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A culturally-sensitive model of the development of child anxiety.

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A CULTURALLY-SENSITIVE MODEL OF THE DEVELOPMENT OF
CHILD ANXIETY

By

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B.A., University of Louisville, 2009
M.A., University of Louisville, 2013

A Dissertation
Submitted to the Faculty of the
College of Arts and Sciences of the University of Louisville
in Partial Fulfillment of the Requirements
for the Degree of

Doctor of Philosophy in Clinical Psychology

Department of Psychological & Brain Sciences
University of Louisville
Louisville, Kentucky

December 2015

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A Dissertation Approved on

September 15, 2015

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DEDICATION

This dissertation is dedicated to my late grandmother, Geneva Strader, whose fortitude and relentless faith in me have been felt throughout this entire journey. The past five years were made of chances she inspired me to take, failures and successes she taught me to learn from, and challenges she willed me to face.

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ABSTRACT

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Jenny M. Petrie

September 15, 2015

Explanatory models significantly enhance the understanding of etiological influences that place children at risk for anxiety, yet little is known about processes that promote resilient outcomes in children. While contextual factors influence risk and protective processes, cultural constructs have not been incorporated into existing models of anxiety and the role of culture remains obscure. The current study proposes a culturally sensitive model for understanding the etiological and mitigating processes underlying anxious symptoms in ethnic minority youth, and preliminarily tests basic components of the proposed model within a non-clinical community sample of 49 African American (AA) parent-child dyads who completed self-report questionnaires.

First, the hypothesis that parental anxious symptoms would be significantly and positively associated with child anxious symptoms was tested. Second, the hypothesis that traditional protective factors would negatively predict child anxiety was examined. Third, the hypothesis that sociocultural variables would share a significant negative relationship with child anxiety was tested. Finally, the hypothesis that the protective effect of culturally-specific constructs would be significant over and above traditional factors alone was investigated. Results yielded partial support. Parent anxiety did not

predict child anxiety; however, perceived control and social support were significant negative predictors of anxiety. Among sociocultural variables, ethnic identity (EI) emerged as the only significant predictor of anxiety. Contrary to hypothesis three, EI positively predicted child anxiety, and racial socialization, spiritual coping, and collective coping were not significantly associated with anxiety. Finally, traditional protective factors demonstrated a significant negative relationship with child anxiety after controlling for parent anxiety, and the effect of EI remained significant over and above the protective effects of traditional protective factors.

Exploratory analyses examined both child- and parent-level factors as moderators of the EI-child anxiety link. Results did not change when familial context was taken into account, as parent EI did not significantly moderate this association. Traditional protective factors did not moderate the EI-child anxiety link; however, children's cultural context (i.e., collectivism) demonstrated a significant buffering effect. Findings are discussed in comparison to the existing literature and implications for conceptual models of anxiety are discussed. Limitations are noted and directions for future investigation are recommended.

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INTRODUCTION

Anxiety disorders are among the most common psychological diagnoses in children (Anderson, Williams, McGee, & Silva, 1987) and have been shown to increase risk for both internalizing and externalizing comorbidities (Barbarin, 1993; Cole, Peeke, Martin, Truglio, & Serocynski, 1998; Last, Perrin, Hersen, & Kazdin, 1996). Anxiety-disordered children show significant impairment in several functional domains (e.g., behavioral and academic; Barbarin, 1993; Strauss, Frame, Forehand, 1987), with a multitude of long-term implications. Not only have some childhood anxiety disorders been shown to evolve over time and exhibit a chronic course (Last et al., 1996; Ollendick & King, 1994), studies of anxiety-disordered adults show evidence of childhood and adolescent onset (Burke, Burke, Regier, & Rae, 1990; Ost, 1987). The implications of extant research have underscored the need for further elucidation of the complexities endemic to childhood anxiety.

Existing models within the childhood anxiety literature have primarily focused on the etiological influences that place children at risk for anxiety. Thus, explanations of predisposing processes have become increasingly complex (e.g., Kertz & Woodruff-Borden, 2011; Rapee, 2001; Vasey & Dadds, 2001), while the influences that protect children against pathological anxiety are only broadly referenced. Although it is generally recognized that the absence of risk factors delineated in existing models may potentially mitigate negative outcomes, the specific factors and processes that promote resilient outcomes remain underspecified. Further, there is evidence that both risk factors and protective processes vary based on contextual factors such

as cultural norms (Cicchetti & Cohen, 2002); however, the sociocultural experiences of ethnic minority youth have not been captured within existing models of childhood anxiety, and the interaction between cultural context and etiological processes are poorly understood. Based on research indicating that African Americans and non-Hispanic Whites may differ in the manifestation and prevalence of anxiety (Chapman et al., 2008; Chapman et al., 2009; Last & Perrin, 1993; Nalven, 1970; Neal & Turner, 1991; Neal & Brown, 1994; Neal, Lilly, & Zakis, 1993; Merikangas et al., 2010), a conceptual framework elucidating the role of cultural influences in the development of child anxiety is warranted. The proposed model explains the role of culturally-specific variables within the broader context of developmental psychopathology in order to 1) elucidate the etiological processes underlying the development of anxiety in African American youth, 2) account for the factors and processes that mitigate childhood anxiety and promote resilient outcomes, and 3) examine the unique contributions of culturally-specific constructs to anxiety in ethnic minority youth. In order to establish the rationale for the proposed model, research pertaining to both the etiology of anxiety in African American youth will be explored.

The Development of Child Anxiety

In contrast to direct-effect approaches to understanding the development of childhood anxiety, more complex, process-oriented models have begun to emerge within the field of developmental psychopathology. The developmental psychopathology paradigm is based on the assumption that a single outcome may result from a number of distinct pathways, which are likely to vary over time and based on other predisposing and ameliorative influences (Cicchetti & Cohen, 1995). As such, the developmental psychopathology perspective provides a particularly useful conceptual framework for understanding the complex processes

that influence the development of childhood anxiety (Cicchetti & Cohen, 1995; Vasey & Dadds, 2001). For example, Vasey and Dadds (2001) proposed a model that broadly illustrates the development and maintenance of pathological anxiety in terms of interactions among higher-order categories of influence (i.e., protective, predisposing, precipitating, ameliorating, and maintaining). Alternative models have narrowed their focus to specific factors at genetic, temperamental, and environmental levels of influence. One such model was proposed by Rapee (2001) in order to explain generalized anxiety disorder (GAD) in children, although this conceptual framework has been recognized as universally applicable to all anxiety disorders. Indeed, the inclusion of factors that are fundamental to the development of all anxiety disorders and the delineation of multiple pathways sustain the utility of this model as a general conceptual framework for understanding childhood anxiety. According to Rapee (2001), interactions among genetic, temperamental, and environmental factors contribute to the development of anxiety, as parental anxiety, genetic variables, parenting behaviors, and socialization experiences may place a child at risk for the development of pathological anxiety. Interactions between child vulnerabilities (e.g., arousal and emotionality) and environmental factors are bidirectional in nature, as parent behavior can increase the likelihood that a child will develop an anxiety disorder, although a child's temperament may elicit such behaviors. Moreover, the extent to which such risks are associated with the development of an anxiety disorder is moderated by nonspecific stressors and threatening stimuli encountered by children as they develop. The components shared by existing models of child anxiety are represented in Figure 1.

Risk factors. In order to elucidate the complex processes underlying the development of childhood anxiety disorders, the factors that influence a child's emotional outcome must be

functionally distinguished. Vasey and Dadds (2001) described risk factors as variables that predispose to, precipitate, maintain, or intensify anxiety at the genetic, neurobiological, temperamental, affective (i.e., emotional regulation), cognitive (i.e., cognitive biases and distortions), and environmental (i.e., early control experiences, parental responses, experience with common conditioned and/or feared stimuli) levels.

Genetic contributions. Support for the genetic underpinnings of childhood anxiety has come from family and twin studies in addition to molecular genetics research. As shown in Table 1, family studies have demonstrated a robust relationship between parental psychopathology and child anxiety (Beidel & Turner, 1997; Biederman, Rosenbaum, Bolduc, Faraone, Hirschfeld, et al., 1991; Burnstein, Ginsburg, Petras, Ialongo, 2010; Burnstein, Ginsburg, & Tein, 2010; Merikangas, Avenevoli, Dierker, & Grillon, 1999). Hettema, Neale, and Kendler (2001) conducted a meta-analysis of genetic epidemiological studies of anxiety disorders in adults to assess the magnitude of familial aggregation. Pooled odds-ratios in first-degree relatives of probands with anxiety disorders suggested increased risk associated with panic disorder (PD; OR=5.0), GAD (OR=6.1), phobias (specific phobia, social phobia, and agoraphobia; OR=4.1), and obsessive-compulsive disorder (OCD; OR=4.0; Hettema et al., 2001). These relatively consistent and significant associations between anxiety disorders in the probands and their first-degree relatives support the familiarity of anxiety disorders. Several other studies have also examined the parent-child co-occurrence of anxiety disorders and found that the offspring of anxious parents are three to seven times more likely to develop an anxiety disorder when compared the offspring of non-anxious probands (see Table 1).

More recently, Micco and colleagues (2009) conducted a meta-analysis of studies utilizing clinical interviews to collect diagnostic data. A pooled odds-ratio of 3.91 indicated that

the children of anxious parents were almost four times more likely to develop an anxiety disorder than the offspring of psychiatric control parents (Micco et al., 2009). Further comparison of the children of anxiety-disordered parents to the offspring of parents with other forms of psychopathology (e.g., major depressive disorder) yielded a pooled odds-ratio of 1.84. Thus, it appears that having a parent who is diagnosed with an anxiety disorder places a child at increased risk for pathological anxiety over and above other forms of psychopathology (Micco et al., 2009). Subsequently, a study conducted by Chapman, Vines, Petrie, and Durrett (2012) found similar rates of parent-child co-occurring anxiety disorder diagnoses in an African American sample, with the children of anxious parents being approximately four times more likely to develop clinical anxiety than children of parents with no diagnosis.

Although family studies have supported the familial aggregation of anxiety disorders, such studies are limited by their inability to elucidate the relative contributions of genetic and environmental influences or explain the directionality of transmission. As such, twin studies have been utilized to examine unique and shared influences in order to explicate the role of genetic and environmental factors in the development of anxiety. A meta-analysis of adult twin studies conducted by Hettema and colleagues (2001) assessed the relative degree to which genetic and environmental factors influence the development of pathological anxiety. According to Hettema and colleagues (2001), twin studies of PD, GAD, and phobias (specific phobias, social phobias, and agoraphobia) supported the conclusion that genetic influences represent the major source of familial risk for anxiety disorders, as the best fitting structural equation model consisted of additive genetic and non-shared environmental influences only. Similarly, a twin study of 378 Italian 8- to 17-year-olds examined the role of genetic and environmental influences in the co-occurrence of GAD, PD, social phobia, and separation

anxiety disorder (SAD) and found that genetic and non-shared environmental influences exclusively accounted for the covariation in symptoms across disorders (Ogliari, Citterio, Zanoni, Fagnani, Patriarca, Cirrincione, et al., 2006). More specifically, results showed that genetic factors shared by the twins explained 58% to 99% of the co-variance in the anxiety disorders under examination, leading the authors to conclude that the role of genetic factors in the etiology of co-occurring anxiety disorders is quite significant, whereas non-shared environmental influences appear to be less salient. Although the role of shared environmental factors has not been supported in studies of adults (Hettema et al., 2001), there is support for the role of both unique and shared environmental influences in the etiology of anxiety during childhood (Gregory & Eley, 2007; Vasey and Dadds, 2001).

While a significant share of familial risk appears to be genetic, a meta-analysis conducted by Hettema and colleagues (2001) yielded estimated rates of heritability across the anxiety disorders that were modest, with the proportion of variance accounted for by genetic factors ranging from 30%-40%. As such, the authors concluded that environmental factors explain a greater proportion of the variance in anxiety outcomes. Although heritability estimates have varied across studies, with the proportion of variance in liability has ranged from 20%-65% for genetic factors (Sakolsky, McCracken, & Nurmi, 2012), the contributions of genetic influences have consistently been significant. It should be noted that a considerable degree of heterogeneity has been observed among studies examining the role of genetic influences in the development of childhood anxiety, with sex and age having been recognized as sources of such heterogeneity. For example, the heritability of anxiety disorders may vary throughout development (Gregory & Eley, 2007), with mixed support for higher rates of heritability as age increases (Feigon, Waldman, Levy, & Hay, 2001). Findings pertaining to sex

differences have been more consistent in their results and have indicated that heritability estimates of anxiety disorders are higher for girls than boys (Feigon et al., 2001). Phenotypic inconsistencies are another source of heterogeneity in heritability estimates of anxiety, as the role of genetic influences has been shown to vary depending on the following outcomes: state versus trait anxiety; anxious symptoms versus clinically significant pathology; the specific anxiety disorders, such as GAD versus fear-based disorders; and method of assessment utilized, ranging from diagnostic interview to self-report to parent-report (Gregory & Eley, 2007).

Molecular genetics researchers have also utilized association studies in order to specify genes and elucidate the mechanisms underlying genetic influences of anxiety, and serotonin, dopamine, catechol-O-methyltransferase (COMT), as well as corticotrophin-releasing hormone (CRH) genes have received attention as candidate genes (Gregory & Eley, 2007). Variants of serotonin markers have received the most attention within the child anxiety literature, and research suggests that variant forms of the serotonin transporter (5-HTT) allele may be linked with anxiety (Olsson, Byrnes, Anney, Collins, Hemphill, Williamson, et al., 2007) and related constructs (shyness; Arabelle, Benjamin, Golin, Kremer, Belmaker, & Ebstein, 2003; Battaglia, Ogliari, Zanoni, Critterio, Pozzoli, Giorda, et al., 2005). However, variable tandem repeats of serotonin, dopamine, and CRH genes as well as single nucleotide polymorphisms in the COMT gene have generally demonstrated mixed effects (Gregory & Eley, 2007).

Temperamental contributions. Despite the robust association between genetic risks and child anxiety, research indicates that this relationship is indirect (Donovan & Spence, 2000; Vasey & Dadds, 2001). It is likely that interactions among genetic and environmental variables influence the development of child anxiety, although the nature of these interactions remains ambiguous (Donovan & Spence, 2000). Child temperament is hypothesized to be a major

manifestation of genetic risks and represents a mechanism of particular interest in the field of child anxiety. Despite discrepancies among conceptual understandings of temperament, temperament is generally understood as the “relatively consistent, basic dispositions inherent in the person that underlie and modulate the expression of activity, reactivity, emotionality and sociability” (Goldsmith & Alansky, 1987, p. 524). It should be noted that a comprehensive presentation of the conceptual and empirical bases of child temperament is beyond the scope of the current review, and so the focus of this discussion has been narrowed to research pertaining to the specific temperamental vulnerabilities observed in children at risk for anxiety.

BI and negative emotionality have demonstrated the most robust associations with anxiety. BI is generally defined as a consistent tendency to display fear, withdrawal, or wariness in novel or unfamiliar situations (Kagan, Reznick, Clarke, Snidman, & Garcia-Coll, 1984). Studies on child temperament and anxiety have primarily utilized observational designs to assess BI, although parent-report and retrospective self-report data have also been examined (Degnan, Almas, & Fox, 2010). Retrospective data and family studies have demonstrated an association between a behaviorally inhibited temperamental style during childhood and later anxiety (Degnan et al., 2010). For example, a study conducted by Hayward, Killen, Kraemer, and Taylor (1998) followed adolescents throughout high school and found that those diagnosed with social phobia endorsed more social avoidance during elementary school. Additional research on the offspring of parents with PD or agoraphobia has indicated higher levels of BI compared to those of non-anxious parents (Rosenbaum, Biederman, Hirshfeld-Becker, Kagan, Snidman, Friedman, et al., 2000). Relatedly, child BI has demonstrated a relationship with both elevations in rates of parent-reported anxiety (Rosenbaum, Biederman, Hirshfeld-Becker,

Bolduc, Faraone, Kagan, et al., 1991) and a parental history of anxiety disorders (Biederman et al., 1993)

Longitudinal studies have also provided support for the relationship between early BI and later development of anxiety (Degnan et al., 2010). For example, Kagan and Snidman (1999) assessed BI in children at 14 and 21 months of age, with a subsequent evaluation occurring at ages four and seven. Results from this study suggested that earlier BI was related to later symptoms of anxiety. Another study conducted by Biederman and colleagues (1993) revealed that early BI increased risk for anxiety disorders between the ages of four and eleven years. Caspi, Henry, McGee, and Moffitt (1995) found that decreased approach behavior and withdrawal from novelty between three and five years of age increased the likelihood of later childhood anxiety in boys and girls. Further, in a sample of children between the ages of two and seven year, BI was associated with increased risk for phobias at ages seven and eight (Hirshfeld, Rosenbaum, Biederman, Bolduc, Faraone, Snidman, et al., 1992). Moreover, harm avoidance has demonstrated a relationship with diagnoses of GAD during both childhood and adulthood (Rettew, Doyle, Kwan, Stanger, & Hudziak, 2006), and Hirschfeld-Becker, Biederman, Henin, Faraone, Davis, Harrington et al. (2007) found the lifetime prevalence of social anxiety in behaviorally inhibited children to be 28% compared to that of only 14% in non-inhibited children. The aforementioned study conducted by Hirschfeld and colleagues (2007) failed to reveal a significant association between BI and any other anxiety disorder. Moreover, childhood and adolescent follow-up evaluations have shown that early BI placed children at increased risk for social anxiety (Biederman, Hirshfeld-Becker, Rosenbaum, Herot, Friedman, Snidman, et al., 2001; Chronis-Tuscano, Degnan, Pine, Perez-Edgar, Henderson, Diaz, et al., 2009; Schwartz, Snidman, & Kagan, 1999); considering the salient role of

temperament in the formation of social behavior and the etiology of psychopathology, it is not surprising that social anxiety exhibits a specific association with BI.

Concurrent data collected from self-report questionnaires has also supported the relationship between BI and anxiety. For example, a study conducted by Muris, Merckelbach, Wessel, and van de Ven (1999) found elevated levels of psychopathology in 12- to 14-year-old children who rated themselves as high in BI, with anxiety accounting for the strongest association. Similarly, a study conducted by Muris, Merckelbach, Schmidt, Gadet, and Bogie (2001) revealed a significant relationship between BI and both anxiety and depression in adolescents ranging in age from 12 to 18 years, although anxiety mediated the relationship between BI and depression. BI generally appears to be a significant predictor of anxiety despite heterogeneity in experimental design (e.g., cross-sectional, longitudinal, family) and methods of assessment (e.g., parent report, child report, observation) across studies (Degnan et al., 2010). Whereas some research has suggested that BI shares a specific association with social anxiety, other studies have indicated that BI may be a more general risk factor common to all anxiety disorders, with this association generalizing to additional internalizing disorders, such as depression, in some studies. Although replication of such findings based on more comprehensive assessment of BI is necessary before firm conclusions can be drawn, a relatively consistent and specific relationship between BI and child anxiety has been supported by the extant literature (Degnan et al., 2010).

In contrast to categorical conceptualizations of temperament (Kagan, Reznick, Clarke, Snidman, & Garcia-Coll, 1984), Rothbart and colleagues explained temperament in terms of emotional reactivity and self-regulation (Rothbart & Derryberry, 1997; Rothbart, Posner, & Hershey, 1995), with surgency, negative affectivity, and effortful control emerging as factors

within this model (Garstein & Rothbart, 2003). As reviewed by Tincas, Benga, and Fox (2006), studies of anxiety and temperament based on Rothbart's model are sparse and results have not been clear. Negative emotionality, which is generally characterized by irritability, negative mood, difficulty being soothed, and intense negative emotional reactions throughout development (Sanson, Hemphill, & Smart, 2004), has been implicated in the development of internalizing symptoms. A study conducted by Rydell, Berlin, and Bohlin (2003) indicated that, although negative affectivity generally predicted psychopathology, lower-order emotional traits differentiated between externalizing and internalizing disorders. More specifically, anger emotionality seemed to be a significant predictor for externalizing disorders, while fear emotionality was significantly associated with anxiety in particular. Despite such results, the literature on emotionality and anxiety is mixed, and the multidimensional nature of Rothbart's conceptualization of temperament makes explicit predictions regarding anxiety outcomes difficult (Tincas et al., 2006).

Despite general support for the temperament-anxiety link, a number of complexities have limited the extent to which researchers have been able to elucidate the nature of this relationship, and some research has suggested that the associations between BI and anxiety are quite modest (Degnan & Fox, 2007; Nigg, 2006). Indeed, a considerable proportion (28%) of behaviorally inhibited samples examined in studies demonstrating a significant relationship between BI and anxiety did not meet criteria for an anxiety disorder of any kind (Biederman et al., 2001). Moreover, an even greater share of behavioral inhibited samples failed to meet criteria for a specific diagnosis of social phobia, with percentages of non-socially anxious children ranging from 39% (Schwartz et al., 1999) to 83% (Biederman et al., 2001). Additionally, research suggests that the relationship between early temperament and anxiety is

weaker than that of later temperament and anxiety (Biederman et al., 1993; Caspi et al., 1995), which has further underscored the importance of considering environmental factors that may interact with a child's temperament in the etiology of pathological anxiety (Lonigan & Phillips, 2001). Along these lines, Degnan and colleagues (2010) proposed that several predisposing and protective influences are likely to account for observed discontinuities in the pathway between temperament and emotional functioning. Recognition of such indirect pathways has prompted researchers to examine environmental variables that moderate and/or mediate the temperament-anxiety link.

Very few studies (see Table 2) have examined temperament, environmental factors, and child anxiety using a single comprehensive model, thus limiting the extent to which interactions among such factors can be elucidated (Degnan et al., 2010). As shown in Table 2, the majority of such studies have demonstrated a moderation effect of maternal factors on the relationship between child temperament and anxiety. As the preponderance of existing research has utilized models that do not attempt to explain the predisposing and maintaining processes involved in the development of childhood anxiety over time, the mechanisms through which temperament contributes to anxiety as well as the factors that moderate this relationship remain largely unexplored. As such, results yielded from studies linking temperament to environmental factors have been interpreted alongside those linking environmental influences to child anxiety in order to gain an understanding of indirect pathways through which temperament and anxiety are related. Generally, findings from such studies have suggested that maternal behavior, parenting styles, parent-child attachment, and parental psychopathology moderate the relationship between temperament and child anxiety (Degnan et al., 2010).

As shown in Table 2, a longitudinal, prospective study conducted by Markovitz, Wagmiller, Mian, Briggs-Gowan, and Carter (2011) examined child temperament, environmental factors, and child anxiety outcomes within a single model and found that child temperament, maternal affective symptoms, and family expressiveness were associated with child anxiety in a sample of 1,202 mother-child dyads. More specifically, results indicated that inhibited girls, but not boys, were rated as more anxious when maternal affective symptoms, as indicated by a composite score of self-reported depressive and anxiety symptoms, were elevated and that family expressiveness appeared to moderate the association between inhibited temperament and symptoms of child anxiety (Markovitz et al., 2011). Also summarized in Table 2, another recent study conducted by Mian, Wainwright, Briggs-Gowan, and Carter (2011) found that early temperament was a significant predictor of child anxiety outcomes and that BI and negative emotionality mediated the relationship between maternal, family, and community influences and child anxiety. Overall, the temperament-anxiety link appears to be significant at extreme levels of BI, although it is clear that child anxiety is not exclusively determined by temperament.

Environmental contributions. Given that a comprehensive discussion of the environmental factors and processes that contribute to childhood anxiety is beyond the scope of this review, the focus of this section has been narrowed to the influences in a child's environment that have received the most attention in the literature; namely, quality of parent-child attachment, parenting behaviors, and negative life events.

Quality of child-parent attachment. Based on the premise that caregivers function as a base from which infants explore the world and return to upon becoming distressed, consistent reassurance during times of distress is generally thought to result in a secure parent-child

attachment (Bowlby, 1973). Conversely, insecure attachment, which is characterized by inconsistent caregiver responses to distress, has been implicated in the etiology of concurrent symptoms of anxiety in children and later development of anxiety disorders (Manassis, Bradley, Goldberg, Hood, & Swinson, 1994; Stevenson-Hinde & Shouldice, 1990; Warren, Huston, Egeland, & Sroufe, 1997). A number of studies have supported the insecure attachment-anxiety link, with the preponderance of research suggesting that ambivalent attachment styles demonstrate the strongest association with childhood anxiety (Colonnesi, Draihier, Stams, Van der Bruggen, Bogelsa, and Noom, 2011). However, some work has indicated that other attachment styles (e.g., avoidant) may be over-represented in anxious children (Manassis et al., 2004) and that the attachment-anxiety link may be most salient to forms of anxiety associated with social relationships (e.g., SAD, social anxiety, and GAD; Cassidy, 1995).

Colonnesi and colleagues (2011) reviewed research from 1984 to 2010 that examined the quality of caregiver attachment and child anxiety. A meta-analysis of 46 studies found a moderate effect size for the attachment-anxiety association, with follow-up analyses indicating that ambivalent attachment styles were most strongly related to childhood anxiety. However, results also revealed that the attachment-anxiety link was moderated by child age, the method of assessment, informant, experimental design, and geographical location, as ambivalent attachment was most related to anxious outcomes during adolescence, when questionnaires were utilized to assess attachment and anxiety and child served as the informant, and in cross-sectional studies as well as those conducted in Europe (Colonnesi et al., 2010). Interestingly, the relationship between attachment and anxiety did not differ based on the anxiety outcome under consideration, which ranged from anxious symptoms to clinical diagnosis to specific

types of anxiety (Colonnesi et al., 2011). Another review conducted by Brumariu and Kerns (2010) further supported the etiological role of attachment in childhood anxiety inasmuch as insecure (i.e., ambivalent) attachment styles were found to demonstrate the strongest association with adolescent anxiety (Brumariu & Kerns, 2010). A longitudinal study conducted by Warren, Huston, Egeland, and Sroufe (1997) investigated the relationship between early attachment and later anxiety using a sample of 172 children who were assessed during infancy and at 17 years of age. Multiple linear regression analyses indicated that anxious/resistant attachment significantly predicted later anxiety disorders after controlling for both maternal anxiety and child temperament (Warren et al., 1997). Another study found parenting style and quality of attachment to be independent contributors to child-reported worry, with the children who reported ambivalent attachment endorsing more worry than those who reported secure attachment to caregivers (Brown & Whiteside, 2008). Conversely, a study of child temperament, maternal psychopathology and behaviors, quality of mother-child attachment, and later anxiety disorder diagnoses in a sample of 202 children showed that BI, maternal anxiety, and maternal overinvolvement significantly predicted pathological anxiety in children at age nine, although maternal negativity and attachment security failed to significantly differentiate between anxious and non-anxious nine-year-olds over and above baseline child anxiety (Hudson & Dodd, 2012).

Just as the complexity of childhood anxiety has been underscored in the discussion of genetic and temperamental factors, it is likely that the effects of child-parent attachment vary based on interactions with other predisposing and/or protective influences of childhood anxiety. Indeed, research suggests that temperament may moderate the attachment-anxiety link, as the association between insecure attachment and child anxiety appears to be particularly strong in

children high in BI (Shamir-Essakow, Ungerer, & Rapee, 2005). Other work has implicated attachment style as both a moderating and mediating variable in the etiology of childhood anxiety. For example, van Brakel, Muris, Bogels, and Thomassen (2006) found that retrospective reports of temperament and attachment security influenced the extent to which maternal control was related to adolescent anxiety. Another study conducted by Booth-LaForce and Oxford (2008) examined the relationship between insensitive parenting, quality of attachment during toddlerhood, and social withdrawal in middle-childhood. Results indicated that insensitive parenting mediated the effect of early insecure attachment on later social withdrawal. Although child-parent attachment styles likely share bidirectional associations with other etiological influences (e.g., child temperament), extant research has generally supported attachment style as a distinct factor related to the development of anxiety during childhood (Manassis et al., 2004). Indeed, a preponderance of existing studies support a significant positive association between insecure attachment style and child anxiety, with ambivalent attachment styles demonstrating a particularly robust effect on the development of anxiety (Colonnesi et al., 2011). However, a number of methodological, demographic, and conceptual factors appear to moderate the attachment-anxiety link, and the mechanisms that explain such interactions remain ambiguous.

Parental behaviors. Studies on the effects of parenting on child anxiety have utilized multiple informants to assess a number of factors that may place a child at risk for anxiety. The preponderance of research on parenting and childhood anxiety has focused on parental acceptance and control in addition to modeling of anxious behaviors. While accepting parents are considered to be responsive and involved in the lives of their children, overcontrolling parents exhibit excessive involvement in a child's routine, daily activities, and/or emotional

experiences and encourage parental dependence (Barber, 1996). Closely related to parental overcontrol is parental overprotection, which is described as excessive parental involvement and control over a child's environment in order to reduce aversive experiences (Parker, 1983). Wood, McLeod, Sigman, Hwang, and Chu (2003) consolidated extant research on parenting and childhood anxiety by synthesizing studies of parental acceptance and control that utilized child- and parent-reports as well as observational data. Regarding parental acceptance, the majority of 11 studies based on child-reported parental acceptance failed to yield significant associations between parental acceptance and child anxiety. A similar pattern of results emerged across studies utilizing parent-report data, as the majority of such studies failed to detect a significant relationship, and those that yielded significant findings demonstrated only a small effect size. Wood and colleagues found a significant relationship between parental acceptance and child anxiety in studies that used an observational design. While such results provide modest support for parental acceptance as an environmental factor that influences child anxiety outcomes, Wood et al. (2003) underscored that other variables, such as parental anxiety, may account for a considerable portion of the variance. It is also possible that broadly defined parenting styles fail to adequately capture specific parenting behaviors that are uniquely relevant to the development of child anxiety. For example, the extent to which parental control and acceptance relate to child anxiety may vary considerably depending on the situational context (Wood et al., 2003). Regarding parental control, observational studies again yielded the most consistent results, with parental control predicting increased child anxiety in six studies and effect sizes ranging from medium to large (Wood et al., 2003). However, the proportion of variance explained by parental control varied across studies and ranged from 9 to 23 percent in the studies reviewed by Wood and colleagues (2003). As was the case with parental

acceptance, studies utilizing self-report data, as opposed to observational design, yielded insufficient evidence to support a significant link between parental control and child anxiety.

A subsequent review conducted by Bogels and Brechman-Toussaint (2006) demonstrated similar patterns of evidence for parent behaviors in the etiology of child anxiety. Indeed, observational studies yielded inconsistent effects of parental warmth but generally supported the association between parental control and child anxiety. Another review by van der Bruggen and colleagues (2008) reported a medium to large effect size for parental control and child anxiety; however, a meta-analysis conducted by McLeod, Weisz, and Wood (2007) revealed a small effect size for the parenting-child anxiety link and showed that only four percent of the variance in child anxiety outcomes was accounted for by negative parenting, which was broadly defined to include both rejection and control. Subsequent analyses conducted by McLeod and colleagues (2007) suggested that lower-order parenting dimensions significantly moderated the relationship between parenting and child anxiety inasmuch as parental control was more strongly related to child anxiety than was parental rejection. Overall, though, the effects of both parental control and rejection were small, and these dimensions accounted for only four to six percent of the variance. Given that broad categorizations of parenting styles, such as controlling or rejecting, may have limited utility in capturing the effects of parenting behaviors specific to the etiology of child anxiety, McLeod and colleagues (2007) also examined subdimensions of parenting. They found that warmth, withdrawal, aversiveness, overinvolvement, and autonomy-granting were differentially related to child anxiety, with parental granting of autonomy demonstrating the largest effect, explaining 18% of the variance in child outcomes.

Despite research suggesting that, among all parenting behaviors, parental control shares the most robust association with child anxiety, the amount of variance explained by parental control appears to be relatively small. Moreover, extant research on the role of parenting in the development of child anxiety has failed to elucidate the direction of this association, and the studies examining the directionality of the parenting-child anxiety link have yielded inconsistent effects. For example a study conducted by Rubin, Nelson, Hastings, and Asendorpf (1999) found that early child shyness predicted later parental control, while another study found that parental acceptance, as opposed to parental control, predicted later symptoms of anxiety in adolescents (Pederson, 1994). More recent longitudinal work conducted by Settapani, O'Neil, Podell, Beidas, and Kendall (2013) examined the directionality of changes in both child anxiety and parent behaviors using a sample of 11 seven- to 14-year olds who were being treated for anxiety disorders. Results from this study indicated that lower levels of mother-reported child anxiety predicted decreased maternal anxiety. Additionally, lower levels of maternal psychological control and family affective involvement significantly predicted decreased clinician-reported child anxiety. Overall, children with lower levels of family affective involvement, behavioral control, and maternal anxiety demonstrated the greatest reductions in anxiety throughout treatment (Settapani et al., 2013). Based on findings that reductions in child anxiety predicted decreased maternal anxiety, Settapani and colleagues (2013) concluded that changes in child anxiety might precede changes in parent factors. Moreover, results suggesting that behavioral control and maternal anxiety were the most stable dimensions over time underscored parental psychological control and family affective involvement as particularly salient targets for interventions in anxious youth. Additional research has examined the role of both parent and child anxiety on behavior during dyadic

interactions and suggests that parent and child behaviors are likely part of a bidirectional process (e.g., Whaley, Pinto, & Sigman, 1999). A study conducted by Schrock and Woodruff-Borden (2010) revealed complex interactions between parent and child factors (i.e., anxiety and behavior) inasmuch as parent negative interactions and child overcontrol and productive engagement varied based on the behavior and presence of anxiety in the other dyad member.

Among parenting behaviors examined in the etiology of child anxiety, modeling of anxious behavior has received limited attention. Parents can model anxious behavior by describing problems as irresolvable or dangerous, reinforcing children's perception of a problem as catastrophic, discouraging children's use of problem-focused solutions, expressing their own anxiety in front of their child, and/or displaying avoidant coping strategies (for a complete review, see Fisak & Grills-Tauechel, 2007; Wood et al., 2003). Studies utilizing children's report of anxious rearing behaviors and anxiety suggest that children of parents who engaged in anxious rearing behaviors tended to endorse more symptoms of anxiety (Muris & Merckelbach, 1998; Roelofs, Meesters, ter Huurne, Bamelis, & Muris, 2006). Experimental studies have also supported the role of parental modeling of anxious behavior in the etiology of child anxiety. For example, a study conducted by Gerull and Rapee (2002) found that the presentation of a toy paired with fearful maternal facial expressions, as opposed to encouraging ones, resulted in greater levels of child avoidance. Burnstein and Ginsburg (2010) found similar effects based on parent behavior prior to the administration of a spelling test, as children reported increased anxiety and avoidance when parents engaged in anxious behaviors. Observational studies have further supported this association, as maternal agitation was shown to predict child distress in dyads with anxious mothers, while child distress predicted maternal agitation in dyads with non-anxious mothers (Greenbaum, Cook, Melamed, & Abeles, 1988).

Another study conducted by Whaley and colleagues (1999) showed that messages related to lack of control and inability to cope were more likely to be conveyed by to anxious children by anxious, as opposed to non-anxious, mothers. Indeed, 47% of the variance in child diagnostic status was explained by mothers' catastrophizing language (Whaley et al., 1999). Additional work has found infants engage in behaviors classified as avoidant or anxious subsequent to maternal behaviors characterized by low encouragement, engagement, or sensitivity (Crockenberg & Leerkes, 2006; Murray, Creswell, & Cooper, 2008).

A review of extant research on the familial transmission of anxious behavior conducted by Fisak and Grills-Tauechel (2007) examined three specific learning mechanisms (i.e., modeling, reinforcement of anxious behaviors, and information transfer) and suggested that parental behaviors play a key role in the development of child anxiety. Overall, modeling was the mechanism that exhibited the most robust support in the empirical literature, as results have implicated parental modeling of anxious behavior in the development of social fears, symptoms of panic and worry, as well as global anxiety (Fisak & Grills-Tauechel, 2007). While retrospective and prospective studies of modeling anxious behaviors in the parents of both clinical and nonclinical children have yielded consistent results, findings from top-down studies in anxious parents have been mixed, with a substantial proportion of such studies failing to detect significant differences in anxious modeling between anxious and control parents (Fisak & Grills-Tauechel, 2007). As such, research using multiple informants, congruent observational techniques, and longitudinal designs is necessary before general conclusions can be drawn (Fisak & Grills-Tauechel, 2007).

Overall, the extant research pertaining to the parenting-child anxiety link is limited by a number of shortcomings. In particular, the specificity of parenting behaviors to the etiology of

anxiety remains ambiguous, as many studies have examined the association between child anxiety and broadly defined parenting styles, such as acceptance and control, which have been linked with psychopathology in general. Given that broadly defined parenting styles may relate to child anxiety differently across contexts, the use of these global measures represents a limitation in that less is known about the contributions of specific parenting behaviors which are uniquely relevant to the development of child anxiety. Moreover, the magnitude of effects for parental factors appears to vary based on the child outcome being assessed (i.e., trait anxiety, specific symptoms, or disorders). While such limitations may account for the small effect sizes found within the existing literature, it is also possible that the relatively small amount of variance in child anxiety explained by parenting behaviors is indicative of indirect pathways (e.g., Wood et al., 2003). As such, research examining the interactions among parental influences and other moderating and/or mediating variables appears to be warranted, and nascent work suggests that models accounting for interaction effects may be particularly useful in answering the questions that remain. For example, van der Bruggen and colleagues (2008) found that demographic variables (i.e., child gender, child age, socio-economic status) and methodological factors (i.e., type of interaction task used to assess parenting) moderated the parenting-child anxiety association to produce larger effect sizes. Similarly, the meta-analysis conducted by McLeod et al. (2007) suggested that anxiety diagnostic status, the type of measurement utilized (i.e., questionnaire, interview, observation), and source of information (i.e., parent, child, observation) moderated the association between parenting and child anxiety. Another study conducted by Williams, Degnan, Perez-Edgar, Henderson, Rubin, Pine and colleagues (2009) examined interactions among parenting behaviors, child temperament, and child anxiety outcomes and yielded a significant temperament by parenting interaction

inasmuch as children between one and two years of age who were high in BI and had permissive mothers exhibited elevations in internalizing symptoms at age four. However, some studies have failed to find a significant moderation effect of parenting for the temperament-child anxiety link, while other work has suggested that parenting factors mediate the association between temperament and child anxiety (van der Bruggen, Stams, Bögels, & Paulussen-Hoogeboom, 2010).

Negative life events. In a review of etiological influences of childhood anxiety, Manassis and colleagues (2004) described stressful life events as a general risk factor for the development of childhood anxiety. Indeed, a number of studies have found higher rates of stressful life events, including parental separations and divorce, death of a family member, family conflict, and repeated moves of school, in children with anxiety disorders (e.g., Benjamin, Costello, & Warren, 1990; Kashani & Orvaschel, 1988), and research suggests that elevated rates of anxiety disorders follow natural disasters (e.g., Dollinger, O'Donnell, & Staley, 1984; La Greca, Silverman, Vernberg, & Prinstein, 1996). However, some work indicates that stressful life events do not necessarily or directly result in pathological child outcomes, as the majority of children survive negative life experiences without the persistence of clinically significant psychological problems (Bleuler, 1984; Garmezy, Masten, & Tellegen, 1984; Rutter, 1979; Werner, 1992). Moreover, it is well-established that a substantial proportion of children with anxiety disorders have not experienced elevated rates of stressors, and the association between environmental stressors and child psychopathology does not appear to be specific to anxiety disorders. For example, a study conducted by Williamson, Birmaher, Dahl, and Ryan (2005) examined the role of stressful life events in the etiology of childhood depression and anxiety and found that stressful life events were significantly more

likely to occur in children who were depressed relative to those who were anxious or non-psychiatric controls. As such, it appears that negative outcomes associated with stressful events are likely influenced by additional factors that intensify or mitigate the effects of such stressors. For example, Rapee (1991) found that the effect of stressors was moderated by the quantity of stressors endured by an individual as well as their perception of such events.

Protective factors. While explanatory models of childhood anxiety have significantly enhanced our understanding of the etiological influences that place a child at risk for the development of clinical anxiety, less is understood about factors that mitigate childhood anxiety. However, the need to examine the protective factors that buffer pathological anxiety in at-risk children has been recognized within the literature (Kazdin & Kagan, 1994; Spence, 2001) based on the premise that not all risks can be avoided (Spence, 2001). Attempts to prevent childhood and adolescent anxiety have further underscored the importance of examining factors that mitigate the development of clinical anxiety in children. Although sparse in its entirety, extant research on protective factors specific to anxiety has almost exclusively focused on the domains of coping and social support (Donovan & Spence, 2000).

Social support. Social support has been implicated as a protective factor for a variety of psychological outcomes (Compas, 1987). Among studies specifically examining the role of social support in buffering anxiety symptoms, results have suggested that social support may moderate the relationship between various risk factors and anxiety during childhood and adolescence (Donovan & Spence, 2010). For example, a study conducted by Quamma and Greenberg (1994) found that the relationship between stressful life events and anxiety was moderated by family social support in a sample of special-education children. Additionally, a longitudinal study revealed that family social support predicted lower levels of anxiety among

11- to 14-year old children who were exposed to community violence (White, Bruce, Farrell, Kliewer, 1998). Similarly, both state and trait anxiety was shown to be negatively associated with social support in a sample of fourth-, fifth-, and sixth-graders (Hill, Levermore, Twaite, & Jones, 1996). Spaccarelli and Fuchs (1997) found that low perceived support, avoidant coping, and negative appraisals were associated with increased self-reported depression and anxiety in female adolescents who were abused. Moreover, decreased anxiety and worry have been observed in the children of divorced parents who reported more overall support (Cowen, Pedro-Carroll, & Alpert-Gillis, 1990). A recent study conducted by Hjemdal, Vogel, Solem, Hagan, and Stiles (2012) found that positive thinking, problem solving skills, extra-familial social support, and family cohesion protected children against anxiety.

Coping skills. Additional research suggests that children's responses to adverse experiences greatly influence the extent to which they experience clinically significant anxiety (Compas, 1987; Spence, 2001). Individual reactions to aversive experiences vary in terms of the strategies utilized to manage negative emotions and problem-solve (Compas, 1987). Problem-focused coping typically involves directly addressing the problem to minimize its negative impact, while avoidant and emotionally-focused coping are characterized by escape of the problem and an emphasis on distress, respectively. Extant research suggests that the use of problem-focused coping is generally associated with decreased anxiety in children (Donovan & Spence, 2000). A study conducted by Compas, Malcarne, and Fondacaro (1988) found that children's ability to use problem-focused coping, as opposed to avoidant or emotion-focused strategies, when presented with interpersonal conflict was associated with positive psychological adjustment. Moreover, a recent study conducted by Ng, Ang, and Ringo (2012) found that approach coping buffered anxiety and that help-seeking behavior demonstrated a

stronger protective effect for anxiety than did positive thinking. Additional support for the mitigating effect of problem-focused coping has come from studies examining the efficacy of treatments designed to prevent childhood anxiety. For instance, several randomized controlled trials have found that cognitive-behavioral treatments for childhood anxiety that introduce coping strategies and encourage the application of such strategies are more efficacious than wait-list control conditions (Barrett, Rapee, & Dadds, 1996).

Perceived competence. Despite the limited attention given to child perceived competence as a buffer of childhood anxiety, the mediational role of this construct for parental influences (e.g., overcontrol, Affrunti & Ginsburg, 2012) has underscored potential protective effects of perceived competence on childhood anxiety. Parental overcontrol may contribute to childhood anxiety by reducing a child's opportunity to engage with their environment and by communicating that the world is a dangerous place in which they cannot cope effectively (Affrunti & Ginsburg, 2012). This process is hypothesized to diminish a child's perceived competence, or a sense of mastery over unfamiliar and/or potentially dangerous situations (Affrunti & Ginsburg, 2012). Therefore, it stands to reason that children who maintain high levels of perceived competence may be protected against clinically significant forms of anxiety. Albeit sparse, recent research in adult samples has supported the role of perceived competence in buffering anxiety. A study conducted by Bitsika, Sharpley, and Peters (2010) examined resilient outcomes in 401 Australian students and found that decreased anxiety was most strongly predicted by personal competence (i.e., self-confidence and optimism) and positive acceptance of change (i.e., challenge-seeking, strong purpose, and persistence). Moreover, another study examining internal resources and adjustment across variety of domains found sense of mastery to be significantly related to social and personal adjustment in a sample of

Israeli Adolescents (Lipschitz-Elhawi & Itzhaky, 2005). Relatedly, Zalta and Chambless (2011) proposed a developmental model of anxiety in which the role of parental behaviors in the etiology of childhood anxiety was mediated by perceived control. Structural equation modeling supported their proposed model and the role of both parental challenge and parental overcontrol in the development of children's perceived control. As such, the authors concluded that while appropriate challenges put forth by parents are likely to promote a sense of mastery, the benefits of merely providing children with opportunities to seek out mastery experiences will likely depend on the child's tendency to take advantage of such opportunities (Zalta & Chambless, 2010). Thus, it appears that perceived competence may be an important construct to consider when explaining children's tendencies to engage in experiences that are likely to buffer anxiety.

Limitations. Attempts to elucidate the underpinnings of childhood anxiety have been characterized by a focus on factors that predispose one to the development of pathological outcomes. As a result, the factors that place children at increased risk for anxiety are widely recognized (Barbarin, 1993; Donovan & Spence, 2000; Garmezy, 1991), whereas factors that promote resistance to anxiety and the protective processes that mitigate adverse outcomes have been neglected in existing models (Barbarin, 1993; Garmezy, 1991; Miller & MacIntosh, 1999). In order to challenge the negative assumptions of traditional etiological models of child anxiety and improve our understanding of protective influences, research paradigms would benefit from the integration of resilience theory, which replaces the traditional focus on deficits with a strength-based approach to understanding positive outcomes (Alvord & Grados, 2012; Masten, 2001). In addition to being sparse in its entirety, the available research on factors that buffer the development of anxiety in children is further limited by the lack of a strong

theoretical basis in existing studies, which have relied primarily upon exploratory analyses relating single predictor variables to positive outcomes (American Psychological Association [APA], 2008). Such approaches fail to adequately capture the role of protective influences in the development of childhood anxiety, as research has shown that outcomes are optimized when multiple protective factors are strengthened within the individual, family, and community (Benzies & Mychasiuk, 2009). As such, various factors that are likely to mitigate anxiety across multiple levels of a child's experience must be incorporated into existing multidimensional systems-based frameworks, such as the developmental psychopathology perspective, in order to gain a richer understanding of the etiological processes underlying the development of child anxiety, (Alvord & Grados, 2005; Spencer, Harpalani, Cassidy, Jacobs, Donde, & Goss, 2006).

As existing models of child anxiety have become more complex in order to account for multiple etiological pathways and indirect effects, the nature of interactions among risk and protective factors has become increasingly ambiguous (Fergus & Zimmerman, 2005; Luthar et al., 2000; Luthar & Cushing, 1999). In particular, inconsistent conceptualizations of what constitutes protective influence within existing models have complicated the interpretation of findings pertaining to resilient outcomes in children at risk for developing anxiety. For example, while some researchers have restricted use of the term "protective" to describe interaction effects (Garnezy et al., 1984; Rutter, 1987), main effects have also been described as protective (Fergus & Zimmerman, 2005; Luthar, 1993; Luthar et al., 2000; Luthar & Cushing, 1999).

Existing developmental psychopathology models of child anxiety are also limited by the reliance on research with samples primarily composed of non-Hispanic White families

(Chapman et al., 2012). Ethnic minorities comprise a growing segment of the United States population, yet they continue to remain underrepresented in empirical research (APA, 2008; Bernal & Padilla, 1982; U.S. Department of Health and Human Services [U.S. DHHS], 2001). Failure to examine the mechanisms underlying the familial transmission of anxiety in ethnic minorities, and more specifically, African Americans, has rendered an incomplete cross-cultural understanding of this process (Chapman et al., 2012). Moreover, disparities in the manifestation and prevalence of anxiety in African American youth (Last & Perrin, 1993; Neal & Turner, 1991) suggest that the interactions among risk and protective factors underlying anxiety may differ in these children (Neal-Barnett, 2004). Thus, existing models based on research in non-Hispanic White families may not sufficiently capture processes unique to African American families and the generalization of such models is not warranted. Indeed, even if the etiological process of anxiety is consistent across diverse ethnicities, variability in the dynamic interactions among proximal and distal environments remains a probable source of outcome differentiation (APA, 2008; Barbarin, 1993; Coll, Crnic, Lamberty, Wasik, Jenkins, Garcia, et al., 1996).

The Development of Anxiety in African American Children

Overall, studies addressing the prevalence of anxiety in African American children have yielded mixed results. While some studies of African American children suggest that they may display less school refusal than non-Hispanic White children (Last & Perrin, 1993), other work has shown that African American children endorse more fear (Burnham & Lomax, 2009; Neal & Turner, 1991, Last & Perrin, 1993) and worry (Silverman et al., 1995) as well as increased rates of specific phobia and post-traumatic stress disorder (Last & Perrin, 1993; Neal & Brown, 1994). For example, in a sample of 169 treatment-seeking

children, Last and Perrin (1993) found that the lifetime prevalence rate for PTSD was higher in African American children when compared to non-Hispanic White children, even after controlling for socioeconomic background. Another study conducted by Burnham & Lomax (2009) examined differences in fear prevalence and fear intensity based on demographic variables including race/ethnicity, school level, and gender in a sample of 466 elementary and 564 high school students. In the elementary school sample, multivariate analysis of variance and post-hoc analyses indicated that non-Hispanic White students reported more school/family-related fears relative to African Americans. Alternatively, when compared to non-Hispanic Whites, African American students endorsed more animal fears and more fear related to “scary things”, such as thunderstorms and darkness. In the middle/secondary school sample, African American students had higher fear of animals than both non-Hispanic White and Hispanic students as well as more fears of death and danger relative to non-Hispanic White students. Overall fear intensity and prevalence appeared to be higher among girls and elementary school students, and there was also a significant effect for ethnicity inasmuch as African American students endorsed more fear compared to their non-Hispanic White and Hispanic counterparts (Burnham & Lomax, 2009).

More recently, epidemiological data has suggested increased rates of anxiety disorders (OR=1.3) among non-Hispanic Black adolescents relative to non-Hispanic Whites (Merikangas et al., 2010). However, much of the existing literature on anxiety in African American youth is based on treatment-seeking and clinical samples, so the extent to which these findings generalize to African American children who are not experiencing pathological anxiety remains unclear. Moreover, the literature on anxiety in African Americans remains mixed overall, as other research on anxiety in African

American children suggests comparable prevalence rates of anxiety symptoms between African American and European American youth (Angold et al., 2002); very few cross-ethnic differences in anxiety disorders (Merikangas et al., 2004); and more similarities than differences overall (Last & Perrin, 1993)..

Other research has focused on anxiety-related constructs in African American children and adolescents. For example, results from a study of anxiety sensitivity in African American adolescents suggested that while the higher-order construct of anxiety sensitivity was positively associated with symptoms of anxiety, the specific components of anxiety sensitivity varied in their association with anxiety in this population (Lambert, McCreary, Preston, Schmidt, Joiner, & Ialongo, 2004), as fear of unsteadiness was specific to anxiety while phrenophobia was positively associated with both anxiety and depression. As such, the authors concluded that the anxiety sensitivity dimension of phrenophobia may not be specific to anxiety in ethnic minority adolescents (Lambert et al., 2004). Research has also examined the psychosocial outcomes associated with anxiety in African American children. Using a community sample primarily composed of African American youth (87.9%), Grover, Ginsburg, and Ialongo (2007) examined both concurrent and long-term psychosocial correlates of anxiety. Outcome assessments across a number of domains (i.e., social, academic, psychological) were conducted in the first and eighth grades, and results from this study indicated that increased anxiety was significantly negatively related to concurrent ratings of academic achievement and peer acceptance and significantly positively associated with concurrent levels of depression and aggression. Moreover, children who were classified as highly anxious during the first grade were more likely to report higher levels of depression and anxiety, but lower levels of academic performance, peer acceptance, and aggression in the eighth grade. Consistent with results from

studies on non-Hispanic White samples, African American children who are highly anxious appear to demonstrate patterns of both concurrent and long-term impairment associated with anxiety in a number of functional domains (Grover et al., 2007).

Related findings in adults. Research on the etiological influences of anxiety disorders in African Americans children represents a particular dearth in the literature (Neal & Turner, 1991; Neal-Barnett, 2004). Therefore, relevant research on anxiety and related constructs in African American adults will be presented in order to identify sociocultural variables that may warrant further investigation. Breslau, Aguilar-Gaxiola, Kendler, Su, Williams, and Kessler (2006) analyzed data from a national sample of 5424 Hispanic, non-Hispanic Black, and non-Hispanic White adults racial and ethnic differences in the lifetime risks of psychiatric disorders in the United States. Results from this study suggested a lower lifetime risk for mood and anxiety disorders in African Americans; however the decreased risk did not generalize to externalizing disorders, such as substance use and impulse control disorders. Interestingly, the overall reduction in lifetime risk for African Americans was accounted for by five disorders (i.e., major depression, dysthymia, GAD, social phobia, and PD), all of which have been shown to cluster together as a set of common internalizing disorders in factor analytic studies (Breslau et al., 2006; Kendler et al., 2003). More recent epidemiological research on lifetime prevalence rates of anxiety disorders across ethnic groups has yielded similar results, as African American adults were less likely than European Americans to be diagnosed with social anxiety disorder, generalized anxiety disorder, and panic disorder, but more likely to meet criteria for post-traumatic stress disorder (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010). In light of such findings, it has been postulated that a common set of culturally-specific protective factors, which are uniquely relevant to the etiological processes underlying internalizing symptoms in

African Americans, function to buffer risk and, thus, account for the lower lifetime risk for specific anxiety and mood disorders (Breslau et al., 2006).

Given that the underestimation of lifetime disorders across race-ethnic groups may also result from cultural differences in the endorsement of anxious symptoms (Breslau et al., 2006), research has begun to explore potential differences in data yielded from diagnostic and self-report assessments of anxiety symptoms in African Americans. Extant research has suggested that African American adults' endorsement of anxious symptoms and anxiety-related constructs diverge significantly from that of other racial and ethnic groups. In a comparative sample of young-adult college students, Chapman and Steger (2010) found that African Americans endorsed lower levels of anxiety when compared to their non-Hispanic White counterparts. Similar results were found in a study conducted by Chapman and Woodruff-Borden (2009), which indicated that African Americans reported significantly less anxiety relative to European Americans. In addition to disparate findings pertaining to overall levels of anxiety reported by African American adults, existing research has also pointed to differences in the extent to which various facets of anxiety are relevant to this population. Indeed, findings from factor analytic studies have indicated that factor structures of well-established measures of anxiety fail to adequately fit data yielded from African American samples. For example, existing research indicates that the factor structure of the Beck Anxiety Inventory significantly diverges from existing models supported in samples comprised primarily of non-Hispanic White adults (Chapman et al., 2009). Factor analytic studies have also indicated that somatic symptoms appear to be a particularly salient component of anxiety in African American adults when compared to non-Hispanic White samples (Heurtin-Roberts et al., 1997; Neal & Turner,

1991). Moreover, notable differences have also emerged in fear content of African American adults when compared to European Americans (Chapman et al., 2008; Chapman et al., 2011).

Burgeoning research suggests significant differences in the role of constructs that have been consistently implicated in the development of anxiety between African Americans and adults from other ethnic backgrounds. For example, family functioning failed to significantly predict anxiety symptoms in African Americans, and these findings were divergent from results yielded in a comparative sample of non-Hispanic Whites (Chapman & Woodruff-Borden, 2009). Similarly, the role of perceived control has been shown to vary between African American adults and European Americans. Specifically, Chapman and colleagues (2009) found that perceived control contributed significantly less to self-reported worry in African Americans. Other research on anxiety in African American adults has underscored the potential contributions of specific sociocultural factors to cross-cultural disparities in the development and manifestation of anxiety. For example, Chapman and Steger (2010) found that religious coping varied in the extent to which it predicted anxiety in African American and non-Hispanic White samples, inasmuch as positive and negative religious coping were not significantly related to anxiety in the African American sample. Similarly, differential effects of ethnic identity have been found across ethnicities, as stronger self-reported ethnic identity predicted lower levels of anxiety in African Americans, whereas this was not the case in their non-Hispanic White counterparts (Williams et al., 2012). Taken together, the aforementioned findings suggest that cultural processes endemic to African American culture may account in part for observed differences in the prevalence rates and manifestation of anxiety in African American adults. Along these lines, it is also possible that culturally-specific processes

contribute to the observed differences in prevalence rates and manifestation of anxiety in African American children.

Limitations. Although burgeoning research on anxiety in African American children and adults represents a significant contribution to the extant literature pertaining to anxiety, a number of limitations must be addressed before the factors and processes endemic to the development of anxiety in African American children can be fully understood. Such limitations are reviewed as part of the rationale for a culturally-sensitive model of the developmental psychopathology of anxiety that will be presented in this review. First, the extant body of work on psychosocial outcomes in African American youth has primarily focused on disproportionately high rates of problem behavior and the factors that place African American children at risk for externalizing disorders (Barbarin, 1993). For example, extant literature has found that low socioeconomic status and single-parent households (Barbarin, 1993), community violence (Prelow, Danoff-Burg, Swenson, & Pulgiano, 2004), stressful life events (Attar, Guerra, & Tolan, 1994; Kliewer & Kung, 1998; Prelow et al., 2004), hopelessness (Bolland, 2003), difficulty self-regulating (Zalot, Jones, Forehand, & Brody, 2007), and perceived discrimination (Burchinal, Roberts, Zeisel, & Rowley, 2008; Prelow et al., 2004; Vega, Khoury, Zimmerman, Gil, & Warheit, 1995; Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001) are related to problem behaviors in African American youth. Given that the preponderance of studies neglect to report data on internalizing symptomatology or diagnoses in African American children (Barbarin, 1993; Li, Nussbaum, & Richards, 2007), the current understanding of the etiology of anxiety disorders remains particularly limited in this population. In light of the reviewed literature on anxiety in African Americans, it appears that

the factors and processes that contribute to the development of anxiety in African Americans may diverge from those which are most salient to non-Hispanic White populations.

In order to elucidate the underpinnings of cross-racial disparities in the prevalence of anxiety disorders, research on anxiety in African American adults has begun to develop explanatory models. For example, Carter, Sbrocco, and Carter (1996) proposed an explanatory model in which the differential expression of anxiety disorders in African Americans is indirectly related to ethnicity via beliefs and expectations. According to this model, racial identity and acculturation comprise the higher-order construct of ethnicity, which interacts with socio-economic status, stress, and age to influence beliefs about anxiety, such as those pertaining to associated medical causes of anxiety symptoms and mistrust of the psychological community. These beliefs, in turn, are postulated to contribute to the observed differences in anxiety symptom profiles and treatment efficacy between African Americans and non-Hispanic Whites. Another explanatory model proposed by Hunter and Schmidt (2010) explains both non-pathological and clinical anxiety outcomes in African American adults. According to this model, learning history and contextual variables differentiate anxiety outcomes in African American adults. More specifically, sociocultural beliefs and attitudes relating to awareness of racism, stigma of mental illness, and salience of physical illnesses contribute to fears associated with minority status and catastrophic interpretations of specific somatic symptoms of anxiety via culturally-specific interpretations and behaviors, such as cultural mistrust and attention to somatic symptoms. Within this framework, the prevalence of anxiety disorders among African Americans is influenced by complex interactions that impact symptom profiles, which are ultimately classified as sub-clinical or pathological (Hunter & Schmidt, 2010).

Although the aforementioned models of anxiety in African Americans (Carter et al., 1996; Hunter & Schmidt, 2010) are strengthened by their ability to capture the functional role of cultural factors in the differentiation of anxiety outcomes in African American adults, the unique mechanisms underlying the etiology of anxiety in African Americans remain unclear at this point. Indeed, while culturally-specific factors have been incorporated into explanations of disparities in the prevalence and assessment of *existing* anxiety symptoms in African Americans, the interactions among culturally-specific constructs and etiological mechanisms that influence the *emergence* of anxiety are largely unexplored. As such, existing models have significantly enhanced our understanding of discrepant prevalence rates of anxiety in our progressively diverse population and underscored the importance of cultural context; however, additional work is needed to elucidate potential differences in the etiological processes of anxiety in ethnic minorities and African Americans, in particular. Given that the current understanding of anxiety in African Americans is based on research in adult samples and that research on anxiety in African American children and adolescents has relied primarily on outcome studies, research on the development of anxiety in this population and during this developmental period is particularly warranted.

A Culturally-Sensitive Model of Child Anxiety

In order to address the shortcomings of extant research on anxiety in African American youth, a culturally-sensitive framework for understanding the development of anxiety in ethnic minority youth is presented (see Figure 2). The proposed model integrates existing research on ethnic minority youth with the theoretical underpinnings of the developmental psychopathology perspective in order to transcend current methodologies utilized to explain cross-racial disparities in the diagnosis and prevalence of anxiety disorders. In particular, the

conceptual framework elucidates the interactions among predisposing and protective factors that may influence the development of anxiety in African American youth. Along these lines, the proposed model reflects the basic tenets of the developmental psychopathology paradigm (Cicchetti & Cohen, 1995). In consideration of the principles of equifinality and multifinality, the proposed conceptual model links a multitude of distinct pathways to several potential outcomes. Consistent with existing models of anxiety based on the developmental psychopathology perspective (e.g., Rapee, 2001; Vasey & Dadds, 2001), the conceptual framework is comprised of inter-related genetic, temperamental, and environmental influences. However, given that the current understanding of etiological influences on childhood anxiety remains largely grounded in research from a Eurocentric perspective (APA, 2008), the proposed model accounts for the role of cultural constructs in order to facilitate a more complete understanding of the development of anxiety in ethnic minority youth.

With regard to genetic influences, research on anxiety disorders in ethnic minority parent-child dyads suggests consistent rates of familial co-occurrence across cultural groups. More specifically, a family study conducted by Chapman and colleagues (2012) found that African American youth with an anxious parent were four times more likely to develop an anxiety disorder when compared to those with a non-anxious parent. To date, the work by Chapman et al. (2012) is the only study to examine the co-occurrence of anxiety disorders in an exclusively African American sample. Although family studies fail to explain specific mechanisms of genetic risk, these findings suggest similar rates of familial transmission of anxiety across African American and non-Hispanic White families (Chapman et al., 2012). In light of research suggesting that familial risk for anxiety does not vary across cultures, it stands to reason that cross-cultural differences in the prevalence and manifestation of anxiety are

likely to be indirectly explained by complex interactions among factors within a child's proximal and distal environments. Indeed, the predisposing and protective influences within a child's family environment may vary as a function of cultural variables. Familial constructs have demonstrated a particularly salient role in African Americans (Boyd-Franklin, 2003). As such, a study conducted by Chapman and Woodruff-Borden (2009) examined the impact of family functioning on symptoms of anxiety in African American and non-Hispanic White young adults using structural equation modeling. Results indicated that dimensions of the family environment differed in the extent to which they related to family functioning in the African American and non-Hispanic White samples. In African Americans, behavioral control was more strongly related to family functioning whereas affective involvement shared a weaker relationship with family functioning when compared to non-Hispanic Whites. Further, overall family functioning was less predictive of anxiety symptoms in African Americans than in non-Hispanic Whites. Overall, results from the Chapman and Woodruff-Borden (2009) study suggest that the familial processes underlying the development of anxiety in African Americans may differ from those in non-Hispanic Whites, further underscoring the need to examine the specific cultural constructs that account for such differences.

Parenting behaviors represent an area in which consideration of cultural context is particularly warranted. For example, extant research suggests that parenting styles and parental behavior may vary across ethnic groups (Garcia-Coll, Meyer, & Brillon, 1995). Therefore, it stands to reason that the role of these variables in the etiology of child anxiety may also differ across ethnic groups. Research has found that democratic parenting styles are related to positive outcomes in non-Hispanic White children (Baumrind, 1972; Hamner & Turner, 1990). In contrast to the parenting styles endemic to individualistic cultures, African American families

tend to engage in parenting styles that reflect the values of collectivistic cultures, such as authoritarian parenting and increased use of discipline and authority (Garcia-Coll et al., 1995). In a sample of low-income families living in urban communities, Baldwin, Baldwin, and Cole (1990) found harsh and controlling parenting to be more common in African Americans. Moreover, research suggests that such parenting styles have been related to positive outcomes in African American children (Brody & Flor, 1998), and that African Americans and non-Hispanic Whites differ in their appraisals of these parenting styles (e.g., Deater-Deckard & Dodge; 1997). In particular, African American children may have a positive perception of high parental control (Lamborn, Dornbusch, & Steinberg, 1996). These findings, coupled with research demonstrating the significant influence of parental factors on child anxiety outcomes, underscore the need to consider cultural influences on anxiety outcomes. In particular, the reviewed literature indicates that culture may moderate the extent to which parental behaviors (e.g., control) relate to child anxiety.

Within the existing literature on parenting and child outcomes, very few studies have examined the moderating role of cultural background. However, a study conducted by Hill and Bush (2001) examined the association among parenting factors and children's mental health as well as the moderating role of ethnicity in African American and non-Hispanic White families that were matched for SES and community background. Results from this study indicated that child-reported anxiety was negatively related to parental self-efficacy in non-Hispanic Whites, but these variables were not significantly related in African American families. These findings provide further evidence of variability in the relationship between parental factors and child anxiety based on ethnic and/or racial differences in parenting. Further, Hill and Bush (2001) reported significant positive correlations between parenting efficacy and positive parenting

practices in African Americans, underscoring the importance of considering the potential mediating role of other parenting factors in protecting African American children against anxiety. Additionally, the moderating role of ethnicity on the association between parenting and child anxiety may be explained by cultural constructs, such as collectivism. Overall, extant research has pointed to the potential role of familial cultural environment as a moderating variable to consider. However, the pathways through which cultural differences in parenting influence child anxiety have not been adequately explained in existing models.

Given that the sociocultural context in which a child develops varies across cultures, the extra-familial influences that predispose a child to anxiety are likely to differ for ethnic minority youth. In particular, negative experiences with racism, discrimination, and prejudice have been shown to have an adverse effect on ethnic minority populations. Studies on environmental factors in African American youth suggest that negative experiences with discrimination and sociocultural risks place these children at increased vulnerability for both internalizing and externalizing symptoms in African American youth. More specifically, externalizing symptoms and disorders have been positive associated with low socioeconomic status and single-parent households (Barbarin, 1993), perceived, discrimination (Burchinal, Roberts, Zeisel, & Rowley, 2008; Prelow, 2004; Vega, Khoury, Zimmerman, Gil, & Warheit, 1995; Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001), community violence (Prelow, Danoff-Burg, Swenson, & Pulgiano, 2004), and stressful life events (Attar, Guerra, & Tolan, 1994; Kliewer & Kung, 1998; Prelow et al., 2004) in African American children and adolescents. With regard to internalizing symptoms, discrimination (DuBois, Burk-Braxton, Swenson, Tevendale, & Hardesty, 2002), life stressors (Grant, O’Koon, Davis, Roache, Poindexter, Armstrong, et al., 2000), violent neighborhoods, poverty, and social isolation

(Fitzpatrick, Piko, Wright, LaGory, 2005) have been shown to place African American children at greater risk. In particular, research suggests that oppression, discrimination, and prejudice may lead to the internalization of helplessness and perceptions of being unable to change the environment among African Americans, in turn, placing them at increased risk for emotional maladjustment (Gibbs, 1990; Hammack, 2003). However, a study conducted by Chapman, Kertz, et al. (2009) found that perceived control was less predictive of anxiety in African Americans when compared to non-Hispanic Whites. Thus, it appears that the construct of perceived control in African Americans needs to be clarified, with a particular focus on the role of cultural variables that may account for disparate findings related to anxiety outcomes. For example, a study conducted by Yakin, McMahon, and University (2003) found that increased community support among 142 African American youth (ages 10-15) was associated with appraisals of predictability and controllability and distraction coping. Given that appraisals of less control over one's environment were associated with poorer psychosocial functioning, the community support appeared to protect these children against risk (Yakin et al., 2003). Results pertaining to community support are likely to generalize to the collectivistic nature of African American culture.

Unfortunately, the current understanding of internalizing disorders remains grounded in a Eurocentric perspective (APA, 2008), and African American children are underrepresented in empirical research on the development of childhood anxiety (American Psychological Association [APA], 2008; Bernal & Padilla, 1982; U.S. Department of Health and Human Services [U.S. DHHS], 2001). As such, research has not adequately examined the diverse sociocultural environments in which children develop, and existing models fail to capture the cultural perspectives and experiences of ethnic minority youth. In order to account for the

unique experiences endemic to the development of ethnic minority youth, the proposed model has incorporated a factor to represent the sociocultural influences that have been neglected in traditional models of childhood anxiety.

Culturally-specific protective factors. While existing literature has emphasized factors that predispose African Americans to symptoms of internalizing disorders, extant research suggests that African American and non-Hispanic White children display rates of anxiety that are more similar than different (Last & Perrin, 1991). Moreover, African American adults have been found to demonstrate lower lifetime risk for internalizing disorders (i.e., major depression, dysthymia, generalized anxiety disorder, social phobia, and panic disorder; Breslau et al., 2006). These findings are inconsistent with previous literature, which has emphasized the multiple layers of risk faced by African American youth, as they suggest that most African American children avoid adverse outcomes and grow to be healthy adults (Barbarin, 1993; Garnezy, 1991; Miller & MacIntosh, 1999). Similarly, a study on perceived discrimination and adjustment conducted by Brody, Murry, Chen, Kogan, and Brown (2006) found that African American youth reported low levels of internalizing symptoms despite facing discrimination. Research suggesting comparable to lower rates of anxiety among African Americans despite heightened risk for internalizing symptoms highlights the need to explore sociocultural factors that account for this discrepancy between risk and outcome. It may be the case that protective influences endemic to the African American context mitigate risk to promote adaptive outcomes. Given that existing research on the development of anxiety in African American children has paid little attention to factors that buffer the association between risk and outcome (APA, 2008; Barbarin, 1993; Brown, 2008; McCabe, Clark, & Barnett, 1999;

Miller & MacIntosh, 1999; Li et al., 2007), additional research is needed to elucidate culturally-specific influences that mitigate risk and protect against anxiety in this population.

While existing models of child anxiety have recognized factors that may protect a child from negative outcomes, extant research on mitigating factors has almost exclusively focused on coping and social support (Donovan & Spence, 2000). However, research suggesting that protective processes vary based on factors such as residential area, socioeconomic status, gender, immigrant status, and adolescent stages (Alvord & Grados, 2005; Cicchetti & Rogosch, 2002; Fergus & Zimmerman, 2005; Zolkoski & Lyndal, 2012) has underscored the influence of contextual factors on the protective processes underlying development. Specifically, cultural norms, practices, values, and beliefs have been delineated as important contextual variables to consider when examining protective processes (Cicchetti & Rogosch, 2002). Moreover, Breslau and colleagues (2006) recognized culturally-specific constructs, such as religious participation and ethnic identification, as potential protective factors that are likely to buffer the development of major depression, dysthymia, GAD, social phobia, and PD in African Americans. Another study conducted by Utsey, Bolden, Lanier, and Williams (2007) found that in addition to family cohesion and adaptability, the use of culture-specific strategies, such as spiritual and collective coping, predicted higher quality of life scores. Based on these findings, the authors concluded that culturally-specific coping strategies utilized by African Americans contribute to quality of life over and above the effects traditional predictive factors alone. Such findings have established the importance of examining contextual variables that are likely to differentiate outcomes (Gutman et al., 2002), and both the U.S. Surgeon General (2001) and researchers on ethnic minority youth (see Barbarin, 1993; Brown, 2008; McCabe,

Clark, & Barnett, 1999; Miller & MacIntosh, 1999; Li et al., 2007) have underscored the role of socio-cultural factors in the prevention of psychopathology and promotion of mental health.

Despite research suggesting that the manifestation of anxiety may differ in African Americans as compared to non-Hispanic whites (Chapman et al., 2008; Chapman et al., 2009; Last & Perrin, 1993; Nalven, 1970; Neal & Turner, 1991; Neal & Brown, 1994; Neal, Lilly, & Zakis, 1993), the role of culturally-specific constructs has not been accounted for by etiological models of childhood anxiety. As such, the unique strengths and resources (APA, 2008; Barbarin, 1993; Li et al., 2007) of African American children and the protective roles of these factors remain poorly understood. Barbarin (1993) proposed a model that delineated a number of sociocultural factors that moderate the effects of risks posed to African American children. Though not specific to anxiety, the model put forth by Barbarin (1993) recognized the importance of examining culturally-specific factors that promote resilient outcomes in a framework accounting for multiple levels of influence. In particular, the moderating roles of racial identity, religiosity, parent-child socialization, and extended family structure have been identified as particularly salient to the emotional adjustment of African American youth (Barbarin, 1993). Along these lines, the proposed culturally-sensitive model of childhood anxiety incorporates extant research on spirituality/religiosity, collectivism, racial identity, and racial socialization supporting the role of these constructs in explaining adaptive outcomes in African American youth (APA, 2008; Boykin, 1983; Hill, 1971; Jones 1991; U.S. DHHS, 2001).

Racial identity. Racial identity is generally defined as “the part of an individual’s self-concept which derives from his knowledge of his membership of a social group together with the value and emotional significance attached to that membership” (Tajfel, 1981, p. 63).

Despite variability in terminology, models of racial identity generally share three broad stages of development. In the initial stage, any examination of racial identity is lacking and the individual's relationship to their ascribed group and other groups is generally positive (Phinney, 1996). As the individual progresses to a phase of exploration, they become more involved with their racial group and demonstrate a higher awareness of discrimination (Phinney, 1996). Upon internalization of their racial identity, individuals demonstrate a secure sense of group membership, although they may vary in terms of their involvement with other groups (Phinney, 1996). Carter and colleagues (1996) conceptualized racial identity as a lower-order factor that is influenced by one's ethnicity. Along these lines, studies of both racial and ethnic identity are included in this review, although the cultural dimension of one's identity will be defined as racial identity (Phinney, 1992) in the proposed model. Research on racial identity and mental health has primarily focused on adolescent and adult populations (see Williams, Chapman, Wong, & Turkheimer, 2012), although recent research has begun to examine the construct in children (APA, 2008; Corenblum & Armstrong, 2012). Studies examining children's attitudes of in-and out-group membership have underscored the importance of considering ethnic identity during childhood. For example, robust in-group biases are generally present in children from majority ethnic-racial groups, while the in-group attitudes of children from minority groups range from positive to out-group bias (Corenblum & Armstrong, 2012).

Overall, studies indicate that strong racial identity positively influences self-perception and self-esteem in ethnic-racial minority children (APA, 2008) and even buffers the negative effects of discrimination (Greene, Way, & Pahl, 2006). More specifically, Greene and colleagues (2006) found that, although African American adolescents reported steeper elevations in perceived discrimination over time relative to Puerto Rican adolescents, ethnic

identity and ethnicity moderated the extent to which perceived discrimination predicted changes in psychological well-being over time. Moreover, research suggests that a positive sense of ethnic-racial group membership may mitigate the internalization of negative stereotypes associated with psychological distress, low self-esteem, internalizing and externalizing behaviors, and poorer school performance in African American children (APA, 2008; McMahon & Watts, 2002; Sellers, Copeland- Linder, Martin, & L'Heureux Lewis, 2006). Most recently, a study conducted by Williams and colleagues (2012) examined the effects of ethnic identity on anxiety and depression in a sample of 572 African American and non-Hispanic White young adults. Results from this study indicated that ethnic identity negatively predicted anxiety and depression in African Americans but not non-Hispanic Whites. Thus, the authors concluded that a strong ethnic positive ethnic identity protect African Americans from internalizing disorders by moderating the negative impact of experiences with discrimination (Williams et al., 2012). Given that ethnic identity has not been incorporated into existing models of childhood anxiety, the role of this variable warrants further examination.

Collectivism. Individuals from collectivistic cultures (Triandis, Bontempo, Villareal, Asai, Lucca, 1988) endorse an interdependent view of the self as fundamentally social and essential to a collective group (Allen & Bagozzi, 2001). Because the collectivistic nature of African American culture diverges from the individualistic principles that have guided existing conceptualizations of childhood anxiety (Triandis et al., 1988), studies have failed to account for collectivism as a culturally-specific protective factor in African American children. However, nascent research on the relational experiences of African Americans indicates that the extended family and kinships endemic to African American culture may be an essential component of psychological well-being in African American children and youth (Boyd-

Franklin, 2003; Caldwell & Koski, 1997; Hatchet & Jackson, 1992; McCabe et al., 1999; Murry, Bynum, Brody, Willert, & Stephens, 2001; Triandis et al., 1988). A review conducted by Murry and colleagues (2001) denoted that the role of social support is particularly salient in African American families as the extended family networks endemic to collectivistic cultures have demonstrated direct and indirect protective effects regarding both family functioning and child developmental outcomes. Along these lines, Allen and Bagozzi (2001) found that identification with the African American collective is positively related to a number of social outcomes, including a strong Black self-concept, which has been defined as “feeling of closeness to similar others in ideas, feelings, and thoughts” (Broman, Neighbors, & Jackson, 1988; p. 148). Given the implications of these findings regarding relatedness, it appears that collectivism is an important construct to consider when explaining the development of anxiety in African American youth.

Spiritual coping. Existing research examining coping styles of African Americans has recognized an individual’s cultural background as an influential factor in the use of specific coping strategies (Majors & Billson, 1992). Cultural coping strategies specific to African Americans have emerged from a longstanding history of experiences with racism and oppression, a strong spiritual orientation, and extended kin support networks (APA, 2008). Among the various culture-specific strategies for managing adversity, spiritual coping is defined as the use of beliefs about God or a higher power when confronted with adversity (Utsey, Adams, & Bolden, 2000).

In adults, spiritual coping demonstrates a particularly robust relationship with positive outcomes and has been recognized as a strength of African American children and their families (APA, 2008; Barbarin, 1993; Boyd-Franklin, 2003). In adults, spiritual coping has

been found to predict quality of life over and above traditional protective factors in African Americans (Utsey et al., 2007). Utsey and colleagues (2007) utilized structural equation modeling to examine the role of culturally-specific coping (e.g., spiritual and collective coping) in predicting outcomes related to physical health, psychological health, social relationships, and environment in a sample of 361 at-risk African Americans. Results indicated that spiritual and collective coping predicted higher quality of life scores over and above traditional protective factors of family adaptability and cohesion, thus supporting the incremental influence of culturally-specific coping in African Americans. Other research has found similar results regarding the protective effect of spiritual coping against psychological symptoms in African Americans (Chapman & Steger, 2010; Grant et al., 2000). A study conducted by Chapman and Steger (2010) examined the relationship between religious coping and anxiety using a non-clinical sample of both African American and European American young adults. Race significantly moderated the results such that African Americans reported significantly more positive religious coping, lower levels of negative religious coping, and endorsed less anxiety when compared to the European Americans in this sample (Chapman & Steger, 2010).

With regard to children's use of religious coping strategies, extant research is lacking. However, a number of familial factors, including parental warmth and child functioning, have been found to be related to global indicators of parent religiosity (Mahoney, Pargament, Tarakeshwar, & Swank, 2001). Although existing studies examining the effect of parent religious coping on child outcomes have not focused on anxiety specifically, a study by Dumas and Tsiopinis (2006) found that parents who endorsed more positive religious coping tended to have children with higher levels of coping competence. Along these lines, it stands to reason that parent use of cultural coping strategies such as positive religious coping in African

American families may protect against child anxiety. Given that coping strategies have generally been classified as approach, avoidant, or emotion-focused in the extant literature on child anxiety, the spiritual coping strategies relied on by African Americans have not been adequately captured. As such, the role of spiritual coping in the development of anxiety in African American families needs to be elucidated.

Racial socialization. Racial socialization refers to the process by which ethnic and/or racial minority parents communicate a culturally-based understanding of the proficiencies required to become a functioning adult member of society to their children (Harrison, Wilson, Pine, Chan, & Buriel, 1990; Peters, 1983). Boykin and Toms (1985) identified three types of socialization practices, which are characterized by their individual focuses on racial equality and Eurocentric values, an overarching oppressive system, or Afrocentric values (i.e., spirituality, harmony, expressive individualism, and communalism). Racial socialization is thought to promote adaptive outcomes in African American children (Boykin & Toms, 1985; Thomas & Speight, 1999) through parents' role in preparing their children for racism, promoting racial pride, providing knowledge of Eurocentric values, and reinforcing spiritual coping (Stevenson, Herrero-Taylor, Cameron, & Davis, 2002; Thomas & Speight, 1999). Research has shown that racial socialization protects against internalizing and externalizing symptoms in African American youth (Caughy, O'Campo, Randolph, & Nickerson, 2002; Stevenson et al., 2002). More specifically, Caughy and colleagues (2002) examined the association between parent racial socialization and child outcomes (i.e., competence) in a sample of 200 African American preschoolers and their families. Results from this study suggested that children from households emphasizing African American culture demonstrated greater amounts of factual knowledge in addition to enhanced problem-solving skills.

Moreover, the children of parents who promoted a stronger sense of ethnic pride exhibited fewer problem behaviors (Caughy et al., 2002). In light of findings supporting the role of racial socialization in developing a problem-oriented coping style, this construct may be particularly salient to the development of anxiety in African American youth.

Considering the aforementioned findings, the proposed model attempts to elucidate the role of culture in development of child anxiety by delineating a higher-order factor that integrates culturally-specific influences that may buffer anxiety in African American youth. By incorporating extant research on ethnic minority youth within the theoretical underpinnings of the developmental psychopathology perspective, the proposed model accounts for a multitude of potential processes that may promote resilient outcomes in ethnic minority youth.

Previously, both main- and interaction-effect models have been used understand the role of protective factors (Fergus & Zimmerman, 2005; Luthar, 1993; Luthar et al., 2000; Luthar & Cushing, 1999). However, resilience research suggests that interaction-effects are more compelling than factors that merely improve outcome (Luthar et al., 2000). Therefore, the process-oriented protective factor model put forth by Garmezy and colleagues (1984) has been incorporated into the proposed framework. According to Garmezy et al. (1984) protective factor model, protective factors promote adaptive outcomes by diminishing the negative effects of risk factors (Garmezy et al., 1984; Fergus & Zimmerman, 2005; Zolkoski & Lyndal, 2012). Consistent with this model, the proposed conceptual framework utilizes a process-oriented approach to explaining the interactions among culturally-specific protective factors and risk factors. In the proposed model, cultural constructs (e.g., racial identity, collectivism, spiritual coping, and racial socialization) are thought to moderate the relationship between a multitude of risk factors and anxiety outcomes. Therefore, the proposed model explains a number of

potential pathways through which culturally-specific protective influences diminish the effects of genetic, temperamental, environmental, and sociocultural risk factors for anxiety.

Developmental considerations. Inherent to the discipline of developmental psychopathology is an awareness of the dynamic nature of children's trajectories and recognition that the presence of both individual and environmental vulnerabilities and resources will vary as a function of time (Cicchetti & Cohen, 1995). As such, explanatory models of childhood anxiety in children must account for both detrimental and adaptive departures from typical developmental trajectories as well as the interactions among risk and protective influences that contribute to them. In order to examine the cross-racial generalization of findings pertaining to the relative (i.e., the extent to which scores at two time points are correlated across individuals) and absolute (i.e., longitudinal consistency in group means stability) stability of behavioral symptoms, Jones and Forehand (2003) conducted a longitudinal study in a low-income urban sample of 124 African American mother-child dyads. Findings from this study indicated that African American children may differ from non-Hispanic white children with regard to the stability of psychological symptoms. In particular it appears that they may exhibit different patterns of absolute stability with regard to internalizing symptoms. More specifically, children's reports of internalizing symptoms were initially decreased, although they stabilized during the latter half of the study. In light of such findings, the authors speculated that African American youth from low-income, urban communities may experience internalizing symptoms (i.e., depression and anxiety) associated with increased hopelessness and negativity at a young age; however, the negative impact of disadvantage may be mitigated over time as resources become available (e.g., peer support, school involvement) and children begin to learn and apply more effective coping skills (Jones & Forehand, 2003).

Along these lines, the proposed model attempts to elucidate the interactions among the existing vulnerabilities and available resources endemic to African American youth over time. As shown in Figure 2, the proposed model accounts for the dynamic nature of the etiology of anxiety by considering developmental changes over time.

The Current Study

Study Rationale

The importance of the proposed model lies in its divergence from the traditional deficit-oriented approaches to examining cultural variations. Although sparse in its entirety, the existing literature pertaining to anxiety in ethnic minority populations is based on comparative designs, in which individuals from diverse ethnic backgrounds are compared to their ethnic majority counterparts. As such, the cross-cultural understanding of childhood anxiety is restricted to a collection of findings that are discrepant from those yielded from studies in non-Hispanic White samples. The proposed model diverges considerably from the existing comparative paradigm inasmuch as it represents a culturally-sensitive conceptual framework for understanding the interactions among predisposing and protective processes across diverse ethnic and racial groups. By incorporating the genetic, temperamental, and environmental influences that differentiate anxiety outcomes within a child's cultural context, the proposed model accounts for traditional and culturally-specific processes that relate to both pathological and non-pathological outcomes in children across cultures. Along these lines, the proposed model provides a conceptual foundation on which a more optimistic portrayal of African American youth can be constructed (APA, 2008; Barbarin, 1993; Li et al., 2007). Additionally, the framework put forth in this study facilitates a clearer understanding of within-group heterogeneity in the manifestation and etiology of childhood anxiety symptoms, as it accounts

for individual differences in the salience of culturally-specific factors. Thus, cultural context is neither necessary nor sufficient to explain cross- or within-group variability in anxious symptoms and the relative contributions of both traditional and culturally-specific factors can be elucidated.

There are a multitude of noteworthy implications associated with the experimental and clinical utility of the proposed model. First, the proposed model may also function as a culturally-sensitive framework for future research utilizing a process-oriented approach to understanding the interactions among genetic, temperamental, environmental, and cultural influences in the etiology of childhood anxious symptoms. Such research will begin to explicate the specific processes that differentiate pathological and non-pathological outcomes. These processes are of paramount importance within the developmental psychopathology framework, as predisposing and maintaining mechanisms can be targeted by interventions, while protective factors can form the basis of preventative interventions (Spence, 1996, 2001). Thus, by integrating salient components of the developmental psychopathology perspective and the cultural experiences of African American families, the proposed model can begin to elucidate factors that are particularly relevant to childhood anxious symptoms in our progressively diverse population. In particular, the proposed model's ability to capture the cultural context in which ethnic minority children develop can highlight the unique strengths of children across a diversity of cultures, which can be cultivated to promote resilient outcomes and prevent pathological anxiety. Finally, the macro-level analysis of influence represents a significant asset of the proposed model, as the conceptual framework lends itself nicely to constructs other than anxiety and populations beyond African American children. Indeed, cultural neglect is endemic to a multitude of disciplines and psychological constructs, and the

proposed model provides a useful framework for better understanding the influence of cultural context on the full range of psychological symptoms, including those that are non-pathological in nature, as they vary across the progressively diverse population.

Hypotheses

Considering these implications, the current study represents a preliminary test of the proposed conceptual model (see Figure 2) as it relates to anxiety symptoms in African American families. Based on the literature reviewed, this study utilized a sample of African American parent-child dyads to elucidate the effects of parent anxiety, traditional protective factors, and culturally-specific constructs on child emotional functioning with two inter-related aims: 1) to examine the extent to which traditional protective factors mitigate the development of anxiety in African American children and 2) to elucidate the role of culturally specific factors in further buffering anxiety in African American families. These aims are divisible into the following hypotheses:

Hypothesis 1. Parental anxious symptoms will significantly predict child anxious symptoms. Specifically, it is predicted that the relationship between parent anxiety and child anxiety will be positive in that parents with higher levels of anxiety will have children with higher levels of anxiety.

Hypothesis 2. There will be a significant negative relationship between traditional protective factors and anxiety in African American children. Specifically, higher levels of child-reported social support, approach coping, and perceived competence parent will predict lower levels of child anxiety.

Hypothesis 3. There will be a significant negative relationship between culturally-specific constructs and child anxiety in African American families.

Specifically, higher levels of racial identity, religious coping, collectivism, and racial socialization will predict lower levels of child anxiety.

Hypothesis 4. The protective effect of culturally-specific constructs will be significant over and above that of traditional protective factors alone. Specifically, it is predicted that the effects of racial identity, religious coping, collectivism, and racial socialization will remain significant after accounting for the effects of both parental anxiety as well as traditional protective factors.

METHODS

Power Analysis

Post hoc power analyses were conducted using the software package, G*Power 3.1.3 (Erdfelder, Faul, & Buchner, 1996). The sample size of 49 was used for the statistical power analyses and an eight-predictor model was used as a conservative baseline, given that this was the largest number of independent variables utilized in a regression model. The effect sizes used for this assessment ranged from moderate ($f^2 = .20$) to large ($f^2 = .40$), based on the preliminary nature of the study. The alpha level used for this analysis was $p < .05$. The post hoc analyses revealed that the statistical power to detect significant R^2 deviation from zero for the overall regression models ranged from .49 for a moderate effect to .84 for the detection of a large effect size. Thus, there was more than adequate power to detect a large effect size level, but significantly less power for the detection for moderate to small effect sizes based on the relatively small size of the sample for this preliminary study.

Participants

Given the current study's aim of testing a culturally-sensitive developmental model of anxiety that accounts for the full range of anxious symptoms and protective factors associated with non-pathological outcomes, a community sample of African American parent-child dyads was examined. Participants were recruited from the community through flyers, brochures, and presentations at local community centers,

health fairs, public libraries, churches, and through word of mouth. There are a number of well-documented challenges inherent to the recruitment of African American samples (Carter-Edwards, Fisher, Vaughn, & Svetkey, 2002; Ejiogu et al., 2011), which stem from several barriers, including mistrust of researchers, fear of exploitation, and lack of familiarity with research (Braunstein, Sherber, Schuman, Ding, & Powe, 2008). In order to overcome these barriers, a number of culturally-sensitive recruitment strategies were utilized, including community outreach, culturally-relevant advertising, and creating a comfortable study environment. Given that community outreach is integral to the successful recruitment African American participants, project coordinators reached out and maintained ongoing relationships with organizations in communities of interest, such as church leaders, program directors, and personnel at local community centers (Clay et al., 2003; Williams, Proetta, Casiano, & Franklin, 2012; Williams, Tellawi, Wetterneck, & Chapman, 2013). Study personnel met with participants at local community organizations and elicited feedback on anxiety-related issues that were relevant to their needs. Based on this feedback, study personnel gave a number of free presentations on topics of interest at local community agencies and included information about the current study as part of those presentations.

In addition to community outreach, advertisements were designed to be culturally specific (e.g., Williams et al., 2013). Specifically, flyers and brochures featured pictures of African American and multiracial families and incorporated culturally-specific terms for anxiety symptoms to increase salience and facilitate a more positive impression about the study (Avery, Hernandez, & Hebl, 2004; Williams et al., 2012; Williams et al., 2013). In order to cultivate trust, all study recruitment materials clearly stated the purpose of the

study, participant burden, and incentives (Clay et al., 2003; Williams et al., 2013), and the term “research” was replaced with less threatening terms, such as “project.” Finally, efforts were made to conduct the study within the participants’ community in order to limit distress and avoidance associated with unfamiliar and potentially threatening settings, such as the university laboratory (Williams et al., 2012; Williams et al., 2013).

Participants in the current study included 49 African American parent-child dyads from the Louisville community. Given the role of both genetic and environmental influences in the development of anxiety, participants were included in the current study based on the following criteria: the parent-child relationship was biological in nature and the participating child resided primarily (i.e., >50% of the time) in the home of the participating parent. Additionally, only one child per family was allowed to participate in the current study in order to eliminate statistical confounding. Participant demographics are shown in Table 3. Child participants ranged in age from 8-13 years ($M=10.47$, $SD=2.09$) and 63% were female. Parents in the study ranged in age from 24 to 58 years ($M=34.49$, $SD=6.78$) and 94% were mothers. Approximately 90% percent of participants in the current study were high school graduates, although 78% of the sample reported an annual household income of less than \$30,000. Greater than 50% of the sample reported completing some college education; however, a similar proportion of participants also reported an annual household income of under \$10,000. The unique demographic characteristics of the current sample may stem from the nature of community organizations from which participants were recruited. For example, a substantial portion of the current sample was recruited through a community organization, which offers residential, financial, academic, and family resources to low-income single-parent

students with the aim of promoting educational success and self-sufficiency. Given that recruitment efforts through the aforementioned and other local organizations yielded the majority of participants in the current study, the sample of parents and children in the current study is atypical and likely representative of families capable of sustaining involvement with community programs and who were connected with resources available through such.

Measures

Demographic Questionnaire. The Demographic Questionnaire utilized in the current study is an 11-item survey that was administered to each participant. Questions on the survey were designed in order to obtain information pertaining to child gender and age as well as parent gender, age, marital status, education level, number of children in household, and annual household income. Open-ended questions were used to obtain participants' age and number of children, and closed-ended format was used to assess gender. Income was assessed by asking participants to choose the closest estimate of their annual household income. Responses were coded as 1 = under \$10,000, 2 = \$10,000-19,999, 3 = \$20,000-29,999, 4 = \$30,000-39,999, 5 = \$40,000-49,999, 6 = \$50,000-59,999, 7 = \$60,000-69,999, 8 = \$70,000-79,999, 9 = \$80,000-89,999, and 10 = \$90,000+. Education was assessed by asking parents to choose the option that included the last grade they completed. Responses were coded as 1 = Grades 9,10, or 11, 2 = high school graduate, 3 = some college or specialized training, 4 = college graduate, and 5 = graduate or professional training. Marital status was assessed using multiple-choice format, with responses coded as 1 = single without partner, 2 = single with partner, 3 =

married, 4 = divorced and remarried, 5 = divorced and single, 6 = separated, and 7 = never been married.

Existing Child Measures.

State Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973). The STAIC is a 40-item self-report questionnaire designed to assess “state” and “trait” in children, with normative data for school-aged children 8-years of age and older (Spielberger, 1973). The STAIC yields scores for two subscales, which distinguish between a child’s general predisposition to anxious behavior as a more stable facet of their personality (STAIC-T) and anxiety as a transitory emotional state (STAIC-S). Each scale contains 20 items, to which participants respond by indicating their subjective experienced intensity of each described feeling. In the current study, STAIC-T subscale scores were utilized as an indicator of child trait anxiety. When completing the STAIC-T, children are asked to rate how they feel *generally (usually)* using a scale ranging from 1-3, with total scores ranging from 20-60. Factor analytic studies have supported the two-factor model, and the STAIC-T has demonstrated good internal consistency, with α coefficients ranging from 0.80 to 0.90 (Silverman & Ollendick, 2005). Examination of psychometric properties has also shown adequate test-retest reliability of STAIC-T ($r=.71$) and concurrent validity with other measures, including the Children's Manifest Anxiety Scale ($r=0.75$: Castaneda, McCandless, & Palermo, 1956), the General Anxiety Scale for Children ($r=0.63$: Saranson, Davidson, Lighthall, Waite, & Ruebush, 1960), and the Hamilton Anxiety Rating Scale interview ($r=0.58$: Clark & Donovan, 1994). The STAIC-T has demonstrated discriminant validity in meta-analytic studies by distinguishing children and adolescents with an anxiety disorder from those without

pathological anxiety as well as youth with externalizing disorders (Seligman, Ollendick, Langley, & Baldacci, 2004). Norms are available for African American youth, and a number of studies support the reliability and validity of this measure when used with African American children (Hedl & Papay, 1978; Hedl & Papay, 1982; Mandara et al., 2009; Treadwell, Flannery-Schroeder, & Kendall, 1995; Wasserberg, 2014). In the current sample, internal consistency for the STAIC-T was acceptable, with an alpha coefficient of .86.

Social Support Scale for Children (SSSC; Harter, 1985). The Social Support Survey for Children (Harter, 1985) is a self-report measure for children ages 8 and older that assesses perceived support, yielding four subscale scores based on various sources of support, including Parents, Classmates, Teachers, and Friends. Each of the four subscales on the measure is comprised of 6 items, for a total of 24 items. In order to avoid eliciting socially desirable responses from children by using two-choice alternative formats common to other measures of children's perceived social support, the Social Support Survey for Children utilizes a structured alternative format in which the child is provided with two statements (e.g., "some kids have parents who treat their child like a person who really matters" and "other kids have parents who don't usually treat their child like a person who really matters") and asked to choose the statement that is most true about them and indicate whether it is "sort of true" or "really true" about them. Items are scored on a scale from 1 to 4 based on the level of support endorsed (i.e., 1=lowest; 4=highest), resulting in a total of 4 subscale means which can be used to define a child's support profile. The reliability of the Social Support Scale for Children has been tested in multiple samples of both elementary and middle school children. The Parent and Teacher

subscales have been shown to be more reliable than the Classmate and Friend subscales, with reliability coefficients ranging from .78 to .86 and .74 to .83, respectively (Harter, 1985). A recent study by Lipski, Sifers, and Jackson (2014) suggested adequate internal reliability for each of the four subscales, with Chronbach's alphas ranging from .72 to .81. A study conducted by Compas, Wagner, Slavin, and Vannatta (1986) lends further support for the reliability of this measure, as evidenced by high test-retest correlation coefficients ($r = .79$ and $.70$) on SSSC subscales at six months. Previous work by Lopez, Ehly, and Garcia-Vazquez (2002) suggested low to moderate intercorrelations between SSSC subscales ($r = .18$ to $.54$). Such findings support the internal validity of the SSSC, as these correlations are large enough to provide evidence of a unitary construct, yet small enough to suggest that they capture distinct aspects of social support with no issues of multicollinearity (Lipski et al., 2014).

Factor analytic studies of the Social Support Scale for Children have yielded 3-factor models for elementary children, in which the Classmate and Friend subscale items load onto a single peer support factor, and the 4-factor model has been supported in middle school children (Harter, 1985). A more recent study using structural equation modeling further supported the construct validity of the SSSC, as the original four-factor structure was confirmed (Lipski et al., 2014). Studies of the measure's convergent validity have indicated that the four subscales are significantly correlated with other measures of social support (Gordon, 2003; Lanier, 2007; Malecki & Demaray, 2002;) as well as other relevant psychological constructs, including acceptance; ability to disclose thoughts and feelings to friends; identification with parent values; self-reported global self-worth; and subjective appraisals of family, teacher, and peer support (Harter, 1985).

Each subscale of the SSSC was included as an indicator of children's perceived social support in the proposed data analyses. Internal consistency was good in the current sample, with alpha coefficients of 0.72, 0.70, 0.74, 0.85 for the parent, classmate, friend, and teacher support subscales, respectively.

Children's Coping Strategies Checklist (CCSC; Program for Prevention Research, 1999). The CCSC is a self-report questionnaire designed to assess the use of various coping strategies in children and adolescents. When completing the 52-item measure, participants are presented with various coping strategies and asked to rate how often they used each strategy to solve their problems during the past month using a 4-point Likert scale (1=Never; 4=most of the time). The CCSC is comprised of 10 subscales, for which scores are derived by calculating the mean response to items comprising that dimension, with higher scores reflecting greater use of that strategy. Factor analytic studies of the CCSC have supported a four-factor model (Ayers, Sandler, West, & Roosa, 1996), including Active Coping, Distraction, Avoidance, and Support-Seeking Strategies. Similar to the scoring approach described above, the scores for these four higher-order factors are derived by calculating the mean of the subscale scores comprising that factor.

The measure was originally validated in children ages 9 and older; however, subsequent research has utilized comparative paradigms to examine the psychometric properties of the CCSC across a broader range of ages. Specifically, de Boo and Wicherts (2009) investigated potential differences in the psychometrics of the CCSC across younger (ages 8-10) and older (ages 11-13) children. Results supported the four-factor model in the sample of younger children, and suggested no measurement variance

with respect to age groups at the subscale level. Moreover, use of the CCSC in children as young as 8 years old was further supported by comparable internal consistencies; the lack of significant differences in covariance among subscales; the absence of significant mean differences; and null finding pertaining to the main effects of age on coping dimensions of the CCSC (de Boo & Wicherts, 2009). Consistent with the current study's aims to investigate the role of protective factors in buffering child anxiety, the Active Coping Strategies subscale was utilized as an indicator of approach coping based on literature suggesting that the use of problem-focused coping is generally associated with decreased anxiety in children (Donovan & Spence, 2000).

The Active Coping Strategies subscale assesses the frequency at which a child engages in both problem focused coping and positive cognitive restructuring strategies. Previous research has supported the internal consistency of the Active Coping Strategies subscale ($\alpha=.88$; Ayers, 1996), and one week test–retest reliability coefficients were satisfactory ($r=.80$; Program for Prevention Research, 1999). Factor analytic studies have supported the construct validity of the active coping strategies subscale within the four-factor model, which has yielded invariant results across ages and genders (Ayers, 1996). Moreover, results from a study conducted by Prelow, Michaels, Reyes, Knight, and Barrera (2002) support the measurement equivalence of the CCSC across ethnicities, including African Americans. Regarding convergent validity, previous work by Ayers (1991) found that the use of active coping strategies, in particular, predicted higher self-esteem and lower self-reports of depression. The Active Coping Strategies subscale demonstrated good internal consistency in the current sample ($\alpha =.73$).

Anxiety Control Questionnaire for Children (ACQ-C; Weems, Silverman, Rapee, & Pina, 2003). The ACQ-C is a modified version of the adult Anxiety Control Questionnaire, a measure of perceived control. It is a 30-item self-report questionnaire that was designed for children between the ages of 6 and 17 years and utilizes a 5-point scale ranging from 0=*none* to 4=*very very much*, with higher scores indicative of greater perceived control. The ACQ-C yields a Total score as well as two lower-order subscale scores, which were designed to capture a child's perceived ability to control anxiety-related negative "internal" emotional and bodily reactions as well as a child's perception of their control over "external" threats (Weems et al., 2003). The ACQ-C is widely used and has generally demonstrated excellent psychometric properties (Cannon and Weems 2010). Initial factor analytic studies yielded a two-factor model consistent with the theoretically derived Internal and External subscales (Weems et al., 2003), and subsequent confirmatory factor analyses have supported both a one- and two-factor model, suggesting that perceived control represents a unitary construct comprised of related, yet distinct dimensions of one's perceived control over internal reactions and external events (Hogendoorn et al., 2013). Reliability coefficients for the Total Score, Internal, and External subscales ranged from 0.86 to 0.93 in the original sample (Weems et al., 2003), and more recent psychometric examinations have yielded similar results suggestive of excellent internal consistency ($\alpha = .93$; Hogendoorn et al., 2013). The ACQ-C has demonstrated adequate test-retest reliability for a two-month time interval, and there is evidence of the measure's convergent validity as well, as the ACQ-C incrementally predicted anxiety diagnostic status over and above age, gender, and self-reported anxiety symptoms (Hogendoorn et al., 2013). In the current study, ACQ-C

subscale and total scores were included as indicators of children's perceived competence when experiencing both internal cues and external threats associated with anxiety.

Internal consistency in the current sample was good for Internal subscale ($\alpha = 0.85$), External Subscale ($\alpha = 0.74$), and Total scores ($\alpha = 0.89$).

Adapted child-report measures. As child-report questionnaires pertaining to sociocultural constructs are lacking, existing adult-report measures of relevant constructs were adapted for the purposes of the current study. Prior to administering the adapted versions of the questionnaires, trained research assistants assessed each child's awareness of culture and ethnicity to ensure that their understanding of these constructs was sufficient for meaningful responses to item content. Children were first prompted to self-identify their ethnicity, and despite the use of variable language within an open-response format, all children in the sample identified as African American, consistent with their parent's report. When asked to provide examples of other ethnic groups, children in the current study were able to generate classifications of ethnic status that were accurate, such as Hispanic or Latino, White, and Asian American. Not unexpectedly, younger children in the sample tended to refer to ethnicity in terms of more observable, physical features; however children across all ages also incorporated non-observable features into their descriptions of ethnicity, such as language, diet preferences, and culturally-based activities. These observations are consistent with existing literature on children's understanding of ethnicity throughout development (see Quintana, 1998), which suggests that children between the ages of 6 and 10 begin to develop more accurate and mature categorizations of themselves and others based on ethnicity as they develop concrete operational skills.

If children did not demonstrate a clear understanding of ethnicity as a construct, an explanation was provided in order to promote validity. Children were informed that there are many different ethnic groups that people belong to, and they were provided with initial examples before additional examples were elicited from them to demonstrate generalization. If children relied heavily on external appearance or biological underpinnings (e.g., distant relative from Africa), explanations of non-observable dimensions of ethnic background, such as culturally-based preferences or traditions, were incorporated. .

Racial Socialization-Child Report (Hughes & Johnson, 2001). Given the absence of child-report measures to assess racial socialization behaviors within families, the existing version of the Racial Socialization-Parent Report (RS-PR) was adapted for use with children in the current study and will be referred to as the RS-CR. The original 15-item measure was designed to assess culturally-based parenting practices concerning race and intergroup relations. When completing the child version, children rate how frequently their parents have engaged in specific behaviors during the past 12 months using a 6-point Likert-type scale ranging from 0 (none) to 5 (more than seven times). Items on the measure were designed to assess four theoretically driven dimensions of racial socialization, including Cultural socialization, Preparation for Bias, Promotion of Mistrust, and Pluralism (Hughes & Johnson, 2001). Responses to the items on each subscale are used to calculate a mean score for each dimension. Preliminary factor analytic studies of the measure yielded a 3-factor solution as the best-fitting model, in which the Cultural Socialization and Pluralism dimensions were not empirically discernible. As such, 3 subscales were retained on the measure, as the Cultural

Socialization and Pluralism factors combined to form a single dimension designed to measure the extent to which parents expose children to culturally-specific media, events, and history as well as parental communications fostering cultural awareness of other races. Based on research suggesting that Cultural Socialization/Pluralism behaviors are more frequently endorsed by African American families and demonstrate stronger associations with positive outcomes relative to other racial socialization practices in (Hughes & Johnson, 2001), the Cultural Socialization/Pluralism subscale functioned as a measure of racial socialization practices among families in the current study. In previous psychometric evaluations, the Cultural Socialization/Pluralism subscale has demonstrated high internal consistency ($\alpha=.86$: Hughes & Johnson, 2001).

In the current study, each of the 15 items on the measure was revised in order to assess children's perception of the frequency at which their parents engage in racial socialization behaviors. While the racial socialization behaviors remained consistent across both versions of the measure, each item was reworded to reduce the use of polysyllabic language and to minimize the complexity of language and concepts. Consistent with the age range of children included in the current sample, instructions and items of the measure were revised to reflect a 3rd-grade reading level. In the current sample, Cultural Socialization/Pluralism demonstrated good internal consistency, with a Cronbach's alpha of 0.84.

Africultural Coping Systems Inventory-Child Version (Utsey, et al., 2000). The Africultural Coping Systems Inventory (ACSI; Utsey et al., 2000) is a 30-item self-report measure designed to assess the culture-specific coping strategies used by African American adults. Due to the paucity of child-report measures designed to assess the

constructs of collectivism and spiritual coping within families, the ACSI was adapted for the purposes of the current study. Similar to the aforementioned adaptation of parent-report measures and consistent with the age range of children included in the current sample, each item on the ACSI was reworded to reflect a 3rd-grade reading level. The adapted version of the ACSI administered to children in the current study will be referred to as the ACSI-C.

On both parent- and child-report versions of the measure, respondents are asked to rate the extent to which they utilized different culturally-specific coping strategies during a stressful situation that occurred over the past week. The response format consists of a 4-point scale ranging from 0 (“does not apply/did not use”) to 3 (“used a great deal”). The ACSI is comprised of 4 scales, including Cognitive/Emotional Debriefing, Spiritual-Centered Coping, Collective Coping, and Ritual Coping. Items on each subscale are summed to yield a total score for each category. Factor analytic studies of the ACSI have supported the 4-factor structure of the measure, and internal consistency for the four ACSI subscales range from adequate to highly desirable ($\alpha=.71-.84$; Utsey et al., 2000; Utsey et al., 2007). Significant correlations emerged across the four subscales ($\alpha =.14$ to $.35, p<.05-.01$), suggesting that the dimensions measured by the ACSI, although related, are largely distinct constructs. The Collective Coping and Spiritual Coping subscales of the revised ACSI-C were included as indicators of collectivism and spiritual coping in data analyses and evidenced good internal consistency in the current sample, with Chronbach’s alpha coefficients of 0.73 and 0.84, respectively.

Multigroup Ethnic Identity Measure-Revised-Child Version (Phinney & Ong, 2007). As existing measures of racial and/or ethnic identity measures have not yielded

adequate support for use with children, an adapted version of the Multigroup Ethnic Identity Measure-Revised (MEIM-R) was utilized to measure children's ethnic identity development for the purposes of the current study. The adapted version of the MEIM-R administered to children in the current study will be referred to as the MEIM-R-C. The MEIM-R is 6-item self-report measure of one's ethnic identity that uses a 5-point Likert scale (1=strongly disagree; 5=strongly agree; Phinney & Ong, 2007). The MEIM-R yields two subscale scores, including Ethnic Identity Commitment and Ethnic Identity Exploration. Factor analytic studies have supported this 2-factor model, suggesting that ethnic identity commitment and exploration are related, yet distinct processes that make independent contributions to the higher order construct of ethnic identity (Lee, Falbo, Doh, & Park, 2001; Phinney, 1992; Phinney & Ong, 2007; Ponterotto, Gretchen, Utsey, Stracuzzi, & Saya, 2003).

Each of the subscale scores yielded by the MEIM-R can be examined independently or combined to assess the overall strength of one's ethnic identity. Along these lines, the score is calculated as the mean of items on each subscale or of the scale as a whole. The MEIM-R has been shown to demonstrate good reliability estimates for the commitment subscale ($\alpha=.78$), exploration subscale ($\alpha=.76$), and combined 6-item score ($\alpha=.81$) (Phinney & Ong, 2007). Internal consistency in the current sample was acceptable for the MEIM-R Exploration subscale ($\alpha=.60$), Commitment Subscale ($\alpha=.68$), and Total scores ($\alpha=.77$). Given that Ethnic Identity Exploration and Ethnic Identity Commitment have been shown to separately contribute to the higher order construct of ethnic identity, each of these subscales and the total score were included as indicators of child ethnic identity in the current study. Subsequently, bivariate

correlations were examined to determine whether individual subscale scores or the combined total score were utilized as predictors in subsequent regression analyses.

Parent Measures. Given that the child self-report measures of sociocultural variables were adapted for the current study, parent self-report data pertaining to these constructs was examined for comparative purposes.

Racial Socialization- Parent Report (RS-PR; Hughes & Johnson, 2001). The RS-PR is a 15-item measure designed to assess culturally-based parenting practices concerning race and intergroup relations. When completing the measure, parents rate how frequently they have engaged in specific behaviors during the past 12 months using a 6-point Likert-type scale ranging from 0= *none* to 5= *more than seven times*. Items on the measure were designed to assess four theoretically informed dimensions of racial socialization including, Cultural socialization, Preparation for Bias, Promotion of Mistrust, and Pluralism (Hughes & Johnson, 2001). Preliminary factor analytic studies of the measure yielded a 3-factor solution as the best-fitting model, in which the Cultural Socialization and Pluralism dimensions were not empirically discernible. As such, these factors were combined into a single dimension, which measures the extent to which parents expose children to culturally-specific media, events, and history as well as parental communications fostering cultural awareness of other races. Based on research suggesting that Cultural Socialization/Pluralism behaviors are more frequently endorsed and that they are more strongly associated with positive outcomes relative to other racial socialization practices in African American families, the Cultural Socialization/Pluralism subscale was utilized as an indicator of racial socialization practices in the current study. The Cultural Socialization/Pluralism subscale has demonstrated high internal consistency

($\alpha=.86$; Hughes & Johnson, 2001). In the current sample, internal consistency was excellent, with a Cronbach's alpha of 0.92.

Africultural Coping Systems Inventory (ACSI; Utsey, et al., 2000)). The ACSI is a 30-item self-report measure designed to assess the culture-specific coping strategies used by African American adults. Respondents are asked to rate the extent to which they utilized different culturally-specific coping strategies during a stressful situation that occurred during the previous week. The response format consists of a 4-point scale ranging from 0 ("does not apply/did not use") to 3 ("used a great deal"). The ACSI is comprised of 4 scales, including Cognitive/Emotional Debriefing, Spiritual-Centered Coping, Collective Coping, and Ritual Coping. Factor analytic studies of the ACSI have supported the 4-factor structure of the measure, and internal consistency for the four ACSI subscales range from adequate to highly desirable ($\alpha=.71-.84$; Utsey et al., 2000; Utsey et al., 2007). Intercorrelations among subscales were significant and ranged from .14 to .35, suggesting that the four dimensions measured by the ACSI represent related, yet largely distinct constructs. The Collective Coping and Spiritual Coping subscales of the ACSI were included as indicators of collectivism and spiritual coping in data analyses and evidenced adequate ($\alpha=0.70$) to good ($\alpha=0.86$) internal consistency, respectively, in the current sample.

Multigroup Ethnic Identity Measure-Revised (MEIM-R; Phinney & Ong, 2007)). The MEIM-R is 6-item self-report measure of one's ethnic identity that uses a 5-point Likert scale (1=strongly disagree; 5=strongly agree; Phinney & Ong, 2007). The MEIM-R yields two subscale scores, including Ethnic Identity Commitment and Ethnic Identity Exploration. Factor analytic studies have supported this 2-factor model,

suggesting that ethnic identity commitment and exploration are related, yet distinct processes that make independent contributions to the higher order construct of ethnic identity (Lee, Falbo, Doh, & Park, 2001; Phinney, 1992; Phinney & Ong, 2007; Ponterotto, Gretchen, Utsey, Stracuzzi, & Saya, 2003). Each of the subscale scores yielded by the MEIM-R can be examined independently or combined to assess the overall strength of one's ethnic identity. The MEIM-R has been shown to demonstrate good reliability estimates for the commitment subscale ($\alpha=.78$), exploration subscale ($\alpha=.76$), and combined 6-item score ($\alpha=.81$) (Phinney & Ong, 2007). Given that Ethnic Identity Exploration and Ethnic Identity Commitment have been shown to separately contribute to the higher order construct of ethnic identity, each of these subscales as well as the total score were included as indicators of child ethnic identity in the current study, and bivariate correlations were utilized to determine whether individual subscale scores or the combined total score were included as predictors in subsequent regression analyses. Internal consistency in the current sample was good for the MEIM-R Exploration subscale ($\alpha=0.89$), Commitment Subscale ($\alpha=0.87$), and Total scores ($\alpha=0.92$).

State Trait Anxiety Inventory (STAI; Spielberger, 1983). The STAI is a 40-item self-report questionnaire designed to assess “state” and “trait” anxiety as separate, dimensional scales. State anxiety is defined as a transient emotional response to a stressful situation involving discomfort characterized by tension and apprehensive thoughts. In contrast, trait anxiety is conceptualized as an enduring attribute of one's personality that could predispose one to state anxiety during periods of heightened stress (Spielberger et al., 1983). On the 20-item STAI-T subscale, participants indicate their

subjective experienced intensity of each described feeling using a 4-point Likert-type scale ranging from 1 (almost never) to 4 (almost always). Participants' responses to anxiety items on the STAI-T are elicited by instructions emphasizing how they feel in general and are then summed to calculate the subscale total score. The STAI-T has demonstrated excellent internal consistency, with average α coefficients greater than 0.89. Moreover, internal consistency has also been reported as moderate to be high in African American community samples (Chapman et al., 2009; $\alpha = .69$). Psychometric examination has suggested excellent test-retest reliability of STAI-T scores (average $r = .88$) at several time intervals (Barnes, Harp, & Jung, 2002), and factor analytic studies have supported the two-factor model. Validity analyses of the STAI-T have yielded evidence of adequate convergent and discriminant validity with other measures of trait anxiety, and STAI-T scores have been shown to distinguish patient from control samples (Spielberger, 1983). The psychometric properties of the STAI have been supported with ethnically diverse samples, and a number of previous studies have utilized the STAI with African American adults (Chapman & Woodruff-Borden, 2009; Novy, Nelson, Goodwin, and Rowzee, 1993; Williams et al., 2012). The STAI-S and STAI-T subscales have evidenced strong psychometric properties within African American adult samples, including excellent internal consistency estimates, more than adequate item-remainder correlations, and convergent and discriminant validity (Novy, Nelson, Goodwin, and Rowzee, 1993). As such, the STAI-T served as an indicator of parent anxiety in the current study. Internal consistency for the STAI-T was acceptable in the current sample, with an alpha coefficient of .68.

Procedure

Participants in the current study were recruited from the community through flyers, brochures, and presentations at local community centers, health fairs, public libraries, churches, and through word of mouth. Subjects were recruited as a part of a larger study, The Multiracial Family Wellness Project, which aimed to examine factors that protect against anxiety within families to promote resilient outcomes in African American, non-Hispanic White, and Biracial parent-child dyads. Participants in the current study attended a single session at the Developmental Psychopathology Research Lab or a local community agency in close proximity to the participant's neighborhood. During the session, both parent and child completed a battery of self-report questionnaires. All data collection was conducted by the study coordinator and trained research assistants from both non-Hispanic White and African American ethnic backgrounds. All study personnel received training in multicultural competence (see Williams et al., 2013), which emphasized cultural influences on patterns of communication, integration of culture into each assessment battery, and understanding culture-specific differences, such as culture-bound idioms of anxiety (i.e., use of the word "nerves" as opposed to "anxiety"). Prior to the initiation of data collection, informed consent and assent were reviewed with the parent and child participant, and they were provided with an opportunity to ask questions prior to signing the consent documents. Following parental consent and child assent, the children in the study were provided with a packet of questionnaires, including the STAIC, ACQ-C, CCSC, SSSC, and adapted measures of sociocultural constructs, including the ACSI-C, MEIM-R-C, and RS-CR. Simultaneously, parents were provided with a battery of measures including the STAI as

well as adult versions of the ACSI, RS-PR, and MEIM-R. The questionnaires were presented in a randomized sequence in order to control for order effects. The questionnaires took approximately one hour to complete, and trained researchers were available to answer any participant questions and read items to younger children if necessary. Participants received \$27.00 compensation for their time and participation in the study.

Data Analysis

Conceptual models examining the effects of both risk and protective factors on a specified outcome are typically tested in one of two ways: 1) the utilization of multiple regression or 2) the use of structural equation modeling techniques to make group comparisons (Fergus & Zimmerman, 2005). Consistent with the first approach, the current study utilized multiple linear regression analyses to test the relationships among variables in the proposed conceptual model shown in Figure 2. This approach to data analysis was chosen for a number of reasons. First, multiple linear regression tests whether the proposed conceptual model makes sense substantively. Second, results yielded by multiple linear regression analyses indicate how much variance in child anxiety outcome is accounted for by a variety of explanatory variables and which independent variables are most significant predictors of outcome. Given the practical implications of the proposed conceptual model, the utility of multiple linear regression analyses in the current study lies in the elucidation of the unique effects of observable constructs. Although structural equation modeling is appealing in that this technique allows one to control for covariation among observed and latent constructs as well as measurement error, such an approach to data analysis requires large sample sizes to

detect adequate model fit. Given the well-documented challenges of recruiting African American samples (Carter-Edwards, Fisher, Vaughn, & Svetkey, 2002; Ejiogu et al., 2011) stemming from several barriers, including mistrust of researchers, fear of exploitation, and lack of familiarity with research (Braunstein, Sherber, Schuman, Ding, & Powe, 2008), it is important to first test the basic components of the proposed conceptual model before proceeding to significantly larger studies.

RESULTS

Preliminary Examination of Data

Data preparation. The total sample consisted of 49 African American dyads, each comprised of a single child and their biological parent. Of these parent-child dyads, 45 children returned completed packets of questionnaires. The four children who had missing data included one who failed to complete the CCSC; one who failed to complete the SSSC; one who failed to complete the ACSI-C; and one who failed to complete the MEIM-R-C. Mean substitution was not utilized for these cases, as the missing data on measures completed by the aforementioned four children represented greater than 20% of the items for the subscales included in data analysis (Peng et al., 2006). In the interest of power, the children who were missing the ACSI-C and MEIM-R-C were included in the traditional protective factor regression. Similarly, those missing the CCSC and SSSC were included in the sociocultural factor regression. When both traditional protective factors and sociocultural variables were included in regression analyses, all four children with missing data were excluded.

Of the 49 parents included in the study, 46 returned completed packets of questionnaires. The three parents with missing data included one who failed to complete the MEIM-R and two who failed to complete the STAI. As such, they were not included in the analyses.

Less than one percent of the data from the completed packets was missing, with only 11 of the 7965 total data points missing (45 children X 177 items). No more than one missing item (or 20% of the data) from each subscale was present for any participant, thus subscale mean substitution was utilized.

Assumption testing. Prior to conducting the proposed data analytic procedures, data were examined for detection of potential outliers and to ensure that necessary assumptions were met in the current sample. The assumption of singularity was met, as each of the independent variables (i.e., parent anxiety, child perceived control, social support, active coping, racial identity, racial socialization, spiritual coping, and collectivism) included in subsequent regression models was not a combination of other predictor variables. Data were then examined for potential outliers using Mahalanobis and Cook's distance scores (Stevens, 2002; Tabachnick & Fidell, 2001), which were not indicative of any multivariate outliers. Review of the Shapiro –Wilk's Test suggested that the assumption of normality was reasonable for all variables included in subsequent regression models, as $p > .05$ for all study variables. Additionally, standardized skewness and kurtosis values were calculated and examined to assess for normality. For each study variable, the standardized skewness and kurtosis values did not exceed the clinically significant threshold of 1.96 ($\alpha = .05$), indicating that skewness and kurtosis were not significantly different from zero for any study variable and lending further evidence that the assumption of normality was not violated.

Preliminary Analyses of Study Variables

Descriptive statistics. As the current study aims to explore 1) the potentially protective effects of variables, which have traditionally been studied in predominantly non-Hispanic White samples, in African American families, and 2) within group variability in the extent to which culturally-specific constructs influence the development and manifestation of child anxiety in African American families, descriptive statistics of study measures were reviewed in the context of previously established psychometric properties. Given that the ACSI, MEIM-R, and RS-PR were adapted for use with children in the current study, no comparative data from other child samples were available for review. As such, the descriptive statistics for the adapted measures were compared to parent-report data from the current study. Descriptive statistics for each study measure are presented in Table 4.

Child anxiety. Overall, the children in the current study endorsed levels of trait anxiety ($M=36.53$, $SD=7.75$) that were very consistent with existing norms yielded from nonclinical samples, which have ranged from 36.30 ($SD=6.80$) to 38.10 ($SD=6.06$) for boys and girls, respectively (Spielberger, 1973). These findings suggest that the current sample was comprised of children who were not particularly anxious. Along these lines, self-reported levels of trait anxiety in the current sample were well below those found in children suffering from pathological anxiety. Indeed, only 9 children in the current study endorsed anxiety symptoms higher than one standard deviation above the mean from non-clinical samples. Interestingly, the current sample endorsed lower levels of trait anxiety when compared to existing norms for African American boys ($M=40.04$, $SD=4.98$) and girls ($M=40.26$, $SD=4.94$; Papay & Hedl, 1978), which have been

referenced in other studies using the STAIC with African American youth (Mandara, Gaylord-Harden, Richards, & Ragsdale, 2009; Wasserberg, 2014). Though previous research has found boys to endorse less anxiety than girls (Lewinsohn et al., 1998), no significant differences were found in self-reported anxiety scores between genders in the current sample, $t(47)=.654, p=.52$.

Traditional protective factors. Normative data for the ACQ-C based on samples composed primarily of non-Hispanic White community children (ages 9-17) have suggested mean scores ranging from 40.16 ($SD=8.8$) to 43.29 ($SD=9.5$) to 83.45 ($SD=17.7$) for the ACQ-C Internal Reactions subscale, External Events subscale, and Total scores in non-anxious youth, respectively (Weems et al., 2003). Overall, the current sample endorsed lower levels of perceived control, as measured by ACQ-C Internal Reactions ($M=34.61; SD=9.28$), External Events ($M=38.63; SD=9.10$), and Total scores ($M=73.24; SD=17.35$). Consistent with previous research, children in the current community sample endorsed greater levels of perceived control when compared to samples of clinically anxious children, which have yielded mean scores ranging from 30.01 ($SD=11.1$) for Internal Reactions to 36.12 ($SD=10.6$) for External Events to 66.13 ($SD=20.3$) for Total Perceived Control (Weems et al., 2003).

Regarding the use of active coping strategies, the mean score for the CCSC Active Coping subscale in the current sample ($M=2.70, SD=.50$) was comparable to that found in predominantly non-Hispanic White normative samples, who ranged in age from 9-13 years ($M=2.76, SD=.70$; Ayers, 1991) as well as previous studies on African American children (Prelow, Michaels, Reyes, Knight, & Barrera, 2002). Children in the current sample endorsed comparable levels of social support relative to existing norms

found within the literature. Specifically, a large normative sample comprised of 1137 third- through eighth-graders, who identified most frequently as non-Hispanic Whites, yielded mean scores ranging from 3.03 to 3.56 ($SD=.45$ to $.80$) for parent support; 2.74 to 3.25 ($SD=.48$ to $.78$) for classmate support; 2.91 to 3.37 ($SD=.59$ to $.72$) for teacher support; and 2.87 to 3.36 ($SD=.58$ to $.73$) for friend support (Harter, 1985). SSSC mean scores in the current study were consistent with the aforementioned ranges for each subscale, suggesting that African American children's perceived support from parents, classmates, teachers, and friends did not significantly diverge from levels reported in predominantly non-Hispanic White samples.

Parent Anxiety. Overall, the parents in the current study endorsed slightly higher levels of trait anxiety relative to other community samples of adults. Specifically, a normative North American sample of primarily non-Hispanic White working adults yielded STAI-T mean scores of 34.89 ($SD= 9.19$) for women and 34.79 ($SD= 9.22$) for men (Spielberger et al., 1970). Interestingly, the mean STAI-T score of 42.28 ($SD=11.03$) in the current sample was more consistent with existing data yielded from samples of African American undergraduate students and pain patients, which found mean trait anxiety scores ranging from 40.00 ($SD=11.3$) to 45.68 ($SD=12.13$), respectively (Chapman & Woodruff-Borden, 2009; Novy, Nelson, Goodwin, and Rowzee, 1993).

Sociocultural variables. Overall, parents in the current sample endorsed levels of cultural socialization/pluralism that were relatively consistent with levels reported in other community samples of African American adults. Specifically, existing data from a sample of 94 African American parents, composed primarily of college-educated,

middle- to upper-middle-income mothers, yielded a mean Cultural Socialization/Pluralism score of 2.74 ($SD=1.24$; Hughes & Johnson, 2001). Consistent with these data, the mean score in the current sample of African American adults ($M=2.38$; $SD=0.99$) fell well within one standard deviation of the previously reported mean.

Adults in the current study also reported similar levels of ethnic identity when compared to other community samples of minority adults. A previous examination of MEIM-R mean scores within a sample of 189 undergraduate and graduate students classified as minorities (i.e., Latino American; Asian American/Pacific Islander, African American, native American, and biracial) yielded mean scores of 3.76 ($SD=0.89$) and 3.97 ($SD=0.87$) for the Exploration and Commitment subscales, respectively (Yoon, 2011). Though levels of ethnic identity in the current sample generally fell within one standard deviation of previously reported means in samples broadly classified as ‘minority,’ the current sample endorsed slightly lower levels of ethnic identity exploration. Interestingly, such findings are consistent with existing research on African American females. Specifically, a sample of 58 African American female adults with gestational diabetes yielded MEIM-R mean scores ranging from 3.36 ($SD=0.97$) for Exploration to 4.04 ($SD=0.85$) for Commitment (Brown et al., 2014).

Overall, adults in the current sample endorsed higher levels of spiritual coping and collectivism when compared to other African American adults from the community. Indeed, the mean ACSI Spiritual Coping ($M=14.02$; $SD=6.80$) and Collectivism ($M=12.75$; $SD=4.73$) subscale scores in the current sample exceeded previously reported

means of 9.51 ($SD=5.53$) for Spiritual Coping and 9.80 ($SD=4.80$) in the original sample of 180 African American adults from the United States (Utsey et al., 2000).

Given that comparative data from child samples was not available for the adapted versions of the ACSI, MEIM-R, and RS-PR, children's self-report of ethnic identity, collectivism, spiritual coping, and racial socialization was compared to parent-report of the same in the current study. Across racial identity, collectivism, spiritual coping, and racial socialization, a general trend emerged across child- and parent- report data, in which the pattern of scores was highly comparable across groups, though children's mean scores on sociocultural measures tended to be slightly lower (<1 SD) than that of parents in the current sample. Overall levels of child-reported ethnic identity (MEIM-R-C Total $M= 3.37$, $SD=0.85$) were consistent with parental ethnic identity (MEIM-R Total $M= 3.48$, $SD=1.25$) in the current sample. Moreover, a similar pattern between dimensions of ethnic identity emerged in both parents and children, as both groups endorsed slightly higher levels of ethnic identity commitment in comparison to ethnic identity exploration. On the adapted version of the ACSI, child self-reported collectivism ($M= 10.88$, $SD=5.71$) and spiritual coping ($M= 11.00$, $SD=7.03$) were generally consistent, though slightly lower, when compared to parent's self-report of the same. Interestingly, children's mean subscale scores more closely approximated those found in the normative sample of African American adults (Spiritual Coping $M=9.51$, $SD=5.53$; Collectivism $M=9.80$, $SD=4.80$) than did the mean subscale scores for adults in the current sample. Finally, children's report of parental racial socialization practices ($M=1.72$, $SD=1.03$) was comparable to their parent's report of the same ($M=2.38$, $SD=0.99$).

Bivariate correlations. Bivariate correlations were conducted in order to examine the relationship between all study variables. Significant results are summarized below (see Table 5 for correlation coefficients).

Parent and child anxiety. In order to assess the extent to which parent anxiety constituted a variable of risk in the current study, bivariate correlations were first examined for parent and child anxiety, as measured by STAI Trait Subscale and STAI-C Trait Subscale scores, respectively. Contrary to expectations, no significant relationship emerged between parent and child anxiety in the current study.

Traditional protective factors. Bivariate correlations involving traditional protective factors (i.e., perceived control, social support, active coping) were then examined to detect significant relationships with other variables of interest in the current study. Results indicated significant positive associations across ACQ-C Internal Reactions, External Events, and combined Total Perceived Control Scores in the current sample. Similarly, significant positive correlations were found between all SSSC subscales (i.e., Parent Support, Classmate Support, Teacher Support, and Friend Support).

Bivariate correlations between traditional protective factors and both parent- and child-reported anxiety yielded notable findings. Each ACQ-C subscale and both Classmate and Parent Support demonstrated a significant negative association with child Trait Anxiety, as measured by the STAIC; however, CCSC Active Coping did not demonstrate a significant relationship with STAIC Trait Anxiety. Parental Trait Anxiety, as measured by the STAI, demonstrated a significant negative association with child-reported parental support, teacher support, and friend support, as measured by the

respective SSSC subscales; however, no other traditional protective factor included in the current study shared a significant association with parent anxiety.

Examination of bivariate correlation coefficients between traditional protective factors suggests that CCSC Active Coping shared significant positive associations with ACQ-C Internal, External, and Total scores as well as friend support, as measured by the SSSC. Looking at unique dimensions of perceived control, the ACQ-C External Events subscale shared a significant positive association with SSSC Classmate Support, Teacher Support, and Friend Support; however, ACQ-C Internal Reactions subscale was not significantly correlated with any dimension of social support, as measured by the SSSC. Overall, ACQ-C Total score demonstrated significant positive associations with both classmate and friend support. In light of the aforementioned significant correlations between various traditional protective factors variables, collinearity statistics, including tolerance and variance inflation factor (VIF), were calculated and examined in subsequent regression analyses to assess for significant multicollinearity between independent variables in the model.

Sociocultural variables: child-report. Bivariate correlations involving sociocultural factors (i.e., ethnic identity, racial socialization, collectivism, spiritual coping) were then examined to detect significant relationships with other variables of interest in the current study. Results indicated significant positive associations across MEIM-C-R Ethnic Identity Exploration, Commitment, and Total scores in the current sample.

Bivariate correlations between sociocultural variables and both parent and child anxiety yielded mixed findings. MEIM-R-C Ethnic Identity Exploration was significantly

correlated with child Trait Anxiety, as measured by the STAIC; however, contrary to a priori predictions, the observed association between Ethnic Identity Exploration and child anxiety in the current sample was positive. Also contrary to study hypotheses was the absence of significant associations between other sociocultural variables (i.e., RS-CR Cultural Socialization/Pluralism, ACSI-C Spiritual Coping, and ACSI-C Collectivism) and STAIC Trait Anxiety. Regarding parent anxiety, no significant associations emerged between the sociocultural variables included in the current study and STAI Trait Anxiety.

Exploration of relationships among sociocultural factors revealed significant positive associations between all variables, with the exception of non-significant relationships between ACSI Spiritual Coping and each of the MEIM-R-C Subscales.

Finally, a number of notable bivariate correlations emerged between sociocultural factors (i.e., ethnic identity, racial socialization, collectivism, spiritual coping) and traditional protective factors (i.e., perceived control, social support, and active coping). Specifically, significant positive relationships emerged between ethnic identity commitment and both internal and external dimensions of children's perceived control, as measured by ACQ-C subscale and total scores; however, ethnic identity exploration did not demonstrate a significant correlation with any ACQ-C subscale or total score in the current sample. Overall, MEIM-R-C Total scores shared a significant positive association with ACQ-C Internal subscale and Total scores, although no significant correlation emerged between MEIM-R-C Total scores and ACQ-C External subscale scores in the current sample. MEIM-R-C Ethnic Identity Exploration, Commitment, and Total scores were not significantly correlated with active coping or social support, as measured by the CCSC and SSSC, respectively. Regarding other sociocultural variables of interest, ACSI

Collectivism demonstrated a significant positive relationship with CCSC Active Coping, all ACQ-C dimensions of perceived control, and SSSC Friend Support; ACSI Spiritual Coping shared a significant positive correlation with CCSC Active Coping; however, children's report of Cultural Socialization/Pluralism demonstrated no significant correlations with any traditional protective factors.

Sociocultural variables: parent-report. Given that child-reported Cultural Socialization/Pluralism, Ethnic Identity, Collectivism, and Spiritual Coping were assessed using adapted versions of existing measures for adults, parent-report data for sociocultural factors (i.e., MEIM-R, RS-PR Cultural Socialization-Pluralism, ACSI Collectivism, ACSI Spiritual Coping) was included in correlational analyses for exploratory purposes. Significant positive associations were found between parents' MEIM-R Ethnic Identity Exploration, Commitment, and Total scores, and exploration of relationships among sociocultural factors revealed significant positive associations between all dimensions of parents' ethnic identity and Cultural Socialization/Pluralism; Cultural Socialization/Pluralism and ACSI Collectivism; and ACSI Collectivism and Spiritual Coping. Parental sociocultural factors did not demonstrate a significant association with parent anxiety.

No significant relationships emerged between parental ethnic identity, cultural socialization/pluralism, spiritual coping, or collectivism and children's report of the same. Moreover, parental endorsement of sociocultural factors was not significantly associated with children's report of anxiety or traditional protective factors (i.e., perceived control, social support, active coping).

Comparison of means. Next, mean scores for study variables were examined for possible differences based on demographic variables, including child age and gender; parent education; and household income. Independent samples T-tests indicated that mean STAIC-T scores did not significantly vary across boys ($M= 35.28, SD= 7.98$) and girls ($M= 36.75, SD= 7.10$) in the current sample, $t(47)= -.654, p=.52$. Mean scores for study variables designated as predictors in subsequent regression analyses (i.e., parent anxiety, traditional protective factors, sociocultural variables) were also examined for significant differences based on child gender using independent samples T-tests. Mean comparisons suggested that no significant gender-based differences existed for any study variable. Child age, parent education, and household income were also examined as potential covariates. As each of these variables was coded into 3 or more levels, one-way analyses of variance were utilized to investigate potential mean differences across levels of each study variable. No significant mean differences in parent anxiety, child anxiety, traditional protective factors, or sociocultural variables emerged across levels of parent education, household income, or child age.

Tests of Hypotheses

Hypothesis 1. *Parental anxiety will significantly predict child anxiety.*

Specifically, it is predicted that the relationship between parent anxiety and child anxiety will be positive in that parents with higher levels of anxiety will have children with higher levels of anxiety.

Initially, a linear regression analysis was used to examine the extent to which parent anxiety predicts child anxiety. Given that preliminary analyses showed no significant effect of child age, child gender, parent education, or household income on

child anxiety, these sociocultural variables were not included as covariates in the regression model. As such, STAI Trait Anxiety was entered as a single independent variable in the regression model, with STAIC Trait Anxiety functioning as the dependent variable. Consistent with the correlational results detailed above, the model was not significant, $R^2 = 0.01$, $F(1, 40) = .559$, $p = .459$, suggesting that parent reported anxiety did not significantly predict child-reported anxiety in the current sample.

Data were examined to ensure that assumptions of regression analysis were met for the model. Visual examination of the scatterplot revealed a linear relationship between parent and child anxiety, suggesting that the assumption of linearity was not violated for these variables. Histograms and Q-Q plots were also explored and yielded evidence of a normal distribution. In the scatterplot of standardized residuals against predicted values, a relatively random display of points emerged, where the spread of residuals appeared fairly constant over the range of values of the independent variable, consistent with the assumption of homogeneity of variance. The Durbin Watson statistic was also computed to further evaluate independence of errors, and was considered acceptable based on the cut score for 1 predictor and current sample size.

Hypothesis 2. *There will be a significant negative relationship between traditional protective factors and anxiety in African American children. Specifically, higher levels of child-reported social support, active coping, and perceived control will predict lower levels of child anxiety.*

A second multiple regression model was conducted to examine the extent to which each of the traditional protective factors related to child anxiety in the current sample. Based on preliminary bivariate correlations, child-reported social support and

perceived control were included as independent variables in the model, for which child anxiety remained the dependent variable. Given that Parent and Classmate Support subscales were significantly and positively correlated and each shared a significant positive association with STAIC-T scores, these subscales were summed to generate a social support composite for each child. The social support composite scores were then examined to ensure that all model assumptions were met. Visual inspection of the histograms revealed that these composites were normally distributed, and scatter plots indicated that they demonstrated a roughly linear relationship with the Child Trait Anxiety. The ACQ-C External Events and Internal Reactions subscales were also significantly correlated, which is consistent with previous research suggesting that the construct of perceived control is unidimensional in children. As such, ACQ-C Total score was utilized as an indicator of perceived control in regression analyses. The model was significant, $F(2,45)=9.88, p<.001$, and explained 30.5% of the variance, R^2 adjusted=0.274. Within the model, both perceived control, $\beta= -.257, t(48)=-1.98, p<.05$, and the social support composite, $\beta= -.420, t(48)=-3.23, p<.01$, emerged as significant negative predictors of STAI-C Trait Anxiety (see Table 6).

Data were examined to ensure that assumptions of regression analysis were met for the model. Visual examination of the scatterplot revealed linear relationships between independent and dependent variables, suggesting that the assumption of linearity was not violated for indicators included in the model. Histograms and Q-Q plots were also explored and yielded evidence of normal distribution for all variables of interest in the model. In the scatterplot of standardized residuals, a relatively random display of points emerged where the spread of residuals appeared fairly constant over the range of

predicted values, consistent with the assumption of homogeneity of variance. The Durbin Watson statistic was also computed to further evaluate independence of errors, and was considered acceptable based on the cut score for two predictors and current sample size. Given that significant correlations existed among traditional protective factors, collinearity statistics were calculated and examined to assess for significant multicollinearity between perceived control and social support in the regression model. Specifically, tolerance and variance inflation factor (VIF) values were evaluated and deemed to be within adequate range (tolerance > .10; VIF < 10), suggesting no significant issues with multicollinearity (Myers, 2000).

Hypothesis 3. *There will be a significant negative relationship between culturally-specific constructs and child anxiety in African American families. Specifically, higher levels of racial identity, religious coping, collectivism, and racial socialization will be related to decreased child anxiety.*

A third linear regression model was conducted to examine the extent to which the sociocultural factors related to child anxiety in the current sample. Based on preliminary bivariate correlations, child-reported Ethnic Identity Exploration was included as the single independent variable in the model, with child anxiety again serving as the dependent variable. Cultural Socialization/Pluralism, Spiritual Coping, and Collectivism were excluded from the regression analysis, as these variables did not share significant associations with child trait anxiety. The model was significant, $F(1,46)=5.03$, $p<.05$, and accounted for 9.9% of the variance in child anxiety, R^2 adjusted = 0.08. Ethnic Identity Exploration emerged as a significant positive predictor of STAI-C Trait Anxiety in the model, $\beta=.314$, $t(47)=2.24$, $p<.05$ (see Table 7).

Data were examined to ensure that assumptions of regression analysis were met for the model. Visual examination of the scatterplot revealed linear relationships, suggesting that the assumption of linearity was not violated for variables included in the model. Histograms and Q-Q plots were also explored and yielded evidence of normal distribution. In the scatterplot of standardized residuals, a relatively random display of points emerged where the spread of residuals appeared fairly constant over the range of predicted values, consistent with the assumption of homogeneity of variance. The Durbin Watson statistic was also computed to further evaluate independence of errors, and was considered acceptable based on the cut score for a single predictor and the current sample size.

Hypothesis 4. *The protective effect of culturally-specific constructs will be significant over and above that of parent anxiety and traditional protective factors alone. Specifically, it is predicted that racial identity, religious coping, collectivism, and racial socialization will demonstrate a significant negative relationship with child anxiety and the effects will remain significant after accounting for both parental anxiety as well as traditional protective factors.*

Hierarchical multiple regression analysis was conducted to elucidate the relationships between parent anxiety, traditional protective factors, culturally-specific constructs, and child anxiety in the current sample. In Block 1, parent anxiety was again entered as an independent variable. In the second block of the regression model, each of the traditional protective factors (i.e., perceived control, social support) was added as an additional predictor variable. Finally, child-reported Ethnic Identity Exploration was entered in step 3 of the regression model. Results are outlined in Table 8. The first model

was not significant, and parent anxiety did not significantly predict child anxiety, $R^2 = .014$, $F(1,43) = .61$, $p = .44$. The inclusion of traditional protective factors in Block 2 yielded a significant model, $F(3,41) = 7.79$, $p < .001$, and explained an additional 34.9% of variance in child anxiety, R^2 adjusted = .316. This change in R^2 was significant, $F(2, 41) = 11.23$, $p < .001$. Within the model, parent trait anxiety emerged as a significant predictor of child anxiety, $\beta = -.277$, $t(45) = -2.13$, $p < .05$, as did social support, $\beta = -.485$, $t(45) = -3.54$, $p < .001$; however, perceived control was no longer a significant contributor to the model, $\beta = -.248$, $t(45) = -1.89$, $p = .07$. In Block 3, the inclusion of Ethnic Identity Exploration as an additional predictor of child anxiety yielded the best-fitting model for the data, $F(4, 40) = 7.40$, $p < .001$. Indeed, the final hierarchical model accounted for a total of 42.5% of the variance in child anxiety, which represents a significant change in R^2 , $F(1,40) = 4.32$, $p < .05$. Within this model, child anxiety was significantly predicted by child-reported ethnic identity exploration, $\beta = .284$, $t(45) = 2.08$, $p < .05$; perceived control, $\beta = -.349$, $t(45) = -2.58$, $p < .05$; and social support, $\beta = -.359$, $t(45) = -2.47$, $p < .05$; however, parent trait anxiety was no longer a significant contributor to child anxiety in the final model, $\beta = -.212$, $t(45) = -1.64$, $p = .11$,

Data were examined to ensure that assumptions of regression analysis were met for the model. Visual examination of the scatterplot revealed linear relationships, suggesting that the assumption of linearity was not violated for variables included in the model. Histograms and Q-Q plots were also explored and yielded evidence of normal distribution. In the scatterplot of standardized residuals, a relatively random display of points emerged where the spread of residuals appeared fairly constant over the range of predicted values, consistent with the assumption of homogeneity of variance. The Durbin

Watson statistic was also computed to further evaluate independence of errors, and was considered acceptable based on the cut score for 4 predictors and current sample size. Given the significant correlations among independent variables, collinearity statistics were calculated and examined to assess for significant multicollinearity between independent variables in the regression model. Specifically, tolerance and variance inflation factor (VIF) values were evaluated and deemed to be within adequate range (tolerance >.10; VIF <10), suggesting no significant issues with multicollinearity.

Exploratory Analyses

Given the parent anxiety did not significantly predict child anxiety as predicted in the current sample, exploratory analyses were conducted to explore potential interactions among other variables of interest. Interestingly, despite the lack of significant association between parent and child anxiety, both traditional protective factors and sociocultural constructs emerged as significant predictors of child anxiety in the current sample. Specifically, perceived control and social support demonstrated a significant negative relationship with child anxiety, which was consistent with a priori hypotheses. However, a priori hypotheses pertaining to the role of sociocultural constructs were only partially supported. Although ethnic identity exploration significantly predicted child anxiety over and above the influence of traditional protective factors and parent anxiety, this relationship was in the opposite direction of that which was expected. In light of these findings suggesting that greater ethnic identity exploration was associated with higher levels of child anxiety in the current sample, exploratory analyses were conducted to examine potential interactions among study variables of interest that might influence the nature of this relationship.

Moderating effects of familial context. Previous research has suggested that the utilization of cultural coping strategies in children can vary based on the strength of ethnic identification within the larger family system (Constantine, Donnelly, & Myers, 2002; Gaylord-Harden, Burrow, & Cunningham, 2012; Lamborn et al., 2006; Lamborn & Nguyen, 2004; Spencer, Fegley, & Harpalani, 2003). Indeed, ethnic identity has been linked to the frequency at which parents engage in racial socialization practices with their children as well as intra-family communication pertaining to culturally-specific ways of responding to adversity (Hughes & Johnson, 2001; Hughes, 2003; Hughes et al., 2006). Extending these findings to the current study, it is reasonable to argue that sociocultural experiences within the context of a child's family environment will influence the extent to which the exploratory phase of ethnic identity development is associated with anxiety. Along these lines, exploratory analyses were utilized to test the hypothesis that parent ethnic identity would moderate the relationship between child ethnic identity exploration and anxiety in the current sample. Specifically, stronger parental ethnic identity was predicted to weaken the relationship between child-reported ethnic identity exploration and anxiety.

Given that MEIM-R Exploration and Commitment subscales shared significant positive associations, the composite MEIM-R Total score was utilized as an indicator of parents' overall ethnic identity in exploratory analyses. In order to capture the maximum amount of variability possible, the MEIM-R Ethnic Identity Total score was retained as a continuous variable, and interactions were examined utilizing multiple regression. Prior to computing the interaction term (i.e., MEIM-R Total X MEIM-R-C Exploration), all independent variables were centered by subtracting the mean from each value in order to

address issues of multicollinearity (Aiken & West, 1991). Parent-reported ethnic identity, child ethnic identity exploration, and the interaction term were then entered as predictors of child trait anxiety in a simultaneous regression model, which also included child perceived control and social support as covariates. The model as a whole was significant, $F(5, 39)=5.56, p<.001$, and accounted for 41.0% of the variance in child anxiety ($R^2=.410$). Within the model, child anxiety was significantly predicted by child ethnic identity exploration, $b=2.76, t(45)=2.51, p<.05$; perceived control, $b=-.187, t(45)=-3.02, p<.01$; and social support, $b=-2.58, t(45)=-2.06, p<.05$; however, parent ethnic identity was not a significant predictor in the model, $b=-.898, t(45)=-.993, p=.33$, and the interaction term did not significantly contribute to the model, $\Delta R^2=.005, F(1,39)=.314, p=.58$. Thus, it was concluded that parent ethnic identity commitment did not significantly moderate the relationship between child ethnic identity exploration and anxiety in the current sample (see Table 9).

The goodness of fit of the regression was determined by evaluating whether the model assumptions had been adequately met. Visual inspection of the scatterplots approximated linear relationships between variables of interest. The assumption of homoscedasticity was deemed to be met based on evaluation of the standardized residuals plotted against standardized predicted values. The standardized residuals of the models were normally distributed upon inspection of the histogram, and no problematic outliers or multicollinearity were identified upon examination of Cook's Distance Values, Mahalanobis distances, VIF, and tolerance values.

Moderating effects of traditional protective factors. The lack of significant main or indirect effects observed for parental factors in the current sample suggests that

predisposing or mitigating variables at the parent level are not particularly relevant to child anxiety in the current sample. As such, additional exploratory analyses were conducted to examine whether the association between child ethnic identity exploration and anxiety varied as a function of other factors at the child level. Given that perceived control and social support are well-established protective factors in the context of anxiety and that they negatively predicted anxious symptoms in the current sample, even after accounting for the indirect effects of familial context, it was hypothesized that higher levels of perceived control and social support would buffer the risk for anxiety associated with ethnic identity exploration.

In order to test this hypothesis, multiple regression analysis was utilized to investigate the indirect effects of traditional protective factors. In order to maximize variability, proposed moderators were retained as continuous variables. Prior to computing the interaction terms for perceived control (i.e., ACQ-C x MEIM-R-C Exploration) and social support (i.e., Social Support Composite x MEIM-R-C Exploration), these variables were centered by subtracting the mean from each value in order to address issues of multicollinearity (Aiken & West, 1991). The two predictors and interaction terms were then entered into a simultaneous regression model, which included ethnic identity exploration as the independent variable and child anxiety as the dependent variable. The model as a whole was significant, $F(5, 39) = 5.33, p < .001$, and accounted for 39.4% of the variance in child trait anxiety. Within the model, significant main effects were found for perceived control, $b = -.163, t(45) = -2.64, p < .05$, and social support, $b = -2.63, t(45) = -2.08, p < .05$. However, the model was not significantly improved by the inclusion of the interaction term for perceived control or social support, and ethnic

identity exploration remained a significant predictor of child anxiety, $b=2.59$, $t(45)=2.40$, $p < .05$. Thus, it was concluded that neither perceived control nor social support significantly moderated the relationship between child ethnic identity exploration and anxiety in the current sample (see Table 10).

The goodness of fit of the regression was determined by evaluating whether the model assumptions had been adequately met. Visual inspection of the scatterplots approximated linear relationships between variables of interest. The assumption of homoscedasticity was deemed to be met based on evaluation of the standardized residuals plotted against standardized predicted values. The standardized residuals of the models were normally distributed upon inspection of the histogram, and no problematic outliers or multicollinearity were identified upon examination of Cook's Distance Values, Mahalanobis distances, VIF, and tolerance values.

Moderating effect of sociocultural variables. As the second exploratory analysis suggested that traditional protective factors do not significantly moderate the relationship between ethnic identity exploration and child anxiety in the current sample, interactions among culturally-specific factors were further explored to investigate the extent to which other dimensions of a child's sociocultural experience impacted this relationship. Preliminary bivariate correlations indicated that both racial socialization and collectivism were positively correlated with child ethnic identity, which is consistent with existing research on sociocultural influences. Indeed, children's efforts to explore the meaning of their ethnic group membership have been shown to prompt parental communication to them about ethnicity (Hughes & Johnson, 2001). Additionally, previous work suggests identification with the African American collective is associated with

a stronger Black self-concept (Allen & Bagozzi, 2001). Although child-reported racial socialization and collectivism were not significantly correlated with trait anxiety in preliminary bivariate correlations, sociocultural factors have demonstrated indirect protective effects pertaining to other child outcomes in previous studies (Murry et al., 2001). Therefore, a final exploratory analysis was conducted to investigate the potential moderating effects of racial socialization and collectivism on the relationship between child ethnic identity exploration and anxiety. Specifically, it was predicted that the association between ethnic identity exploration and child anxiety would be weaker at higher levels of racial socialization and collectivism.

In order to capture the maximum amount of variability possible, the proposed moderators were retained as a continuous variable, and interactions were examined utilizing multiple regression. Prior to computing the interaction terms for racial socialization (MEIM-R-C Exploration X RS-CR cultural socialization/pluralism) and collectivism (MEIM-R-C Exploration X ACSI-C Collective Coping), all independent variables were centered by subtracting the mean from each value in order to address issues of multicollinearity (Aiken & West, 1991). Child ethnic identity exploration, the proposed moderators, and the interaction term were then entered into a simultaneous regression model, with child anxiety as the dependent variable. The model as a whole was significant, $F(5,39)=2.69, p<.05$, and accounted for 24.7% of the variance in child anxiety ($R^2=.247$). The interaction term between collectivism and ethnic identity exploration significantly improved the model and emerged as a significant negative predictor of child anxiety, $\Delta R^2=.082, F(1,39)=4.44, p<.05, b=-.464, t(45)=-2.11, p<.05$. Interestingly, the main effect of ethnic identity exploration on child anxiety fell just

below the level of statistical significance, $b=2.73$, $t(45)=-2.01$, $p=.051$. Nonetheless, such findings can be meaningfully interpreted in the context of the current sample's size and other results yielded from this study. Indeed, these results not only indicate a potential dampening effect, but further provide evidence to suggest that ethnic identity exploration remained a marginally significant predictor of child anxiety over and above the interaction with collectivism. Further review of the model indicated that no other predictor variables yielded significant main or indirect effects (see Table 11).

Given that the ethnic identity exploration by collectivism interaction term emerged as a significant predictor in the model, it was determined that collectivism significantly moderated the relationship between ethnic identity exploration and child anxiety in the current sample. As such, post-hoc probing of the interaction effects was conducted to further explore the conditional effects of ethnic identity exploration on child anxiety at varying levels of collectivism. Specifically, simple slopes were calculated and plotted graphically (see Figure 3) to further examine the relationship between ethnic identity exploration at low ($-1 SD$), moderate (M), and high ($+1 SD$) collectivism. As shown in Figure 3, ethnic identity exploration remained a significant positive predictor of child anxiety at both low & moderate levels of collectivism; however, when high collectivism was endorsed, ethnic identity exploration was not significantly associated with child anxiety. As such, it was concluded that collectivism demonstrated a buffering effect, in which the relationship between ethnic identity exploration and child anxiety was significantly weakened when high levels of collectivism were present.

The goodness of fit of the regression was determined by evaluating whether the model assumptions had been adequately met. Linearity of the variables was indicated by

the scatterplots of the variables, which approximated linear relationships. The assumption of homoscedasticity was met through the examination of the plot of standardized residuals against the predicted values. The standardized residuals of the models were normally distributed upon inspection of the histogram, and no problematic outliers or multicollinearity were identified upon examination of Cook's Distance Values, Mahalanobis distances, VIF, and tolerance values.

DISCUSSION

The current study sought to examine the relationships between parent anxiety, traditional protective factors, sociocultural variables, and child anxiety in a sample of African American youth. Specifically, the study aimed to validate the link between parent and child anxiety within African American families as well as the mitigating effects of protective factors that have been linked to resilient outcomes in the context of anxiety among non-Hispanic White samples. In addition, the current study concurrently aimed to elucidate the contributions of sociocultural factors as well as potential interactions between parental risk factors, traditional protective factors, and culturally-specific constructs in the development of child anxiety within African American families. With these aims in mind, the current study empirically tested various components of a proposed conceptual model of child anxiety development, which posits that 1) culturally-specific factors (i.e., ethnic identity, racial socializations, collectivism, and spiritual coping) will influence the relationship between predisposing factors (i.e., genetics, temperament, environment, sociocultural) and anxiety, and 2) the effect of these salient sociocultural experiences within the African American context will buffer the risk for child anxiety over and above traditional factors that have demonstrated a protective influence in non-Hispanic White samples (i.e., social support, perceived control, active coping).

Research on anxiety and related constructs within African American families is lacking and the limited literature pertaining to cross-cultural disparities has yielded mixed findings on the prevalence and manifestation of anxiety in African Americans. As such, preliminary analyses were conducted to examine study variables in comparison to existing data yielded from non-Hispanic White community samples. Preliminary analyses were also conducted to explore correlations among traditional protective factors, sociocultural variables, and anxiety to investigate potential differences based on demographic variables, such as child gender and age, household income, and parent education. In order to test a priori study hypotheses, the extent to which parent anxiety, traditional protective factors, and sociocultural variables predicted child anxiety was then examined through regression analyses. Specifically, it was predicted that parent anxiety would demonstrate a significant positive relationship with child anxiety, whereas both traditional and culturally-specific protective factors were hypothesized to negatively predict child anxiety. Subsequent to hypothesis testing, exploratory regression analyses were conducted to further examine significant findings that emerged during hypothesis testing as well as potential interactions among variables of interest. Specifically, traditional protective factors and sociocultural constructs were hypothesized to demonstrate a moderating effect, in that greater endorsement of these variables would attenuate children's risk for anxiety.

Preliminary Analyses

Preliminary analyses indicated children in the current study endorsed levels of trait anxiety that were highly consistent with those yielded from previous nonclinical samples. Indeed, mean self-reported anxiety for both boys and girls in the current sample

was comparable to existing norms based on predominantly non-Hispanic White samples (Spielberger, 1973). Interestingly, male and female children in the current sample endorsed less anxiety when compared to normative data from non-clinical samples of African American youth (Papay & Hedl, 1978). Such findings are particularly notable when considered within the context of existing literature, which has generally emphasized factors that predispose African Americans to adverse emotional outcomes as well as the heightened risk for anxiety and other internalizing symptoms in this population.

Previous studies have found that African American children endorse more fear (Burnham & Lomax, 2009; Neal & Turner, 1991, Last & Perrin, 1993) and worry (Silverman et al., 1995) as well as increased rates of specific phobia and post-traumatic stress disorder (Last & Perrin, 1993) and specific phobia (Neal & Brown, 1994) when compared to non-Hispanic Whites. Most recently, epidemiological data has found increased rates of anxiety disorders (OR=1.3) among non-Hispanic Black adolescents relative to non-Hispanic Whites (Merikangas et al., 2010). Interestingly, African American children in the current study did not appear to be at increased risk for anxious symptoms inasmuch as they endorsed comparable levels of anxiety relative to predominantly non-Hispanic White normative samples, and not higher as would be expected.

The lower than expected level of anxiety endorsed by children in the current study may be a function of the atypical characteristics of this sample (i.e., more highly educated with lower income). However, much of the empirical data on anxiety in African American youth is derived from treatment-seeking and clinical samples of African

American youth, so it may also be that existing findings do not generalize to African American children who are not experiencing pathological anxiety. Findings from the current study diverge somewhat from even more recent epidemiological data, which has suggested that African American adolescents are at increased risk for anxiety disorders (Merikangas et al., 2010). It should be noted, however, that an OR of 1.3 falls within a 95% confidence interval that ranges from 1.0, which would suggest no increase in risk relative to non-Hispanic Whites, to 1.5 (Merikangas et al., 2010). Moreover, the aforementioned epidemiological data was collected from adolescent samples, so it remains unknown whether those findings generalize to the current sample of African American children, who ranged from 8 to 13 years of age. This is particularly true given that the literature on anxiety in African Americans remains mixed overall. Indeed, these preliminary findings do align with previous epidemiological research on anxiety in children, which suggests comparable prevalence rates of anxiety symptoms between African American and European American youth (Angold et al., 2002), very few cross-ethnic differences in anxiety disorders (Merikangas et al., 2004), and more similarities than differences overall (Last & Perrin, 1993).

Existing epidemiological research suggesting lower lifetime risk for generalized anxiety disorder, panic disorder, and social phobia among African American adults has pointed to potential culturally-specific protective factors that are uniquely relevant to the etiological processes underlying internalizing symptoms in this population (Breslau et al., 2006). Along these lines, preliminary results from the current study represent an initial step toward enhancing our understanding of internalizing symptoms as well as potential pathways to adaptive outcomes originating in childhood. When coupled with existing research suggesting

that African American adults demonstrate lower rates of anxiety disorders relative to non-Hispanic Whites, the current findings point to the possibility that protective cultural processes become more salient over time with incremental benefit in the context of anxiety. Future research examining cross-cultural differences in anxiety over the course of the lifespan is needed to elucidate the role of environmental experiences within the African American context and normative developmental processes in promoting adaptive outcomes.

Generally speaking, the protective effects of sociocultural experiences on anxiety have not previously been explored in child samples, and the interactions among predisposing factors, protective environmental experiences, and anxiety outcomes in African American children are critical to further examine. It may be that particular sociocultural experiences lead to overall increases in levels of traditional protective factors, which account for similar to lower levels of anxiety as compared to non-Hispanic White and African American non-clinical samples, respectively. Indeed, ethnic identity commitment, collectivism, and spiritual coping shared significant positive associations with a number of traditional protective factors in the current sample. Specifically, perceived control was positively associated with ethnic identity commitment and collectivism; social support shared a significant positive association with collectivism; and active coping demonstrated a positive correlation with collectivism and spiritual coping. Although these preliminary correlational data do not offer insight into causative effects, previous research has consistently linked these cultural experiences with a multitude of positive psychological outcomes (APA, 2008). Therefore, one possible explanation is that the cultural experiences of African American children lead to adaptive outcomes by promoting traditional protective influences, such as perceived control, social

support, and active coping, which have demonstrated negative associations with anxiety in non-Hispanic White samples.

In the current study, African American children endorsed comparable levels of social support and active coping but lower levels of perceived control relative to previously studied non-Hispanic White samples. Consistent with these findings, previous research has shown that African American adolescents report lower perceived control across personal and sociocultural domains when compared to non-Hispanic Whites (Long, 1975; Zimmerman, Ramirez-Valles, & Maton, 1999). Taken together, these findings indicate that the sociocultural experiences of African American youth may lead this group to perceive themselves as having less control, as compared to non-Hispanic White children. Indeed, it has been posited that negative experiences with oppression, discrimination, and prejudice contribute to the internalization of helplessness and lower levels of perceived control among African American youth (Zimmerman, Ramirez-Valles, & Maton, 1999). Interestingly, despite endorsing lower levels of perceived control relative to previous non-Hispanic White samples, children from the current study did not endorse significant levels of anxious symptoms. These results suggest that perceived control may be less relevant to anxious symptoms in African American children. Moreover, the finding that children from the current study endorsed comparable levels of anxiety but lower perceived control when compared to previous non-Hispanic White samples points to other pathways through which sociocultural experiences may impact the development of anxiety. For example, the indirect effects of salient cultural experiences, such as ethnic identity development, racial socialization practices, spiritual coping, and collectivism, could explain this discrepancy. In the current study, none of the

culturally-specific factors demonstrated a significant correlation with child anxiety; however, such findings are not inconsistent with the notion that sociocultural experiences may moderate pathways to anxiety. This interpretation is consistent with the proposed conceptual model, and will therefore be discussed more comprehensively in the context of study hypotheses and exploratory analyses.

Hypothesis Testing

The hypothesis that parent anxiety would positively predict child anxiety was first investigated. Preliminary bivariate correlations between parent and child anxiety were examined and, contrary to expectations, no significant association emerged between these variables in the current study. Consistent with these correlational results, the subsequent regression model utilized to test this hypothesis was not significant, suggesting that parental anxiety did not explain a meaningful amount of variance in child anxiety within the current sample. These findings are inconsistent with existing data, which suggest that comparable familial co-occurrence of anxiety disorders across African American families and non-Hispanic White families. A previous study by Chapman and colleagues (2012) found that African American children with an anxious parent were four times more likely than those with non-anxious parents to develop an anxiety disorder themselves.

These discrepant findings can be interpreted in a number of ways. Firstly, the lack of significant association between parent and child anxiety in the current study may be explained by the use of parent and child self-reported anxiety symptoms as opposed to clinical diagnoses. While findings pertaining to the familial transmission of anxiety are generally robust, it is worth noting that much of the data supporting the link between parent and child anxiety has been obtained from clinical samples, with diagnostic criteria

being met by both parents and children. Indeed, the only study to date examining the co-occurrence of parent-child anxiety in African American families utilized clinical diagnoses (Chapman et al., 2012). While the current results certainly diverge from previous findings based on clinical samples, they are not inconsistent with existing research on child and parent self-reported anxious symptoms in non-clinical samples. Correlations between parent self-reported and child self-reported anxiety symptoms tend to be much lower than those yielded from samples in which diagnostic criteria have been met and often do not reach the level of statistical significance. For example, Coletti and colleagues (2010) found no significant association between parent and child anxious symptoms or parent and child depressive symptoms within a sample of predominantly non-Hispanic White parents (i.e., 13.5 % African American) who were previously diagnosed with a depressive disorder. Similarly, Bogels and van Melick (2004) found no significant correlation between parent report of parent anxiety and child report of child anxiety.

Additionally, the lack of significant association between parent and child anxiety in the current sample may stem from the nature of familial risk considered in this study. Specifically, considering the broad construct of trait anxiety as opposed to disorder-specific symptoms of anxiety may have oversimplified the concept of familial risk in the current study. Previous studies have suggested that familial risk varies across anxiety disorders. For example, Biederman and colleagues (2006) found that some anxiety disorders, such as agoraphobia, are associated solely with parental panic disorder, whereas the risk for other anxiety disorders, such as social phobia, appears to be

influenced by both parental panic disorder as well as other factors, including parental depression (Biederman et al., 2006).

Finally, it is also possible that dimensions of familial context which are conceptualized as risk factors in traditional models of child anxiety do not generalize to African American families. This interpretation is consistent with research suggesting that familial processes differ in the extent to which they predict anxious outcomes across cultures. For example, there is evidence to suggest that family functioning is less related to anxiety symptoms in African Americans relative to non-Hispanic Whites (Chapman & Woodruff-Borden, 2009). Along these lines, other studies on parenting styles and behavior across ethnic groups have found the effects of parental factors on the development of child anxiety to also differ in African Americans (Garcia-Coll, Meyer, & Brillon, 1995).

Generally, research suggests that African American families tend to engage in parenting styles that reflect the values of collectivistic cultures, such as authoritarian parenting and greater use of discipline (Garcia-Coll et al., 1995). Additionally, other research has found harsh and controlling parenting to be more common in African Americans (Baldwin et al., 1990; Berlin, Brady-Smith & Brooks-Gunn, 2002; Bradley, Corwyn, McAdoo, & Garcia Coll, 2001; McLoyd & Smith, 2002). Consistent with greater use of control among African American parents, lower levels of perceived control have been found among African American youth as compared to non-Hispanic White children (Long, 1975; Zimmerman, Ramirez-Valles, & Maton, 1999). Interestingly, while democratic parenting styles have generally been related to positive outcomes in non-Hispanic White children (Baumrind, 1972; Hamner & Turner, 1990), research suggests

that parental control and authoritarian parenting styles are predictive of positive outcomes in African American children (Brody & Flor, 1998; Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004; McLoyd & Smith, 2002; Ispa, Fine, Halgunseth, Harper, Robinson, Boyce, et al., 2004). Moreover, the existing literature suggests that African Americans differ from non-Hispanic Whites in their appraisals of these parenting styles (e.g., Deater-Deckard & Dodge; 1997), in that African Americans appear to perceive high parental control in more positive terms (Lamborn, Dornbusch, & Steinberg, 1996).

Given the differential role of parental control across non-Hispanic White and African American families, it stands to reason that pathways from parenting behaviors to child anxiety may not fully generalize across these populations. There is a large body of evidence suggesting that early experience with diminished control increases the likelihood that one perceives themselves to have less control over events, in turn predisposing them to anxiety (Chorpita & Barlow, 1998). Consistent with previous research on African American youth, children in the current study endorsed lower levels of perceived control when compared to normative and predominantly non-Hispanic White samples; however, the overall level of anxiety within the current sample was consistent with non-anxious predominantly European American samples. While lower perceived control is generally conceptualized as a risk factor for anxiety, this construct may be less relevant to children within the African American family context given the role of parental control. This interpretation is consistent with previous research in African American adults, which has suggests that perceived control contributed significantly less to worry among African American adults as compared to their non-Hispanic Whites counterparts (Chapman et al., 2009). However, because the current study explored

parental anxiety and not specific parenting behaviors, future research is needed to elucidate the moderating role of culture on the familial transmission of anxiety.

The hypothesis that there would be a significant negative relationship between traditional protective factors and anxiety was subsequently examined and was partially supported in the current sample. Preliminary bivariate correlations indicated that, among various sources of social support, only parent and classmate support demonstrated significant associations with child anxiety in the current sample. These preliminary findings are consistent with existing normative data from predominantly non-Hispanic White children, as previous research has found parent and classmate support to share the strongest associations with positive outcomes, such as self-concept, in both elementary school- and middle school-aged students (Harter, 1985; Harter, 1999; Harter, 2012). In addition to parent and classmate support, perceived control also shared a significant negative association with child anxiety in the current sample. After combining parent and classmate support to form the social support composite, subsequent regression analyses indicated that the aforementioned traditional protective factors contributed significant variance (30.5%) to child anxiety. Within the regression model, both social support and perceived control emerged as unique negative predictors of child anxiety.

These results are consistent with studies that have examined protective factors in predominantly non-Hispanic white samples. For instance, family social support predicted lower levels of anxiety among children who were exposed to community violence (White, Bruce, Farrell, Kliewer, 1998), and both state and trait anxiety were negatively predicted by social support in a sample of elementary and middle school students (Hill, Levermore, Twaite, & Jones, 1996). Though less research has examined the construct of

perceived control as it relates to anxiety in children, there is some evidence indicating that children with a strong sense of mastery over unfamiliar and/or potentially dangerous situations may be protected against clinically significant levels of anxiety (Bitsika et al., 2010).

Taken together, the results of the second study hypothesis provide support for the generalization of two traditional protective influences in the development of anxiety within African American children, indicating that both social support and perceived control were salient negative predictors of child anxiety in the current sample. In addition to enhancing our understanding of factors that buffer anxiety in youth, the current study extends the applicability of existing models to African American children, and suggests that the relationships between traditional protective factors hold in African American children. These pathways to adaptive outcomes are of paramount importance within the developmental psychopathology framework, as protective factors form the basis of intervention and optimize preventative efforts (Spence, 1996, 2001). Given that empirical support for existing psychosocial interventions targeting anxiety remain largely informed by research on predominantly non-Hispanic White samples, the finding that the effects of traditional protective factors generalize to African American children are notable. Indeed, to the extent that social support and perceived control predict less anxiety in African American children, existing empirically-based interventions and preventative efforts targeting these constructs are likely to be relevant to the needs of this population.

Interestingly, the finding that perceived control was significantly related to anxious symptoms among children in the current sample is discrepant from existing research on African American adults. Specifically, previous work in the area has

indicated that perceived control contributes significantly less to self-reported worry in African American adults relative to non-Hispanic Whites (Chapman et al., 2009). When considering the intersection of traditional protective factors, cultural context, and anxiety across the lifespan, the current findings begin to shed light on potential changes in the relative contributions of these influences over the course of one's development. It may be that traditional protective factors of perceived control and social support are significantly related to anxiety symptoms in African American children and become less predictive of anxiety symptoms within the African American context over time. In particular, as one develops the cognitive resources needed to establish a stronger ethnic identity and more abstract notions of coping, it is likely that culturally-specific protective influences and more active coping strategies will become more salient and in turn, account for a greater proportion of the variance in anxiety outcomes.

Contrary to expectation, the use of active coping strategies was not significantly related to anxiety in the current sample. It may be the case that traditional measures of coping do not adequately capture the culturally-specific coping strategies employed by African Americans, which might also be represent an active approach to managing distress. This interpretation fits with preliminary analyses in this study, which indicated that culturally specific coping strategies, including collectivism and spiritual coping, demonstrated a significant positive relationship with active coping in the current sample. Nonetheless, active coping strategies, spiritual coping, and collectivism were not significantly related to child anxiety, so it may be the case that other forms of coping, such as support-seeking, are more salient within the African American context. This is likely to be particularly true for younger children like those in the current sample, as

seeking support from others and attempting to cope with anxiety through control represent more concrete ways to manage anxiety. To the extent that culturally-specific and more active coping strategies require the ability to grasp more advanced and abstract concepts, these strategies may become increasingly salient at later stages of development.

The hypotheses that culturally-specific constructs would negatively predict child anxiety and that these effects would be significant over and above the contributions of parent anxiety and traditional protective factors was partially supported within the current sample. Preliminary analyses indicated that all sociocultural variables were internally consistent, as evidenced by good Cronbach alpha values, and demonstrated significant positive correlations with each other, excluding the non-significant relationship between spiritual coping and ethnic identity. However, parent and child self-reported sociocultural experiences were not significantly correlated in the current sample. While these findings are inconsistent with research demonstrating moderate overlap between child and adult sociocultural experiences (Hughes et al., 2009; Thomas & King, 2007), this discrepancy aligns with previous research on parent-youth agreement, which has generally demonstrated high rates of discordance (Achenbach et al., 1987). As such, future work utilizing data yielded from other sources (e.g., multiple informants, interview) is needed to clarify the nature of discrepant findings between parent- and child-reported sociocultural experiences. Moreover, given that existing adult measures were adapted to assess culturally-specific factors among children in the current study, it is possible that the instruments utilized failed to validly capture sociocultural processes among children in the current sample. Therefore, a more comprehensive examination of the psychometric properties of these child-report sociocultural measures is warranted.

Bivariate correlations between child anxiety and sociocultural variables revealed that ethnic identity exploration shared a significant association with child anxiety, whereas racial socialization, collectivism, and spiritual coping were not related to child anxiety. Contrary to prediction, the correlation between ethnic identity exploration and anxiety was in the direction opposite of expectation. Follow-up regression analyses indicated that ethnic identity exploration was a positive predictor of child anxiety and explained a significant amount of variance in this outcome, even after accounting for the effects of parent anxiety and traditional protective factors.

These findings are inconsistent with existing research, which has underscored the negative relationship between ethnic identity and a number of psychological outcomes, including self-perception, well-being, and self-esteem (APA, 2008) as well as the mitigating effect ethnic identity on multitude of negative outcomes, such as the internalization of negative stereotypes associated with psychological distress, internalizing and externalizing behaviors, and poorer school performance in African American youth (APA, 2008; McMahon & Watts, 2002; Sellers, Copeland- Linder, Martin, & L'Heureux Lewis, 2006). However, it is important to consider that previous research on ethnic identity has generally focused on adolescent samples, thus limiting the availability of comparative data on the relationship between ethnic identity and anxiety in children ages of 8-13. Given the novelty of the examination of the relationship between sociocultural factors and anxiety in elementary and middle school-aged African American children, these findings can be interpreted in a number of ways.

It is first important to consider the bidirectional nature of the association between ethnic identity and child anxiety, as it may be that anxiety prompted children's efforts to

explore the meaning of their ethnicity. Indeed, as children's level of autonomy increases and they begin to engage with peers and independent activities, those from minority ethnic backgrounds are increasingly exposed to culturally-based experiences with stigma, oppression, discrimination, and prejudice (Phinney & Chavira, 1995). Often, these experiences increase the salience of one's ethnic identity and prompt children to explore the meaning of their ethnic group membership. Therefore, the positive association between ethnic identity exploration and anxiety may be indirectly related to children's exposure to stigma and negative experiences with oppression, discrimination, and prejudice.

Along these lines, the finding that ethnic identity was the only significant sociocultural predictor of child anxiety may further indicate that ethnic identity functions as a precursor to other culturally-specific coping strategies. For example, the extent to which one identifies with the African American context has been shown to significantly predict the use of culturally-based practices, such as collective coping, spiritual coping, and racial socialization (Constantine et al., 2002; Utsey, Adams, & Bolden, 2000; Zaff, Blount, Phillips, & Cohen, 2002). As children begin to explore the meaning of their ethnicity, they attempt to gather information about their own cultural background, in turn eliciting parental use of cultural socialization practices, such as discussions about attitudes and values and modeling the use of culturally-specific coping strategies (Hughes & Johnson, 2001). Along these lines and considering the relatively low levels of anxiety endorsed by the current sample, it is possible that ethnic identity exploration was indeed a protective factor in that it predicted adaptive levels of anxiety in the current sample. To the extent that children in the current study lacked exposure to such levels of increasing

autonomy as a result of their relatively young age, other culturally manifested processes elicited by ethnic identity exploration, such as racial socialization, spiritual coping, and collectivism, may have lacked salience, therefore limiting the amount of variance in anxiety accounted for by these factors. Therefore, it stands to reason that the relationship between sociocultural factors and anxiety is likely to be strengthened over the course of one's developmental trajectory. This interpretation is consistent with the self-reported sociocultural experiences of children and parents in the current study, as a pattern emerged in which children consistently endorsed lower (<1 SD) levels of collectivism, racial socialization, spiritual coping, and racial identity relative to parents in the current study.

As sociocultural experiences become more salient over time, it is also possible that the directionality of the relationship between ethnic identity and anxiety will change. For example, the finding that ethnic identity exploration positively predicted child anxiety in the current sample was inconsistent with correlational data for parents in the current study, as ethnic identity exploration did not demonstrate a significant relationship with anxiety among adults in this sample. Existing research utilizing adult samples has revealed that anxiety and depression are negatively predicted by ethnic identity in African American adults but not in non-Hispanic Whites (Williams et al., 2012). Taken together, these findings underscore the notion that distinct facets of ethnic identity may differ in the extent to which they relate to anxiety over the lifespan. Within a developmental framework, ethnic identity has been conceptualized as a dynamic process that evolves over time. Indeed, longitudinal examinations of ethnic identity development have revealed a process characterized by progression from limited exploration and integration

with one's sense of self to an enhanced understanding and incorporation into one's self-concept (Greig, 2003). Among youth in particular, the process of ethnic identity development is likely to occur within the broader context of personal identity development. Along these lines, the discrepant findings pertaining to ethnic identity in adults and children might be accounted for by development over time.

It is important to recognize that ethnic identity may be less salient to younger children, thus limiting findings pertaining to the potentially protective effects of this construct among children in the current study. Further worth noting is the possibility that the discrepant findings pertaining to ethnic identity across children and adults may stem from limitations in measurement. As previously noted, the sociocultural measures used in the current study were adapted from existing adult measures and, therefore, may have failed to validly capture these constructs in children between the ages of 8 and 13 years. Finally, data from the current study may suggest that ethnic identity exploration represents a risk factor at earlier stages of ethnic identity, whereas a protective influence emerges as one develops a stronger commitment to their ethnic group. This interpretation is consistent with existing research, which has revealed significantly higher levels of ethnic identity in later adolescence relative to early adolescence (Phinney & Chavira, 1992; Phinney, Ferguson, & Tate, 1997). Further, increased ethnic identity during adolescence has been associated with significant reductions in anxiety among African Americans (Mandara et al., 2009). As such, longitudinal research utilizing child, adolescent, and adult African American samples is needed to explore potential changes in the strength and nature of the association between ethnic identity and anxiety across the lifespan. Moreover, given that the simultaneous process of personal identity development

complicates ethnic identity development, future work should also focus on disentangling the unique contributions of culturally-based and normative developmental processes in the manifestation of anxiety in African Americans.

The current findings begin to shed light on the contributions of culturally manifested processes to child anxiety relative to traditional protective influences. Consistent with a priori predictions, results from the current study suggest that ethnic identity is associated with child anxiety over and above factors that have traditionally been examined in existing models, such as parent anxiety, perceived control, and social support. The clinical implications of these findings are notable. Given that existing treatments for anxiety are informed by research on predisposing and protective factors in predominantly non-Hispanic White samples, anxiety is often targeted by interventions that aim to enhance perceived control, social support, and the use of active coping strategies. However, while the protective effects of perceived control and social support generalized to African American children in the current sample, ethnic identity exploration remained a salient predictor of child anxiety over and above traditional predisposing and protective processes. Taken together, these findings indicate that existing interventions may not adequately address the processes that contribute to anxiety in African American children. As such, these results underscore the need to elucidate protective processes that buffer the unique sociocultural challenges faced by African American children.

Exploratory Analyses

In light of results suggesting that ethnic identity exploration was associated with increased child anxiety in the current sample, exploratory analyses were conducted to

examine processes that could potentially influence the nature of this relationship. First, it was hypothesized that the association between ethnic identity exploration and child anxiety would be moderated by familial sociocultural experiences. Follow-up regression analyses did not yield support for this hypothesis, as parent ethnic identity failed to significantly moderate the relationship between child ethnic identity exploration and anxiety. These findings suggest the children who endorse higher levels of ethnic identity exploration remain at higher risk for anxiety despite having a parent who strongly identifies with their own ethnic group. It could be the case that other contextual factors, such as children's experiences with classmates, have a greater impact on the pathway from ethnic identity exploration to anxiety than parents' personal attitudes and experiences related to their ethnic identity. This interpretation is consistent with existing research suggesting that children's experiences outside of the home often precede parental communication to them about race, independent of parents' personal experiences and attitudes related to culture (Hughes & Johnson, 2001). To the extent that exposure to racially-based experiences prompt children to gather information about their own ethnic group, it is possible that familial context and parents' own sociocultural experiences will become more salient and buffer anxiety associated with ethnic identity exploration.

Next, it was hypothesized that higher levels of perceived control and social support would mitigate the risk for anxiety associated with ethnic identity exploration. Post hoc regression analyses were conducted and did not support this prediction. These null findings may suggest that, while the direct effects of traditional protective influences appear to generalize to African American children, perceived control and social support do not buffer what appears to be a culturally-specific risk in African American youth

between the ages of 8 and 13 years. As such, the current findings underscore the need to further examine the protective effects of other culturally-based experiences and the extent to which they moderate the unique risks endemic to the African American experience.

Along these lines, interactions among culturally-specific factors were further explored to investigate whether other dimensions of children's sociocultural experience impacted the extent to which ethnic identity exploration was related to anxiety. Specifically, it was predicted that the association between ethnic identity exploration and child anxiety would be weaker when higher levels of racial socialization and collective coping were endorsed. A final regression analysis was conducted and yielded support for the moderating role of collectivism. Specifically, collectivism demonstrated a buffering effect, in which the relationship between ethnic identity exploration and child anxiety was significantly weakened when high levels of collectivism were present. Previous research has revealed greater use of collectively-centered coping strategies among African American adolescents who identified more strongly with their ethnic group (Constantine et al., 2002); however, while previous work has underscored ethnic identity as a precursor to culturally-specific coping strategies, the current study extends our understanding of the interactions between both predisposing and protective sociocultural experiences in the context of anxiety. Indeed, these results suggest that collectivism appears to be particularly salient protective factor in buffering heightened anxiety during the exploration phase of children's ethnic identity development.

Implications for a Culturally-Sensitive Model of Anxiety

The results of the current study have important implications for the proposed culturally-sensitive model of anxiety in African American children. First, the overall

level of anxiety endorsed by the current sample supports the notion that rates of anxiety are more similar than different across African American and non-Hispanic White children (Last & Perrin, 1991; Merikangas et al., 2004). Given that the current sample was largely non-anxious, the findings pertaining to the co-occurrence of parent and child anxiety are interpreted with caution. While the lack of significant findings for the first study hypothesis does not support the pathway from parent to child anxiety in the proposed conceptual model, such findings are generally consistent with results from prior nonclinical samples, which have yielded comparable low correlations between parent and child anxiety. While future work is needed to validate the generalizability of specific predisposing familial processes involved in the transmission of anxiety within African American families, these findings suggest that developmental models of anxiety based on research with high-risk samples may not generalize to those not diagnosed with an anxiety disorder. In order to develop a more meaningful understanding of factors that promote resilience and to inform preventative efforts, future research should examine other familial and environmental risk factors that are more relevant within the context of subclinical anxious symptoms or rely upon clinical samples.

Despite the lack of significant findings pertaining to the co-occurrence of anxiety within African American families, results from the current study indicate that the contributions of traditional protective factors are partially supported in African American children between the ages of 8 and 13. In particular, the protective effects of perceived control and social support appear to hold in African American youth. Although the direct pathway from traditional protective factors to child anxiety appears to be statistically

meaningful, the findings from the current study indicate that the moderating effects of traditional protective influences are not supported in African American children.

Results from the current study partially supported the conceptual model with regard to the anticipated effects of sociocultural predisposing and protective influences. The direct pathway from sociocultural protective factors to child anxiety was not supported; however, the current findings validated the direct pathway between predisposing sociocultural experiences and anxiety. Interestingly, ethnic identity exploration appears to represent a risk factor for anxiety, rather than a protective influence, among African American children between the ages of 8 and 13. Moreover, the moderating effects of culturally-specific protective influences on the relationship between sociocultural risk factors and anxiety were supported by the current findings. While future work is needed to validate the current findings, it appears that collectivism represents a particularly salient buffer of anxiety associated with ethnic identity exploration among African American children. Additional research will be needed to determine whether sociocultural variables begin to exert greater influence on anxiety outcomes over the course of one's developmental trajectory. Indeed, it may be that these pathways are strengthened in adolescence and confer multiplicative benefit as they become increasingly salient over time.

Taken together, the findings from the current study suggest that while components of traditional models of anxiety may generalize to African American children, a significant proportion of the variance in child outcomes is accounted for by culturally-specific processes, predisposing and protective alike. Therefore, the proposed culturally sensitive model represents not only a warranted adaptation to existing models of child

anxiety, but also a significant contribution to the current understanding of the culturally specific protective processes that uniquely buffer the well-documented risks posed to African American children. Future research is needed before traditional models of anxiety can be extended to more fully capture the African American context. In particular, there is a need for studies with concurrent aims of validating the generalizability of traditional predisposing and protective processes within this population and taking a more nuanced approach to understanding the role that sociocultural experience plays in anxiety development over the lifespan. Indeed, findings from the current study suggest that traditional protective factors, though negatively related to child anxiety in African Americans, are not particularly relevant in terms of buffering culturally-specific risks for anxiety conferred to African American youth. Instead, protective sociocultural experiences, such as collectivism, likely function more effectively as buffers of anxiety associated with culturally manifested risks, including exploration of one's identity in early childhood. For instance, while collectivism is not likely to attenuate the risk for childhood anxiety associated with having an anxious parent, the current findings would suggest that collectivism is highly relevant for young children who are faced with the new challenge of navigating their own ethnic identity.

Limitations

While the current study was characterized by a number of strengths, several limitations constrain the findings that emerged. First, the sample size represents a significant limitation of the current study. There are a number of well-documented challenges inherent to the recruitment of African American samples (Carter-Edwards, Fisher, Vaughn, & Svetkey, 2002; Ejiogu et al., 2011), which stem from several barriers,

including mistrust of researchers, fear of exploitation, and lack of familiarity with research (Braunstein, Sherber, Schuman, Ding, & Powe, 2008). Along these lines, while an exclusively African American sample of 45 participants certainly contributes to the existing literature on anxiety in this underrepresented population, a larger sample may allow for more accurate detection of significant effects.

Combined with the small sample size, characteristics of the current sample significantly limit the generalizability of the findings from this study. First, the sample demonstrated levels of anxiety that were consistent with normative data from non-anxious samples, which likely made it impossible to detect small effects among predisposing, protective, and culturally-specific factors and anxious symptoms due to insufficient variance. Moreover, given that potential differences between children with high and low anxiety could not be examined due to the small sample size and insufficient power, the extent to which the current findings are representative of more anxious African American children remains unclear. In order to clarify the nature and strength of predisposing and protective influences as they relate to both pathological and resilient outcomes, future research is needed to test the proposed conceptual model within higher-risk samples. Additionally, parents in the current sample were primarily mothers, and the unequal gender distribution significantly limited the generalizability of study findings to African American parents in general.

Despite the advantages afforded by a cross-sectional design with regard to the recruitment of participants, this approach represents a significant limitation in that it precludes conclusions from being drawn with regard to the directionality of effects. While the current study and previous research have shed light on the extent to which

predisposing, protective, and culturally-specific factors are related to child anxiety, it remains unclear whether perceived control, social support, and ethnic identity exploration demonstrate causative effects. Moreover, the use of a cross-sectional design limits the current study's utility in elucidating potential changes in the strength and direction of relationships among variables of interest over time. In particular, the relative contributions of culturally-based and normative developmental processes to child anxiety within the African American context need to be clarified, as the salience of both predisposing and protective processes are likely to change over time. As such, using a longitudinal design to test the proposed culturally-sensitive model of anxiety in African American samples would enhance our understanding of causality as well as pathways to anxiety that vary as a function of development over time.

The use of self-report measures represents another significant limitation of the current study. In particular, the use of self-reported anxiety symptoms, as opposed to clinical diagnoses, limits the interpretation of findings pertaining to the co-occurrence of anxiety among parents and children in the current study. Indeed, parent and child self-reported anxiety symptoms tend to yield smaller and less robust associations than those found when clinical diagnoses are utilized. Additionally, the sociocultural measures administered to children in the current study were adapted from existing adult measures. As such, normative data for same-age peers is not available for comparison, and the extent to which these indicators validly capture the sociocultural experiences of African American children between the ages of 8 and 13 years of age remains unknown. The current study attempted to evaluate the psychometric properties of these adapted measures to the extent that it was possible; however, despite some preliminary support

for the use of these measures with elementary and middle school-aged children, our understanding of their construct validity remains ambiguous. Along these lines, future studies would benefit from a more comprehensive approach to validating self-report questionnaire that assess sociocultural processes in young children. Moreover, the use of composite indicators based on data from multiple informants as well as direct interviews to assess culturally-based practices at the child level would further enhance the construct validity of sociocultural factors in young children.

Summary and Directions for Future Research

Overall, results of this study suggest that existing models of child anxiety do not fully generalize to the African American context and yield initial support for a proposed culturally-sensitive model of anxiety within African American families. The inclusion of both direct and indirect pathways from sociocultural factors to child anxiety appeared to more adequately capture both predisposing and protective influences related to anxiety in African American parents and children. Specifically, parent anxiety did not appear to constitute a risk factor for child anxiety; however, it remains unclear whether these findings would hold when pathological anxiety, and presumably greater risk, is present. Nonetheless, among non-anxious African American families, traditional protective factors appear to be important predictors of anxious symptoms in African American children. Consistent with previous research using predominantly non-Hispanic White samples, higher perceived support from parents and classmates as well as greater perceived control predict lower levels of anxiety in young African American children. The results of this study indicate that the sociocultural variable of ethnic identity exploration exerts significant positive influence on anxious symptoms at this

developmental stage, over and above the protective effects of perceived control and social support. Indeed, it appears that African American children who are actively exploring their ethnic identity experience greater levels of anxiety. However, other sociocultural variables, including racial socialization, spiritual coping, and collectivism do not appear to directly influence child anxiety during this developmental stage. Interestingly, although familial sociocultural experiences and traditional protective factors do not appear to buffer anxiety related to ethnic identity exploration, perceiving one's self to be a part of the African American collective appears to buffer anxiety associated with the exploratory phase of ethnic identity development.

This study represents a significant contribution to the existing literature on the development of anxiety within African American families. Indeed, the current study is novel in that it goes beyond examining cross-cultural differences in the prevalence of anxiety and the risks endemic to African American children to validate both predisposing and protective factors associated with anxiety in this understudied population. Future research should continue to clarify the role of other predisposing factors in the development of anxiety, including those not tested in the current study, such as parenting behaviors, temperament, and pathological levels of parental anxiety. A particular focus on parenting behaviors appears to be warranted in future work, as significant differences in the relationship between a number of parenting factors, such as parental control and parenting efficacy, and child anxiety emerge in African American families relative to non-Hispanic White families (Hill & Bush, 2001; Lamborn, Dornbusch, & Steinberg, 1996). Thus, consideration of culture and ethnicity will be crucial to creating a more complete empirical picture of how these processes impact African American youth. In

addition, the relationship between the sociocultural challenges faced by African American children (e.g., oppression, discrimination, and prejudice) and child anxiety warrant further examination in order to elucidate the role that culturally-specific risk factors play in the development of anxiety. Indeed, results from the current study lend initial support for the notion that pathways from predisposing sociocultural experiences to anxiety may be uniquely buffered by protective processes endemic to the experience of African American children, such as collectivism.

Moreover, additional research is needed to enhance our understanding of the role that traditional protective factors play in buffering anxiety over the course of African American children's developmental trajectory. Existing research indicates that potentially protective processes, such as the use of concrete versus more abstract coping strategies, interact in complex ways with normative developmental processes over time. As such, future research is needed to disentangle these relationships and determine the relative contributions of traditional and culturally-specific protective processes that influence anxiety at various developmental stages. Developing an enhanced understanding of the temporal underpinnings of these relationships will clarify changes in the nature and strength of predisposing and protective processes over time and can inform preventative efforts by highlighting sensitive periods in the development of anxiety among African American youth. Although many sociocultural factors examined in the current study were not directly related to child anxiety, further examination of potential intra-ethnic differences in sociocultural experiences over the full developmental course will begin to clarify the points at which specific culturally-based processes become salient, and therefore impact the manifestation of anxiety in African Americans.

Studies utilizing longitudinal designs will be necessary in order to elucidate normative developmental and sociocultural processes that explain discrepant levels of anxiety endorsed by African American children and adults. While explaining the observed differences in overall anxiety levels will undoubtedly contribute to our understanding of anxiety across the lifespan, examining within group differences among African Americans at similar developmental stages are particularly warranted. Specifically, exploring the differential interactions between predisposing, protective, and sociocultural factors in the context of both pathological and normative outcomes will begin to shed light on the processes by which high-risk and resilient populations are differentiated and, in turn, facilitate preventative efforts to promote adaptive outcomes.

Table 1

Odds-Ratios Yielded from Family Studies of Co-Occurring Parent-Child Anxiety

Study	Child Anxiety Disorders		Odds-Ratios	Method of Assessment
	Anxious Parents	Non-Psychiatric Control Parents		
Turner et al. (1987)	6/16	1/13	7.2	Diagnostic interview
McClellan et al. (1990)	14/60	3/47	4.46	Diagnostic interview
Biederman et al. (1991)	15/39	5/47	5.25	Diagnostic interview
Mufson et al. (1992)	36/79	4/20	3.35	Diagnostic interview
Capps et al. (1996)	11/16	0/16	69.00	Diagnostic interview
Beidel & Turner (1997)	16/57	4/48	4.29	Diagnostic interview
Merikangas (1998)	13/58	6/57	2.46	Diagnostic interview
Black et al. (2003)	22/43	9/35	3.03	Diagnostic interview
Micco et al. (2009)	133/368	32/283	3.91	Meta-analysis (of studies above)
Chapman et al. (2012) <i>Disorders</i>	33/55	9/42	4.39	Diagnostic Interview

Table 2

Studies Examining Temperamental and Environmental Influences on Child Anxiety Outcomes

Study	Study Design	Child Age at Assessment	Dimension of Temperament	Assessment of Temperament	Environmental Factor	Effect	Child Outcome	Assessment of Outcome
Biederman et al. (2001)	Longitudinal	Temperament: 2-6 years Outcome: 5-6 years	Behavioral inhibition	Observation	Parental psychopathology	Moderation	Anxiety disorder	Clinical assessment
Crockenberg and Leerkes (2006)	Longitudinal	Temperament: 6 months Outcome: 5-6 years	Behavioral inhibition	Adult-report	Maternal behavior	Moderation	Internalizing symptoms	Adult-report
Coplan et al. (2008)	Cross-sectional	Temperament: 5-6 years Outcome: 5-6 years	Behavioral inhibition	Observation, adult report	Maternal parenting style, personality	Moderation	Internalizing symptoms	Adult-report
Degnan et al. (2008)	Longitudinal	Temperament: 4 months Outcome: 7 years	Behavioral inhibition	Observation	Maternal behavior, personality	Moderation	Internalizing symptoms	Observation, adult-report
Rubin et al. (2002)	Longitudinal	Temperament: 2 years Outcome: 4 years	Behavioral inhibition	Observation	Maternal behavior	Moderation	Internalizing	Adult-report

Table 3

Participant Demographics

	<i>N</i>	<i>%</i>
Child Gender		
Female	31	63
Male	18	37
Parent Gender		
Female	46	94
Male	3	6
Parent Education Level		
Grade 9	1	2
Grade 10 or 11	4	8
High School Graduate	6	12
Some college or specialized training	14	29
College Graduate	19	39
Graduate or Professional Training	5	10
Income		
<\$10,000	27	55
\$10,000-\$19,999	4	8
\$20,000-\$29,999	7	15
\$30,000-\$39,999	5	10
\$40,000-\$49,999	3	6
\$50,000-\$59,999	0	0
\$60,000-\$69,999	0	0
\$70,000-\$79,999	1	2
\$80,000-\$89,999	1	2
\$90,000-\$99,999	0	0
>\$100,000	1	2

Table 4

Descriptive Statistics of Self-Report Measures between Genders

Measure	Females	Males
	M (SD)	M (SD)
Child-report		
1. STAIC-T	36.75(7.10)	35.28(7.98)
2. ACQ-C		
a. Internal Reactions	32.86(10.23)	36.78(7.05)
b. External Events	38.32(9.90)	39.72(8.17)
c. Total	71.18(19.20)	76.50(14.25)
3. SSSC		
a. Parent	3.60(0.52)	3.42(0.44)
b. Classmate	3.23(0.58)	3.16(0.52)
c. Teacher	3.45(0.62)	3.29(0.74)
d. Friend	3.46(0.48)	3.28(0.81)
4. CCSC Active Coping	2.70(0.49)	2.70(0.56)
5. MEIM-R-C		
a. Exploration	2.92(1.03)	3.16(0.91)
b. Commitment	3.40(1.00)	4.14(0.54)
c. Total	3.16(0.93)	3.65(0.66)
6. ACSI-C		
a. Collectivism	10.37(5.79)	12.06(5.83)
b. Spiritual Coping	11.26(7.54)	11.39(6.71)
7. RS-CR Cultural Socialization/Pluralism	1.44(1.03)	2.12(0.82)
Parent-report		
1. STAI-T	42.70(10.97)	36.00(12.12)
2. MEIM-R		
a. Exploration	3.47(1.28)	3.67(0.47)
b. Commitment	3.77(1.13)	4.00(1.41)
c. Total	3.62(1.13)	3.83 (0.47)
3. ACSI		
a. Collectivism	12.64(4.83)	14.33(4.36)
b. Spiritual Coping	13.75(6.88)	15.50(0.71)
4. RS-PR Cultural Socialization/Pluralism	2.37(0.98)	2.58(1.49)

Table 5

Correlation Coefficients (r) for all Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	
1. STAI-T	1.00																						
2. ACQ-C Internal Reactions	-.09	1.00																					
3. ACQ-C External Events	-.10	.94**	1.00																				
4. ACQ-C Total	-.07	.95**	.78**	1.00																			
5. CCSC Active Coping	-.20	.52**	.52**	.47**	1.00																		
6. SSSC Parent Support	-.33*	.16	.22	.08	-.09	1.00																	
7. SSSC Classmate Support	-.19	.33*	.36*	.26	.03	.41**	1.00																
8. SSSC Teacher Support	-.31*	.24	.35*	.11	.11	.72**	.40**	1.00															
9. SSSC Friend Support	-.38*	.31*	.34*	.24	.29*	.44**	.33*	.52**	1.00														
10. MEIM-R-C Exploration	-.11	.24	.21	.25	.26	-.15	-.28	-.13	.02	1.00													
11. MEIM-R-C Commitment	-.07	.37*	.31*	.38**	.14	.10	-.10	.05	.17	.65**	1.00												
12. MEIM-R-C Total	-.10	.33*	.28	.35*	.22	-.03	-.22	-.05	.10	.91**	.90**	1.00											
13. RS-CR Cultural Socialization	-.11	.15	.20	.09	.25	-.12	-.14	.05	-.01	.48**	.48**	.53**	1.00										
14. ACSI-C Spiritual Coping	.01	.09	.17	.00	.38**	-.12	-.08	.09	.08	.19	.14	.18	.44**	1.00									
15. ACSI-C Collectivism	-.24	.35*	.38**	.29*	.38**	-.02	.04	.18	.37**	.41**	.35*	.42**	.51**	.63**	1.00								
16. STAIC-T	-.06	-.39**	-.40**	-.33*	.01	-.29*	-.53**	-.26	-.15	.31*	.01	.18	.09	.12	-.11	1.00							
17. MEIM-R Exploration	-.13	-.13	-.15	-.10	-.15	.02	.00	.09	.04	.17	-.14	.02	-.10	-.03	.02	.02	1.00						
18. MEIM-R Commitment	-.22	-.19	-.21	-.14	-.09	-.04	.07	.00	.02	.03	-.10	-.04	-.20	-.12	-.05	-.13	.74**	1.00					

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.
19. MEIM-R Total	-.18	-.17	-.19	-.13	-.13	-.01	.03	.05	.03	.11	-.13	-.01	-.16	-.08	-.01	-.06	.94**	.92**	1.00			
20. RS-PR Cultural Socialization/Pluralism	-.18	.02	.00	.03	.07	-.01	.17	.18	-.02	-.06	-.08	-.08	.01	-.03	-.05	-.13	.39**	.34*	.39**	1.00		
21. ACSI Spiritual Coping	-.03	.13	.14	.10	.21	-.11	-.06	-.07	-.02	.10	-.06	.03	-.07	.29	.17	-.11	-.00	-.14	-.07	.06	1.00	
22. ACSI Collectivism	-.14	-.05	-.09	-.01	.13	-.00	-.05	.06	.06	.02	-.13	-.06	-.26	.14	-.03	-.02	.11	.06	.09	.34*	.69**	1.00

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

Table 6

Predicting Child Trait Anxiety from Traditional Protective Factors

Traditional Protective Factors	<i>t</i>	β	<i>F</i>	<i>R</i> ²
Overall Model			9.88***	.305
ACQ-C Perceived Control Total	-1.98*	-.257		
Social Support Composite	-3.23**	-.420		

Note: STAIC-T subscale score was the dependent variable for all regressions.

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

Table 7

Predicting Child Trait Anxiety from Sociocultural Variables

Sociocultural Variable	<i>t</i>	β	<i>F</i>	R^2
Overall Model			5.03*	.099
MEIM-R-C Ethnic Identity Exploration	2.24*	.314		

Note: STAIC-T subscale score was the dependent variable for all regressions.

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

Table 8

Parent Anxiety, Traditional Protective Factors, and Sociocultural Variables Predicting Child Anxiety

Variables	t	β	F	R ²
Block 1			.61	.014
STAI-T	-.782	-.118		
Block 2			7.79***	.363
STAI-T	-2.13*	-.277		
ACQ-C Perceived Control Total	-1.89	-.248		
Social Support Composite	-3.54***	-.485		
Block 3			7.40***	.425
STAI-T	-1.64	-.212		
ACQ-C Perceived Control Total	-2.58**	-.349		
Social Support Composite	-2.47*	-.359		
MEIM-R-C Ethnic Identity Exploration	2.08*	.284		

Note: STAIC-T subscale score was the dependent variable for all regressions.

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

Table 9

Moderating Effects of Parent Ethnic Identity on Child Ethnic Identity and Anxiety

Variables	<i>t</i>	<i>b</i>	<i>F</i>	<i>R</i> ²
Overall Model			5.56***	.410
MEIM-C-R Ethnic Identity Exploration	2.51*	2.76		
ACQ-C Perceived Control Total	-3.02**	-.187		
Social Support Composite	-2.06*	-2.58		
MEIM-R Total	-.993	-.898		
Interaction (MEIM-R x STAI-T)	-.561	-.445		

Note: STAIC-T subscale score was the dependent variable for all regressions.

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

Table 10

Traditional Protective Factors as Moderators of Ethnic Identity and Anxiety

Traditional Protective Factors	<i>t</i>	<i>b</i>	<i>F</i>	<i>R</i> ²
Overall Model			5.33***	.394
MEIM-C-R Ethnic Identity Exploration	2.40*	2.59		
ACQ-C Perceived Control Total	-2.64*	-.163		
Social Support Composite	-2.08*	-2.63		
Interaction 1 (ACQ-C x MEIM-C-R)	-.357	-.019		
Interaction 2 (SSC x MEIM-C-R)	-.286	-.375		

Note: STAIC-T subscale score was the dependent variable in the regression model.

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

Table 11

Moderating Effects of Sociocultural Factors on Ethnic Identity and Anxiety

Traditional Protective Factors	<i>t</i>	<i>b</i>	<i>F</i>	<i>R</i> ²
Overall Model			2.69***	.247
MEIM-C-R Ethnic Identity Exploration	2.01	2.73		
ASCI-C Collectivism	-1.13	-.257		
RSCR	.006	.008		
Interaction 1 (MEIM-R-C x ASCI-C)	-2.11*	-.464		
Interaction 2 (MEIM-R-C x RSCR)	1.16	1.49		

Note: STAIC-T subscale score was the dependent variable in the regression model.

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

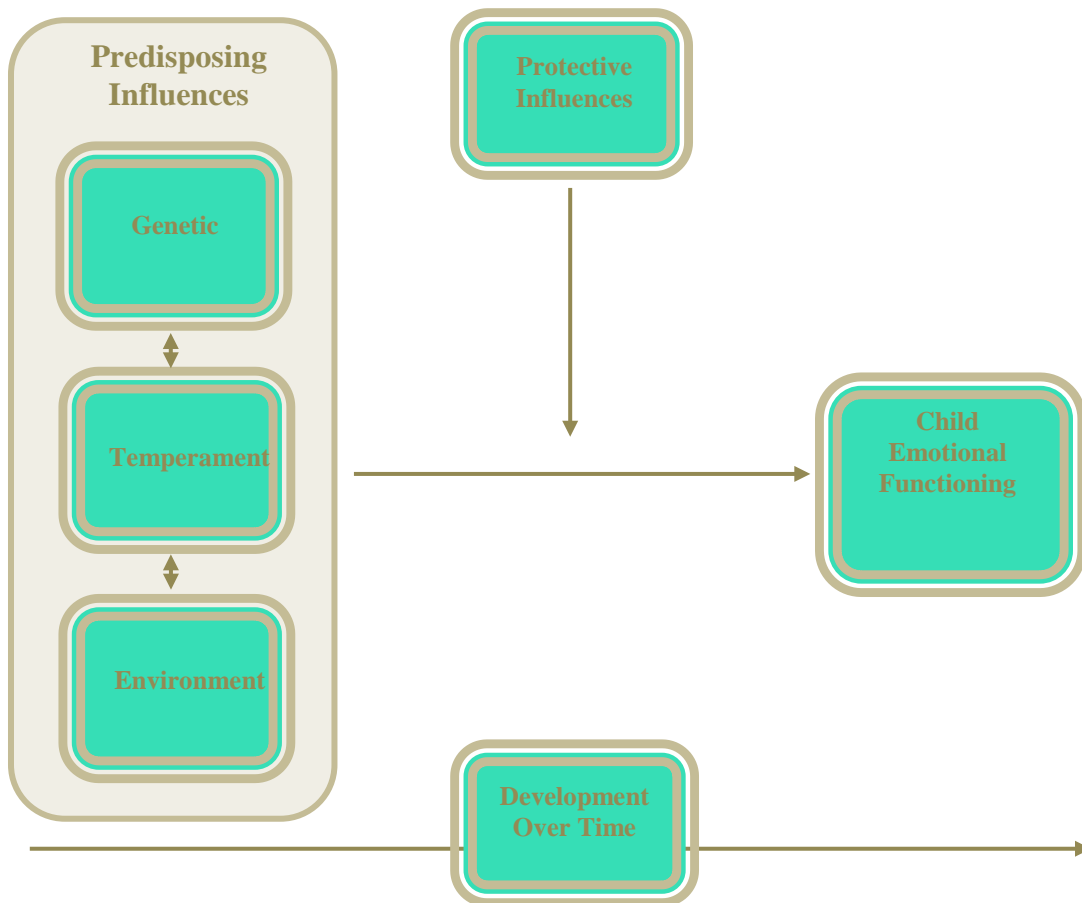


Figure 1. Traditional etiological model of childhood anxiety.

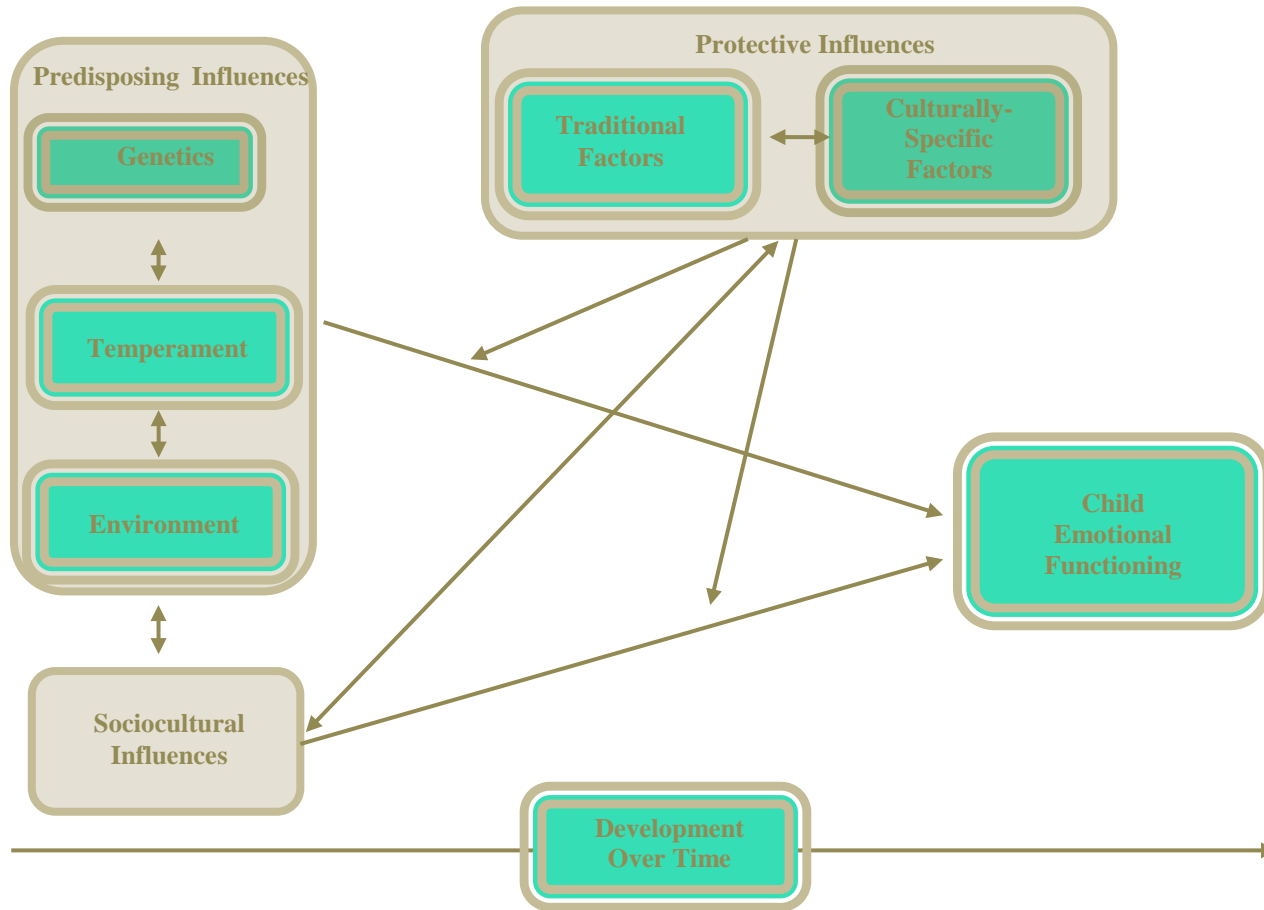


Figure 2. Culturally-sensitive model of childhood anxiety.

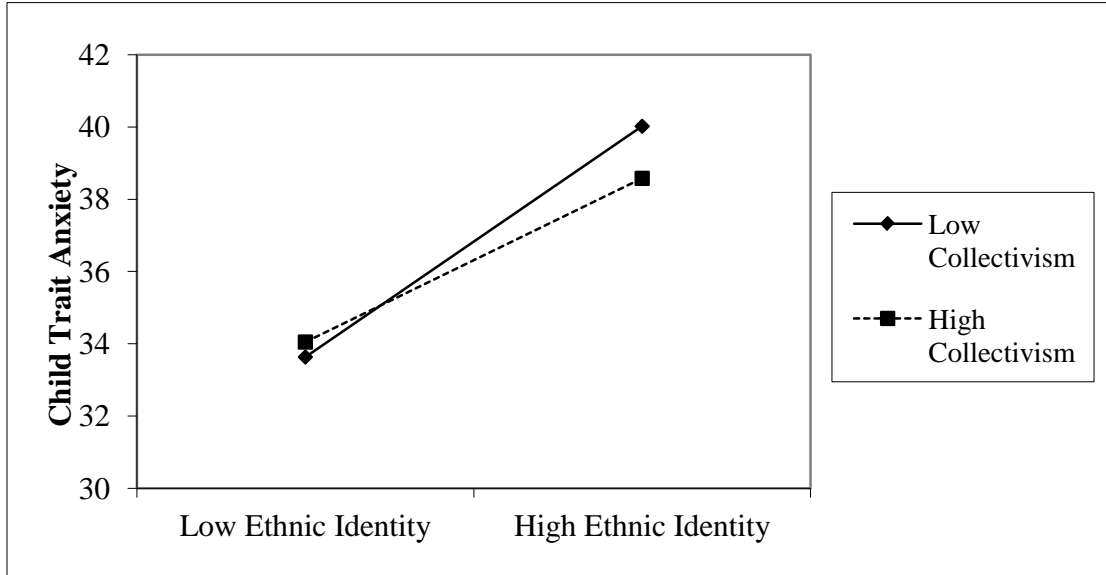


Figure 3. Simple Slopes of ethnic identity predicting child anxiety at low (-1 SD) and high (+1 SD) collectivism.

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CURRICULUM VITAE

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EDUCATION

2014-2015

Indiana University School of Medicine, Indianapolis, IN
APA-accredited Predoctoral Clinical Internship
Open-Emphasis Track, Concentration in Clinical Intervention

2010-2015

University of Louisville, Louisville, KY
APA-accredited Clinical Psychology Program
Doctor of Philosophy (Ph.D.) in Clinical Psychology
Dissertation: A Culturally-Sensitive Model of the Development of Child Anxiety
All requirements Completed: 9/2015
Anticipated Graduation Date: 12/18/2015
Faculty Mentor: Janet Woodruff-Borden, Ph.D.

2013

University of Louisville, Louisville, KY
Master of Arts, Clinical Psychology

2009

University of Louisville, Louisville, KY
Bachelor of Arts, Psychology (*Magna Cum Laude*)

HONORS AND AWARDS

2014

Stanley A. Murrell Scientist-Practitioner Award, University of Louisville (\$500)

- Faculty nominated competitive award for excellence in both research and empirically-supported clinical practice.

2011

African Americans in Behavior Therapy Special Interest Group “Most Important Research Award”, Association for Behavioral and Cognitive Therapies

- Competitive award recognizing quality and importance of research presented at special interest group poster session.

2010-2012

Graduate Fellowship, University of Louisville (\$44,000)

- Competitively awarded funding to support graduate education.

2009

Magna Cum Laude, University of Louisville

2006-2009

Kentucky Educational Excellence Scholarship, Kentucky Higher Education Assistance Authority

- Award based on academic merit to support undergraduate education.

CLINICAL EXPERIENCE

9/2014-2015

Psychology Intern, Open-emphasis Track, Concentration in Clinical Intervention
Department of Psychiatry, Indiana University School of Medicine, Indianapolis, IN

Core Rotations (4-month):

- Adult Inpatient
 - Larue Carter State Psychiatric Hospital, Indianapolis, IN
 - Supervisor: Kris Chapleau, Ph.D.
 - Conducted mental status and psychological assessments, individual and group therapy to diagnostically and demographically diverse patient population ranging in age from early adulthood to elderly. Patients’ primary diagnoses included psychotic disorders, mood disorders, and severe personality pathology. Worked with multidisciplinary treatment team to discuss patient progress and develop/tailor treatment plans to meet unique patient needs.
- Adult Outpatient
 - Adult Psychiatry Clinic, Indiana Neuroscience Center, Indianapolis, IN
 - Advanced Heart and Lung Care Clinic, Methodist Hospital, Indianapolis, IN
 - Multidisciplinary Clinic, Indiana University Simon Cancer Center, Indianapolis, IN
 - Supervisor: Yelena Chernyak, Ph.D.
 - Conduct psychiatric evaluations and provide supportive therapy, cognitive behavioral intervention, and Acceptance and Commitment Therapy to adult patients presenting with anxiety, mood, and personality disorders as well as

adjustment difficulties related to serious medical conditions within hospital-based outpatient psychiatric and medical treatment setting.

- Child Outpatient
 - Riley Hospital for Children, Indianapolis, IN
 - Supervisor: Ann Lagges, Ph.D.; Bill Kronenberger, Ph.D.; Eric Scott, Ph.D.
 - Clinical Experience split among specialty outpatient clinics, including the Child and Adolescent Mood Clinic, Headache Clinic, Testing Clinic, and Pain Center. Responsible for conducting assessment and therapy with patients presenting with a wide range of mood disorders, CBT intervention for headache and chronic pain, and basic and advanced biofeedback within a multidisciplinary clinic.

Specialty Rotations (4-month):

- Pediatric Consult-Liaison
 - Riley Hospital for Children, Indianapolis, IN
 - Supervisor: Amy Williams, Ph.D.
 - Provided psychological evaluations, individual therapy, family supportive therapy, and biofeedback training to children and adolescents within an inpatient pediatric children's hospital. Patient's presented with wide range of medical conditions and psychological sequelae. Worked within multidisciplinary treatment team comprised of psychologist, psychiatrist, and social workers and communicated clinical impressions and treatment recommendations to medical professions across hospital.

- Child Inpatient
 - Larue Carter State Psychiatric Hospital, Indianapolis, IN
 - Supervisor: John Spanke, Ph.D.
 - Conducted empirically-based individual and group psychotherapy to children and adolescents presenting with diagnoses including psychotic, mood, and behavioral disorders. Work within multidisciplinary treatment team to discuss patient progress and develop/tailor treatment plans to meet unique patient needs.

- Adolescent Addictions
 - The Riley Child and Adolescent Psychiatry Clinic, Indianapolis, IN
 - Supervisor: Eric Scott, Ph.D.
 - Conducted initial intake evaluations and administer structured clinical interviews (e.g., KSADS). Also responsible for doing cognitive behavioral therapy with individuals presenting with a dual diagnosis of at least 1 substance related disorder and one other psychiatric disorder (e.g., anxiety, mood, disruptive behavior disorder or psychotic disorder) and presenting information relevant for treatment with interdisciplinary team.

THERAPY EXPERIENCE

2014

Graduate Student Therapist, Family Scholar House

Louisville, KY

Supervisor: Bernadette Walter, Ph.D.

- Facilitated a weekly didactic group aimed at fostering adaptive coping strategies, promoting resilience, and mitigating distress to low-income, ethnically-diverse, single parents enrolled in the Family Scholar House program.
- Provided psychoeducation and practice in cognitive, behavioral, and mindfulness-based techniques.
- Within sessions, utilized group members' individual experiences in order to modify treatment strategies and promote optimal learning.
- Administered psychometric assessments at the initiation and completion of the groups in order to determine treatment efficacy.

07/2012-2014

Graduate Clinical Assistant, Psychological Services Center

University of Louisville, Louisville, KY

Supervisor: Bernadette Walter, Ph.D.

- Administration and integration of data acquired through clinical interview and self-report measures in order to formulate diagnoses, generate intake reports, and determine appropriate treatment placement.
- Initial contact with individuals seeking treatment at the PSC. Responsibilities include gathering demographic information necessary to facilitate treatment, screening for suicidal ideation, homicidal ideation and indications of psychosis, as well as providing referrals when appropriate.
- Provision of supervisory feedback to first-year graduate students during initial intake interviews.
- Responsible for developing the curriculum of graduate-level clinical interviewing course and teaching the course to first-year graduate students in the clinical psychology doctoral program

08/2013-2014

Graduate Student Therapist, Cognitive-Behavioral Anxiety Research & Treatment Team

Psychological Services Center, University of Louisville, Louisville, KY

Supervisor: Janet Woodruff-Borden, Ph.D.

- Individual therapy with clients from the surrounding community with diverse ethnic, economic, and educational backgrounds
- Utilization of cognitive-behavioral techniques to treat a broad range of psychopathology, including mood and anxiety disorders as well as comorbid personality disorders
- Development of clinical case conceptualizations for complex client presentations using a biopsychosocial approach and drawing heavily on cognitive behavioral theory
- Provision of weekly peer supervision to novice graduate students

2011-2013

Graduate Student Therapist, Children with AD/HD and Related Disorders (CARDS) Team

Psychological Services Center (PSC), University of Louisville, Louisville, KY

Supervisor: Paul Rosen, Ph.D.

- Provision of evidence-based services for children and adolescents with ADHD.
- Cognitive-behavioral treatment focused on emotion regulation and other difficulties stemming from ADHD, including inattention, overactivity, organizational difficulties, and impulsivity.
- Responsibilities included conducting ADHD evaluations, individual/family therapy for children and their parents, school consultations, and group services for both children and parents (e.g., managing frustration and social skills training groups for children).

2010-2011

Graduate Student Therapist, Integrative Therapy Team

Psychological Services Center (PSC), University of Louisville, Louisville, KY

Supervisor: Jay Irby, Ph.D.

- Individual therapy with clients from the surrounding community with diverse ethnic, economic, and educational backgrounds
- Incorporation of various elements and techniques from different theoretical orientations.
- Tailor structure and content of individual therapy sessions to meet the unique goals and values of individual clients.
- Responsible for the comprehensive assessment of psychological symptoms, personal values, thinking styles, cultural issues, and social background
- Utilized a collaborative approach to treatment planning and intervention.

ASSESSMENT EXPERIENCE

2012-2014

Graduate Student Examiner, Forensic Mental Health Services

Kosair Charities Division of Pediatric Forensic Medicine, Department of Pediatrics

University of Louisville School of Medicine, Louisville, KY

Supervisor: Kelli Marvin, Ph.D.

- Review of respondent parents' records at the Department of Community-Based Services (DCBS) and the Cabinet for Health and Family Services (CHFS).
- Administration of clinical interview pertaining to the personal history of respondent parents, the CHFS investigation, and factors related to general parental capacity.
- Administration of cognitive and personality assessment instruments
- Generation and revision of Forensic Mental Health Evaluation Reports to be presented in Court.

2010-2014

Graduate Student Examiner, Psychological Services Center (PSC)

University of Louisville, Louisville, KY

Supervisor: Bernadette Walter, Ph.D.; David Winsch, Ph.D.; Paul Rosen, Ph.D.

- *Child Experience:* Administration of comprehensive psychological assessments and completion of integrated reports under the supervision of licensed clinical psychologists, including Advanced Placement, ADHD, and Learning Disorder Evaluations. Conducted structured interviews with children, adolescents, families, and professionals from diverse ethnic, economic, and educational backgrounds. Administered various psychodiagnostic tests, including but not limited to, the WISC-IV and the WJ-III. Communicated results of assessment to families and community professionals.
- *Adult experience:* Administration of assessments and completion of integrative reports under the supervision of licensed psychologists. Administered various psychodiagnostic tests, including but not limited to, the WAIS-IV, Woodcock-Johnson III, Trail Making Test, CPT, AVLT, personality assessments (MMPI-II and MCMI-III), TAT, and adult structured interviews for the assessment of cognitive functioning, learning disabilities, mood disorders, and ADHD.

2012

Graduate Student Examiner, Robley Rex VA Medical Center
Louisville, KY

Supervisor: Jeanne Bennett, Psy.D.

- Conducted interviews with veterans from diverse ethnic, economic, and educational backgrounds
- Administered various neuropsychological, cognitive, and personality assessment instruments
- Completed integrated reports detailing conclusions drawn from cognitive and personality assessment measures
- Provision of feedback to veterans pertaining to psychodiagnostic testing results and treatment recommendations.

SUPERVISION EXPERIENCE

2014-2015

Clinical Psychology Intern, Riley Hospital for Children

Indiana University School of Medicine, Indianapolis, IN

Supervisor: Ann Lagges, Ph.D.; Bill Kronenberger, Ph.D.

- Provided weekly supervision to multiple graduate students for both psychotherapy and psychodiagnostic assessment with pediatric populations and provided competency-based feedback for clinical skills, cognitive-behavioral therapy techniques, and test administration.
- Supervised third- and fourth-year medical students over the course of 4-week psychiatry rotations in multiple outpatient clinics, including the Encompass Dual Diagnosis Program, Tic and Anxiety Clinic, and Mood Disorder clinic.

07/2012-2014

Graduate Clinical Assistant, Psychological Services Center

University of Louisville, Louisville, KY

Supervisor: Bernadette Walter, Ph.D.

- Supervised first-year graduate students during initial intake interviews and provided competency-based feedback for clinical interviewing skills and integrated reports.
- Responsible for overseeing clinic administrative activities, including phone intakes, scheduling, and chart audits.
- Provided peer supervision of risk assessment and crisis management.

08/2013-2014

Peer Supervisor, Cognitive-Behavioral Anxiety Research & Treatment Team
Psychological Services Center, University of Louisville, Louisville, KY

Supervisor: Janet Woodruff-Borden, Ph.D.

- Provided weekly peer supervision of clinical case conceptualizations and therapeutic intervention within cognitive behavioral framework.
- Responsible for leading group supervision with fellow graduate students using cognitive behavioral framework.
- Presented to fellow graduate students on the theoretical and scientific underpinnings of empirically supported treatments for specific anxiety disorders.

2011-2013

Peer Supervisor, Children with AD/HD and Related Disorders (CARDS) Team
Psychological Services Center (PSC), University of Louisville, Louisville, KY

Supervisor: Paul Rosen, Ph.D.

- Provided peer supervision of group and individual cognitive-behavioral treatment focused on emotion regulation and other difficulties stemming from ADHD.

2010-2014

Research Assistant Supervisor, Center for Mental Health Disparities
University of Louisville, Louisville, KY

Supervisor: L. Kevin Chapman, Ph.D.

- Supervised undergraduate and graduate research assistants in the conceptual development of research questions and scholarly publication
- Responsible for facilitating weekly lab meetings, including oversight of study recruitment, data collection, data entry and analysis.
- Supervised graduate student administration of structured clinical interviews (i.e., ADIS) with children and parents from underserved populations, using empirically based protocol for reliability standards in research setting.

RESEARCH EXPERIENCE

2014-Present

Graduate Research Assistant, Developmental Psychopathology Research Laboratory
University of Louisville, Louisville, KY

Supervisor: Janet Woodruff-Borden, Ph.D.

- Study the developmental psychopathology of stress and anxiety in diverse families and children.

- Cross-sectional and longitudinal research approaches are utilized to examine factors that predispose and mitigate anxiety development across the lifespan in order to promote resilience and wellness.
- Emphasis is placed on the influence of cultural factors on the development of anxiety, particularly the protective effect of sociocultural variables.
- Responsibilities include recruitment, data collection, data entry and analysis, and supervision of undergraduate research assistants.
- Specific research projects include:
 - The Multiracial Family Wellness Project (MFWP) study: Cross-sectional research study aimed at examining stress, anxiety, and resilience in a comparative sample of non-Hispanic White, African American, and Biracial families. Assisted in the development of the Institutional Review Board protocol, writing of an intramural research grant initiative, and recruitment of the community-based, low income, diverse sample. Conducted client and parent/child ADIS-IV interviews with diverse families and assisted with data collection, entry, and management.

2010-2014

Graduate Research Fellow, Center for Mental Health Disparities
 University of Louisville, Louisville, KY
 Supervisor: L. Kevin Chapman, Ph.D.

- Studied anxiety and related constructs in African American families and children.
- Research emphases included cross-cultural disparities in the development and manifestation of anxiety, the assessment of anxiety in diverse families, and sociocultural factors that promote resilient outcomes despite risk for anxiety.
- Responsibilities include recruitment, data collection, data entry and analysis, supervision of undergraduate research assistants, and assisting in the writing of internal grants for the Multiracial Family Wellness Project.
- Specific Research Projects include:
 - Community and Family Excellence (CAFÉ) Project: Cross-sectional research study explored the familial transmission of anxiety in a community sample of African American parent-child dyads. Conducted client and parent/child ADIS-IV interviews with African American families and assisted with data collection, entry, and management. Also assisted with data analysis and scholarly production from data collected.

2008-2009

Research Assistant, Community & Family Excellence Research Lab
 University of Louisville, Louisville, KY
 Supervisor: L. Kevin Chapman, Ph.D.

- Studied anxiety and related constructs in African American families and children.
- Responsibilities included recruitment of community-based, low income African American sample, administration and scoring of parent- and child-report questionnaires, and data entry and analysis.

2007-2008

Research Assistant, Memory and Cognition Lab

University of Louisville, Louisville, KY
Supervisor: Keith Lyle, Ph.D.

- Assisted with data collection in a study examining handedness and memory in tasks related to eye-witness reporting.

RESEARCH PUBLICATIONS

PEER-REVIEWED MANUSCRIPTS

Richards, A., **Petrie, J.**, Chapman, L. K. (in press). Is religious coping a moderator of perceived control and panic symptoms in African American adults. *Journal of Black Psychology*.

Petrie, J. M., Vines, L., & Chapman, L. K. (2013). Utility of the PANAS-X in predicting social phobia in African American females. *Journal of Black Psychology*, 39(2), 131-155. doi:10.1177/0095798412454677

Chapman, L. K., Vines, L., & **Petrie, J.** (2012). Factor structure analysis of the SCL-90-R in a community-based sample of African American women. *Psychiatry Research*, 199(2), 140-144. doi:10.1016/j.psychres.2012.03.028

Chapman, L. K., Vines, L., & **Petrie, J.**, Durrett, E. (2012). The co-occurrence of anxiety disorders in African American parents and their children. *Journal of Anxiety Disorders*, 26(1), 65-70.

Chapman, L. K., Vines, L., & **Petrie, J.** (2011). Fear factors: Cross validation of specific phobia domains in a community-based sample of African American adults. *Journal of Anxiety Disorders*, 25(4), 539-544.

MANUSCRIPTS UNDER REVIEW

Chapleau, K. M., **Petrie, J. M.**, & Oswald, D. L. (under review). Follow that script: Men's power-sex beliefs associated with the desire to dominate and need to conform. Manuscript submitted for publication at *Journal of Sex Research*.

Chapman L. K., **Petrie, J. M.**, & Richards, A. E. (under review). The efficacy of self-report measures in predicting social phobia in African American adults. Manuscript submitted for publication at *Journal of the National Medical Association*.

MANUSCRIPTS IN PREPARATION

DeLapp, R., **Petrie, J.**, Richards, A., & Chapman, L. K. (in preparation). Patterns of fear in African American urban youth: A factor analysis of Fear Survey Schedule — Revised in a community-based African American youth sample. *Manuscript in preparation*.

Petrie, J. M., Richards, A. E., & Chapman, L. K. (in preparation). The relationship between resiliency and psychopathology in African American youth. *Manuscript under revision.*

Vines, L., **Petrie, J. M.,** & Chapman, L. K. (in preparation). Confirmatory Factor Analysis of the Multidimensional Anxiety Scale for Children in a Community Sample of African American Youth. *Manuscript under revision.*

RESEARCH PRESENTED

Simms, J., Richards, A., **Petrie, J.,** & Woodruff-Borden, J. (2014). Perceive control as a mediator of religious coping and trait anxiety in African American adults. Poster presented at the Indiana Psychological Association Fall Conference, Indianapolis, IN.

DeLapp, R., **Petrie, J.,** & Chapman, L. K. (2013). FSSC-R as a predictor of fear-based disorders in childhood. Poster presented at the African Americans in Behavioral Therapy SIG, ABCT, Nashville, TN.

Richards, A., Chapman, L.K., & **Petrie, J.** (2012). Religious coping as a moderator of perceived control and panic symptoms in African American adults. Poster presented at ABCT, National Harbor, MD.

DeLapp, R., **Petrie, J.,** Richards, A., Davis, D., Bahojb-Nouri, L., Buckner, E., & Chapman, L. K. (2012). Patterns of fear in African American urban youth: A factor analysis of Fear Survey Schedule — Revised in a community-based African American youth sample. Poster presented at the African Americans in Behavioral Therapy SIG, ABCT, National Harbor, MD.

Bucker, E., Steever, A., DeLapp, R., Bahojb-Nouri, L., **Petrie, J.,** Richards, A., & Chapman, L. K. (2012). An examination of the factor structure of the BDI-II in a community-based sample of African Americans. Poster presented at the African Americans in Behavioral Therapy SIG, ABCT, National Harbor, MD.

Richards, A., **Petrie, J.,** & Chapman, L. K. (2011). Resiliency and Psychopathology in African American Children and Adolescents: An Examination of the Resiliency Scales for Children and Adolescents. Poster presented at the Association for Behavioral and Cognitive Therapies Convention, Toronto, ON, Canada.

Petrie, J., Vines, L., & Chapman, L. K. (2011). The Clinical Utility of the Positive and Negative Affect Scales- Extended Version in Predicting SP in African American Adults. Poster presented at the Association for Behavioral and Cognitive Therapies Convention, Toronto, ON, Canada.

Petrie, J., Vines, L., & Chapman, L. K. (2011). The co-occurrence of anxiety disorders in African American parents and their children. Poster presented at the Association for Behavioral and Cognitive Therapies Convention, Toronto, ON, Canada.

Petrie, J. M., Vines, L., & Chapman, L. K. (2011). The Clinical Utility of Self-report Measure in Predicting Social Phobia in African American Adults: A Receiver Operating Characteristic Analysis. Poster presented at the 31st Annual Anxiety Disorders Association of America (ADAA) Conference, New Orleans, LA.

Durrett, E., **Petrie, J. M.**, Vines, L., & Chapman, L. K. (2011). The Effects of Child Psychopathology on Parenting Stress in a Community Based Sample of African Americans. Poster presented at the 31st Annual Anxiety Disorders Association of America (ADAA) Conference, New Orleans, LA.

Gurren, M., **Petrie, J. M.**, Vines, L., Durrett, E., & Chapman, L. K. (2011). The Relationship between Emotional Regulation and Social Anxiety in African American Children and Adolescents: An Examination of Internalizing and Externalizing Symptoms. Poster presented at the 31st Annual Anxiety Disorders Association of America (ADAA) Conference, New Orleans, LA.

Vines, L., **Petrie, J. M.**, & Chapman, L. K. (2011). Confirmatory Factor Analysis of the Multidimensional Anxiety Scale for Children in a Community Sample of African American Youth. Poster presented at the 31st Annual Anxiety Disorders Association of America (ADAA) Conference, New Orleans, LA.

Davis, D., Vines, L., **Petrie, J. M.**, & Chapman, L. K. (2011) Worry Content in an Anxious and Non-Anxious Sample of African American Adults. Poster presented at the 31st Annual Anxiety Disorders Association of America (ADAA) Conference, New Orleans, LA.

Simmons, A., Vines, L., **Petrie, J. M.**, & Chapman, L. K. (2011). The Familial Transmission of Anxiety in African Americans: Does Resiliency Moderate that Relationship? Poster presented at the 31st Annual Anxiety Disorders Association of America (ADAA) Conference, New Orleans, LA.

Petrie, J. M., Vines, L. M., Chapman, L. K. (2010). Fear factors: Cross-validation of specific phobia domains in a community-based sample of African American adults. Poster accepted for presentation at the Association for Behavioral and Cognitive Therapies Convention, San Francisco, CA.

Vines, L. M., **Petrie, J. M.**, Chapman, L. K. (2010) Does the SCL-90 predict clinical severity ratings of anxiety in African American adults. Poster accepted for presentation at the Association for Behavioral and Cognitive Therapies Convention, San Francisco, CA.

Chapman, L. K., **Petrie, J. M.**, Diggs, Q. T., Vines, L. M., & Goodwin, S. (2010). The CAFE Project: An Examination of Anxiety Disorders in African American Parents and

Their Children. Poster presented at the 30th Annual Anxiety Disorders Association of America (ADAA) Conference, Baltimore, MD.

Kakar, S., **Petrie, J. M.**, Mitchell-Hurd, L., Vines, L. M., & Chapman, L. K. (2010). The Scary Truth: The Familial Linkage of Phobias in African American Youth. Poster presented at the Kentucky Psychological Association Conference, Louisville, KY.

INTRAMURAL RESEARCH GRANT FUNDING

2013

Intramural Research Incentive Grants: Research Initiation Grant

University of Louisville

Project Title: Multiracial Family Wellness Project

Authors: **Petrie, J.**, Richards, A., & Chapman, L. K.

Status: Awarded (Total funds: \$3,500)

TEACHING EXPERIENCE

2012-2014

Clinical Graduate Teaching Assistant, Psychological Services Center

University of Louisville, Louisville, KY

Course: Intellectual and Cognitive Assessment

Supervisor: Bernadette Walter, Ph.D.

- Discussed and demonstrated the administration of cognitive assessments, including the WISC-IV, WAIS-IV, and WJ-III to incoming clinical graduates students.
- Led group discussions regarding the assessment of cognitive functioning in diverse clinical populations. Graded WISC-IV, WAIS-IV and WJ-III administrations and integrative reports.
- Provided feedback of administration accuracy and areas for improvement.
- Presented on and facilitated discussion regarding conducting assessments with children and families.

2012-2014

Clinical Graduate Teaching Assistant, Psychological Services Center

University of Louisville, Louisville, KY

Course: Introduction to Clinical Interviewing

Supervisor: Janet Woodruff-Borden, Ph.D.

- Facilitated and developed coursework regarding basic clinical interviewing skills with incoming clinical psychology doctoral students.
- Responsibilities included leading group discussions, facilitating clinical role-plays, and grading weekly written assignments.
- Provided both real-time and post-hoc feedback in order to facilitate continued learning.
- Within various roles, challenged students to think critically about multicultural considerations within clinical interviewing and therapeutic contexts.

SERVICE & LEADERSHIP

COMMUNITY PRESENTATIONS

Petrie, J. & Richards, A. (4/2014). *Stress management and your family*. Presented at Family Scholar House, Louisville, KY.

Center for Mental Health Disparities. (4/2013). *Overcoming test anxiety*. Presented at the Lincoln Foundation, Louisville, KY.

Petrie, J. & Vines, L. (2/2013). *Stress in the work place*. Presented at Dress for Success, Louisville, KY.

OUTREACH

2012-2014

Graduate Clinic Assistant Outreach Coordinator, Psychological Services Center
University of Louisville

Supervisor: Bernadette Walter, Ph.D.

- Responsible for clinic outreach in order to promote mental health and to facilitate an increased community awareness of services offered at the PSC.
- Clinic outreach included presentations on a variety of psychological concerns (e.g., stress in the workplace) at local community organizations.
- Organized participation in several health fairs through various institutions across the Louisville community (e.g., churches, businesses, philanthropic organizations)
- Developed and co-led stress management groups, which were available to members of various community organizations free of charge

2011-2014

Continuing Education Program Development, Kentucky Psychological
Association

Louisville, KY

Committee Chair: Joe Edwards, Psy.D.

- Attended monthly meetings and assisted in the development of various Continuing Education workshops offered by the Kentucky Psychological Association.

2011-2012

Research Assistant Outreach Coordinator, West End School
Louisville, KY

Supervisor: Benjamin Payne, Principal; L. Kevin Chapman, Ph.D.

- Assisted in the planning and implementation of research design to assess program development and evaluate outcomes in at-risk youth from diverse cultural backgrounds.

2009-2013

Research Assistant Outreach Coordinator, Lincoln Foundation
Louisville, KY

Supervisor: L. Kevin, Chapman, Ph.D.

- Assist with development and presentation of workshops designed to educate under-represented groups about the etiology, manifestation, and treatment of anxiety and related disorders.

WORKSHOPS AND SUPPLEMENTAL TRAINING

2013

Seminar in Treatment Courses in Post-Traumatic Stress Disorder

University of Louisville, Louisville, KY

- Full day psychoeducational seminar on current approaches to symptoms, diagnosis, and treatment of post-traumatic stress disorder with a focus on interventions with military veterans.

2013

Seminar in Functional Analytic Psychotherapy

University of Louisville, Louisville, KY

- Full day didactic and experiential seminar devoted to utilizing functional analytic psychotherapy treatment strategies with diverse clients, including interactive and roleplay components.

2012

Seminar in Comprehensive Behavioral Intervention for Tics Disorder,

University of Louisville, Louisville, KY

- Full day didactic seminar devoted to treatment courses for tics and Tourette's disorders, including interactive and role-play components.

PROFESSIONAL AFFILIATIONS

2010-Present

Kentucky Psychological Association (KPA)

2009-Present

Association for Behavioral and Cognitive Therapies (ABCT)

2009-2012

Anxiety Disorders Association of America (ADAA)

REFERENCES

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