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Risk Factors For Youth Anxiety: The Role of Parenting

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Abstract

This paper reviews the recent literature on the role that parenting has in the development of youth anxiety. Research indicates that certain parenting behaviors may be risk factors for youth anxiety problems. Three dimensions of parenting are examined as potential risk factors for youth anxiety: negative parenting behaviors (i.e. control and rejection), anxious rearing, and poor parental discipline practices. This review presents evidence for each of these dimensions as risk factors for anxiety, while also acknowledging this body of literature's methodological considerations and shortcomings. Finally, this paper concludes with a proposal for a study that examines whether a variety of parental discipline practices are associated with greater levels of anxiety disorders and trait anxiety in youth. Parent and child gender effects on the association between parental discipline and youth anxiety problems will also be assessed.

Keywords: anxious rearing, discipline, control, parenting, rejection, youth anxiety

Risk Factors for Youth Anxiety: The Role of Parenting Behaviors

Imagine a 16-year-old adolescent girl named Sarah¹. Shortly after her fifteenth birthday, Sarah suffered a panic attack during class at her high school. Since that initial attack, Sarah experiences biweekly panic attacks characterized by extreme nausea, accelerated heart rate, shaking, sweating, shortness of breath, and feelings that she is dying. These panic attacks occur without warning and do not seem to be triggered by any particular event or location. As a result, it is only with extreme distress and anxiety that Sarah's parents can get her to leave home because she is afraid of having a panic attack in public. She has quit all of her extracurricular activities and no longer goes anywhere with her friends, which has caused her to become socially isolated and lonely. Additionally, Sarah completely refused to return to school after her panic attack because she associates the onset of her panic attacks with her school, and so Sarah's mother had to quit her job in order to homeschool Sarah. While Sarah was undergoing cognitive-behavioral therapy for panic disorder and on medication, her progress has been slow. The lack of treatment progress and social isolation has caused Sarah to develop comorbid major depression, and she recently attempted to kill herself to stop the attacks. Sarah is now currently being treated in an inpatient youth psychiatric facility. The financial costs of treatment, Sarah's mother quitting her job, and the stress of caring for and seeing their daughter suffer have resulted in Sarah's parents experiencing severe marital problems. Sarah's parents have recently separated while they consider the next steps in Sarah's treatment.

Sarah's story exemplifies how devastating anxiety disorders are for millions of youth and their families. Like with many anxiety disorders, not only does Sarah suffer extreme emotional distress and physical discomfort while in the middle of a panic attack, but her disorder also manifests itself at both a cognitive (e.g. she irrationally perceives her school environment as a potential trigger for her attacks) and behavioral (e.g. she avoids going outside so she does not have a panic attack in public) level. This demonstrates how anxiety such as Sarah's pervades all aspects of youths' lives, while simultaneously having negative effects on the well-being of parents with anxious children. Furthermore, this example highlights how anxiety disorders disrupt children and adolescents' normal psychosocial development. For Sarah, her panic disorder has specifically disrupted her normal social development, as her refusal to participate in

¹ This is a hypothetical case study for illustration only and does not portray a real individual.

extracurricular activities or hang out with her friends have impeded her ability to maintain her social network, leading to isolation and the potential for social interaction problems in adulthood. Finally, Sarah's case study highlights how severe anxiety disorders can lead to additional mental health problems and, in extreme cases, suicidal ideation and attempts. Unfortunately, Sarah's case is merely one example of the many anxiety disorders and their resulting negative outcomes that afflict millions of children.

Anxiety disorders are the most frequent childhood and adolescent disorders in the United States, contributing to the growing costs of mental health treatment for youth in this country that are approaching \$250 billion per year (Beesdo, Knappe, & Pine, 2009; Merikangas et al., 2010). A study by Beesdo et al. (2009) found that the lifetime prevalence rate for anxiety disorders in children and adolescents is approximately 15% to 20%. Furthermore, Merikangas et al. (2010) found that 8.3% of adolescents suffer from a "severe" anxiety disorder characterized by both extreme emotional distress and impairment in functioning. This means that approximately 1.42 million adolescents suffer from a severe anxiety disorder without even counting youths under 13 years of age with severe anxiety (U.S. Census Bureau, 2012). Anxiety is 2 to 3 times more prevalent in girls than boys after puberty, with girls experiencing a greater number of anxious symptoms and severity across the lifespan than boys (Beesdo et al., 2009; Letcher, Sanson, Smart, & Toumbourou, 2012). This statistic highlights an important gender difference found in the prevalence of anxiety disorders. Thus, it is clear that anxiety is an epidemic problem in U.S. youth that requires serious attention from researchers and mental health practitioners.

It is particularly important to address youth anxiety in light of the early onset and chronic nature of these disorders. Youth (i.e. 18 years old and under) is the primary developmental period in which anxiety symptoms and disorders develop (Beesdo et al., 2009). Anxiety

disorders have the earliest mean age of onset than any other *DSM-IV* axis I disorder, as most individuals develop their first anxiety disorder (even if not yet detected) in early childhood by 6 years old (Beesdo et al., 2009; Drake & Ginsburg, 2012; Merikangas et al., 2010). Anxiety is also relatively chronic and persistent across the lifespan, as the maladaptive thought patterns and avoidance characteristic of anxiety seem to be resistant to change over time (Beesdo et al. 2009; Chorpita & Barlow, 1998; Drake & Ginsburg, 2012). While 80% of youth outgrow their initial anxiety disorder, only 10% to 15% of youth who remit have no psychiatric diagnosis at 10-year follow-up, with the remaining 85% to 90% developing either the same or another psychiatric problem (Beesdo et al., 2009). This suggests that while anxious children may enter remission from their initial diagnosis, they are at a high risk to develop new anxiety and/or other psychiatric disorders (Craske, 1999). Therefore, childhood anxiety is a chronic disorder that may pose a risk for future psychopathology.

In particular, children with anxiety disorders are at extreme risk for a host of comorbid or future psychiatric disorders including concurrent anxiety disorders, major depression, substance abuse, and even suicide (Beesdo et al., 2009; Drake & Ginsburg, 2012). Greater severity of anxiety problems also leads to poorer outcomes for youth. Letcher et al. (2012) found that youth classified as “highly anxious” at age 11 showed significantly more shyness, anxiety, aggression, poor social skills, and peer relationship difficulties in later adolescence than their “low anxiety” counterparts. Highly anxious girls also exhibited greater levels of hyperactivity, depression, and parent-child relationship difficulties than girls with low levels of anxiety. Therefore, children with anxiety disorders suffer poorer outcomes than children who never have an anxiety disorder, highlighting the importance of early detection and intervention for youth anxiety.

As childhood and adolescence are comprised of multiple stages of emotional, cognitive,

and psychosocial growth, anxiety disorders may interrupt a child's normal development, setting the stage for chronic adjustment problems and psychopathology (Cicchetti, 2006). Together, the epidemiological statistics on anxiety disorders indicate that research, treatment, and prevention should focus on youth anxiety. In doing so, it may be possible to minimize the developmental interruptions in youth that contribute to poorer outcomes, distress, and impairment. In order to facilitate the treatment and prevention of youth anxiety, it is crucial to identify the risk factors that are associated with these disorders. Research indicates that environmental factors account for approximately 70% of the variance in youth anxiety, suggesting that research should focus on environmental risk factors that disrupt child development (Eley et al., 2003).

Aspects of parenting are important environmental risk factors to examine, as parents are the most important figures in the child's life during infancy and childhood. This relationship also sets the stage for behavior and adjustment in adolescence. Parents play a significant role in healthy child development by facilitating secure attachments and the development of positive internal working models, helping children learn how to interact with and master their environment, facilitating positive coping strategies and solutions in response to anxiety-provoking situations, and modeling positive behaviors (Bandura, 1984; Bowlby, 1973; Chorpita & Barlow, 1998). When parenting behaviors are neither positive nor adaptive, however, this may pose a risk for youth anxiety problems, as disruptions in the child's normal development due to poor parenting may lead to psychopathology (Cicchetti, 2006). Parenting factors are closely linked to children's psychological development and thus warrant closer examination as risk factors for youth anxiety. The purpose of this review is to examine the role that parenting factors play in the development of youth anxiety problems and to propose a research study that closely examines the role of parental discipline techniques.

Defining Anxiety and Its Core Features

Anxiety is a universal feature of human nature, as at one time or another everyone feels “anxious.” Yet, it is difficult to precisely define what anxiety is, given the propensity for researchers to use the term “anxiety” to describe many different emotions and cognitive processes. For example, anxiety may describe a temporary emotional state (i.e. state anxiety), a stable personality characteristic (i.e. trait anxiety), a psychological symptom, a specific psychological disorder, or any combination of these. This depends on how pervasive, intense, and dysfunctional the anxiety is (Beesdo et al., 2009; Colonnese et al., 2011). Simply, anxiety is a “future-oriented mood state” characterized by “a sense of uncontrollability focused on possible future threats, danger, or other upcoming potentially negative events” (Barlow, 2000, 1249). This is conceptually distinct from fear, which involves anxiety and autonomic arousal due to the presence of an immediate and possibly life-threatening danger (Barlow, 2000; Craske, 1999).

However, fear and anxiety are both normative features of child development. Anxiety is often adaptive because it helps facilitate youth’s avoidance of danger (Beesdo et al., 2009). Anxiety is also normal as children begin to explore their environment, learn how to think about the future and interpret danger, and gain mastery over their environment. This often makes it difficult to distinguish normal and abnormal anxiety in youth (Beesdo et al., 2009). For example, separation anxiety from caregivers during the first few years of a child’s life is part of normal development; persistent separation anxiety in early childhood and adolescence, however, is abnormal behavior for the child’s age and developmental stage.

Therefore, it is essential to differentiate normal and abnormal youth anxiety. Properly identifying severe anxiety problems is important for research on abnormal anxiety etiology and treatment protocols. Simply put, abnormal anxiety is marked by a persistent and/or excessive

pattern of intense anxious symptoms and avoidance that leads to extreme distress, impairment, and/or dysfunction in the child (Beesdo et al., 2009; Colonnese et al., 2011). Because it is a complex construct, studies often differ in how they conceptualize and measure child anxiety. Two major conceptualizations of abnormal anxiety are common in the literature: 1) trait anxiety, which refers to excessive “nonspecific symptoms of fear, worry, and other negative mood states not unique to a single disorder,” and 2) anxiety disorders as classified by the *DSM-IV*, which are clinical diagnoses (e.g. Generalized Anxiety Disorder and Separation Anxiety Disorder) that consist of specific collections of symptoms unique to each individual anxiety disorder (Beesdo et al., 2009; McLeod, Wood, & Weisz, 2007, 161). This highlights the construct of anxiety’s² complexity and the challenges faced when interpreting research on anxiety.

Despite this complexity, a number of unique biological, behavioral, and cognitive features characterize youth anxiety. Biologically, anxiety is distinguished from other internalizing disorders such as depression by physiological hyperarousal of the sympathetic central nervous system (CNS; Barlow, 2000; Beesdo et al., 2009). Especially in youth, hyperarousal is often accompanied by somatic symptoms such as stomachaches, restlessness, and muscle tension (Ginsburg, Riddles, & Davies, 2006). In particular, overactivity of the behavioral inhibition system (BIS), which comprises the septal area, hippocampus, and Papez circuit of the brain, causes this hyperarousal (Chorpita & Barlow, 1998). These brain regions are all part of the limbic system of the brain, which is involved in regulating emotional processes. The BIS also activates the corticotropin-releasing factor system, which facilitates the release of stress hormones known as glucocorticoids (Barlow, 2000; Chorpita & Barlow, 1998). These stress

² In order to simplify the conceptual distinction between trait anxiety and anxiety disorders, the term “anxiety” in the remainder of this review will refer to both *DSM-IV* anxiety disorders and excessive trait anxiety in youth unless otherwise specified.

hormones increase blood pressure, heart rate, sweating, shortness of breath, and elicit many of the other physiological symptoms of anxiety. Particularly in youth, early and consistent exposure to these stress hormones may alter brain structure and chemistry, interfering with later development (Chorpita & Barlow, 1998). Amygdalar hypersensitivity has also been implicated as a risk factor for youth anxiety (Beesdo et al., 2009). Finally, high levels of negative affect, which is a general state of negative emotion and altered cognitive functioning that may be a manifestation of biological brain factors, is characteristic of anxiety disorders, although it seems to be less specific to anxiety as high negative affect is also a feature of depression (Barlow, 2000; Chorpita & Barlow, 1998).

At a cognitive level, anxiety is marked by cognitive distortions, threat biases, and focused attention to danger. Gallagher and Cartwright-Hatton (2008) indicate that anxious children are prone to overgeneralizing, selective abstraction, personalizing, and catastrophizing of negative thoughts and emotions. For example, anxious youths may feel as though every school exam will determine their future success in life, and therefore become excessively anxious about their performance on every exam even if they have succeeded in the past. Furthermore, studies show that anxious children are prone to threat biases. Barrett, Rapee, Dadds, and Ryan (1996) found that children with anxiety disorders attributed greater threat to ambiguous situations than did nonanxious children. As a result, the researchers argued that differences in threat interpretations might be a way to distinguish children with and without anxiety disorders. In line with this threat bias, children with anxiety also exhibit differences in attention compared to nonanxious children. Anxious children narrow their attention to sources of threat or danger, which also contributes to these children's cognitive distortions (Barlow, 2000; Craske, 1999). Anxious children also appear to exhibit self-focused attentional states that increase arousal and negative

affect (Barlow, 2000). Finally, children with anxiety find it very difficult to control their worried thoughts, which contributes to the perpetual cycle of increased arousal and negative thoughts (Barlow, 2000).

These biological and cognitive components are manifested by characteristic behavioral symptoms of anxiety. The core behavior that underlies all anxiety problems in youth is avoidance of the situations that cause anxiety (Barlow, 2000). A study by Barrett et al. (1996) found that children with anxiety disorders chose a greater number of avoidant solutions in response to anxiety-producing situations than children with oppositional defiant disorder or children without any psychiatric disorder. Children who suffer from severe anxiety not only exhibit anxiety when a feared stimulus or situation is present, but they also display anticipatory anxiety before the anxiety-producing event ever occurs. This anxiety then results in active attempts to avoid the anxiety-producing event. For example, a child with a dog phobia will be anxious walking by a house with a dog in the yard on the way to school, and as a result may avoid walking by the house by taking a longer route to school. This avoidance not only prevents exposure to the feared stimulus, but it also reduces the child's anxiety. Unfortunately, this avoidance is reinforced by this reduced anxiety, resulting in the continued use of maladaptive avoidant responses and cognitive processes to the stressor in the future. Together, this suggests that persistent avoidance is one of the unique behavioral characteristics of anxious children that is both a symptom and a behavior that increases children's anxiety, negative cognitive processes, and continued maladaptive behavioral responses to the anxiety-producing situation. Thus, it is clear specific biological, behavioral, and cognitive features mark anxiety problems and distinguish anxiety from other forms of psychopathology.

Parenting Dimensions: Negative Parenting, Anxious Rearing, and Discipline

Before examining the empirical literature on the role that parenting plays in the development of youth anxiety problems, it is first important to define the dimensions of parenting and explain preliminary hypotheses for how these dimensions relate to youth anxiety. Parenting broadly refers to a number of parental childrearing behaviors, several of which have been implicated as potential risk factors for youth anxiety problems. Three important dimensions of parenting have been hypothesized to contribute to the development of youth anxiety: negative parenting, anxious rearing, and discipline style.

Negative parenting is traditionally comprised of the constructs of parental control and rejection, though terminology varies across studies (McLeod et al., 2007). Parental control refers to “excessive parental regulation of children’s activities and routines, encouragement of children’s dependence on parents, and instruction to children on how to think and feel” (McLeod et al., 2007, 156). Additionally, McLeod et al. (2007) argue there are two major subdimensions of parental control: (1) overinvolvement in children’s activities and behaviors, and (2) lack of autonomy granting. It is hypothesized that excessive parental control limits children’s abilities to explore and develop a sense of control over their environment, leading to feelings of helplessness and anxiety about their abilities to cope with their environment (Chorpita & Barlow, 1998).

Parental rejection involves “low levels of parental warmth, approval, and responsiveness,” and consists of the subdimensions of parental withdrawal, aversiveness, and emotional warmth (McLeod et al., 2007, 156). McLeod et al. (2007) suggest that parental rejection disrupts children’s emotional regulation and increases their sensitivity to anxiety. Parental rejection, particularly withdrawal, may also be related to an insecure attachment between the child and his/her caregivers. A lack of parental responsiveness to the child’s distress is characteristic of insecure attachment, and insecurely attached children do not see their

caregivers as being responsive to their needs (Ainsworth, 1978; Bowlby, 1973). Furthermore, the inability of insecurely attached and rejected children to solicit attention and ensure that their emotional needs are met may contribute to feelings of less control over their environment as well as the development of less autonomous behavior (Chorpita & Barlow, 1998). Any associations between parental rejection and youth anxiety may therefore be related to the strong associations found between insecure-ambivalent attachment and youth anxiety (Colonnesi et al., 2011).

The second important dimension of parenting to consider is anxious rearing, which refers to a “parent’s tendency to demonstrate anxious thoughts, feelings, or avoidant behaviors in front of the child” (Drake & Ginsburg, 2012, 148). Social learning theory suggests that children may learn and model parents’ anxious and avoidant behaviors through observation (Bandura, 1986). Additionally, Bandura (1986) suggests that viewing others’ emotional reactions evokes similar emotional reactions in the observer. For example, a child who observes a parent being anxious about going to a social event may experience similar feelings of anxiety observing this behavior, and may then feel anxious the next time he/she has to go to a social event such as a birthday party. Because youth, especially young children, often selectively attend to their parents’ behaviors and cues as part of the learning and development process, excessive and persistent displays of anxious cognitions or behaviors (both verbal and nonverbal) by parents are likely to result in greater anxiety problems for these children.

Finally, parental discipline style is an important aspect of parenting that may be related to youth anxiety. Research suggests that as many as 48% of children experience non-abusive physical discipline in their lifetime (Afifi, Brownridge, Cox, & Sareen, 2006). However, discipline comprises more than just physical discipline. It is helpful to look at parental discipline techniques in two subdimensions: inductive discipline and power assertive discipline. Inductive

discipline, which refers to making the child feel responsible for their behavior and understand the effects of their misbehavior on others, consists of less aggressive discipline behaviors such as explaining child misbehaviors, ignoring child misbehavior, and monitoring child behaviors (Bosmans, Braet, Beyers, Van Leeuwen, & Van Vlierberge, 2011, 35). In contrast, power assertive discipline uses techniques such as corporal punishment, deprivation of privileges, psychological aggression, and penalty tasks (Bosmans et al., 2011, 35). While much less is known about how discipline might cause youth anxiety problems, it is possible that negative discipline may cause children to make negative attributions about their self-worth and develop a lessened sense of security, leading to lower self-esteem and worries about their personal safety (Rodriguez, 2003). Additionally, aversive discipline may encourage avoidance of a multitude of behaviors that the child believes may result in discipline. This may become problematic if the punished behaviors are not truly maladaptive, but are simply the result of parental overreaction and use of inappropriate discipline techniques. For example, if a parent overreacts when a child stays too long at a friend's house by hitting the child, the child may experience feelings of negative self-worth, feel as though his/her security has been violated, and may even avoid going over to friends' houses in the future in order to avoid the punishment from occurring again (which consequently may result in more anxious symptoms due to social isolation). Thus, a number of power assertive and/or inductive techniques may foster youth anxiety problems.

Parenting and its Relation to Youth Anxiety

Negative Parenting: Parental Control and Rejection

It has been well established in the extant literature that negative parenting is significantly associated with youth anxiety problems (Drake & Ginsburg, 2012). A recent meta-analysis by McLeod et al. (2007) found that negative parenting was moderately correlated with youth

anxiety, contributing to 4% of the variance in youth anxiety. However, simplifying the entire domain of negative parenting into a single factor likely underestimates the true effect that each dimension of negative parenting has on youth anxiety. As a result, researchers suggest that it is important to parse apart the different dimensions of parenting behaviors in order to determine their unique effects on youth anxiety (Drake & Ginsburg, 2012; McLeod et al., 2007; van der Bruggen, Stams, & Bögels, 2008).

In general, correlational studies have found significant associations between high levels of both parental control and rejection and greater levels of youth anxiety (Gallagher & Cartwright-Hatton, 2008; Roelofs, Meesters, Ter Huurne, Bamelis, & Muris, 2006). However, there are methodological inconsistencies in the operationalization of negative parenting dimensions and youth anxiety, as well as inconsistencies of how these dimensions have been assessed (e.g. parent/youth self-report versus observation; Drake & Ginsburg, 2012; McLeod et al., 2007). These inconsistencies have contributed to the varied findings on how strongly parental control and rejection are related to youth anxiety (Drake & Ginsburg, 2012; McLeod et al., 2007). In order to resolve these inconsistencies, meta-analyses of the negative parenting literature provide valuable information on the true magnitude of the relationship between negative parenting and youth anxiety.

McLeod et al. (2007) conducted a meta-analysis of 47 studies comprising over 12,000 youth that examined the association between negative parenting dimensions and youth anxiety problems. The researchers found that parental control and parental rejection were both moderately associated with youth anxiety, with control showing a slightly higher association than rejection. However, the most convincing evidence for the role of negative parenting was demonstrated when they further subdivided these two dimensions. For parental control, the

subdimension lack of autonomy granting contributed a staggering 18% of the variance in youth anxiety scores, while overinvolvement contributed an additional 5% of the variance. A similar meta-analysis by van der Bruggen et al. (2008) further supported these results, and found that control had a medium-to-large standardized effect on youth anxiety. In comparison, the parental rejection subdimensions of withdrawal and aversiveness each contributed approximately 5% of the variance, while emotional warmth had almost no correlation with youth anxiety scores and accounted for less than 1% of the variance (McLeod et al., 2007). These findings indicate that excessive parental control, particularly lack of autonomy granting, are the negative parenting behaviors most strongly associated with the development of youth anxiety.

The finding that parental control is the dimension most strongly associated with youth anxiety is unsurprising, given that some studies have shown that parental control uniquely predicts the development of anxiety but not depressive disorders (Beesdo, Pine, Lieb, & Wittchen, 2010). In contrast, in line with the finding that low parental warmth is not a significant predictor of youth anxiety, Beesdo et al. (2010) found that low emotional warmth may be more predictive of depressive disorders. Furthermore, the predominant role of parental control agrees with theoretical models of youth anxiety etiology described earlier, which suggest that anxiety results from a lack of control over the environment (Chorpita & Barlow, 1998). By restricting children's autonomy, parents remove the opportunity for the child to explore and manipulate their environment, prevent opportunities to extinguish irrational anxieties by approaching feared stimuli without experiencing negative consequences, and impede their ability to develop coping skills when failures occur (Chorpita & Barlow, 1998; Drake & Ginsburg, 2012). For example, consider parents who remain by their child at every moment on the playground and do not let him/her participate in any activities that the parents feel are dangerous.

While these parents may have good protective intentions, this restriction of autonomy prevents the child from fully exploring his/her environment. This could cause the child to feel a lack of control over what activities he/she engages in, and also prevents the child from learning coping strategies to deal with anxiety-provoking situations or failures, such as getting hurt, in a proactive way. Over time, this lack of control may eventually result in more generalized anxiety about his/her abilities to cope with anxiety-provoking situations. Thus, parental control indirectly increases youth anxiety by causing children to perceive their environment as uncontrollable and by preventing children from developing the appropriate coping skills to deal with this anxiety. Therefore, dividing negative parenting into its subdimensions best explains these behaviors' effects on the development of youth anxiety.

Beyond parsing apart negative parenting into subdimensions, other methodological considerations such as the parent/child gender and child diagnostic status must be taken into account when interpreting these findings. First, van der Bruggen et al. (2008) found that girls were more adversely affected by parental control than boys. This gender difference can be explained by the fact that youth who have a higher anxiety sensitivity level are more susceptible to parenting factors (van der Bruggen et al., 2008, 1258). Because girls appear to be more prone to anxiety, van der Bruggen et al. (2008) and Letcher et al.'s (2012) findings that girls are more sensitive to negative parenting is thus unsurprising. Parents may also view girls as more vulnerable to potential negative events (e.g. child abduction or sexual abuse), and therefore in more need of protection and supervision. As a result, girls may have fewer opportunities to explore, test, and experience the outcomes of their external environment, leading to a diminished sense of control and greater anxiety. Van der Bruggen et al. (2008) also found that parent gender moderated the association between parental control and child anxiety, with larger effects seen for

fathers compared to mothers. This suggests that there may be a differential effect of negative parenting based on parent gender, with fathers perhaps having a stronger effect on youth anxiety because they often spend less time with their children than mothers. As a result, fathers' negative parenting behaviors may be more salient to their children despite the fact that mothers and fathers show no significant differences in actual parenting behaviors (Lindhout et al., 2006; van Der Bruggen et al., 2008). Beyond the effects of parent/child gender, however, McLeod et al. (2007) also found that studies that categorized children according to *DSM-IV* diagnoses and measured negative parenting using observer and child report over parent report showed stronger associations between negative parenting and youth anxiety. Together, the findings on child/parent gender and child diagnostic status highlight the importance that assessment methodology has on the associations found between negative parenting and youth anxiety. This suggests that multi-informant methods of assessing negative parenting behaviors and distinguishing between clinical and nonclinical samples are crucial for providing accurate assessments of negative parenting's influence on youth anxiety (McLeod et al., 2007).

Finally, it is important to recognize that most of the research on negative parenting and youth anxiety is correlational and/or cross-sectional. Only a few studies have examined the longitudinal effects of parental control and rejection on youth anxiety (McLeod et al., 2007). As a result, it is possible that the strength of the relationship between negative parenting and youth anxiety might be underestimated, as the effects of negative parenting likely accumulate across the lifespan. Additionally, these findings do not clarify the direction of the relationship between negative parenting and youth anxiety. While it is highly likely that these negative parenting factors (particularly control) are risk factors for youth anxiety based on theoretical models of child development and anxiety etiology, it is also possible that youths with anxiety problems

elicit more negative parenting behaviors. Thus, while it is clear that negative parenting factors and youth anxiety are correlates with one another, prospective longitudinal research is needed to determine whether these behaviors are predictive risk factors for youth anxiety problems.

Anxious Rearing

Correlational studies have also identified a relationship between anxious rearing and youth anxiety problems. For example, a study by Roelofs et al. (2006) found that 9- to 12-year-old nonanxious children who perceived their mothers and fathers as exhibiting more anxious rearing experienced a greater number of anxiety disorder symptoms. A similar study by van Brakel, Muris, Bögels, and Thomassen (2006) also found that anxious rearing was correlated with a greater number of anxious symptoms in 11- to 15-year-old children, contributing 5% of the variance in predicting anxiety disorder symptoms over and above the role of behavioral inhibition and attachment style. Clearly, anxious rearing is a parenting behavior common in parents of anxious children and is associated with more severe youth anxiety problems.

The most compelling research on the role of anxious rearing, however, has used experimental manipulations of parents' anxious rearing behavior. By utilizing manipulations of children's exposure to anxious rearing, these researchers have demonstrated that there is a causal link between anxious rearing and increased youth anxiety, which is necessary to identify anxious rearing as a risk factor for youth anxiety problems. A methodologically sound study by Barrett et al. (1996) examined whether families enhanced the choice of avoidant solutions in children with anxiety disorders, oppositional disorders, and nonclinical children (i.e. children with no psychiatric disorders). The researchers had 152 children between 7 and 14 years old indicate whether they would feel threatened by 12 ambiguous situations, and what type of solution they would choose (avoidant, aggressive, or prosocial solutions). Parents were also asked to rate how

they thought that their children would respond to the 12 scenarios. Following these assessments, parents and their child engaged in a 5-minute discussion about two of the situations. After the discussion, children were separated from their parents and asked a second time to choose their final solutions for these two scenarios.

The researchers found that anxious children gave higher threat interpretations than nonclinical children, and gave significantly more avoidant solutions than both nonclinical and oppositional children. Perhaps more compelling, however, is that only anxious children showed a significant percent increase in choosing avoidant solutions after the manipulation (29.7% prediscussion versus 67.8% postdiscussion). These results suggest that anxious children may have been influenced by the coping strategies and solutions proposed by their parents, and thus modeled greater levels of avoidant behavior after interacting with their parents. Additionally, the fact that parents' expectations about their children's responses matched their children's threat ratings and solution choices suggests that children may be learning how to interpret and respond to certain situations based on parent behavior. Through this learning, parental anxiety and expectations about their children's behaviors may then be modeled and reinforced (Barrett et al., 1996). Therefore, this study provides strong evidence that parental anxious rearing behaviors may directly increase anxiety and avoidance in youth, whether the parent suffers from anxiety or just has low expectations about their child's ability to cope.

A similar experimental study by Burtsein & Ginsburg (2010) also found evidence for anxious rearing as a risk factor for youth anxiety in nonclinical children. Twenty-five children between 8 and 12 years old took two spelling tests, during which parents either modeled anxious behavior or modeled relaxed and supportive behavior about their children's capabilities to succeed on the test. The researchers found that children reported higher levels of anxiety, more

anxious cognitions, and more desired avoidance of the feared event (i.e. spelling test) during the anxious parent condition than when the same children completed the relaxed parent test. These results suggest that parental anxious rearing is a risk factor for increased youth anxiety, as the same children showed significant differences due to experimentally controlled parent behavior.

It may be argued that these studies only demonstrate that situational anxious modeling just temporarily increases children's anxiety, and does not truly establish anxious rearing as a risk factor for lasting youth anxiety problems. While it is true that one instance of anxious modeling is unlikely to produce lasting and pervasive anxiety problems in children, over the course of years persistent patterns of anxious rearing may lead to clinical levels of youth anxiety. For example, if a parent becomes anxious about their child's performance every time the child faces an important school project or extracurricular event, then the child is likely to internalize and model this anxious behavior and begin to express self-doubt about his/her own abilities and ability to control their environment in the future. By creating a consistently anxious environment, it may be inevitable that children develop anxious cognitions and behavior patterns by being exposed to and observing their parent's anxious rearing (Bandura, 1986). Barrett et al.'s (1996) study in particular may provide a window into parents' persistent patterns of anxious rearing, indicating that this behavior may be a risk factor that has an influence on clinical levels of youth anxiety over time. Therefore, it is reasonable to argue that these studies provide strong evidence that anxious rearing is a risk factor for youth anxiety problems.

However, the influence of negative parenting and anxious rearing on youth anxiety is not as simple as the research might suggest. Rather than being a straightforward cause-and-effect relationship, it is more likely that youth anxiety develops through the mutual interaction of parental and child behaviors (Drake & Ginsburg, 2012; Williams, Kertz, Schrock, & Woodruff-

Borden, 2012). For example, a child who has a naturally anxious temperament and suffers from severe social anxiety may elicit parental anxiety as they try to determine how to address the child's anxious behavior. As a result, this anxiety may result in parental anxious rearing and overprotection in order to minimize their child's negative feelings. In doing so, however, the parents model their own insecurities about the child's abilities and do not allow their child to face his/her social anxieties or learn how to adapt and better interact with his/her environment, which increases the child's anxiety. Thus, patterns of interactive behavior between parents and children may best explain how these risk factors operate and lead to youth anxiety problems.

While studies examining the interactive relationship between parenting behaviors and child anxiety are minimal due to the complexities of conducting such studies, preliminary research has begun to examine this relationship. Williams et al. (2012) found that when completing a joint parent-child task, anxious parents most frequently responded to their anxious children's attempts to take control over the behavior with parental aversiveness and low warmth, which in turn caused anxious children to respond with high levels of aversiveness and low levels of control. These aversive child behaviors could further result in a continued pattern of negative parent responses, creating a mutually reinforcing pattern of maladaptive parent and child behaviors that increase levels of both negative parenting and youth anxiety. In comparison, non-anxious parents who responded with warmth to child controlling behaviors elicited warmth from their nonanxious children (Williams et al., 2012). This highlights the critical role that positive interactions between parents and children likely play in breaking the cycles of maladaptive parenting behavior that lead to increased youth anxiety. Thus, this study highlights the importance of addressing the interactive nature of parenting and child behavior. While negative parenting and anxious rearing may indeed increase the risk for and severity of youth anxiety, this

anxiety also has a reciprocal effect on parenting practices that may then in turn amplify the severity of youths' anxiety problems.

Discipline

A less-researched parenting risk factor for increased youth anxiety is discipline style, as discipline has been largely studied as a risk factor for other forms of child psychopathology. Harsh physical discipline is clearly associated with increased risk for developing severe externalizing problems such as aggression, conduct disorder, oppositional defiant disorder, and drug and alcohol abuse/dependence (Afifi et al., 2006; Bender et al., 2007; Callender, Olson, Choe, & Sameroff, 2012; Feehan, McGee, Stanton, & Silva, 1991). This association has been established through both correlational and longitudinal studies, providing strong evidence that harsh physical discipline is a risk factor for child externalizing problems. It is interesting to note that one study found that physical punishment was associated with more externalizing problems in European American children but not for African-American children (Deater-Deckard, Dodge, Bates, & Petit, 1996). This suggests that cultural differences may play a role in how children interpret and react to parental discipline. Thus, it is clear that parental discipline, especially harsh physical discipline, can be a risk factor for later child psychopathology.

It is only recently, however, that researchers have begun to examine the associations between parental discipline and youth anxiety (Gallagher & Cartwright-Hatton, 2008). Overall, the literature seems to support an association between harsh physical discipline and child anxiety. For example, a cross-sectional study by Rodriguez (2003) examined whether parental attitudes towards physical discipline and their risk for future physical abuse corresponded with greater levels of child anxiety. Forty-two parents were assessed for child abuse potential and their use of physical discipline behaviors. Parents were presented with 12 scenarios in which

parents physically disciplined their children for misbehaving using mild to borderline abusive discipline techniques. Physical discipline was measured by having parents indicate how frequently they use the same punishment tactics. The researcher found that children of parents with greater levels of harsh discipline and abuse potential exhibited greater anxiety levels than children of less harsh parents. As stated earlier, this physical discipline may increase youth anxiety by spurring negative self-attributions and a diminished sense of control over the environment (Rodriguez, 2003). For example, a child who is hit for accidentally breaking a dish may misattribute the reason for the physical discipline to fundamental flaws in his/her character and self-worth rather than due to contextual factors or overreaction from the parents.

Other cross-sectional studies have confirmed that physical discipline is correlated with greater levels of youth anxiety. Bender et al. (2007) found that harsh maternal discipline was moderately correlated with adolescent anxiety. Another study found a relationship between mothers' and fathers' power assertive discipline and generalized adolescent internalizing problems, although the researchers suggest that parent relationship quality might mediate the relationship between discipline style and youth internalizing (Bosmans et al., 2011). Furthermore, a study by Gallagher & Cartwright-Hatton (2008) found that overreactive harsh discipline was more strongly associated with youth trait anxiety than were the negative parenting factors of control and rejection described earlier. This harsh discipline may lead to emotional dysregulation problems and negative attributions about the child's self-worth, both of which may consequently contribute to youth anxiety. Thus, this study highlights the fact that discipline may play an equal or more important role than negative parenting in youth anxiety problems.

It is important to note that similar to the negative parenting literature, the majority of the discipline literature is cross-sectional, which limits inferences about causality. Only one

longitudinal study by Letcher et al. (2012) was found that examined the relationship between harsh discipline and youth anxiety. This study found that that harsh parental discipline at ages 11 to 12 was a risk factor that predicted adolescent anxiety problems at age 17, although this was not the primary focus of the study. Therefore, more longitudinal research is needed to help determine the direction of the relationship between parental discipline and child anxiety.

One final methodological consideration is how discipline has been measured in the parental discipline and youth anxiety literature. Nearly all of the research on the links between parental discipline and youth anxiety has focused solely on physical discipline. In contrast, other discipline strategies such as psychological aggression, loss of privileges, time out strategies, and less harsh forms of discipline such as explaining have not been studied (Van Leeuwen, Fauchier, & Straus, 2012). As a result, the existing research on parental discipline and youth anxiety may not be representative of the many ways in which parents discipline their children. Van Leeuwen et al. (2012) identified nine distinct dimensions of parental discipline that may be helpful in examining how different discipline styles may or may not be associated with and predict youth anxiety problems. Their preliminary data gathered while developing the Dimensions of Discipline Inventory (DDI) suggests that corporal punishment, excessive monitoring of child misbehavior (i.e. control), psychological aggression, and ignoring of misbehavior (i.e. laxness) are significantly correlated with youth internalizing problems (i.e. depression/anxiety), though there may be differential effects based on parent gender. This highlights the importance of considering multiple discipline techniques as risk factors for youth anxiety.

Conclusions on Parenting and Youth Anxiety

The present review suggests that parenting factors such as negative parenting, anxious rearing, and disciplinary style play an important role in the development of youth anxiety

problems, although more research is needed. Negative parenting and anxious rearing have been sufficiently identified as correlates of youth anxiety, and anxious rearing has been shown to be a predictive risk factor for youth anxiety problems. While negative parenting requires longitudinal studies to determine the direction of the relationship, it is extremely likely that longitudinal studies will show that negative parenting is also a predictive risk factor for youth anxiety problems. However, it seems that parental discipline is most in need of further research as a risk factor for youth anxiety. While preliminary research has identified an association between physical discipline and youth anxiety, more research is needed to determine if there are associations with other forms of parental discipline. While longitudinal studies will eventually be needed to determine if there is a causal relationship between these parental discipline practices and youth anxiety, it must be first established that there are indeed relationships between the many dimensions of discipline and youth anxiety. By investigating the associations between multiple dimensions of parental discipline and youth anxiety, research can provide valuable insights into the etiology of youth anxiety problems, and will have clinical importance by identifying which aspects of parenting should be targeted in the treatment of youth anxiety.

Research Proposal: Associations Between Parental Discipline and Youth Anxiety

Purpose and Participants

The purpose of this study is to examine whether there are associations between different dimensions of parental discipline and youth anxiety problems. Child age and parent/child gender will also be assessed for differential patterns in this relationship. A cross-sectional design will be used to assess the magnitude of these relationships. This study will recruit a diverse community sample of 75 children 5 to 8 years old, 75 children 9 to 12 years old, and 75 children 13 to 16 years old (total $N = 225$) and their parents from a local school district. To qualify for the study,

children must (a) be between the ages of 5 to 16 years old, (b) have no current psychiatric disorder (with the exception of a current anxiety disorder), (c) have at least one parent or guardian living with the child who are willing to provide information on their discipline practices, and (d) have no parent or guardian currently under investigation or previously convicted for child abuse.

Materials and Procedure

Discipline measures. The Dimensions of Discipline Inventory (DDI) will be used to measure parental discipline practices (Straus & Fauchier, 2011). The DDI is a self-report measure of parental discipline practices that measures how often parents use specific discipline behaviors. The DDI measures these discipline behaviors along nine dimensions: Corporal Punishment (CP), Deprivation of Privileges (DP), Diversion (DI), Explain/Teach (ET), Ignore Misbehavior (IM), Penalty Tasks and Restorative Behavior (PT), Psychological Aggression (PA), Reward (RE), and Monitoring (MO). Both the parent-report and child-report versions of the DDI will be used in the current study. This will provide a more accurate report of parent behaviors, as parents may underreport negative parenting behaviors while children may overreport these behaviors (McLeod et al., 2007). The dimensions of the DDI have shown good internal consistency ($\alpha = .51$ to $.89$) and test-retest reliability ($r = .72$ to $.90$) for assessing both mothers and fathers (Fauchier & Straus 2010; Straus & Fauchier, 2011).

Anxiety measures. Two measures of youth anxiety will be used. First, children will be interviewed using the child version of the Anxiety Disorders Interview Schedule (ADIS-C; Albano & Silverman, 1996). The ADIS-C is a commonly used structured interview that assesses levels of youth anxiety disorder symptomatology and can be used to diagnose youth anxiety disorders as classified by the *DSM-IV* (Lyneham, Abbott, & Rapee, 2007). The ADIS-C has

demonstrated excellent interrater reliability for diagnosing a variety of anxiety disorders ($k = .81$ to $.87$), and good to excellent test-retest reliability for individual anxiety disorders ($k = .63$ to $.80$; Lyneham et al., 2007; Silverman, Saavedra, & Pina, 2001). Second, youth's trait anxiety will be measured using the trait subscale of either the State-Trait Anxiety Inventory for Children (STAIC) or the State-Trait Anxiety Inventory (STAI; Spielberger, 1973; Spielberger, Gorsuch, & Lushene, 1970). Because the STAIC was designed for elementary school students and the STAI is applicable for both adolescents and adults, the appropriate version will be used depending on the child's age. Parents will also fill out the STAI in order to assess parental anxiety levels. The trait subscale for both the STAIC and STAI consists of 20 statements describing components of anxiety including apprehension, tension, nervousness, and worry. Participants are asked to rate how often each statement usually applies to them on a 3-point Likert scale from 0 (*hardly ever*) to 2 (*often*). The STAIC has shown excellent internal consistency ($\alpha = .91$) and convergent validity with similar child anxiety scales (Muris, Merckelbach, King, Ollendick, & Bogie, 2002). The STAI has also shown high internal consistency among diverse general population samples ($\alpha = .84$ to $.95$; Novy, Nelson, Goodwin, & Rowzee, 1993; Ray, 1984).

Procedure. After arriving and giving consent to participate in the study, youths will be brought back to a testing room to be interviewed by one of the researchers, while another researcher will remain with the parent(s) in the waiting room. Researchers will first administer the DDI child-report form for children to report on their parents' discipline behaviors. Following completion of the DDI child-report, researchers will first administer the ADIS-C to the youth, followed by either the STAIC or STAI. While children are being assessed, each parent will fill out both the DDI parent-report form and the STAI in the waiting room with the second

researcher present. Upon completion of the assessment, families will be debriefed and given compensation for their participation in the study.

Data Analysis

Scores on the DDI parent- and child-report forms will be averaged for each youth-parent pair in order to provide a single set of DDI data for each parent. Descriptive statistics will analyze the sample's demographics, including child age, gender, SES, and race/ethnicity. Simple correlations between each DDI dimension and both ADIS-C and STAIC/STAI scores will be conducted to determine the overall associations between the DDI dimensions and youth anxiety on these two measures for each age group. Partial correlations between each DDI dimension and both the ADIS-C and STAIC/STAI scores will also be computed after controlling for SES and race/ethnicity. Simple and partial correlations for each age group will be reported in order to highlight the effects of parent and child gender. As a result, four simple and four partial correlations representing parent and child gender will be reported for each age group.

In order to determine whether parental discipline scores differ between children who do and do not have an anxiety disorder above and beyond the effects of youth gender and ethnicity, two-way between-subjects MANCOVAs will be conducted. In all MANCOVA analyses, child diagnostic status (anxiety disorder or no diagnosis) as categorized by the ADIS-C will serve as the primary independent variable. The nine DDI dimensions will serve as dependent variables, although separate MANCOVAs will be conducted using either mothers' or fathers' respective DDI dimension scores. Thus, each distinct two-way MANCOVA will be computed in pairs (one analysis for mothers and one for fathers). In the first pair of two-way MANCOVAs, child gender (male or female) will serve as the second independent variable, while in the second pair of two-way MANCOVAs, child ethnicity (Caucasian, African-American, and Other) will serve

as the second independent variable. All MANCOVA analyses will statistically control for the effects of parental anxiety, child gender, and ethnicity by including these variables as covariates.

Finally, in order to assess the predictive value of each DDI dimension, hierarchical regressions will be conducted. Separate hierarchical regressions will be computed for mothers and fathers in order to assess whether parent gender influences the predictive relationship between discipline and youth anxiety. Mothers' and fathers' DDI dimension scores will serve as independent variables, and for each parent x DDI dimension combination (e.g. mothers' CP scores) two hierarchical regressions will be conducted with either ADIS-C score or STAIC/STAI score as the dependent variable. Thus, there will be a total of four hierarchical regressions conducted for each DDI dimension (father-STAI(C); father-ADIS-C; mother-STAI(C); mother-ADIS-C). The DDI dimension being analyzed in each hierarchical regression will be entered in after controlling for child age, gender, SES, race/ethnicity, and parental anxiety levels.

Anticipated Results and Discussion

Due to the exploratory nature of this study, only speculations can be made about the anticipated results. Based on the previous research on physical punishment, it can be reasonably inferred that greater CP will be correlated with and predict higher ADIS-C and STAIC/STAI scores, and will differentiate between children with and without anxiety disorders (e.g., Bender et al., 2007; Rodriguez, 2003). In conjunction with preliminary findings from Van Leeuwen et al. (2012), greater MO, PA, and IM scores are predicted to be correlated with and predictive of higher ADIS-C and STAIC/STAI scores, and are predicted to differentiate between youths with and without anxiety disorders. It is unclear whether DP or PT will be correlated with youth anxiety scores, so no predictions about these dimensions will be made. Because the DI, ET, and RE are largely proactive and non-confrontational discipline practices, they are predicted to either

show no correlation or negatively correlate with youth anxiety scores and predict lower ADIS-C and STAIC/STAI scores. Furthermore, because the parenting literature suggests that girls may be more susceptible to negative parenting factors than boys, it is expected that stronger correlations between the DDI dimensions that are significantly associated with greater ADIS-C and STAIC/STAI anxiety will be found for girls (van der Bruggen, 2008). In contrast, no predictions will be made regarding the effects of either parent gender or youth race/ethnicity on the associations between parental discipline and youth anxiety due to the limited research in this area. Finally, it is predicted that negative discipline will result in greater anxiety problems for younger children, as studies suggest that when children are maltreated at a younger age they are more likely to develop anxiety problems (Kaplow & Widom, 2007; Thompson & Tabone, 2010).

Despite the difficulties in predicting the study's results, the study's exploratory nature will provide valuable information about the discipline dimensions most strongly associated with and predictive of youth trait anxiety and anxiety disorders. At a measurement level, the results of this study may help identify which dimensions of the DDI require further development in order to improve internal consistency (e.g. ET $\alpha = .51$ for mothers, $.53$ for fathers; Straus & Fauchier, 2011), and may also help to identify if any DDI dimensions are highly intercorrelated with one another and thus should be synthesized into a single composite dimension.

Additionally, future studies may choose to develop clinical interview and observation protocols that assess parental discipline styles in order to eliminate the response biases (e.g. socially desirable responding) sometimes seen in self-report measures. This study's findings will also spur further research that more precisely examines gender, age, SES, and race/ethnicity differences in the associations between discipline and youth anxiety. Furthermore, this study's results can help identify the discipline dimensions (if any) that may be potential risk factors for

youth anxiety, and provide an empirical basis for conducting further longitudinal studies to determine whether these discipline factors are true predictive risk factors for youth anxiety problems. Finally, if any of the DDI dimensions are correlated with increased youth anxiety, this has important implications for parent skills training interventions, as these results could give insight into the least harmful discipline techniques that parents should be taught to utilize. Thus, this study will have numerous benefits for creating a new field of research on parenting factors and youth anxiety, and may eventually lead to clinical applications that specifically target the behaviors that may be risk factors for later youth anxiety problems.

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