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Child Age and Gender Do Not Moderate the Relationship Between Parenting Styles and Child Anxiety

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Abstract

The purpose of this study was to investigate whether particular parenting styles are correlated with childhood anxiety levels. The interactive effect of child age and gender on child anxiety levels was examined as well. Finally, it was hypothesized that child age and gender may moderate the relationship between parenting styles and child anxiety levels. Thus, as part of a further analysis, the effects of age and gender on the parenting style-child anxiety relationship were studied. Novel analyses were conducted on data previously collected as part of a larger study, the School-Based Treatment of Anxiety Research Study (STARS), by the child/adolescent anxiety and mood program at UConn Health. Two-hundred and sixteen children and adolescents (ages 6-18) and their parents were administered the Egna Minnen Betraffande Uppfostran (EMBU) questionnaire, which gathers information regarding parenting styles, and the Screen for Child Anxiety Related Emotional Disorders (SCARED) questionnaire, which identifies children's anxiety levels. A moderate correlation between overprotective, rejection, and anxious rearing styles and child anxiety levels was found. In addition, female adolescents had significantly higher anxiety levels than male adolescents, male children, and female children. Surprisingly, neither child age nor gender influenced the relationship between parenting styles and child anxiety levels.

Child Age and Gender Do Not Moderate the Relationship Between Parenting Styles and Child Anxiety

Awareness regarding anxiety disorders in children and adolescents has grown over the past few decades. Anxiety refers to the feeling of excessive fear or worry. Symptoms commonly surface during childhood. (Beesdo, Knappe, & Pine, 2009). Some children learn to manage their feelings of worry and these feelings dissipate with time. However, for some, their symptoms manifest into a larger problem; a problem they will suffer with for the entirety of their lives. Interestingly, anxiety disorders are the most common psychological disorders in children and adolescents (Beato, Pereira, Barros, & Muris, 2016). Approximately 11-15% of youth receiving special education services (Déry, Toupin, Pauzé, & Verlaan, 2004) and 10-20% of youth in mainstream classrooms experience excessive anxiety (Costello, Copeland, & Angold, 2011). The percentage of those diagnosed has significantly increased as a direct result of heightened awareness of anxiety.

Increased awareness has also allowed researchers to develop a better understanding of how anxiety impacts children and adolescent's daily lives. Anxiety impairs academic, social, and behavioral functioning in school (Swan & Kendall, 2016). It negatively affects children's social interactions with peers; children with anxiety are often rejected by peers or have awkward interactions with them (Strauss, Frame, & Forehand, 1987). Specifically, within the school setting, children with anxiety appear to be shy and withdrawn from others, which is commonly associated with low self-esteem (Swan & Kendall, 2016). Sadly, children with anxiety are often teased and bullied, leading to further social isolation (Strauss et al., 1987). Anxiety may also cause some children to have attention problems (Strauss et al., 1987). Their overall school performance is impaired by this disorder (Strauss et al., 1987). Along with impairing

performance in school, anxiety also influences the home environment. Anxious behaviors can illicit conflict and disruption at home (Drake & Ginsburg, 2012). Trouble at home may result in tense relationships between anxious children and their parents or siblings.

It is evident that anxiety impairs numerous domains of life: school, social, and home. Therefore, it is important to highlight the genetic component associated with anxiety. Children whose parents suffer from a psychiatric disorder have a higher risk of developing anxiety compared to those whose parents do not have any psychiatric disorders (Micco et al., 2009). More specifically, children whose parents have anxiety are predisposed to developing anxiety disorders themselves (Drake & Ginsburg, 2012). It is widely accepted that anxiety can be passed down through generations within a family. A study by Morris-Rosendahl (2002) confirmed that there is a genetic component of generalized anxiety disorder (GAD) and revealed that children whose parents have GAD have a 30% chance of heritability. While anxiety is heritable, specific genes are not yet known (Lau & Pine, 2008). Though, several research studies have suggested a connection between personality traits and anxiety (Gottschalk & Domschke, 2017; Morris-Rosendahl, 2002). It is also believed that the expression of certain genes can trigger the onset of anxiety symptoms. Specifically, varied gene expression of the serotonin transporter gene is correlated with projection of anxiety symptoms (Morris-Rosendahl, 2002). Since serotonin controls mood and emotion, alterations to genes connected with the serotonergic system are directly related to feelings of anxiety.

Environmental stressors tend to interact with genetic factors to induce anxious behaviors, meaning a gene-environment interaction exists (Lau & Pine, 2008). Lau and Pine (2008) explained this interaction by highlighting how an environmental stressor can trigger a genetic risk factor, which leads to a psychological deficient that generates anxious behavior. For

example, one's ability to detect threats may be impaired, resulting in the interpretation of minor threats as extreme, thus stimulating anxious behavior more often (Lau & Pine, 2008). Additionally, exposure to stressful life events, such as taking a difficult exam or loss of a family member, can trigger neurological changes that lead to the onset of anxiety. Stressful life events may alter brain function in the amygdala and prefrontal cortex, both of which contribute to anxiety symptoms (Lau & Pine, 2008).

Parental psychopathology can also greatly influence the development of child anxiety. Parents may consciously or unconsciously model anxious behavior; they may display anxious thoughts, feelings, or avoidant behaviors (Drake & Ginsburg, 2012). Children who view their parents acting anxiously may then imitate those behaviors on their own (Drake & Kearney, 2008). Therefore, anxious parents may unintentionally teach their children anxious behaviors. In addition to modeling anxious behaviors, parents may lack sensitivity toward their children and dwell on their child's anxious behaviors. Calling attention to these behaviors causes children to become hyperaware of them (Drake & Kearney, 2008). This heightened awareness can cause children to fear their anxious behaviors, which ultimately amplifies their symptoms (Drake & Kearney, 2008). Another common risk factor is a home environment filled with conflict and control (Drake & Kearney, 2008). Frequent family conflict can cause strained familial relationships (Drake & Ginsburg, 2012). Increased familial conflict is also related to increased anxiety symptoms in children (Drake & Ginsburg, 2012; Messer & Beidel, 1994). Overall, an environment filled with conflict and control can influence the development of anxiety in children (Drake & Kearney, 2008). An additional risk factor for anxiety is exposure to life stressors, such as finishing a homework assignment on time or moving to a new house (Gottschalk & Domschke, 2017). Stressful life events are linked with higher levels of anxiety (Gottschalk &

Domschke, 2017). Finally, another type of environmental risk factor is parental guidance. As a result of a parent's own anxiety or a natural instinct to protect their child, some parents become overprotective. Overprotective parents may micromanage their child or limit the activities in which their child engages (Drake & Ginsburg, 2012). Unfortunately, restricting children from engaging in various opportunities negatively impacts their development of coping skills and sense of self-efficacy (Drake & Ginsburg, 2012). Impaired coping skills are directly related to increased anxiety symptoms (Platt, Williams, & Ginsburg, 2016). It is important to keep in mind that while genetic risk factors are inevitable, the majority of environmental risk factors are preventable.

In addition to home environment and genetic factors, specific parenting styles and practices contribute to the development of anxiety (Drake & Kearney, 2008; Laurin, Joussemet, Tremblay, & Boivin, 2015; McLeod, Wood, & Weisz, 2007; Muris, Meesters, & van Brakel, 2003; Young et al., 2013; Muris & Merckelbach, 1998). The way in which a parent raises their child significantly influences children's psychological growth. Parental rearing can be categorized into four distinct categories: overprotection/control, emotional warmth, rejection, and anxious rearing. The characteristics associated with each style are important to note. Parents who are *overprotective* are strict, controlling, expect obedience, have high expectations, and micromanage their children. Those who are *emotionally warm* are supportive, nurturing, promote independence, have clear rules, and have high, yet attainable expectations for their children. Parents who exhibit *rejection* rearing are cold, unresponsive, indifferent, uninvolved in their children's lives, have no rules, and provide no support. Lastly, parents with an *anxious* rearing style are warm, responsive, and nurturing, but they also are lenient, implement few to no rules, and model anxious behaviors. Due to the various classifications of parenting styles, it is

important to highlight the similarities between overprotection and authoritarian styles, emotional warmth and authoritative styles, rejection and neglectful/ uninvolved styles, and anxious and dismissive styles. Regardless of the label, parents can be classified into one of these categories based on their demeanor and attitude towards their child.

Numerous studies have been conducted regarding parenting styles and child anxiety, yet results appear to contradict rather than align. Results from some studies have found a correlation between parenting styles and child anxiety (Grüner, Muris, & Merckelbach, 1999; Laurin et al., 2015; Muris et al., 2003; Muris & Merckelbach, 1998; Young et al., 2013), while a weak or no correlation has been found in others (Gere, Villabø, Torgersen, & Kendall et al., 2012; McLeod et al., 2007). Although findings are mixed, empirical evidence supporting the claim that parental rearing styles influence child anxiety levels is strong. The majority of studies conducted have focused on the overprotective/ over control rearing style. It is evident that overprotective parenting style is consistently correlated with child anxiety levels (Drake & Kearney, 2008; Grüner et al., 1999; Laurin et al., 2015; McLeod et al., 2007; Muris et al., 2003; Muris & Merckelbach, 1998). Over protective parents tend to remove their children from anxious situations or limit the settings to which their children are exposed. Although parents are trying to help their children, preventing children from experiencing challenging situations may impair their development of coping skills, which in turn results in increased anxious behaviors (Drake & Kearney, 2008). Therefore, parental over control reinforces anxious behaviors in children (Drake & Kearney, 2008; Gere et al., 2012). Soenens and Vansteenkiste (2010) highlight two different types of parental over control: internal and external. Internal over control interferes with children's thoughts and feelings. For example, a parent tells their child that they are not capable of completing a task on their own, which causes the child to feel ashamed and helpless.

Children internalize their overprotective parent's comments, which triggers increased anxious behaviors (Laurin et al., 2015). External over control refers to children feeling obligated to listen to their parents due to verbal threats, such as punishment or taking away privileges (Laurin et al., 2015). Parents consciously and unconsciously use internal and external over control when parenting their children. Overall, overprotective parenting induces anxious symptomology and behavior in children.

In contrast to these previous studies, Gere and colleagues (2012) found that the correlation between parental over control and child anxiety becomes insignificant when controlling for co-occurring disorders, such as OCD. This indicates that over protective parenting may not distinctively influence child anxiety, rather it is only significant in children with comorbid disorders. Unfortunately, the link between overprotection and child anxiety is strongly empirically supported (Drake & Kearney, 2008; Grüner et al., 1999; Laurin et al., 2015; McLeod et al., 2007; Muris et al., 2003; Muris & Merckelbach, 1998), making the results from Gere et al. (2012) less significant. It is also important to note that parental control is more strongly associated with child anxiety than parental rejection (McLeod et al., 2007) and parental acceptance (Yaffe, 2018). Though overprotective parenting alone contributes to child anxiety, high overprotection paired with low emotional warmth results in higher anxiety levels (Drake and Kearney, 2008). This indicates that a combination of high overprotection and low emotional warmth may be the most detrimental parenting style related to development of anxiety in children.

While overprotective parenting has been studied in-depth, rejection, anxious, and emotional warmth rearing styles have all been under examined. Findings regarding the impact of rejection rearing on child anxiety have been inconsistent. Studies by Grüner and colleagues

(1999) and Muris and colleagues (2003) found that parental rejection is strongly associated with child anxiety symptoms. Lack of parental guidance and attention induces anxious behaviors in children. Conversely, Muris and Merckelbach (1998) discovered no correlation between child anxiety and rejection rearing. Interestingly, all three studies surveyed children from mainstream classrooms and used the EMBU-C questionnaire to measure parenting style (Grüner et al., 1999; Muris et al., 2003; Muris & Merckelbach, 1998). However, the sample size of each studied varied significantly, which most likely contributed to the varied results; Grüner and colleagues (1999) and Muris and colleagues (2003) both had larger sample sizes than Muris and Merckelbach, (1998). Regardless of the results from previous research, the significance of parental rejection has been suppressed by results involving overprotection. McLeod and colleagues (2007) found that parental control is more strongly associated with child anxiety than parental rejection.

Similarly, anxious rearing style has been overshadowed by parental overprotection as well. The majority of previous research, though limited, has indicated a positive correlation between anxious rearing and child anxiety levels (Grüner et al., 1999; Muris et al., 2003; Muris & Merckelbach, 1998; Young et al., 2013). It is important to note that parents with an anxious rearing style are not necessarily diagnosed with anxiety themselves. Rather, parents who engage in anxious rearing tend to model anxious behaviors in which their children observe on a daily basis. Anxious parents generally shelter their children, avoid exposing their children to challenging situations, and model poor problem-solving skills. These anxious parenting behaviors reinforce their children's anxious behaviors (Grüner et al., 1999; Young et al., 2013).

The final parenting style, emotional warmth, has minor presence in previous research related to child anxiety. Unsurprisingly, most studies that have included this rearing style have

found no correlation between emotional warmth and child anxiety (Grüner et al., 1999; Muris et al., 2003; Muris & Merckelbach, 1998). Most researchers expect emotional warmth to have the opposite effect on child anxiety levels compared to the other three rearing styles; high emotional warmth would most likely alleviate anxiety symptoms. Interestingly, a study by Muris and Merckelbach (1998) found that emotional warmth paired with anxious rearing by fathers resulted in increased anxiety symptoms in children. However, when anxious rearing was controlled for in the study, the correlation was no longer significant, supporting the conclusion that emotional warmth alone does not influence child anxiety. The interaction effect between emotional warmth and anxious rearing in this study was a direct result of the behaviors associated with anxious rearing (Muris & Merckelbach, 1998).

In addition to revealing positive correlations between parenting styles and child anxiety, it is also important to uncover whether child age and gender impact child anxiety levels. For research purposes, school-age children between the ages of 6 and 11 will be referred to as "children," while school-age children between the ages of 12 and 18 will be referred to as "adolescents." Previous research regarding the effects of age on child anxiety have found that as age increases, children and adolescents' anxiety levels increase as well (Bosquet & Egeland, 2006; Costello et al., 2011; Muris et al., 2003). Similarly, previous studies that have investigated gender effects have found that anxiety is equally common among males and females before puberty, but is then twice as prevalent in females after puberty (Bakhla et al., 2013; Beesdo et al., 2009; Costello et al., 2011; McLean, Asnaani, Litz, & Hofmann, 2011). The majority of these studies have examined gender effects in specific anxieties (McLean et al., 2001), though results from Beesdo et al. (2009) indicate that all anxieties are more common in females than males. This gender difference may begin during childhood, but reaches a female to male ratio of 2:1 or

3:1 during adolescence (Beesdo et al., 2009). It is likely that hormones attribute to anxiety level differences across genders (Reardon, Leen-Feldner, & Hayward, 2009). Reardon and colleagues (2009) found that during puberty females tend to have higher levels of estrogen and cortisol, both of which may contribute to the onset of anxiety. Interestingly, while females suffer from anxiety more than males, the genetic and environmental risk factors are similar for both genders (Bosquet & Egeland, 2006; Hettema, Prescott, Myers, Neale, & Kendler, 2005).

It is evident that age, gender, and parenting style all individually impact child anxiety levels. However, studies addressing the relationship between parenting styles and child anxiety with age and gender as moderating variables are sparse. Only one previous study has examined how child age and gender influence the parenting style- child anxiety relationship (McLeod et al., 2007). No significant correlations between parenting styles and child anxiety were found when assessing for child age and gender effects (McLeod et al., 2007). However, the researchers noted that methodological features, such as use of questionnaires and single informants, may have impacted their results (McLeod et al., 2007). Thus, it is crucial for future studies to continue investigating whether child age and gender moderate the relationship between parenting styles and child anxiety.

It is possible that parents may treat girls differently than boys, especially if anxious behaviors are present. Since anxiety is more prevalent in females than in males (Beesdo et al., 2009), it is possible that females may elicit more over control from their parents. Parents may also treat their offspring differently based on their age. Since child development theories highlight parents as the main socializing agent in a young child's life (McLeod et al., 2007), the rearing styles in which they use can be greatly influential. Parents use of support and control can significantly impact children's behavior at a young age (Paulussen-Hoogeboom, Stams,

Hermanns, Peetsma, & Wittenboer, 2008). Moreover, unfavorable parenting styles, like overprotection and rejection, can exacerbate a child's difficult temperament (Paulussen-Hoogeboom et al., 2008). A child with a difficult temperament is more likely to experience internalizing and externalizing behaviors, as well as increased negative emotionality (Paulussen-Hoogeboom et al., 2008; Stormshak, Bierman, McMahon, & Lengua, 2000). These traits put children at a higher risk of developing an anxiety disorder. Additionally, children are increasingly expected to become more independent as they grow up, thus the influence of parenting styles is expected to diminish. One study by Muris and colleagues (2003) found age to have a significant effect on overprotective parenting. It was discovered that as age increases, the effect of overprotective rearing slightly decreases (Muris et al., 2003). Unfortunately, this study did not examine how age effects the relationship between parenting styles and child anxiety. Therefore, further examination on the effects of age and gender on the parenting style-child anxiety relationship is needed.

Prior to conducting future studies, it is important to note that the effect size of parenting styles on child anxiety has been found to be small or nonexistent in some previous studies (McLeod et al., 2007). While numerous studies indicate a correlation between parenting style and child anxiety level, McLeod and colleagues (2007) found that most studies in their meta-analysis only produced a weak correlation. In fact, results from this study indicated that parenting styles only accounts for 4% variance in child anxiety (McLeod et al., 2007). Inconsistent findings across the literature is likely due to study limitations, such as variation in anxiety definitions and methods used (McLeod et al., 2007). Some research studies defined anxiety in vague terms related to presence of worry, while others defined it in clinical terms. Clinicians commonly use the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition

(DSM-V) to diagnose anxiety disorders. Each disorder has specific criteria that must be met in order to be diagnosed. Some studies require children to be clinically diagnosed with anxiety, while others are more lenient with their inclusion criteria. The way in which anxiety is defined in each study influences the responses gathered regarding anxiety levels. Additionally, the method of data collection can also influence the outcome of results. Some studies use behavioral observations to gather information about parenting styles. Although behavioral observations allow investigators to observe parent-child interactions first-hand, they are prone to researcher bias and rely on accurate interpretation of results. The majority of studies in this field use questionnaires. Questionnaires are vulnerable to multiple types of response bias (McLeod et al., 2007; Young et al., 2013), however, they are easy to administer, can gather large quantities of information, and are cost efficient. Since children and their parents may have different views regarding parental rearing styles, if questionnaires are used, concurrence between parent and child responses should be examined. Overall, future studies should take into consideration the limitations regarding anxiety definitions and methodology. This current study will use a clinical definition of worry and will only include children who are clinically diagnosed with an anxiety disorder based on the DSM-IV criteria. Questionnaires will be used to collect data and concurrence between parent and child responses will be assessed.

Research Objectives and Hypotheses

As a result of inconsistent findings, further investigation into the correlation between parenting style and child anxiety is required. Previous research has uncovered the negative relationships between parental over-control, rejection, and anxious rearing and child anxiety through questionnaires and behavioral observations, noting a smaller effect for rejection and

anxious rearing than over-control (Drake & Kearney, 2008; Grüner et al., 1999; Laurin et al., 2015; McLeod et al., 2007; Muris et al., 2003; Muris & Merckelbach, 1998). The current study will gather responses regarding parenting styles and child anxiety through questionnaires. Concurrence between parent and child responses will be evaluated. The relative importance of all four rearing styles will be thoroughly examined.

The present study first aims to explore the impact of each rearing style on children and adolescent's general anxiety levels. Based on previous research, I hypothesize that overprotective, rejection, and anxious parenting styles will be correlated with higher levels of anxiety in children and adolescents than the emotional warmth parenting style. This study will also investigate whether child age and gender impact levels of anxiety. Both age and gender have been shown to be predictors of child anxiety levels; female adolescents have been reported to be significantly more anxious than their male counterparts in previous research (Beesdo et al., 2009; Bosquet & Egeland, 2006; Costello et al., 2011). Thus, I hypothesize that these two variables will interact in that female adolescents will experience higher anxiety levels than male adolescents, while there will be no significant difference in anxiety levels between male and female children.

Finally, I predict that age and gender will act as moderating variables in the relationship between parenting styles and child anxiety levels. Child development theories indicate that parenting styles are more influential during childhood, and so I expect the impact of parenting styles on child anxiety to diminish as children age. Therefore, I hypothesize that the relationship between parenting styles and child anxiety will be stronger in children than in adolescents. Similarly, I believe gender effects will impact the parenting style-child anxiety relationship. More females suffer from anxiety than males (Beesdo et al., 2009; Costello et al.,

2011) and the overprotective parenting style has been found to have the most significant effect on child anxiety (McLeod et al., 2007; Muris & Merckelbach, 1998). I predict that females may elicit more overprotective behaviors from their parents (McLeod et al., 2007). Thus, I hypothesize that the relationship between parenting styles and child anxiety will be stronger in females than in males.

Method

Participants

The sample consisted of 216 students (110 males, 105 females, and 1 unreported) and their parents (177 mothers, 17 fathers, and 9 other). Students ages ranged from 6 to 18 years old (M=10.88, SD=3.277) and were in grades Kindergarten through 12 (M=5.54, SD=3.193) (see Table 1). When reporting ethnicity, the majority of the sample identified as not Hispanic or Latino (81%), with a mere 12% classifying as so (see Table 1). In regards to race, more than half of the sample identified as White (63.4%), with the remaining portion being categorized as African American (28.7%), Asian (2.8%), and more than one race (4.6%) (see Table 1). Parents/ guardians were between the ages of 25 and 67 (M=42.10, SD=7.384) and 60.1% were married, 11.8% divorced, 5.9% separated, 16.7% single, 1.5% widowed and 3.9% other (see Table 1). Participants were recruited from elementary, middle, and high schools in Maryland and Connecticut via referrals from clinicians, teachers, parents, or self-referrals.

In order to be eligible for the study, children had to be between the ages of 6 and 18. Participants also had to meet the DSM-IV criteria for a primary diagnosis of GAD, SAD, or SOP based on the Anxiety Disorders Interview Schedule for Children (ADIS-IV-C) and have a minimum 1-point difference in ADIS-IV-C severity scores between the primary disorder and

other disorders (e.g. depression or other anxiety disorders). Families were excluded from the study if the child was already receiving treatment (e.g. psychosocial or pharmacological) for their anxiety, had a medical or psychiatric condition contraindicating study treatment (e.g. suicidal intent), or were a victim of previously undisclosed child abuse. Participants were also excluded if anxiety was not the primary issue and if the child needed more immediate or alternative treatment. Of the 632 families referred, only 216 were eligible for this study.

Procedure

Upon being recruited, families were asked to complete a phone screen with study staff to determine whether the study was appropriate for the child. If key inclusion criteria were met (e.g. age, anxiety severity), then a baseline evaluation was performed in person. Prior to beginning the baseline evaluation, participants and their parents or guardians were consented. Children and parents were both administered the Egna Minnen Betraffande Uppfostran (EMBU) and Screen for Child Anxiety Related Emotional Disorders (SCARED) questionnaires during the baseline evaluation. Additionally, parents were given a demographic questionnaire to complete. After the baseline evaluation, so long as the child still met the inclusion criteria, children received treatment. However, none of the treatment data or post treatment data is utilized in the current study.

Measures

Egna Minnen Betraffande Uppfostran (Muris et al., 2003). Parenting styles were measured using a modified version of the Egna Minnen Betraffande Uppfostran (EMBU). This 39-item questionnaire consisted of four subscales: overprotection/control, emotional warmth,

rejection, and anxious rearing. The child version asked participant's about their perceptions of their parent's rearing styles (e.g., "Your parents show that they love you."; $\alpha = .841$). While the parent version inquired about parent's/ guardian's opinions regarding their own rearing style (e.g. "I show that I love my child"; $\alpha = .681$). Items were answered on a 4-point Likert scale (1=No, never, 2=Yes, but seldom, 3= Yes, often, 4= Yes, most of the time).

Screen for Child Anxiety Related Emotional Disorders (Birmaher et al., 1999). Child anxiety was measured using a modified version of the Screen for Child Anxiety Related Emotional Disorders (SCARED). This 42-item questionnaire was administered to both children and their parents. On the child version of this questionnaire, responses to items corresponded with the degree to which statements were true about themselves (e.g. "When I feel frightened, it is hard to breathe"; $\alpha = .856$). The parent version inquired about the parent's opinion regarding the degree to which statements were true about their child (e.g. "When my child feels frightened, it is hard for him/her to breathe."; $\alpha = .817$). Questions were answered on a 3-point Likert scale (0= Not true or hardly ever true, 1= Somewhat true or sometimes true, 3= Very true or often true). Higher scores on this questionnaire reflect higher levels of anxiety.

Results

I hypothesized that overprotective, rejection, and anxious parenting styles would be correlated with higher levels of anxiety in children and adolescents than the emotional warmth parenting style. The four subscales of the EMBU-C and EMBU-P, overprotective, rejection, anxious, and emotional warmth, represented the four parenting styles. A total score of the SCARED-C (child report) and SCARED-P (parent report) questionnaires reflect the child's level of anxiety. First, EMBU-C scores were compared with both SCARED-C and SCARED-P

scores. Pearson product-moment correlation coefficients were computed to assess the relationship between various parenting styles and child anxiety levels. There was a significant positive correlation between the EMBU-C rejection subscale and SCARED-C score, $r(181) = .32$, $p < .001$ (see Table 2). These results suggest that increased rejection rearing is correlated with higher child and adolescent anxiety levels when self-ranked by the participant. There was also a significant positive correlation between the EMBU-C anxious rearing subscale and SCARED-C score, $r(180) = .34$, $p < .001$ (see Table 2). This correlation indicates that anxious rearing negatively influences anxiety levels based on children and adolescent's self-reports. All other EMBU-C subscales and SCARED-C or SCARED-P correlations were insignificant (see Table 2).

EMBU-P scores were also compared with both SCARED-C and SCARED-P scores. There was a significant positive correlation between the EMBU-P overprotection subscale and the SCARED-P score, $r(198) = .22$, $p = .002$ (see Table 2). These results reveal that, according to parent-reports, there is a positive relationship between overprotection rearing and anxiety. Finally, there was a significant positive correlation between the EMBU-P anxious rearing subscale and the SCARED-P score, $r(198) = .33$, $p < .001$ (see Table 2). These results suggest that anxious rearing is correlated with child and adolescent anxiety levels based on parent-reports. As seen in Table 2, all other EMBU-P subscales and SCARED-C or SCARED-P correlations were insignificant.

Second, I predicted that female adolescents would experience higher levels of anxiety than male adolescents, while there would be no significant difference in anxiety levels between male and female children. This claim was partially supported by results from this study. A 2 x 2 factorial ANVOA with an alpha level of 0.05 was conducted to investigate the impact of age and

gender on anxiety levels according to SCARED-C reports. The main effect for gender was not statistically significant, F (1,186) = 3.49, p = .063, partial eta squared = .018. There was no difference between males (M = 30.76, SD = 15.09) and females (M = 34.28, SD = 15.80) in anxiety levels. There was a statistically significant difference among the two age groups (6-11, 12-18) in anxiety levels, F (1,186) = 5.53, p = .020, partial eta squared = .029. Children (M = 30.24, SD = 15.75) had significantly lower anxiety scores than adolescents (M = 35.59, SD = 14.68). The interaction effect between age and gender was also statistically significant, F (1,186) = 6.27, p = .013, partial eta squared = .033 (see Figure 1). Post-hoc tests using pairwise comparisons indicated that female adolescents (M = 40.26, SD = 13.67) had significantly higher anxiety scores on the SCARED-C than female children (M = 29.48, SD = 15.87) (see Figure 1). It was also found that there was a statistically significant difference in anxiety scores between the male and female adolescent groups. Female adolescents (M = 40.26, SD = 13.67) had significantly higher anxiety scores on the SCARED-C than male adolescents (M = 30.56, SD = 14.21) (see Figure 1). These results supported the hypothesis.

Another 2 x 2 factorial ANVOA with an alpha level of 0.05 was conducted to investigate the impact of age and gender on anxiety levels based on SCARED-P reports. The main effect for gender was not statistically significant, F (1,197) = .28, p = .595, partial eta squared = .001. There was no difference between males (M = 26.61, SD = 13.31) and females (M = 27.84, SD = 13.07) in anxiety levels. There was also no statistically significant difference among the two age groups (6-11, 12-18), F (1,197) = .71, p = .400, partial eta squared = .004. There was no difference between children (M = 26.59, SD = 12.75) and adolescents (M = 28.23, SD = 13.86) in anxiety scores. Finally, there was no interaction effect between age and gender, F (1,197) = .17,

p = .679, partial eta squared = .001 (see Figure 2). These results do not support the hypothesis and contradict the findings discovered using the SCARED-C report.

Additionally, I predicted that the relationship between parenting styles and child anxiety would be stronger in children than in adolescents. However, this claim was not supported by the results of the study. Pearson product-moment correlation coefficients were computed to assess whether age influences the relationship between different parenting styles and child anxiety levels. Results revealed that rejection rearing negatively influences anxiety levels in both children and adolescents. There was a significant positive correlation between the EMBU-C rejection subscale and the SCARED-C score in children, $r(104) = .36$, $p < .001$, and in adolescents, $r(77) = .25$, $p = .029$ (see Table 3). However, these correlations were not significantly different, $Z = .79$, $p = 0.430$, meaning this rearing style did not affect one age group more than the other. Additionally, there was a significant positive correlation between the EMBU-P rejection subscale and the SCARED-C score in children, $r(106) = .21$, $p = .035$, but not among adolescents, $r(73) = -.08$, $p = .448$ (see Table 3). These findings indicate that rejection rearing negatively effects anxiety levels in only children. Yet, these correlations were not significantly different, $Z = 1.88$, $p = 0.060$. These results indicate a trend between the rejection rearing style and anxiety levels in different age groups.

Increased anxious rearing was also found to result in higher anxiety levels in both children and adolescents. There was a significant positive correlation between the EMBU-C anxious subscale and the SCARED-C score in children, $r(103) = .37$, $p < .001$, and in adolescents, $r(77) = .31$, $p = .007$ (see Table 3). However, these correlations were not significantly different, $Z = .44$, $p = 0.660$. There was also a significant positive correlation between the EMBU-P anxious subscale and the SCARED-P score in children, $r(122) = .26$, $p =$

.004, and in adolescents, $r(76) = .41$, $p < .001$ (see Table 3). Though, these correlations were not significantly different, $Z = -1.15$, $p = 0.250$, meaning this rearing style did not affect one age group more than the other.

Finally, results revealed that increased overprotection leads to higher anxiety levels in adolescents, but not children. There was a significant positive correlation between the EMBU-P overprotection subscale and the SCARED-P score in adolescents, $r(76) = .38$, $p = .001$, but not in children, $r(122) = .14$, $p = .118$ (see Table 3). However, these correlations were not significantly different, $Z = -1.74$, $p = 0.082$. This finding indicates a trend between the overprotective rearing style and anxiety levels in different age groups. All other correlations between EMBU-C or EMBU-P subscales with SCARED-C or SCARED-P scores were insignificant (see Table 3).

I also hypothesized that the relationship between parenting styles and child anxiety would be stronger in females than in males, but this was also not supported by results from the study. Pearson product-moment correlation coefficients were computed to assess whether gender influences the relationship between different parenting styles and child anxiety levels. Results revealed that rejection rearing negatively influences anxiety levels in both males and females. There was a statistically significant positive correlation between the EMBU-C rejection subscale and the SCARED-C score in males, $r(92) = .35$, $p = .001$, and in females, $r(87) = .31$, $p = .003$ (see Table 4). However, these correlations were not significantly different, $Z = -.31$, $p = 0.757$, meaning this rearing style did not affect one gender more than the other.

Results also indicated that increased anxious rearing results in higher anxiety levels in both males and females. The EMBU-C anxious rearing subscale was positively correlated with higher SCARED-C scores in males, $r(87) = .36$, $p = .001$, and in females, $r(91) = .36$, $p < .001$ (see Table 4). Though, these correlations were not significantly different, $Z = 0$, $p = 1$. The

EMBU-P anxious rearing subscale was also associated with higher SCARED-P scores in males, $r(98) = .29$, $p = .003$, and in females, $r(98) = .39$, $p < .001$ (see Table 4). However, these correlations were not significantly different, $Z = .79$, $p = .430$. These results indicate that the influence of anxious rearing on anxiety levels is no different in males than females. As seen in Table 4, there is no significant correlation between any other EMBU-C or EMBU-P subscale with SCARED-C or SCARED-P scores.

Discussion

Consistent with most previous research on this topic, results indicate that overprotective, rejection, and anxious rearing styles are all significantly associated with higher child and adolescent anxiety levels (Grüner et al., 1999). Findings in this current study dispute results by Muris and Merckelbach (1998), who found no correlation between rejection and anxiety symptoms. Additionally, in the current study, the relationship between age and gender has an interactive effect on child anxiety levels. Similar to previous research, results indicate that female adolescents have the highest levels of anxiety compared to male adolescents, female children, and male children (Beesdo et al., 2009; Bosquet & Egeland, 2006). Surprisingly, age and gender were not found to moderate the relationship between parenting style and child anxiety. In other words, even though female adolescents report much higher levels of anxiety than children or male adolescents, parenting style does not constitute as a stronger or weaker risk or protective factor for female adolescents than it does for any other group.

Parenting Styles and Child Anxiety Levels

Results vary slightly between child and parent reports regarding the correlation between overprotection and rejection rearing and child anxiety levels. Parents report a correlation between the overprotection rearing styles, as measured by the EMBU-P, and child anxiety levels, as measured by the SCARED-P, while children do not. Child reports indicate a relationship between the rejection parenting style, as measured by the EMBU-C, and child anxiety, as measured by the SCARED-C, while parent reports do not. According to both parent and child reports, the anxious rearing style is correlated with higher levels of anxiety in children and adolescents. It is important to note that concurrence between parent and child responses was examined. There is a correlation between the parent and child responses on the SCARED-C and SCARED-P, as well as on all four subscales of the EMBU-C and EMBU-P. This indicates that parent and child responses are similar.

In this study, higher scores on the EMBU-P overprotection subscale are associated with higher scores on the SCARED-P. This means that parents who describe themselves as more overprotective also deem their children as more anxious. Since parental over control reinforces anxious behaviors in children (Drake & Kearney, 2008; Gere et al., 2012), these findings come as no surprise. Overprotective parents tend to micromanage and limit the activities their child can partake in. They also tend to limit their child's exposure to anxious situations, which in turn diminishes their child's ability to cope in anxious settings (Drake & Kearney, 2008). If a child is not allowed to decide what they want to do on their own, the development of age appropriate skills, such as social and problem-solving abilities, is impaired (Affrunti & Ginsburg, 2012). This in turn makes children feel incompetent, which causes an increase in their anxiety levels (Affrunti & Ginsburg, 2012).

Interestingly, child reports in this study did not indicate a correlation between parental overprotection and child anxiety. This is surprising, as previous studies have found an association between overprotective parenting and child anxiety using child reports (Affrunti & Ginsburg, 2012; Muris & Merckelbach, 1998). Affrunti and Ginsburg (2012), as well as Muris and Merckelbach (1998), had children complete the EMBU and SCARED questionnaires and found that maternal over control was correlated with child anxiety levels. Thus, results from the current studying pertaining to child reports contradict these previous findings. The sample size in the current study was significantly larger than those in the Affrunti and Ginsburg (2012) and Muris and Merckelbach (1998) studies, implying that results from the current study may be more reliable. Additionally, the child participants in both previous studies were not clinically diagnosed with anxiety (Affrunti & Ginsburg, 2012; Muris & Merckelbach, 1998), while participants in the current study had to be clinically diagnosed for eligibility purposes.

Although theory suggests that parental overprotection leads to child anxiety, it is also possible that the relationship between overprotection and child anxiety is bidirectional. An anxious child may cause parents to modify their parenting style to be more controlling. It is possible that parents may become overwhelmed by their child's anxiety and implement excessive control over their child as a means of decreasing expression of anxious behaviors. Parents may also feel sympathetic for their children and choose to limit their activities in an attempt to reduce exposure to anxiety-provoking situations. Previous research has also found that children with difficult temperaments and negative emotionality, both of which are risk factors for anxiety, tend to elicit increased parental over control (Kiff, Lengua, & Zalewski, 2011). Regardless of the direction of causality, parents must be informed of the negative effects associated with their

over-control (Bakhla et al., 2013). Findings from the current study imply that parents may not be aware of the effects their parenting style has on their child's well-being.

According to child reports in the current study, increased rejection rearing is also correlated with higher child anxiety levels. Children who categorized themselves as more anxious on the SCARED-C, ranked their parents as more rejecting on the EMBU-C. These results are consistent with previous research by Grüner and colleagues (1999) and Muris and colleagues (2003), who found that parental rejection is strongly associated with child anxiety symptoms. Both previous studies used the EMBU-C to measure parental rejection (Grüner et al., 1999; Muris et al., 2003). It is possible that lack of parental support and attention can induce anxious behaviors in children. Results from the current study imply that children may internalize permissiveness from their parents, which in turn contributes to their anxiety.

Conversely, results from Muris and Merckelbach (1998) contradict findings from the current study. Muris and Merckelbach (1998) found no correlation between rejection and anxiety symptoms. They also used child reports on the EMBU and SCARED in their study (Muris & Merckelbach, 1998). However, they had a more limited sample than the current study; only 45 children between the ages of 8 and 12 participated (Muris & Merckelbach, 1998). Therefore, findings from the current study are more generalizable due to a larger sample size, as well as a more diverse age range. Though, it is also possible that the relationship between rejection rearing and child anxiety is bidirectional. Some parents may become more dismissive if their child exhibits anxious behaviors. Children with difficult temperament also tend to elicit rejection from their parents (Kiff et al, 2011), which in turn could lead to the development of anxiety if parental rejection persists for an extended period of time.

It is also important to note that parents with a rejection rearing style tend not to participate in research studies. Since parents with this rearing style tend to be less involved in their child's life, it is difficult to recruit them. Thus, the parents who were identified as having a rejection rearing style in this study were most likely unaware of their style. With that being said, they may have exhibited some characteristics associated with rejection, but are likely not the most representative sample of this parenting style.

For the current study, the relationship between anxious rearing and anxiety levels was also supported by child and parent reports. Results indicate that parents who described their child as more anxious on the SCARED, classified themselves as being more anxious on the EMBU. In addition, children who ranked themselves as more anxious on the SCARED, described their parents as more anxious on the EMBU. Previous research supports this relationship and suggests that it may result from parents modeling anxious behaviors, which consequently reinforces children's anxious behaviors (Grüner et al., 1999; Young et al., 2013). Grüner and colleagues (1999) used child reports on the EMBU in their study and found that higher scores on the anxious subscale for mothers and fathers were both associated with higher anxiety scores in children. Young and colleagues (2013) used child reports on the EMBU as well. They found a correlation between the EMBU-C anxious rearing subscale and child reports on anxiety (Young et al., 2013), which is similar to results of the current study. Parents with an anxious rearing style may also avoid exposing their children to challenging situations (Grüner et al., 1999; Young et al., 2013). Similar to overprotective parenting, findings from the current study imply that anxious rearing may inhibit the development of age appropriate skills. Whether parents consciously or unconsciously shelter their children, lack of exposure to new situations can result in heightened anxiety when exposed later in life, therefore leading to increased child

anxiety levels. According to findings from the current study, EMBU-C and EMBU-P rejection subscales had the most significant correlations with SCARED-C and SCARED-P scores, respectively. This implies that anxious rearing may be the most influential parenting style on child anxiety levels. However, like the overprotection and rejection parenting styles, it is possible that the relationship between anxious rearing and child anxiety is bidirectional. When children experience anxiety, it may exacerbate anxious behaviors in their parents. Parents may feel nervous and helpless regarding their child's anxiousness, which in turn could result in parents implementing more anxious practices. If children were to elicit anxious behaviors in parents, they would then observe and internalize these behaviors and most likely mirror them in their own life.

Interestingly, the emotional warmth EMBU-P subscale was negatively related to child anxiety scores, as measured by the SCARED-C. These findings indicate that when parents describe themselves as more emotionally warm, their children rank their anxiety as lower. This implies that high emotional warmth most likely alleviates child anxiety symptoms and may act as a protective factor. Indeed, based on theory, emotional warmth would be expected to have the opposite effect on child anxiety levels than the other three rearing styles (Grüner et al., 1999; Muris et al., 2003; Young et al., 2013).

Finally, it was noted that emotional warmth rearing is not correlated with child anxiety levels, when comparing EMBU-C scores with SCARED-C scores and EMBU-P scores with SCARED-P scores. This the lack of relationship between emotional warmth and child anxiety (as reported by children and parents) is supported by previous literature (Grüner et al., 1999; Muris et al., 2003; Muris & Merckelbach, 1998). Grüner and colleagues (1999), as well as Muris and colleagues (2003), found that emotional warmth is not related to anxiety levels.

Additionally, Muris and Merckelbach (1998) found no direct correlation between emotional warmth and child anxiety, but they did note a connection between paternal anxious rearing and emotional warmth. Muris and Merckelbach (1998) found that emotional warmth in conjunction with anxious rearing displayed by fathers contributes to increased child anxiety levels. Yet, a study conducted by Young and colleagues (2013) found no correlation between the emotional warmth and anxious rearing subscales. Unfortunately, exploratory analyses on correlations between EMBU subscales was not conducted in the current study, so findings cannot support or dispute the results by Muris and Merckelbach (1998).

Child Age, Gender, and Anxiety Levels

Consistent with previous literature, female adolescents reported having significantly higher anxiety levels, as measured by the SCARED-C, than their male counterparts, as well as male and female children (Bosquet & Egeland, 2006). Additionally, male and female children reported having no significant difference in anxiety levels (Bosquet & Egeland, 2006). The interaction effect between age and gender on child anxiety is consistent with previous research, which found that anxiety is equally common among males and females before puberty, but is then twice as prevalent in females than in males after puberty (Bakhla et al., 2013; Beesdo et al., 2009; Bosquet & Egeland, 2006; McLean et al, 2011). As age increases, children and adolescents' anxiety levels have been noted to increase (Bosquet & Egeland, 2006; Costello et al., 2011; Muris et al., 2003). Costello and colleagues (2001) found a correlation between age and anxiety, which supports the significant difference in anxiety levels between female child and female adolescents in the current study.

Findings from the current study imply that the effects of age and gender are most powerful around puberty. Male and female children report no difference in anxiety levels, whereas female adolescents report significantly higher levels of anxiety than male adolescents. Hormones likely attribute to differences in anxiety levels across ages and genders (Reardon et al., 2009). During puberty, adolescents experience a fluctuation in gonadal and adrenal hormones, which are believed to contribute anxiety symptomology (Reardon et al., 2009). The adrenal hormone, cortisol, is responsible for regulating metabolism and the body's stress response. Previous studies have found high levels of cortisol in children and adolescents with anxiety (Reardon et al., 2009). Additionally, increased levels of gonadal hormones, especially estrogen in females and testosterone in males, have been noted to be associated with anxiety disorders (Reardon et al., 2009). Altemus, Sarvaiya, and Neill Epperson (2014) also found that fluctuations in reproductive hormones during menstruation may trigger and exacerbate anxiety in females. It is possible that increased levels of estrogen may lead to increased levels of cortisol (Altemus et al., 2014). However, the underlying biological mechanisms that connect hormones and anxiety are not well understood (Reardon et al., 2009). For now, research just indicates that hormonal changes during puberty put females at a higher risk for developing anxiety disorders (Altemus et al., 2014; Reardon et al., 2009).

Interestingly, results from parent reports on the SCARED questionnaire in this study contradict child report and the previous literature, indicating no significant difference between child and adolescent anxiety levels or male and female anxiety levels. Discrepancy between parent and child report will be further discussed in the "*Limitations"* section.

Child Age and Gender, Parenting Styles, and Child Anxiety Levels

Further analyses found that the relationship between parenting styles and child anxiety is not stronger in children than in adolescents. Only one previous study investigated the impact of child age on the relationship between parenting styles and child anxiety. Similar to results of this study, McLeod and colleagues (2007) found that child age does not affect the relationship between parenting styles and child anxiety levels. However, authors noted that methodological features, such as use of questionnaires and single informants may have impacted their results (McLeod et al., 2007). These same factors may have skewed the results of the current study. See the "*Limitations*" section for more details.

Since previous research found that the influence of parenting styles diminishes as age increases (Muris et al., 2003), similar patterns were expected regarding the impact of the parenting styles-child anxiety relationship. However, findings from the current study indicate that the impact of the parenting style-anxiety level relationship does not differ with age. Parenting styles influence on child anxiety may be just as strong in older children's lives as it is in young children's lives. These results imply that the significance of parents being the main socializing agent in a young child's life may not be as influential as child development theories previously indicated (McLeod et al., 2007). It is also possible that the cumulative effects of parent-child interactions may remain stable from childhood through adolescence (McLeod et al., 2007). Children may internalize feelings associated with their parent's behaviors during early childhood and then continue to reflect on those feelings throughout adolescence (Brumariu & Kerns, 2010). Thus, the influence of parenting styles on child anxiety would remain stable throughout adolescence because the feelings a child internalized at a young age may be permanently engrained.

Finally, results from the current study indicate that the relationship between parenting styles and child anxiety is not stronger in females than in males. Since females are more susceptible to developing anxiety (Beesdo et al., 2009; Bosquet & Egeland, 2006), parenting styles were expected to have a greater effect on their anxiety levels than males. Surprisingly, results indicate that gender had no impact on the parenting style-child anxiety relationship. These findings are consistent with one previous study, which also found that child gender does not affect the relationship between parenting styles and child anxiety levels (McLeod et al., 2007). However, as previously stated, McLeod and colleagues (2007) expressed that their results may be skewed due to methodological factors. These same shortcomings may have been present in the current study (see the "*Limitations*" section for further explanation). Nevertheless, findings from the current study indicate that the influence of the parenting style-child anxiety relationship is similar in females and males. Child gender does not appear to elicit a change in parenting styles, which would inevitably impact child anxiety levels.

Limitations

Numerous limitations may have contributed to the findings of this current study. First off, since this study used correlational analyses, causality of parenting styles effect on child anxiety levels could not be determined. Subsequently, this study was flawed in the use of questionnaires. Like most studies regarding this topic, questionnaires were used to collect information regarding parenting styles and child anxiety levels. However, questionnaires are not the most reliable tool as they are vulnerable to bias and falsified responses (McLeod et al., 2007). Some children may not have comprehended or may have misinterpreted a question, leading them to select an improper response. It is also possible that some parents are just not aware of the

severity of their adolescent's anxiousness, which ultimately results in them selecting unsuitable responses. Unless children regularly converse with their parents about their feelings, parents may not know how their children truly feel. Additionally, some parents may not want to admit that their child is anxious or do not want their child to be labeled with a disorder due to stigma. This may result in parents providing falsified answers when completing the questionnaire, ultimately leading to biased results. Finally, it is probable that adolescents may be better at gauging their own anxiety levels than their parents, meaning child reports would be more accurate than parent reports. In this study, the discrepancy between child and parent reports on the SCARED most likely arose due to one or several of these explanations.

Another limitation in this study was the measurement and analysis of parenting styles. This study did not categorize every parent as having a specific parenting style, rather it classified parents as being "high" or "low" in each of the four parenting style domains. Though it is beneficial to categorize parents as having multiple rearing styles, analyses in this study did not examine how the interaction of multiple parenting styles influences child anxiety levels. As found by previous research, the majority of parents use a combination of the different parenting styles (Bakhla et el., 2013). However, analyses in this study only examined how the presence of one parenting style was associated with child anxiety. For example, this study did not compare parents who were ranked as high overprotection, high emotional warmth, low rejection, and low anxious rearing to those who are low overprotection, high emotional warmth, low rejection, and low anxious rearing. This slight change in parenting characteristics may have a significant impact on child anxiety, but remains unknown due to lack of analysis.

Another possible source of error may be presence of cultural bias. Certain parenting styles are favored in different cultures. Previous research indicates that parenting styles affect

those from various cultures differently (Mousavi, Low, & Hashim, 2016). Mousavi and colleagues (2016) found that European/ American adolescents described their parents as the least over controlling compared to Malay, Chinese, Indian, and Arab adolescents. Additionally, this previous study found that Malay and Chinese adolescents had significantly higher anxiety levels and reported greater use of parental rejection and anxious rearing, as well as reduced use of emotional warmth (Mousavi et al., 2016). With this in mind, cultural beliefs of families in this current study may have impacted the parenting style-child anxiety relationship. Since the majority participants originated in the United States, findings from this study cannot be generalized to families from different countries.

Lastly, socioeconomic status (SES) may have also acted as an extraneous variable in this study, meaning it may have influenced parents rearing style or a child's level of anxiety independently. If a child is raised is a low SES household, their parents may utilize less favorable parenting behaviors, like over control, more often (Kaufmann et al., 2000). For example, if a parent has to work two jobs to support their family, they may not pay as much attention to their child as a financially stable parent would. Parents with a low SES may also feel overburdened by their financial instability and may cope with their unhealthy feelings by micromanaging their child. Kaufmann and colleagues (200) also found that children from high-income families tend to receive more support and emotional warmth from their parents than low SES children. On the contrary, children raised in a low SES may feel as if they are financial burden to their family, which in turn could lead to the development of anxiety. Previous research has confirmed that low SES are twice as likely to develop mental health disorders (Reiss, 2013). Overall, socioeconomic standing may have impacted the two independent variables of this study, parenting styles and child anxiety, and skewed the findings.

Future Research

Based on the critiques of this study, several changes should be implemented in future studies. All future studies should have a large sample size to reduce the chances of biased results. Researchers should also attempt to study this topic using observational and longitudinal methods, as opposed to questionnaires. If questionnaires are used, they should be sure to administer them to both parents instead of just one. It would be interesting to examine whether parent gender acts a moderating variable on the parenting style-child anxiety relationship. A certain gender parent may favor or treat differently a certain gender child. Additionally, modifying methodological factors used, like means of data collection (i.e. use of observational study) and number of informants (i.e. both parents instead of one), would allow for more reliable results to be collected. Thus, improved experimental designs should be implemented in future studies. Finally, forthcoming studies should focus on determining a direction of causality in the relationship between parenting style and child anxiety level. It is evident that parenting styles are influential on child anxiety, therefore future research should attempt to uncover a causal link.

Conclusions and Implications

Results from the current study are valuable because they contribute to a growing body of research, demonstrating a link between parenting styles and child anxiety. It is likely that parental overprotection, rejection, and anxious rearing place children at risk for developing anxiety. However, it is also feasible that children with a predisposition to anxiety may elicit alternate parenting practices from their parents. Third, it is possible that overprotective, rejection, and anxious parenting styles are more typical of parents who are anxious themselves

and are conferring genetic risk to their children. Female adolescents report the highest anxiety levels compared to their male counterparts and children, meaning they are the most at risk group for developing anxiety. Although, this finding was not reported by parents, indicating that parents may be particularly vulnerable to not knowing the amount of distress their female teenage children are experiencing. Finally, results from the current study indicate that neither child age nor gender influence the relationship between parenting styles and child anxiety levels. Therefore, parenting styles appear to act as an equally strong risk or protective factor among all age and gender groups.

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Table 1.
Demographics Characteristics of Participants

Characteristic	Frequency (n)	Percent (%)
Child Age		
6	12	5.6
7	20	9.3
8	35	16.2
9	17	7.9
10	32	14.8
11	15	6.9
12	17	7.9
13	14	6.5
14	15	6.9
15	15	6.9
16	8	3.7
17	9	4.2
18	6	2.8
Child Gender		
Male	110	50.9
Female	105	48.6
Child Ethnicity		
Hispanic or Latino	26	12.0
Not Hispanic or Latino	175	81.0
Child Race		
Asian	6	2.8
Black or African American	62	28.7
White	137	63.4
More than one race	10	4.6
Child Country of Origin		
China	1	.5
Egypt	1	.5
El Salvador	1	.5
English/Irish/Hungarian/Scotish	1	.5
Eu	1	.5
Guatemala	1	.5
Lithuania/Ukrania/Germany	1	.5
Mexico	1	.5
Peru	1	.5
Philippines	1	.5
Russia	1	.5
USA	190	88.0
Grade level		
K	2	.9
1	11	5.1
2	34	15.7
3	27	12.5

4	15	6.9
5	30	13.9
6	19	8.8
7	18	8.3
8	10	4.6
9	19	8.8
10	12	5.6
11	6	2.8
12	12	5.6
Parent Age		
25	2	.9
26	1	.5
27	3	1.4
28	1	.5
29	3	1.4
30	3	1.4
31	3	1.4
32	5	2.3
33	1	.5
34	6	2.8
35	4	1.9
36	5	2.3
37	14	6.5
38	7	3.2
39	10	4.6
40	12	5.6
41	16	7.4
42	11	5.1
43	9	4.2
44	15	6.9
45	12	5.6
46	11	5.1
47	12	5.6
48	7	3.2
49	5	2.3
50	1	.5
51	4	1.9
52	3	1.4
53	2	.9
54	2	.9
55	2	.9
56	1	.5
57	2	.9
60	1	.5
62	3	1.4
63	1	.5

67	1	.5
Marital Status		
Married	122	56.5
Divorced	24	11.1
Separated	12	5.6
Single	34	15.7
Widowed	3	1.4
Other	8	3.7

Table 2
Pearson Correlation Coefficients Between EMBU-C subscales SCARED-C and SCARED-P scores

	SCARED-C Total Score	SCARED-P Total Score
EMBU-C Overprotection subscale	.084	.041
EMBU-C Rejection subscale	.315**	.043
EMBU-C Anxious Rearing subscale	.336**	.180*
EMBU-C Emotional Warmth subscale	-.094	.041
EMBU-P Overprotection subscale	-.002	.215**
EMBU-P Rejection subscale	.081	.129
EMBU-P Anxious Rearing subscale	.039	.330**
EMBU-P Emotional Warmth subscale	-.187*	.001

* Correlation is significant at the 0.05 level (1-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 3
Pearson Correlation Coefficients Between EMBU subscales and SCARED-C and SCARED-P scores when testing for age effect.

	Children		Adolescents	
	SCARED-C	SCARED-P	SCARED-C	SCARED-P
EMBU-C Overprotection	.148	.045	.124	.091
EMBU-C Rejection	.356**	.050	.247*	.016
EMBU-C Anxious Rearing	.365**	.219*	.306**	.139
EMBU-C Emotional Warmth	-.096	.009	-.010	.122
EMBU-P Overprotection	.139	.142	-.101	.380**
EMBU-P Rejection	.204*	.164	-.082	.087
EMBU-P Anxious Rearing	-.006	.257**	.040	.408**
EMBU-P Emotional Warmth	-.048	-.119	-.259*	.165

* Correlation is significant at the 0.05 level (1-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 4
Pearson Correlation Coefficients Between EMBU subscales and SCARED-C and SCARED-P scores when testing for gender effect.

	Males		Females	
	SCARED-C	SCARED-P	SCARED-C	SCARED-P
EMBU-C Overprotection	.129	.123	.063	-.039
EMBU-C Rejection	.348**	.051	.307**	.040
EMBU-C Anxious Rearing	.358**	.131	.358**	.246
EMBU-C Emotional Warmth	-.041	.099	-.183	-.042
EMBU-P Overprotection	.113	.212*	-.109	.219*
EMBU-P Rejection	.138	.158	.059	.112
EMBU-P Anxious Rearing	.008	.292**	.101	.392**
EMBU-P Emotional Warmth	-.135	.040	-.256*	-.044

* Correlation is significant at the 0.05 level (1-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

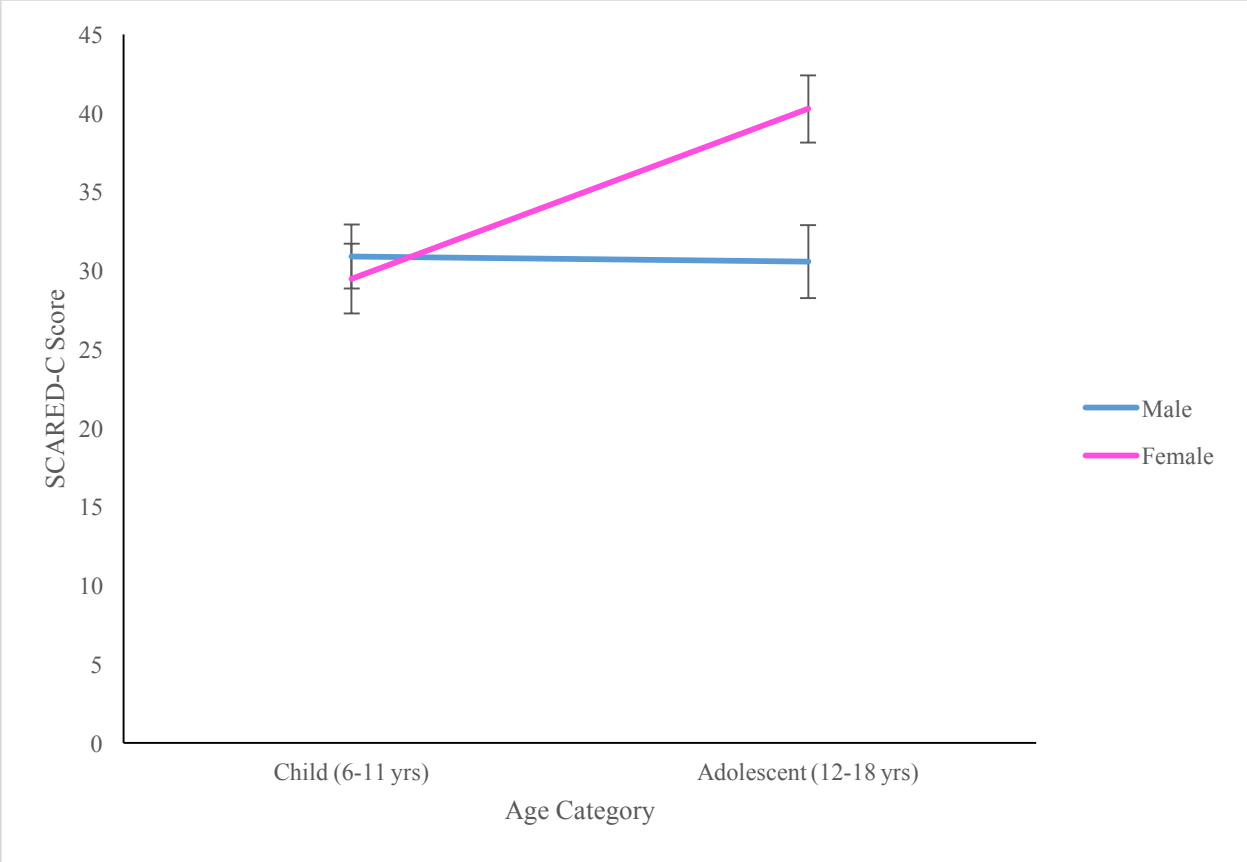

Figure 1: Effect of age and gender on SCARED-C scores (+/- *SE*s)

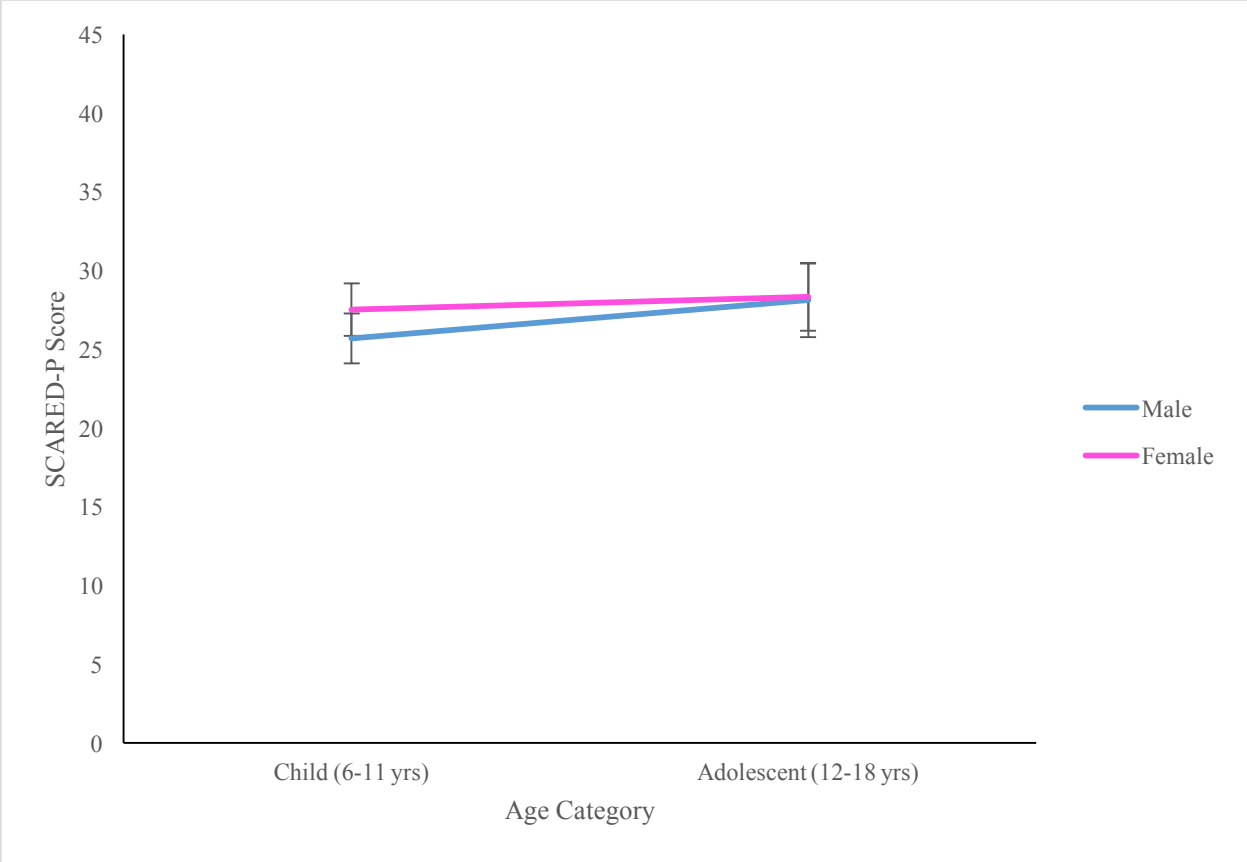

Figure 2: Effect of age and gender on SCARED-P scores (+/- *SE*s)