean score for boys. Further, the mean scores along all dimensions of anxiety were significantly higher for girls as compared to boys. On average, for physical, social anxiety, separation anxiety, and harm avoidance symptoms girls scored 3.3, 2.93, 3.14, and 1.74 units higher than their male counterparts, respectively.

Table 2 shows the correlation estimates among study variables. There were a few noteworthy significant correlations. Anxiety sensitivity was correlated with all study variables except parental control. Perceived parental control was correlated with social anxiety and separation anxiety symptoms. Parental acceptance was positively correlated with social anxiety, but was negatively correlated with harm avoidance.

SEM Analyses

Structural equation modeling (SEM) analysis was used to examine the hypothesized relations among child ethnic pride, perceived parenting behavior, anxiety sensitivity and child anxiety symptoms using AMOS 7.0 (Arbuckle 2006) with a single indicator path analytic approach and a robust weighted least squares solution. SEM was selected over ordinary least squares regression because SEM allows for more accurate path estimates between variables by utilizing a measurement modeling technique that accounts for measurement error when estimating the paths among variables in the analysis (Byrne 2001). To evaluate hypothesized mediated relations (i.e., whether anxiety sensitivity mediated the effects of parenting behavior on child anxiety), the joint significance test recommended by MacKinnon et al. (2002) was used. This method simultaneously tests whether the independent variable is related to the hypothesized mediators and whether the hypothesized

Table 1 Means and standard deviations for study variables

Variables	Total Sample ($N = 266$)		Boys ($n = 121$)		Girls ($n = 145$)		t (264)
	M	SD	M	SD	M	SD	
Ethnic pride	6.30	1.45	6.14	1.45	6.44	1.45	−1.68
Anxiety sensitivity	14.36	3.68	13.03	3.41	15.46	3.54	−5.66**
Perceived parental control	8.38	1.77	8.42	1.88	8.34	1.68	.36
Perceived parental acceptance	10.16	1.79	10.25	1.72	10.09	1.85	.72
Physical symptoms	12.45	7.14	10.65	6.97	13.95	6.97	−3.85**
Social anxiety symptoms	10.63	6.21	9.03	5.99	11.96	6.10	−3.93**
Separation anxiety symptoms	9.06	5.11	7.35	4.64	10.49	5.05	−5.22**
Harm avoidance symptoms	17.78	4.50	16.83	4.20	18.57	4.61	−3.20**

* $p < .05$; ** $p < .01$

Table 2 Intercorrelations for study variables

Variable	1	2	3	4	5	6	7	8
1. Ethnic pride	–	17**	.10	.14*	.08	.00	.08	.20**
2. Anxiety sensitivity		–	.13**	.05	.58**	.55**	.57**	.27**
3. Perceived parental control			–	.02	.10	.13*	.19**	.06
4. Perceived parental acceptance				–	.00	−.16**	−.09	.24**
5. Physical symptoms					–	.60**	.53**	.29**
6. Social anxiety symptoms						–	.64**	.24**
7. Separation anxiety symptoms							–	.38**
8. Harm avoidance symptoms								–

* $p < .05$; ** $p < .01$

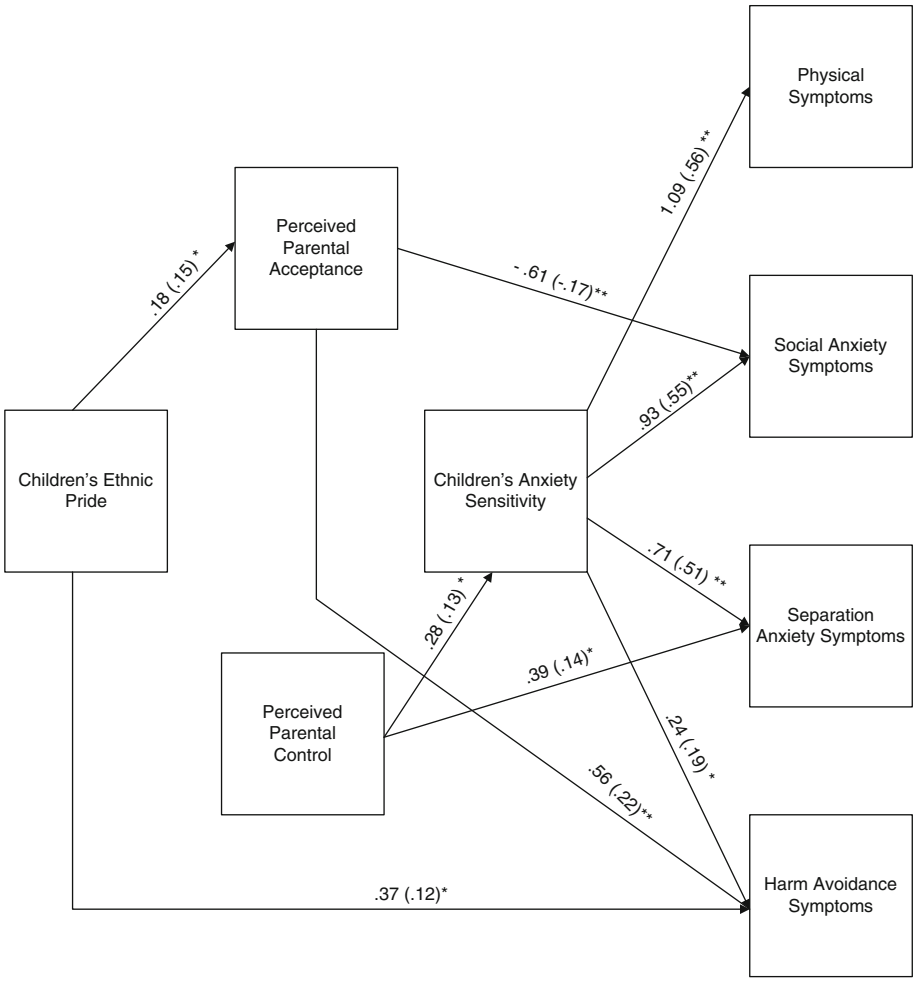

Fig. 2 SEM model showing significant relations among children's ethnic pride, perceived parenting behavior, anxiety sensitivity and child anxiety symptoms. *Note* Standardized path coefficients are in parentheses. * $p < .05$. ** $p < .01$. Students' age in years, students' biological sex, and school attended are included as covariates although not shown. Students' age in years, students' biological sex, and school attended are correlated with all exogenous variables although *curved arrows* are not shown. Error variances for perceived parental acceptance and perceived parental control are correlated although *curved arrows* are not shown

mediators are related to the dependent variable. The joint significance test has improved statistical power than other tests of mediation while retaining adequate control over Type I error rates (MacKinnon et al. 2002). Because little empirical work has been done to identify factors that impact anxiety in African American children, we did not want to limit ourselves when modeling potential relations among variables. Thus, we modeled both indirect and direct effects to test for mediation (see Jaccard and Jacoby 2009).

To reduce clutter in the figure (see Fig. 2), not all details of analyses are apparent. These include: (1) students' biological sex (0 = male,1 = female), age in years, and school attended (0 = school one,1 = school two) were included as covariates for all endogenous variables; (2) direct causal paths were included from children's ethnic pride, perceived parental acceptance and perceived parental control to each outcome (i.e., children's anxiety sensitivity and perceived parental control and acceptance were modeled as only partial mediators, not complete mediators of these effects); and (3) the path model included correlated errors where it was reasonable to assume that factors other than the common cause are influencing the correlation between variables. For example, factors other than anxiety sensitivity and perceived parenting behavior (e.g., child temperament and perceptions of control) can contribute to the correlation between these variables and the outcome variables.

The overall fit of the model was acceptable as demonstrated by the statistically non-significant chi square test of model fit (X^2 (4) = 5.61, $p = 0.23$). The Root Mean Square Error of Approximation (RMSEA) was .04. The p value for the test of close fit was 0.52. The Tucker-Lewis index (TLI) was .98. Taken together, these global fit indices (i.e., X^2, RMSEA, p value for close fit, and TLI) all pointed towards good model fit. More focused tests of fit revealed no theoretically meaningful or sizeable modification indices, nor were any of the absolute standardized residuals larger than 1.96.

Children's ethnic pride was associated with perceived parental acceptance such that as children's ethnic pride increased, perceived parental acceptance increased ($B = .18$, 95% CI = .02, .32, $p < .05$). Further, as children's ethnic pride increased, perceived parental acceptance

increased which, in turn, was related to a decrease in social anxiety symptoms ($B = -.61$, 95% CI $= -.94, -.28$, $p < .001$) and an increase in harm avoidance symptoms ($B = .56$, 95% CI $= .28, .83$, $p < .001$). Children's ethnic pride was not significantly related to perceived parental control.

Children's ethnic pride had a significant direct effect on harm avoidance symptoms, such that as children's ethnic pride increased, levels of harm avoidance symptoms increased ($B = .37$, 95% CI $= .02, .72$, $p < .05$). Children's ethnic pride did not have a significant direct effect on any other dimensions of anxiety symptoms.

Perceived parental control was significantly related to children's anxiety sensitivity ($B = .28$, 95% CI $= .04, .51$, $p < .05$) indicating that as children's report of perceived parental control increased their reports of anxiety sensitivity symptoms increased. Perceived parental acceptance was not significantly related to children's anxiety sensitivity in this sample. Both perceived parental acceptance and control accounted for approximately 16% of the variance in anxiety sensitivity.

Perceived parental control also had a direct effect on childhood anxiety such that as, perceived parental control increased, symptoms of separation anxiety increased ($B = .39$, 95% CI $= .11, .67$, $p < .01$). Thus, children's anxiety sensitivity partially mediated the relation between perceived parental control and separation anxiety symptoms (i.e., perceived parental control was both directly and indirectly related to separation anxiety symptoms). Children's anxiety sensitivity accounted for 24% of the variance in the prediction of separation anxiety symptoms. Conversely, perceived parental control was indirectly related to physical symptoms ($B = 1.09$, 95% CI $= .87, 1.28$, $p < .001$), social anxiety symptoms ($B = .93$, 95% CI $= .75, 1.11$, $p < .001$), and harm avoidance symptoms ($B = .24$, 95% CI $= .09, .39$, $p < .01$). All of the endogenous variables in the model accounted for a good portion of the variance in children's reports of physical (33%), social anxiety (36%), separation anxiety (37%), and harm avoidance symptoms (15%).

Discussion

Our study investigated factors related to the domains of anxiety symptoms in a sample of African American school children. Specifically, we evaluated the relations between ethnic pride, anxiety sensitivity, perceived parental control and acceptance, and specific dimensions of child anxiety symptoms in our sample. Although we did not find evidence for full support of our theoretical model, our findings underscore the nuances in the manifestation of anxiety symptoms among African American children.

Overall, our findings suggest that children's ethnic pride, parental behaviors and anxiety sensitivity are all factors that may impact anxiety symptoms in African American children. Specifically, we found that children who reported high ethnic pride perceived their parent's child rearing behavior as high in parental acceptance. Higher perceived parental acceptance, in turn, predicted children reporting lower levels of social anxiety symptoms and higher levels of harm avoidance. In addition, children with perceptions of high parental control reported high anxiety sensitivity. Anxiety sensitivity partially mediated the relation between perceived parental control and separation anxiety symptoms. However, parental control was indirectly related to physical symptoms, social anxiety symptoms, and harm avoidance symptoms through its direct link to anxiety sensitivity.

The results of our study add to what is known about how parental behavior contributes to the dimensions of anxiety symptoms in children, particularly in African American children. Children who reported high ethnic pride perceived their parents as high in parental acceptance. Parental acceptance was, in turn, significantly, yet differentially linked with social anxiety and harm avoidance symptoms. Based on previous research documenting negative relations between parental acceptance and anxiety in children (e.g., Craske 1999), we expected and found that as parental acceptance increased children's social anxiety symptoms decreased. Contrary to our expectations, however, was the finding that as parental acceptance increased children's harm avoidance symptoms (i.e., behavioral response to threatening situations, March, 1997) also increased. Research with African Americans has shown that children's high ethnic pride is associated with high parental acceptance (Wills et al. 2007), and parents who exhibit warm and accepting parenting practices tend to integrate messages regarding ethnic pride and racial socialization into their child rearing practices, including messages on potential discrimination (Caughy et al. 2002; McHale et al. 2006). Using the CRPBI, McHale et al. (2006) found perceived parental acceptance to be positively associated with preparation for bias, an increased awareness for an African American child to develop coping strategies for prejudices and discrimination within their larger socioethnic milieu; this preparation for bias may increase children's symptoms related to harm avoidance. To advance understanding of the relation between parental acceptance and harm avoidance symptoms in African American children, additional work is needed and should likely include research on parent's racial socialization practices.

Perceived parental control, unlike parental acceptance, was found to be significantly positively associated with anxiety sensitivity in children. This finding is inconsistent with the work of Scher and Stein (2003), who found that

children who reported their parents as hostile and rejecting (converse of accepting) had higher anxiety sensitivity. It is likely that the discrepant findings lie in the methodology. Scher and Stein used a sample of college students who reported on their current levels of anxiety and retrospectively reported their perceptions of their parents' behavior. The age of the sample (college students vs. children); the temporal lag in reporting parenting behavior (retrospective vs. current); and the inclusion of certain aspects of parenting behavior (acceptance/hostile and control/granting autonomy) all may help to explain the inconsistencies in findings. More work is needed in this area to fully explicate the impact of parenting behavior on anxiety sensitivity.

Our study also extends research on anxiety sensitivity in African American children. Noteworthy was the mediating role of anxiety sensitivity in the relation between perceived parental control and anxiety symptoms. In our study, as parental control increased, youth-reported anxiety sensitivity increased, which, in turn, was associated with the manifestation of anxiety symptoms across all dimensions of anxiety. This was not the case with parental acceptance. Parents who are controlling increase their child's risk of experiencing feelings of fear of anxiety symptoms, which in turn lead to anxiety symptoms. Because African Americans have been shown to exhibit elevated somatization symptoms (Heurtin-Roberts et al. 1997) and heightened attentiveness to physiological symptoms is associated with anxiety sensitivity, an understanding of factors that put African American children at risk for anxiety sensitivity is increasingly important. Children with high anxiety sensitivity tend to associate their somatic symptoms (e.g., accelerated heart beat) as distressing, which, in turn, increase their overall anxiety (Ginsburg and Drake 2002); these processes are cyclical (Reiss 1991) and likely perpetuate until there is clinical intervention. Albeit clinical intervention with the child may be warranted, if parental control is a risk factor for anxiety sensitivity, intervening at the parent-level may also be an appropriate applied strategy.

Limitations of the present study should be noted. First, we utilized children's reports as the sole method for capturing data. Although children are the most reliable reporting source for their anxiety symptoms and anxiety sensitivity (Silverman and Eisen 1992), data from parents on their parenting behavior, including racial and ethnic socialization practices should be used in future studies to examine convergence and divergence with children's reports. Additionally, this study utilized a cross-sectional sample. Future research investigating the relations we examined in our study would benefit from prospective research designs to better understand potential causal relations among the study's variables.

Another study limitation was the somewhat low reliability of the ethnic pride measure used in this study. Reese et al. (1998) suggested there may be other mediating mechanisms that impact the reliability of reports of ethnic pride among African American children (e.g., cognitive processes, socioeconomic factors) and have discussed the challenges in fully disentangling this construct in children. Nevertheless, this study is the first to call attention to the potential importance of ethnic pride in trying to understand anxiety problems in samples of African American children. Future research should continue to examine ethnic pride as a relevant and reliable construct among African American children.

Finally, other factors not measured in this study could have accounted for the variance in domains of anxiety (e.g., parents' anxiety symptoms). Although, our theoretical framework accounted for a good portion of the variance in the domains of anxiety, more research is needed to consider other factors that may place African American youth at risk for or protect from anxiety problems. We suggest that future researchers continue to extend our work so that knowledge on the domains of childhood anxiety symptoms in African American children is advanced.

References

Angold, A., Erkanli, A., Farmer, E. M. Z., Fairbank, J. A., Burns, B., Keeler, G., et al. (2002). Psychiatic disorder, impairment, service use in rural African American and White youth. *Archives of General Psychiatry, 59*, 893–901.

Arbuckle, J. L. (2006). *Amos (Version 7.0) [Computer program]*. Chicago: SPSS.

Barber, B. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development, 67*, 3296–3319.

Byrne, B. A. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.

Caughy, M. O., O'Campo, P. J., Randolph, S. M., & Nickerson, K. (2002). The influence of racial socialization practices on the cognitive and behavioral competence of African American preschoolers. *Child Development, 73*, 1611–1625.

Chorpita, B. F., & Barlow, D. H. (1998). The development of anxiety: The role of control in the early environment. *Psychological Bulletin, 124*, 3–21.

Chorpita, B. F., Brown, T. A., & Barlow, D. H. (1998). Perceived control as a mediator of family environment in etiological models of childhood anxiety. *Behavior Therapy, 29*, 457–476.

Compton, S. N., Nelson, A. H., & March, J. S. (2000). Social phobia and separation anxiety symptoms in community and clinical samples of children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 39*, 1040–1046.

Craske, M. G. (1999). *Anxiety disorders: Psychological approaches to theory and treatment*. New York, NY: Basic Books.

Finkelstein, J. S., Donenberg, G. R., & Martinovich, Z. (2001). Maternal control and adolescent depression: Ethnic differences among clinically referred girls. *Journal of Youth and Adolescence, 30*, 155–171.

Gaylord-Harden, N. K., Ragsdale, B. L., Mandara, J., Richards, M. H., & Petersen, A. C. (2007). Perceived support and internalizing symptoms in African American adolescents: Self-esteem and

ethnic identity as mediators. *Journal of Youth and Adolescence, 36*, 77–88.

Ginsburg, G. S., & Drake, K. L. (2002). Anxiety sensitivity and panic attack symptomology among low-income African American adolescents. *Journal of Anxiety Disorders, 16*, 83–96.

Gottman, J. M., Katz, L. F., & Hooven, C. (1997). *Meta-emotion: How families communicate emotionally*. Hillsdale, NJ: Erlbaum.

Greenfield, P. M., Keller, H., Fuligni, A., & Maynard, A. (2003). Cultural pathways through universal development. *Annual Review of Psychology, 54*, 461–490.

Heurtin-Roberts, S., Snowden, L., & Miller, L. (1997). Expressions of anxiety in African Americans: Ethnography and the epidemiological catchment area studies. *Culture, Medicine and Psychiatry, 21*, 337–363.

Jaccard, J., & Jacoby, J. (2009). *Theory construction and model-building skills: A practical guide for social scientists*. New York: Guilford Press.

King, G., Honaker, J., Joseph, A., & Scheve, K. (2001). Analyzing incomplete political science data: An alternative algorithm for multiple imputations. *American Political Science Review, 95*, 49–69.

Lambert, S. F., Cooley, M. R., Campbell, K. D. M., Benoit, M. Z., & Stansbury, R. (2004). Assessing anxiety sensitivity in inner-city African American children: Psychometric properties of the childhood anxiety sensitivity index. *Journal of Clinical Child and Adolescent Psychology, 33*, 248–259.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7*, 83–104.

March, J. S., Parker, J. D., Sullivan, K., Stallings, P., & Conners, C. K. (1997). The Mulitdimensional Anxiety Scale for Children (MASC): Factor structure, reliability, and validity. *Journal of American Academy of Child and Adolescent Psychiatry, 36*, 554–565.

Marsiglia, F. F., Kulis, S., & Hecht, M. L. (2001). Ethnic labels and ethnic identity as predictors of drug use among middle school students in the southwest. *Journal of Adolescent Research, 11*, 21–48.

Mason, C. A., Walker-Barnes, C. J., Shihfen, T., Simons, J., & Martinez-Arrue, R. (2004). Ethnic differences in the affective meaning of parental control behavior. *Journal of Primary Prevention, 25*, 59–79.

McCreary, M. L., Slavin, L. A., & Berry, E. J. (1996). Predicting problem behavior and self-esteem among African American adolescents. *Journal of Adolescent Research, 11*, 216–234.

McHale, S. M., Crouter, A. C., Kim, J., Burton, L. M., Davis, K. D., Dotterer, A. M., et al. (2006). Mothers' and fathers' racial socialization in African American families: Implications for youth. *Child Development, 77*, 1387–1402.

Neal, A. M., & Turner, S. M. (1991). Anxiety disorders research with African Americans: Current status. *Psychological Bulletin, 109*, 400–410.

Neal, A. M., & Ward-Brown, B. (1994). Fears and anxiety disorders in African American children. In S. Friedman (Ed.), *Anxiety disorders in African Americans* (pp. 65–75). New York: Springer.

Olatunji, B. O., & Wolitzky-Taylor, K. B. (2009). Anxiety sensitivity and the anxiety disorders: A meta-analytic review and synthesis. *Psychological Bulletin, 135*, 974–999.

Phinney, J. S. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with adolescents and young adults from diverse groups. *Journal of Adolescent Research, 7*, 156–176.

Rapee, R. M. (1997). Potential role of childrearing practices in the development of anxiety and depression. *Clinical Psychology Review, 17*, 47–67.

Reese, L. E., Vera, E. M., & Paikoff, R. L. (1998). Ethnic identity assessment among inner-city African American children: Evaluating the applicability of the Multigroup Ethnic Identity Measure. *Journal of Black Psychology, 24*, 289–304.

Reiss, S. (1991). Expectancy model of fear, anxiety, and panic. *Clinical Psychology Review, 11*, 141–153.

Scher, C. D., & Stein, M. B. (2003). Developmental antecedents of anxiety sensitivity. *Journal of Anxiety Disorders, 17*, 253–269.

Schludermann, E. H., & Schludermann, S. M. (1988). *Children's Report on Parent Behavior (CRPBI-108, CRPBI-30) for older children and adolescents* (Technical Report) Winnipeg, MB, Canada: University of Manitoba, Department of Psychology.

Silverman, W. K., & Eisen, A. R. (1992). Age differences in the reliability of parent and child reports of child anxious symptomatology using a structured interview. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 117–124.

Silverman, W. K., & Weems, C. F. (1998). Anxiety sensitivity in children. In S. Taylor (Ed.), *Anxiety sensitivity: Theory, research and the treatment of the fear of anxiety* (pp. 239–268). Mahwah, New Jersey: Lawrence Erlbaum.

Silverman, W. K., Fleisig, W., Rabian, B., & Peterson, R. A. (1991). Childhood anxiety sensitivity index. *Journal of Clinical Child Psychology, 20*, 162–168.

Udry, J. R. (1998). *The national longitudinal study of adolescent health (add health), waves I and II, 1994–1996*. Chapel Hill, NC: Carolina Population Center, University of North Carolina at Chapel Hill.

Valk, A., & Karu, K. (2001). Ethnic attitudes in relation to ethnic pride and ethnic differentiation. *Journal of Social Psychology, 141*, 583–601.

Volpe, R. J., Gadow, K. D., Blom-Hoffman, J., & Feinberg, A. B. (2009). Factor-analytic and individualized approaches to constructing brief measures of ADHD behavior. *Journal of Emotional and Behavioral Disorders, 17*, 118–128.

Watt, M. C., Stewart, S. H., & Cox, B. J. (1998). A retrospective study of the learning history origins of anxiety sensitivity. *Behaviour Research and Therapy, 36*, 505–525.

Wills, T. A., Murry, V. M., Brody, G. H., Gibbons, F. X., Gerrard, M., Walker, C., et al. (2007). Ethnic pride and self-control related to protective and risk factors: Test and the theoretical model for the strong African American Families Program. *Health Psychology, 26*, 50–59.

Wood, J. J., McLeod, B. D., Sigman, M., Hwang, W., & Chu, B. C. (2003). Parenting and childhood anxiety: Theory, empirical findings, and future directions. *Journal of Child Psychology and Psychiatry, 44*, 134–151.