



# The Role of Coping Strategies in Understanding the Relationship Between Parental Support and Psychological Outcomes in Anxious Youth

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## Abstract

The current study examined the moderating role of coping strategies on psychological outcomes at varying levels of parental support in a sample of clinically anxious youth. Youth ( $N = 174$ , mean age 11.89) completed the Children's Coping Strategies Checklist, Child and Adolescent Social Support Scale, Multidimensional Anxiety Scale for Children and Children's Depression Inventory. Data was gathered at a large, university-based anxiety disorders treatment clinic. This nonexperimental design analyzed the use of active and avoidant coping strategies as a moderator of anxiety and depression, while controlling for parental support. Results revealed active coping strategies did moderate the relationship between parental support and anxiety, however, not as expected while the significant moderation role of avoidance coping was mixed. Findings showed that anxious youth with more parental support and more active coping were at risk for higher levels of anxiety, yet protected from higher depression. Avoidant coping strategies did moderate in a manner that was predicted for higher anxiety symptoms. Results suggest increased need for parental involvement in the treatment of anxiety disorders in youth.

**Keywords** Anxiety · Coping strategies · Parental support · Children · Adolescents

## Introduction

Anxiety disorders are the most prevalent mental health disorders in children and adolescents with up to 20% of children meeting diagnostic criteria for one or more anxiety disorder (Chavira, Stein, Bailey, & Stein, 2004; Costello & Angold,

1995; Kessler et al., 2011; Pine, Helfinstein, Bar-Haim, Nelson, & Fox, 2009). Development of anxiety disorders in youth has been linked to biologic and environmental risk factors (Spence, 2001). Parental behaviors and support such as over-protection and control, criticism by parents, parents' ability to accept negative or anxious affect in their child, and parent's modeling inappropriate anxious coping are all associated with the development of anxiety and depression in youth (Cobham, Dadds, & Spence, 1998; Hudson & Rapee, 2001; Malecki, Demaray, & Elliott, 2004; McLeod, Wood, & Weisz, 2007a, b; Rapee, 1997; Whaley, Pinto, & Sigman, 1999; Wood, McLeod, Sigman, Hwang, & Chu, 2003). Counter to these risk factors, protective factors exist and may moderate the development and/or impact the severity of anxiety in youth. Coping strategies, which have been linked to reducing anxiety and depression in youth (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001) are protective factors in need of consideration in the development of anxiety in youth. This study uses a risk and protective factor framework to attempt to understand the role coping strategies play on the relationship between parental support, and psychological struggles in a sample of clinically anxious youth. Thus, understanding protective factors

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that may be associated with anxiety has important implications for impairment and treatment of these youth.

Within a risk and protective factors framework, multiple influences impact the development, exacerbation, and amelioration of psychopathology in youth (Vasey & Dadds, 2001). Risk factors often influence the chances for harm and increase the probability of onset and/or maintenance of problems. Protective factors, however act to buffer the development or maintenance of problems or outcomes, which may lead individuals to become more resilient and help prevent adverse events and also assist to develop competencies for increased resilience (Fraser, Kirby, & Smokowski, 2004). As such, risk and protective factors may be expected to interact and impact the development of psychopathology in youth (Vasey & Dadds). It can also be expected that in the context of risk, protective factors can reduce the impact of this risk on psychopathology in youth. Thus, in the present study, coping strategies are expected to protect youth from higher anxiety severity when parental support is low.

### Parental Support and Psychological Struggles

Parental support is defined as providing material and psychological resources to help children cope with stress (Cohen, 2004). These resources include providing advice, giving emotional support, and providing feedback or information (Colarossi & Eccles, 2003; Malecki & Demaray, 2006). Additionally, children who faced harsher parenting identified themselves as being more avoidant to novel situations and experienced an increase in their physiological stress response, which can result in more anxious behaviors over time (Sturge-Apple, Davies, Martin, Cicchetti, & Hentges, 2012). However, more balanced amounts of parental support have been found to buffer youth from experiencing negative outcomes in the face of certain adversities. For example, parental support has been associated with higher academic achievement (Malecki & Demaray) and lower levels of anxiety (Lewis, Byrd, & Ollendick, 2012) in non-clinic referred youth. Youth with too little parental support are left to cope with stress in ways that may not be effective or if they receive too much support, they are unable to find alternatives offered by parents or cannot generalize this support with other relationships or situations. Regardless of the amount of support youth receive, the use of coping strategies may impact a child's anxiety or depression.

Parental rejection and control are associated with both increasing and reducing anxiety and depressive symptoms in youth (McLeod et al., 2007a, b; Wood et al., 2003). For instance, Creveling, Varela, Weems, and Corey (2010) found that maternal control was associated with less child autonomy and indirectly with child anxiety via rejection practices. Garber and Flynn (2001) found that within a sample of young adolescents, a mother's psychological control

(characterized by parental influence of guilt, shame and anxiety along with the withdrawal of love) was significantly related to a negative attribution style, particularly learned self-blame and depressive cognitions. Following a family group cognitive-behavioral intervention, Compas et al. (2010) reported that as parents in the experimental treatment provided more warmth and praise (components of support), depression scores in children reduced. However, this study failed to find significant effects of parenting on children's anxiety.

Despite the documented relationships between various parenting behaviors and both anxiety and depression in youth, the strength of these relationships has recently been challenged. For example, meta-analyses found that parenting behaviors only accounted for 4% of the variance in anxiety in youth (McLeod et al., 2007a) and only 8% of the variance in depression in youth (McLeod et al., 2007b). McLeod et al. postulate that the low explained variance may be related to the discontinuity in the conceptual definitions of rejection and control and further suggested that there may be sub-dimensions to these parenting behaviors. They identified that when separated out, parenting sub-dimensions of warmth, withdrawal, aversiveness, over-involvement, and autonomy granting, explained up to 18% of the variance in child anxiety (McLeod et al., 2007a) and that withdrawal and aversiveness explained 4 and 11% of the variance, respectively, in predicting childhood depression (McLeod et al., 2007b). Based on the importance of sub-dimensions purported by McLeod et al., this study aims to specifically understand the role of parental support, as a sub-dimension of parenting, and its relationship with youth symptomatology and their use of coping strategies.

### Coping Strategies

Children and adolescents use various coping strategies to deal with myriad problems. Coping is defined as "cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). The use of specific coping strategies, both adaptive and maladaptive, has been linked to positive and negative psychological outcomes. For example, the use of active/problem-solving coping was associated with reductions in anxiety (Gaylord-Harden & Cunningham, 2009; Houtzager et al., 2004) and the use of more social support [seeking] strategies was associated with reductions in depression among youth (Nicolotti, El-Sheikh, & Whitson, 2003). Furthermore, Compas et al. (2010) reported that for youth with depressed parents, increasing their use of secondary control coping helped reduce depression compared to controls while the use of less primary control coping (also a form of active coping) was associated with higher amounts of depression

in at-risk youth (Evans et al., 2015). A stronger association between uncontrollable stress and hopelessness was found when higher levels of distraction, active coping strategies, and social support seeking coping strategies were present in males and higher levels of rumination among females (Landis et al., 2007). Furthermore, youth who reported more anxiety and depression were found to use more cognitive avoidant strategies and less approach strategies (Ebata & Moos, 1991; Gaylord-Harden & Cunningham, 2009; Houtzager et al., 2004) and avoidant strategies were used more often by anxious and depressed youth compared to youth without psychological problems (Barrett, Rapee, Dadds, & Ryan, 1996; Ebata & Moos, 1991). Barrett et al. (1996) found that parents of anxious youth encourage their children to avoid ambiguous situations more often than parents of non-anxious youth. Additionally, these parents, in an attempt to help their anxious child, may be supporting behaviors that are not only maladaptive, but could result in poor outcomes in their anxious child while maladaptive coping in the face of trauma was associated with increased depression in youth (Morris, Kouros, Fox, Rao, & Garber, 2014).

Within a risk and protective factor framework, coping strategies can help prevent the impact of adverse events by limiting the impact of adversity, protecting/buffering the individual from the impact, and helping promote the development of competencies to successfully navigate stressful events (Sandler, 2001). For example, the use of appropriate coping strategies can prevent negative outcomes, they can protect the individual from more serious consequences associated with adverse events, and the repeated use of appropriate coping strategies and increased positive mood may promote further successful outcomes. Therefore, coping strategies are considered potential protective factors against the impact of risk (low parental support) on anxiety severity.

Increasing one's ability to effectively cope with stress is a treatment component for anxious youth (Compas et al., 2010). Cognitive behavioral therapy (CBT) has received a great deal of empirical support in reducing anxiety in youth (Barrett, 1998; Kendall et al., 2008). Components of CBT include helping youth to actively problem solve when faced with an anxiety producing situation (Problem Focused Coping; PFC) and to engage in cognitive restructuring to find alternatives to anxious cognitions (Positive Cognitive Restructuring; PCR) while minimizing avoidance with exposures. Muris, Mayer, den Adel, Roos, & van Wamel, (2009) found that cognitive restructuring reduced the amount of anxious automatic thoughts experienced by anxious youth while increased exposure (less avoidance) was associated with less anxiety and increased school attendance (Heyne et al., 2002). Taken together, these coping strategies help reduce anxiety in youth; however, little is known about the additive/combined effects of parental support and coping strategies on anxiety and depression. Gomez and McLaren

(2006) found that anxiety/depression was greater when the use of avoidant coping was high and maternal support was low compared to high avoidance when maternal support was high indicating the potential risk for anxiety and/or depression when more avoidant strategies are used particularly when maternal support was low.

## The Current Study

The purpose of this study is to explore (a) the relationship between level of parent support and coping strategies and (b) the interaction between these variables in relation to anxiety or depressive symptoms in a sample of clinically anxious youth. The moderating model examines whether coping strategies buffer youth from higher levels of anxiety when faced with less parental support. This type of model works well within this framework because the use of adaptive coping strategies is expected to lead to less anxiety in youth.

Because behavioral and cognitive active coping and avoidant coping are associated differently with psychological outcomes, they are analyzed independently. Based on previously reported research of direct effects between parental support, coping, and psychological symptoms highlighted above in non-clinic referred youth, we hypothesize that active coping strategies would be positively related to parental support and negatively related to psychological outcomes while avoidance would be positively associated with parental support and psychological outcomes in a sample of clinically referred anxious youth.

We hypothesize that active coping strategies will moderate the relationship between parental support and psychological outcomes in anxious youth such that regardless of level of parental support, more active coping will be associated with less psychological distress. Furthermore, we hypothesize avoidant coping will moderate the relationship between parental support and outcomes such that less parental support along with more avoidant coping, will be associated with higher levels of anxiety and possibly higher depression in this sample.

## Method

### Participants

This study is part of a larger study researching risk and protective factors in anxious youth. Participants in the larger study were recruited after seeking treatment at an urban, university-based mental health clinic that specializes in the treatment of pediatric anxiety disorders. Appropriate referrals were screened to ensure that youth had anxiety, and if so, were then registered for a diagnostic evaluation. Caregivers were mailed and asked to complete questionnaires

describing information on their child's recent anxiety symptoms and their own psychiatric issues and family relationships. Youth completed questionnaires at their first visit; providing information about their affect, family, coping, and support. The presence of specific anxiety symptoms were elicited using a semi-structured interview including relevant diagnostic modules from the Anxiety Disorders Interview Schedule for Children (ADIS-IV-CP; Silverman & Albano, 1996, 2004). If the child met criteria for an anxiety disorder, the caregiver was asked to provide consent and children over age six were asked to provide assent to participated in an IRB approved risk and protective factors study associated with anxious youth; thus, informed consent was obtained from both the child/adolescent and their legal guardian for inclusion in the research.

### Sampling Procedures

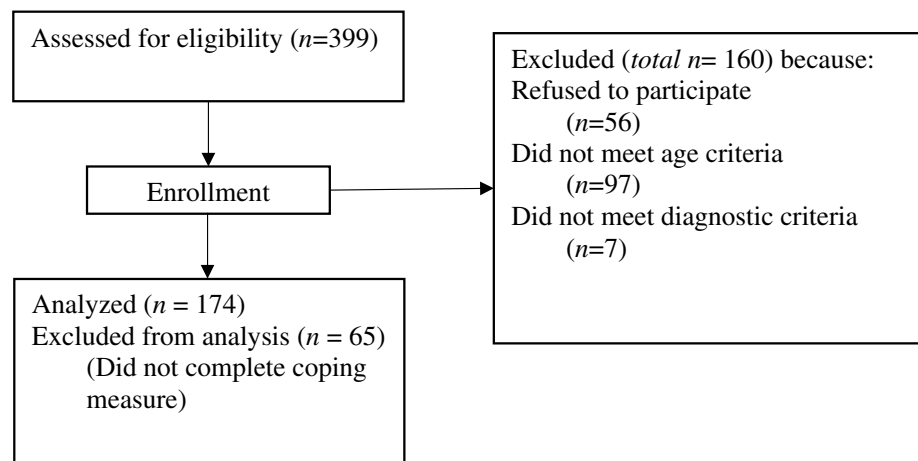
Three-hundred and ninety-nine youth and families were approached for inclusion into this study between 2002 and 2014. Of these 399, three-hundred and forty-three youth and their caregivers provided informed consent to participate in this IRB approved study. Inclusion criteria for the current study include being over 7-years-old with any anxiety disorder. Ninety-seven youth were excluded because they were younger than eight years and an additional four were excluded because they did not meet diagnostic eligibility. Of these four, one had depression only, one had a pervasive developmental disorder only, one had PDD and ADHD only, and one had ADHD and mood disorder only. Additionally, even though three youth had a primary anxiety disorder, they were removed for other diagnostic reasons: one also had a diagnosis of a brief psychotic episode and two others had MR. Thus, the final eligible sample consisted of 239 youth with a primary anxiety disorder. A review of the data revealed that 65 youth did not complete the coping measure at baseline. Comparisons between those who completed

and those who did not complete this measure did not reveal any significant differences in age, gender, ethnicity or other variables of interest in this study. Because the use of coping strategies was central to this study, the youth who did not complete the coping measure were removed from all analyses. Thus, the final sample consisted of 174 youth aged 8–18 years (mean = 11.89, SD = 2.6 years) with 54% male. Ethnicities included in this sample were 104 Caucasian (59.8%), 23 African American (13.2%), 30 Latino (17.2%), 5 Asian (2.9%) and 12 other/mixed (6.9%). Seventy-eight youth (44.8%) had only one anxiety diagnosis while 96 (55.2%) of the youth in this sample had multiple diagnoses (anxiety and other diagnostic classifications). Additionally, neighborhood characteristics from Census tract data revealed that these youths lived in communities with an average of 7.5% (SD = 9.44) families living below the poverty level, and communities with 82% (SD = 15.7) if adults having a high school diploma or higher. An a-priori power analysis was performed to determine whether this was an appropriate sample size for these analyses. For a medium effect size (.50) and 80% power, with a maximum of five predictor variables per model, and an adjusted probability level of .01 (corrected for multiple comparisons), the minimum sample size required is 44. Figure 1 includes the participant flow chart.

### Measures

As mentioned above, the current study was part of an ongoing risk and protective factors study of anxious youth. As such, several measures were completed by the child, their parent and the child's teacher upon evaluation in the clinic. These measures obtained information associated with psychological outcomes, support, coping strategies, parent's own report of psychological well-being, medical and treatment history, behavioral indicators and certain diagnostically specific questionnaires (i.e. trauma related, obsessive compulsive disorder, and selective mutism). When available,

Fig. 1 Participant flow chart



measures were provided in Spanish if this was the primary language of the child and family. Furthermore, youth were assisted by trained clinic staff to complete measures if there were issues related to readability; however, youth were only asked to complete measures based on age. Senior clinicians trained junior clinicians on the correct manner to approach and work with youth to complete measures. Below is a description of the measures used specifically to test the hypotheses in the current study.

### Anxiety

We assessed anxiety symptoms using the Harm Avoidance and the Total Score from the Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings, & Conners, 1997). A sample item included “I try to do things other people will like.” Participants indicated on a four-point scale (0 = never true about me, 3 = often true about me) whether they experienced this type of anxiety symptom. Cronbach’s alpha scores for total score was .87 and harm avoidance of .70 for this sample. March et al. (1997) found the MASC showed significant validity when compared to the Revised Children’s Manifest Anxiety Scale (RCMSA; .633,  $p < .01$ ).

### Depression

Depression was assessed using the total score from the Children’s Depression Inventory (CDI; Kovacs, 2001). This measure asks youth to select one sentence from three sentences, the sentence that best described them in the past 2 weeks. A sample item included “I am sad once in a while. I am sad many times. I am sad all the time.” Reliability and validity is well established in the extant literature. For example, concurrent validity of the CDI with the Piers-Harris Self-Concept measure was  $-.64$  ( $p < .001$ ; Fleming-Saylor, Finch, Spirito, & Bennett, 1984). Cronbach’s alpha for the total score for this sample was .87.

### Perceived Parental Support

The 12 items from the parent subscale of the Child and Adolescent Social Support Scale (CASSS; Malecki et al., 2004) was used to measure the child’s perceived social support from parents. A sample question included “My parents show they are proud of me.” Participants reported the amount of parental support using a six-point rating scale where 1 = never and 6 = always. The Cronbach’s alpha was .90 for the parent subscale. Convergent validity between the CASSS parent subscale and the Social Support Appraisals Scale was .58 ( $p < .001$ ; Malecki & Demaray, 2003).

### Coping Strategies

We assessed coping using The Children’s Coping Strategies Checklist-Revision 1 (CCSC-R1; PPR, 1999). Particularly, we used the problem focused coping (PFC), positive cognitive restructuring (PCR) and avoidance subscales for these analyses. Sample items include “When you had a problem in the past month, you did something to solve the problem” (PFC) and “You tried to stay away from the problem” (avoidance). Participants indicated their use of these coping strategies on a four-point rating scale (1 = never, 2 = sometimes, 3 = often, 4 = most of the time). Cronbach’s alpha scores were .85 (PFC), .87 (PCR), and .73 (avoidance). Construct validity for the CCSC-R1 is strong (CFI for all subscales was  $\geq .84$ ; Ayers, Sandler, West, & Roosa, 1996).

### Data Analyses

Descriptive statistics were completed on all variables. Independent t-tests comparing gender to all outcome variables was performed in this non-experimental study. Zero-order correlations were conducted comparing age to all outcome variables. Linear regressions were used to determine both main effects and interaction effects for parent support, and coping on outcome variables and variables were mean-centered prior to regression analyses and effect sizes were determined using Cohen’s  $f^2$  (Selya, Rose, Dierker, Hedeker, & Mermelstein, 2012). Small, medium, and large effects for  $f^2$  are .02, .15, and .35, respectively (Cohen, 1988). Bootstrapping was used to estimate moderating effects on psychological outcomes with 5000 iterations. This approach improves statistical power and avoids potentially unrealistic distributional assumptions about moderated effects (Brock & Kochanska, 2016; Hayes, 2013). When significant interactions emerged, a plot of the interactions and simple-slope post-hoc analyses were completed to determine the significance of the regression slopes. Because three moderators were tested for three dependent variables (a total of nine tests), a Bonferroni correction was used and an adjusted alpha level for significance was determined as  $.0055$  ( $.05/k$ , where  $k$  is the number of comparisons conducted in the analysis). When regression assumptions were not met (outliers present), the outliers were removed, the analyses were performed a second time to reveal no effect on the statistical significance following the adjusted alpha level for multiple analyses, and thus remained.

## Results

### Descriptive Analyses

Descriptive statistics are presented in Table 1. Data from 174 youth were used in the analyses. The current sample includes

families who agreed to participate and who provided the measures used in the current study. Participants who did not complete the current measures were missing at random. The Little's MCAR test (in SPSS, version 22) obtained for this study's data resulted in a Chi square = 2480.25 (df = 2432;  $p = .243$ ). The range of missing data was from 0 to 11%, with a mean = 3.01% (SD = .0389%). Thus, mean substitution was used (Baraldi & Enders, 2010; Dziura, Post, Zhao, Fu, & Peduzzi, 2013). Independent t-tests indicate that there were no differences on parental support, MASC subscale Harm Avoidance (HA), MASC Total, and CDI total when comparing those who completed the coping measure versus those who did not ( $ps = .96, .59, .17, \text{ and } .23$ , respectively). Furthermore, independent t-tests of individuals who completed the coping measure comparing gender on all outcome variables revealed gender differences by gender on HA,  $t(172) = -3.467, p = .001$ , with significantly higher scores in males ( $M = 52.59, SD = 10.41$ ) compared to females ( $M = 46.85, SD = 11.44$ ) and CDI Total

$t(150) = 3.314, p = .001$ , with significantly higher scores in females ( $M = 53.86, SD = 12.16$ ) compared to male participants ( $M = 48.28, SD = 9.63$ ). MASC Total Score did not differ by gender ( $p = .70$ ).

## Correlations

A correlation matrix is presented in Table 2. Results indicate that parental support, PFC, and PCR were negatively associated with CDI scores and positively associated with HA. Avoidant Coping was significantly and positively associated with HA and MASC Total scores. As expected, the use of active coping strategies was associated with lower depression while more avoidant coping was associated with higher anxiety. However, the opposite was true for HA whereby higher parent support is associated with greater HA. Age was significantly and negatively associated with HA indicating younger subjects reported more HA compared to older youth. Furthermore, age was significantly, positively associated with CDI Total score, indicating that older subjects reported higher CDI scores compared to younger youth. Gender and age were entered as control variables in all analyses that included HA and CDI as the outcome variable.

**Table 1** Descriptive statistics for parental support, coping strategies, and anxiety and depression

Measure	M	SD	Range
CASSS	54.67	10.73	18–72
PFC	2.45	.60	1–4
PCR	2.33	.63	1–4
AVOID	2.54	.51	1–4
MASC harm avoidance	49.96	11.24	25–72
MASC total score	55.62	10.75	29–84
CDI total score	50.84	11.19	11–87

N = 174

CASSS child and adolescent social support scale, PFC problem focused coping, PCR positive cognitive restructuring, AVOID avoidant coping, MASC multidimensional anxiety scale for children, CDI children's depression inventory

## Linear Regressions Testing Interactions

### Problem Focused Coping as Moderator

When controlling for gender and age, regression results indicated that parent support, PFC, and their interaction explained 25.1% of the variance in HA (Adjusted  $R^2 = .251, F(5, 168) = 12.579, p < .001, f^2 = .374$ ; Table 3). Bootstrapping generated confidence interval confirmed moderation (95% CI  $- .398, - .058$ ). Post-hoc, simple-slope analysis revealed that only lower levels of PFC changed significantly depending on amount

**Table 2** Correlation matrix for study variables

	1	2	3	4	5	6	7
1. CASSS							
2. PFC	.39**						
3. PCR	.31**	.76**					
4. AVOID	.18*	.47**	.55**				
5. MASC HA	.35**	.37**	.22**	.29**			
6. MASC Tot	.08	.09	-.03	.20*	.56**		
7. CDI	-.27**	-.29**	-.33**	.06	-.19*	.38**	
8. Age	-.17*	-.02	-.08	-.02	-.21**	.08	.33**

N = 174

CASSS child and adolescent social support scale, PFC problem focused coping, PCR positive cognitive restructuring, AVOID avoidant coping, MASC multidimensional anxiety scale for children, CDI children's depression inventory

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

of parental support, such that when parental support was higher, youth using less PFC reported greater levels of HA compared to youth with lower amounts of parental support ( $t(168) = 3.429, p = .001$ ; Fig. 2).

Results also revealed that PFC and parent support explained 3.7% of the variance in MASC Total Scores (Adjusted  $R^2 = .037, F(3, 170) = 3.185, p = .025, f^2 = .056$ ; Table 3). Bootstrapping generated confidence interval for the interaction confirmed moderation (95% CI  $-.485, -.059$ ). Post-hoc, simple-slope analysis revealed only lower levels of PFC changed significantly depending on parental support ( $t(170) = 1.943, p = .054$ ; Fig. 3) leading to higher MASC Total Scores when parent support was high than when parental support was low.

The interaction between PFC and parental support on CDI was not confirmed with bootstrapping (95% CI  $-.025, .424$ ).

**Positive Cognitive Restructuring as Moderator**

The model testing the interaction between PCR and parent support explained 19.8% of the variance of HA, when controlling for age and gender (Adjusted  $R^2 = .198, F(5, 168) = 9.563, p < .001, f^2 = .285$ ). Bootstrapping generated confidence interval for the interaction confirmed moderation (95% CI  $-.435, -.057$ ; Table 4). Follow-up post-hoc analysis of the simple-slopes revealed that only lower PCR changed significantly depending on the level of parental support ( $t(168) = 4.470, p < .001$ ; Fig. 4). For example, when

**Table 3** The unstandardized and standardized regression coefficients for the model testing the interaction between PFC and parent support on CDI total score, MASC harm avoidance, and MASC total score

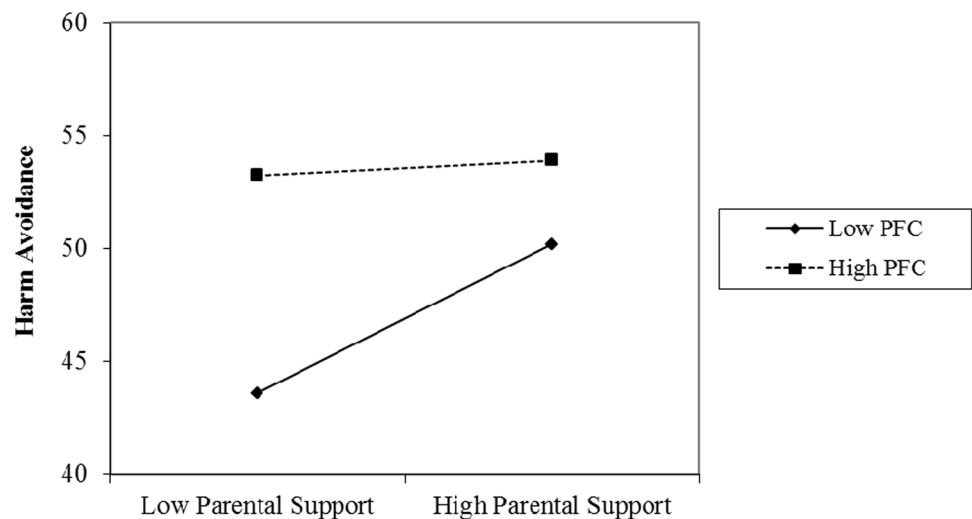
Outcome variable	Predictor	B	SE B	$\beta$
CDI total score+	Age	1.16	.296	.274
	Gender	-3.895	1.544	-.174*
	Parent support	-.085	.079	-.081
	PFC	-4.56	1.37	-3.329**
	Parent support by PFC	.213	.095	.153*
MASC harm avoidance	Age	-.565	.292	-.133
	Gender	4.543	1.523	.202**
	Parent support	.169	.078	.297*
	PFC	5.582	1.351	.297***
	Parent support by PFC	-.231	.094	-.165*
MASC total score	Parent support	.006	.083	.006
	PFC	1.610	1.463	.089
	Parent support by PFC	-.284	.102	-.213**

PFC problem focused coping, MASC multidimensional anxiety scale for children, CDI children’s depression inventory

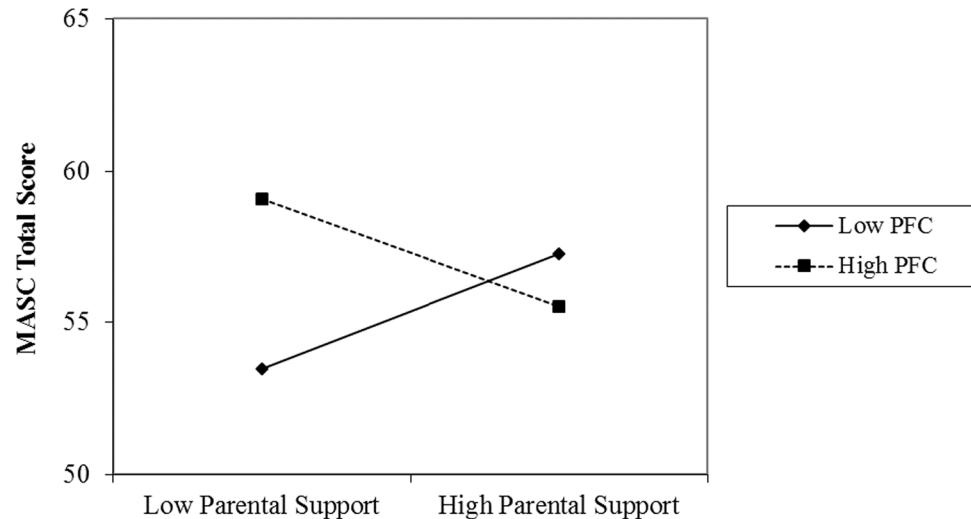
N = 174

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ; +Bootstrapping did not confirm moderation

**Fig. 2** Low problem focused coping moderated the relationship between parent support and harm avoidance;  $t(168) = 3.429, p = .001$



**Fig. 3** Low problem focused coping moderated the relationship between parent support and total anxiety;  $t(170) = 1.943$ ,  $p = .054$



PCR was low and youth reported higher parental support, their reports of HA was greater compared to those with low PCR and low parental support.

A significant model emerged when testing the interaction between PCR and parental support on MASC Total Scores (Adjusted  $R^2 = .038$ ,  $F(3, 170) = 3.265$ ,  $p = .023$ ,  $f^2 = .057$ ; Table 4). The bootstrapping generated confidence interval for the interaction confirmed moderation (95% CI  $-.481$ ,  $-.082$ ). Post-hoc, simple-slope analysis revealed that only lower levels of PCR were associated with significant changes in MASC Total Scores at varying amounts of parental support ( $t(170) = 2.612$ ,  $p = .010$ ; Fig. 5). Youth who reported less use of PCR had higher anxiety with higher parental support.

The interaction between PCR and parental support on CDI was not confirmed with bootstrapping (95% CI  $-.044$ ,  $.401$ ).

#### Avoidant Coping as Moderator

Controlling for age and gender, the model testing the interaction between parent support and avoidant coping explained 23% of the variance on HA scores (Adjusted  $R^2 = .23$ ,  $F(5, 168) = 11.357$ ,  $p < .001$ ,  $f^2 = .339$ ; Table 5). Bootstrapping generated confidence interval for the interaction confirmed moderation (95% CI  $-.464$ ,  $-.006$ ). Follow-up, post-hoc analysis of the simple-slopes revealed that use of less avoidant coping changed significantly with varying levels

**Table 4** The unstandardized and standardized regression coefficients for the model testing the interaction between PCR and parent support on CDI total score, MASC harm avoidance, and MASC total score

Outcome variable	Predictor	B	SE B	$\beta$
CDI total score	Age	1.073	.293	.254***
	Gender	-3.591	1.536	-.160*
	Parent support	-.112	.075	-.108
	PCR	-4.743	1.253	-.267***
	Parent support by PCR	.172	.096	.121
MASC harm avoidance	Age	-.481	.301	-.113
	Gender	4.456	1.575	.198**
	Parent support	.259	.077	.248**
	PCR	2.241	1.285	.126
	Parent support by PCR	-.251	.098	-.176*
MASC total score	Parent support	.064	.079	.064
	PCR	-.696	1.345	-.041
	Parent support by PCR	-.294	.103	-.215**

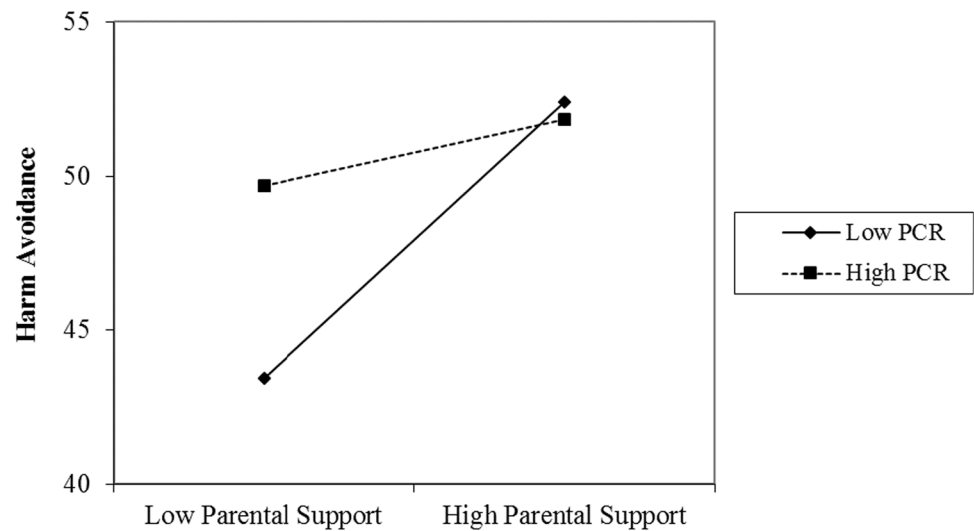
N = 174

PCR positive cognitive restructuring, MASC multidimensional anxiety scale for children, CDI children's depression inventory

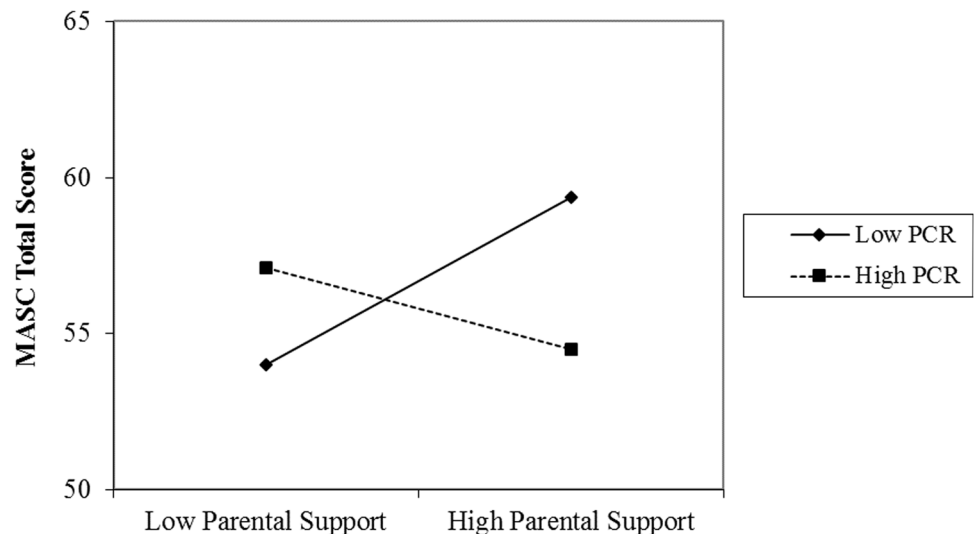
\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$



**Fig. 4** Low positive cognitive restructuring moderated the relationship between parent support and harm avoidance;  $t(168)=4.470, p<.001$



**Fig. 5** Low positive cognitive restructuring moderated the relationship between parent support and total anxiety;  $t(170)=2.612, p=.010$



of parental support ( $t(168)=4.226, p<.001$ , Fig. 6). For example, using less avoidant strategies with higher amounts of parental support was associated with higher levels of HA compared to youth with lower use of avoidant strategies and low parental support. The slope for higher avoidant coping between low and high levels of parental support was not significant.

The model testing the interaction between parent support and avoidant coping explained 9.2% of the variance on MASC total score (Adjusted  $R^2=.092, F(3, 170)=6.846, p<.001, f^2=.121$ ; Table 5). Bootstrapping generated confidence interval for the interaction confirmed moderation (95% CI  $-.666, -.203$ ). Post-hoc, simple-slope analysis revealed that youth who reported lower amounts of avoidant coping strategies and more parental

support reported more anxiety than youth with low avoidance and low parental support ( $t(170)=2.714, p=.007$ ; Fig. 7). Conversely, youth who reported higher levels of avoidance and low levels of parental support experienced more anxiety compared to youth with high avoidance and high parental support ( $t(170)=-2.057, p=.041$ ; Fig. 7). Regardless of how much avoidance youth were engaged in (low or high), when parent support was high, there were no significant differences in MASC Total scores overall, thus having high parental support was protective for high avoiders yet a risk factor for low avoiders.

The interaction between avoidant coping and parental support on CDI was not confirmed with bootstrapping (95% CI  $-.612, .542$ ).

**Table 5** The unstandardized and standardized regression coefficients for the model testing the interaction between AVOIDANT coping and parent support on CDI total score, MASC harm avoidance, and MASC total score

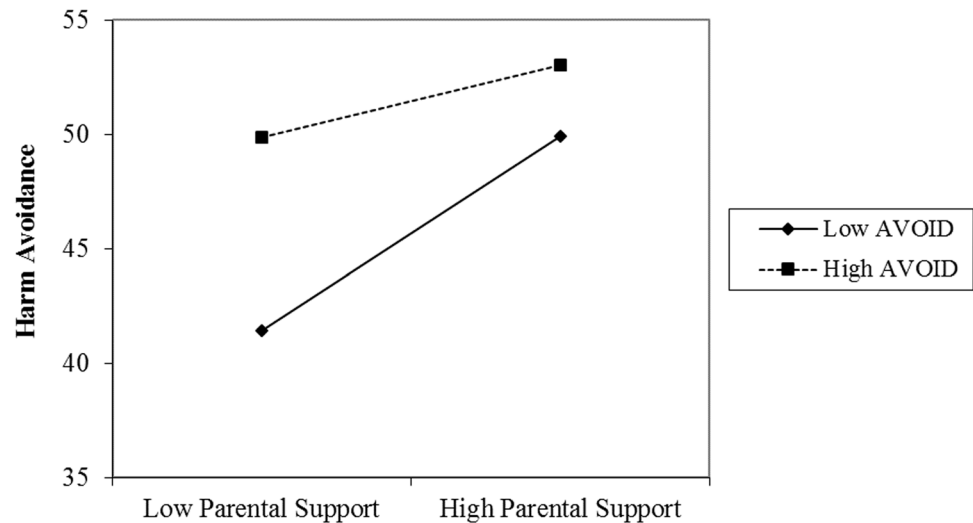
Outcome variable	Predictor	B	SE B	$\beta$
CDI total score	Age	1.048	.305	.248**
	Gender	-3.857	1.598	-.172*
	Parent support	-.236	.075	-.227***
	AVOID	2.464	1.563	.112
	Parent support by AVOID	-.076	.124	-.043
MASC harm avoidance	Age	-.479	.294	-.113
	Gender	4.736	1.544	.211**
	Parent support	.270	.072	.258***
	AVOID	5.664	1.510	.257***
	Parent support by AVOID	-.241	.120	-.136*
MASC total score	Parent support	.031	.074	.031
	AVOID	4.874	1.570	.231**
	Parent support by AVOID	-.441	.124	-.261***

N = 174

AVOID avoidant coping, MASC multidimensional anxiety scale for children, CDI children's depression inventory

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Fig. 6** Low avoidance coping moderated the relationship between parent support and harm avoidance;  $t(168) = 4.226$ ,  $p < .001$

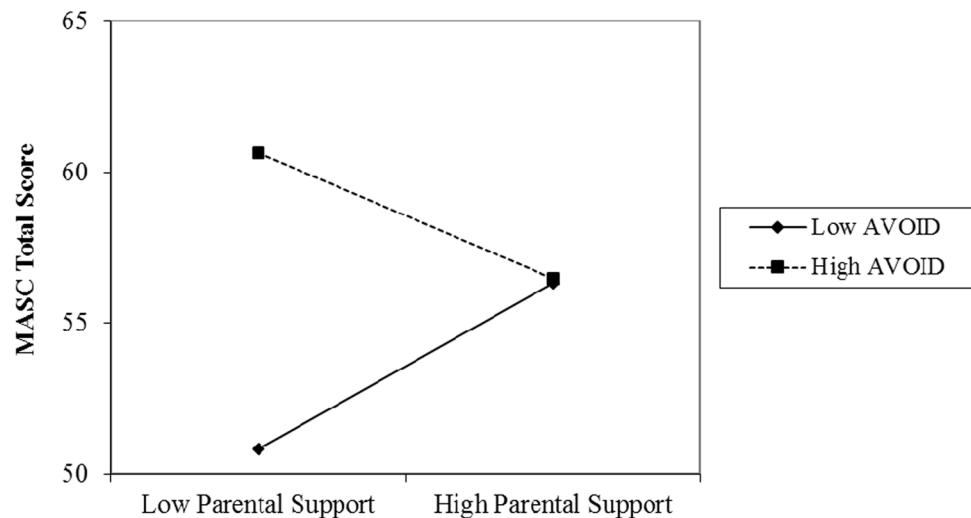


## Discussion

This study focused on the relationship between parental support, coping, and psychological symptoms and whether coping strategies moderated the relationship between parental support and anxiety and depression in a sample of clinically anxious youth. Many of the preliminary hypotheses between coping strategies and outcomes were supported. As hypothesized, parental support and active coping strategies were significantly, positively related and is consistent with previous research (Marsac, Donlon, Winston, & Kassam-Adams, 2011). Although it is difficult to understand the true nature of this relationship, it is

clear that these protective factors remain significant in a sample of anxious youth. Additionally, as predicted, avoidant coping and parental support were also significantly and positively related. This adds to support that parents may actively encourage their youth to avoid situations (Barrett et al., 1996). However, other hypotheses were not as predicted. For example, active coping strategies were associated with more HA/reassurance seeking, which is contrary to our predictions. This might suggest that youth who use these strategies may be engaging in reassurance seeking behaviors instead of managing their physiological response to stressors which supports the notion that active coping used for uncontrollable events is associated with worse anxiety (Connor-Smith, Compas, Wadsworth,

**Fig. 7** Low avoidance coping moderated the relationship between parent support and total anxiety;  $t(170)=2.714$ ,  $p=.007$ . High avoidance coping moderated the relationship between parent support and total anxiety;  $t(170)=-2.057$ ,  $p=.041$



Thomsen, & Saltzman, 2000; Wadsworth & Berger, 2006). Active coping strategies were negatively associated with depression scores, indicating these strategies were helpful in thwarting depression. As expected, the use of avoidance was significantly associated with anxiety outcomes and supports earlier evidence that avoidance is a fundamental component to increased anxiety (Gaylord-Harden & Cunningham, 2009; Houtzager et al., 2004).

Several moderating hypotheses were supported, even with an adjusted alpha level of significance, suggesting that outcomes were impacted at varying levels of parental support and coping. Despite significant interactions, none of the bootstrapping analyses confirmed support and active coping strategies on depression. Problem focused coping and PCR moderated the results between support and anxiety. Harm avoidance did not differ significantly for youth who use higher amounts PFC or PCR regardless of the amount of support by parents. However, when the use of PFC and PCR was low, youth with more parental support had significantly higher rates of HA than youth with lower support. In the absence of active coping strategies, parental support may not be helpful in lowering anxiety and is contrary to our initial hypotheses. It is possible that youth may interpret seeking reassurance as an active coping strategy, regardless of how little it is used, and thus reported engaging in this more frequently. Instead of anxious youth finding their own ways of dealing with anxiety, reassurance from parents can quickly reduce distress, and over time, youth may come to rely more heavily on their parents or caregivers to cope with their anxiety (Joiner, Metalsky, Gencoz, & Gencoz, 2001). As a result, anxious youth who seek reassurance instead of using other active strategies such as problem solving or cognitive restructuring may experience more anxiety over time (Varela, Sanchez-Sosa, Biggs, & Luis, 2009). By offering immediate assistance or support in response to their child's distress, parents unintentionally send messages that

they do not believe their child can solve problems on their own, and therefore the child seeks reassurance from parents (Simpson, Suarez, & Connolly, 2012) and/or continuously believe events are worthy of being feared and therefore avoided. Additionally, parents may not actively encourage their children to use cognitive strategies (i.e. exploring the likelihood of negative events occurring) and instead, may simply provide reassurance or remove them from the anxiety producing situation as these may be quicker solutions. Furthermore, Vasey and Dadds (2001) point out that parents who are overprotective (e.g. alerting their child to potential environmental dangers), create a bias towards thought processes that are maladaptive, leading their children to rely on reassurance seeking behaviors. Therefore, even with high parental support, youth using less PFC or PCR may have a skills deficit when it comes to using coping strategies that ameliorate their anxiety, particularly HA.

Avoidant coping strategies moderated the relationship between parent support and HA and overall anxiety, where youth who reported engaging in lower amounts of avoidance differ significantly in HA and anxiety between high and low levels of parental support. These findings are contrary to earlier results that indicated the greatest protective effect on outcomes from avoidant coping was maternal support (Gomez & McLaren, 2006). Thus, our study revealed that engaging in less avoidance coping when parent support was high was associated with more reassurance seeking (HA) versus when parental support was low. This suggests that parents may be encouraging avoidance, which youth are interpreting as supportive. Another explanation for the increase in anxiety with less avoidance and more support is that parents who provide large amounts of support may be providing support that reinforces the need for their child to seek reassurance. This was consistent with previous research where youth were found to increase avoidant behaviors after consulting with their parents about ambiguous, anxiety producing situations (Barrett

et al., 1996). These results were also consistent with predictions based on the theoretical underpinnings of avoidance and reassurance seeking and their link to greater levels of anxiety (Barlow, 2002) as well as the role that parents may have in the development of anxiety in youth (Simpson et al., 2012). Thus, results from this study indicate that avoidant coping may be a risk factor for higher levels of anxiety in a sample of clinically anxious youth and its impact may impact anxiety more strongly when youth perceive higher parental social support. Therefore, parents may be encouraging/supporting their children in ways that are not helpful or productive to overcome anxiety and HA, particularly if success is not apparent (Elliot & Church, 1997).

Finally, results revealed that youth using more avoidant coping strategies with more parental support reported significantly less anxiety than those who reported more avoidant coping strategies and less parental support. Thus, receiving higher amounts of parental support actually protected youth from worse anxiety when youth used more avoidant strategies. Parents may be encouraging them to solve problems in other ways instead of avoidant strategies to cope with their anxiety or the avoidant strategies they used were seen as protective (i.e. avoiding violent neighborhoods; Gaylord-Harden, Cunningham, Holmbeck, & Grant, 2010); thus these youth may have more coping strategies overall to deal with their distress. Furthermore, youth who were high avoiders with limited parental support reported the most anxiety, suggesting that youth who resort to avoidance in the absence of support, experience higher levels of anxiety. This may be due to an overall lack of appropriate coping strategies to deal with stressful events or having parents who modeled avoidance.

Youth who reported lower amounts of avoidance had more anxiety when parental support was high compared to when support was low, indicating that parental support here may place youth at risk for anxiety. Perhaps parents are encouraging their children to use other strategies, thus are reporting they use less avoidance and as a result of using other strategies, they still experience more anxiety. It is unclear with this study whether anxious youth are using other strategies to cope with stress and as indicated earlier, finding whether certain coping strategies suppress other strategies (Gaylord-Harden et al., 2010) or whether certain coping strategies are used for certain stressors (Ellis, Bianchi, Griskevicius, & Frankenhuis, 2017), indicating a more situational evaluation of coping is needed.

### Implications for Practice

This study highlights the specific role parental support has on the use of active and avoidant coping strategies in anxious youth and their relationship to psychological outcomes. As such, several practice implications need to be considered.

Clinicians should help parents develop skills that support their child to cope behaviorally with stressors and help parents learn ways to challenge their child's negative cognitions, both of which are empirically supported in the treatment of anxiety in youth (Kendall et al., 1997; Kendall & Treadwell, 2007). This should include working with parents directly on providing the appropriate levels of support to their anxious child with the goal to reduce anxiety levels and reassurance seeking behaviors in youth. Also, helping parents and youth recognize that coping flexibly with stressful events may be important when dealing with a variety of stressors as flexibility is needed for coping with a myriad of stressors (Davis & Humphrey, 2012). Furthermore, from an adaption-based approach (Ellis et al., 2017), it is important to understand how youth's coping has been helpful and build on these strategies as appropriate. Longitudinal studies are needed to determine whether these types of interventions support changes in coping strategies.

Furthermore, this study supports the need for clinicians to help anxious youth develop active coping strategies that are taught in anxiety treatment manuals (Kendall et al., 1997). Longitudinal studies that specifically address changes in coping strategies following (or even during) treatment with these manuals are needed to help elucidate how coping strategies change as a result of these empirically supported interventions. Findings also point to the additive effects of internal and external resources on youth outcomes and the importance of tailoring treatment approaches to the types of challenges experienced by youth (e.g. anxiety versus depression).

### Limitations and Future Directions

The limitations of this study need to be highlighted. This study did not consider whether these youths received support from other sources. Understanding whether receiving support from others besides parents or caregivers (i.e. peers or teachers) should be the focus of further research as these other sources may have more salience at different developmental periods than support from parents. However, because parents have an integral role in the development and maintenance of anxiety in youth, this study allowed us to examine coping and support within a sample of anxious youth and determined the specific relationship parental support has on coping and psychological outcomes in anxious youth. Furthermore, this study highlighted that support received by anxious youth from their parents is not always a protective factor as commonly thought (Wadsworth & Compas, 2002).

A second limitation includes not considering whether youth using various coping strategies (high or low amounts) were also engaged in other coping strategies when they reported higher levels of parental support and less overall anxiety. This is particularly important considering that youth in this study

who used the highest amounts of avoidant coping strategies with high parent support had lower anxiety. This may suggest that other coping strategies may be at play when coping with stressful events and it will be important to determine which coping strategies are the most protective for anxious youth. This may also account for the small levels of explained variance for some models in this study. Therefore, future studies should consider whether suppressor effects of other coping strategies can account for less anxiety in these youth (Gaylord-Harden et al., 2010). Additionally, there may be other issues that lead to changes in psychological outcomes (self-efficacy and positive outlook on the future; O'Neal & Cotton, 2016) that were not addressed in this study that may have also been associated with low explained variance in certain analyses.

As this was a cross-sectional study, cause-effect, possible reciprocal relationships between parental support, coping strategies, and outcomes could not be determined. However, these results offer a promising platform for future research to determine the reciprocal relationship between youth who use HA (reassurance seeking) and whether this, in turn, leads to parents who encourage child avoidance or vice-versa. This study did, however, show that parental support in anxious youth may not support previous studies on its overall protective effect against anxiety and depression and longitudinal treatment studies need to help elucidate whether support and/or coping strategies change over time. Furthermore, youth in urban settings are dealing with stressors related to community violence and thus seek support and reassurance from parents that is adaptive to interacting with these environments. Coping strategies may not be used in isolation, thus research to determine how youth use coping strategies flexibly as stressors change is of utter importance for understanding anxious youth. Being able to help youth build on strategies already used can set the stage for successful treatment.

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## Compliance with Ethical Standards

**Conflict of interest** The authors have no conflict of interest to report.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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