BULLYING, SOCIAL SELF-EFFICACY, AND SOCIAL COMPETENCE IN ANXIOUS YOUTH: MODERATORS AND MEDIATORS OF CBT

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

THE GRADUATE SCHOOL OF APPLIED AND PROFESSIONAL PSYCHOLOGY

OF

RUTGERS,

THE STATE UNIVERSITY OF NEW JERSEY

BY

LAUREN HOFFMAN, PSY.M.

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF

DOCTOR OF PSYCHOLOGY

NEW BRUNSWICK, NEW JERSEY OCTOBER 2016

APPROVED: 

Brian C. Chu, Ph.D.

Maurice J. Elias, Ph.D.

DEAN: 

Stanley B. Messer, Ph.D.
Abstract

Anxiety disorders in youth are associated with a range of psychosocial difficulties, including peer bullying. Though there is evidence to support the use of cognitive-behavioral therapy (CBT) to treat youth anxiety, little research has examined the impact of bullying on treatment. This study examined a sample of youth who received CBT for anxiety at an outpatient specialty research clinic. It was hypothesized that bullying and bullying-related impairment would moderate treatment outcome, such that bullied anxious youth and those with higher bullying-related impairment would respond less well to treatment. The study also posited that social self-efficacy and social competence would mediate treatment effects and that the indirect effect of social competence would be moderated by bullying (i.e., stronger for bullied youth). Hostile intent served as a comparison mediator and was hypothesized to not significantly mediate treatment effects. Participants (n = 52; age M =15.29 years, SD = 4.19, range = 8-25) were interviewed using a questionnaire that retrospectively assessed for bullying at the time of treatment intake. Youth diagnostic and symptom measures were completed at pre- and post-treatment assessments. Almost 40% of the sample endorsed being bullied in the school year of treatment initiation. Bullying did not moderate treatment outcome. However, among those who were bullied, highly anxious youth who also had high bullying-related impairment had poorer response to treatment. There were no indirect effects of social self-efficacy or social competence on treatment outcome, and the indirect effect of social competence was not moderated by bullying. Surprisingly, change in hostile intent emerged as the only significant mediator of change. Overall, results indicate that bullying is common among anxious, treatment-seeking youth. Results also suggest that bullying can impact response to CBT, depending upon degree of
initial anxiety and bullying-related impairment. Findings also highlight the value of addressing hostility in anxious youth. Implications for clinical practice and future research are discussed.

*Keywords*: bullying, anxiety, treatment-seeking, moderators, mediators
Acknowledgements

First and foremost, I cannot express enough gratitude for Dr. Brian Chu, who has served as my dissertation chair, faculty advisor, professor, and clinical supervisor. Most importantly, Brian has been (and continues to be) a mentor who never ceases to provide new challenges along with endless support, guidance, and a corny joke or two. I will always cherish my time as a student in the Youth Anxiety and Depression Clinic (YAD-C) and will forever be grateful that I had the fortune to begin my professional training under his mentorship. I would also like to thank all of the YAD-C lab members for creating such a supportive and fun atmosphere in which to work. A special thanks goes to Alicia Fenley and Hayley Fitzgerald for devoting countless hours to making this project possible, as well as to Christopher Wyszynski for always being open to providing clarification and reassurance about my statistics. I am also thankful for Dr. Maurice Elias, who first opened my eyes to the importance of addressing school-based concerns in youth and the value of systems-wide interventions. Thank you for serving on my dissertation committee and for providing helpful insights and encouragement.

To my fellow GSAPPers and favorite soon-to-be psychologists, thank you for being a constant source of support, encouragement, and laughter. Your enthusiasm, dedication, and skills have energized and inspired me along the way. I am proud to call each of you my colleagues and look forward to continuing to learn from you in the years to come.

Finally, I would like to thank my family for being the greatest cheerleaders any daughter or sister could hope for. Words cannot express my appreciation for your endless belief in me, your willingness to listen to me talk about psychology on vacation, and your constant support of my professional dreams and goals. Thank you for being by my side for every step of this journey.
TABLE OF CONTENTS

ABSTRACT ........................................................................................................................................... ii

ACKNOWLEDGEMENTS ........................................................................................................................ iv

LIST OF TABLES .................................................................................................................................... vii

LIST OF FIGURES ................................................................................................................................. viii

INTRODUCTION ..................................................................................................................................... 1

CBT for Anxiety ......................................................................................................................................... 2

How Bullying May Complicate Clinical Presentations ........................................................................... 3

Potential Mediators of Treatment for Anxious Youth ............................................................................. 5

Potential Mediators of Treatment for Bullied Youth .............................................................................. 7

Next Steps: Moderation, Mediation, and Moderated Mediation Analyses ............................................ 10

Current Study ......................................................................................................................................... 11

METHOD ............................................................................................................................................... 12

Participants ............................................................................................................................................. 12

Measures ................................................................................................................................................ 13

Procedures ............................................................................................................................................ 17

Analytic Overview .................................................................................................................................. 18

RESULTS .............................................................................................................................................. 20

Frequency and Type of Bullying Reported ............................................................................................... 21

Relationship Between Bullying and Pre-Treatment Clinical and Demographic Variables .................... 21

Bullying as a Moderator of Treatment Outcome ..................................................................................... 23
LIST OF TABLES

1. Bivariate correlations among pre-treatment symptoms, hypothesized mediators, and bullying-related impairment ...................................................50

2. Pre-treatment clinical and demographic characteristics across bullied and non-bullied youth ........................................................................51

3. Raw scores for symptoms and mediator variables across non-bullied youth, bullied youth, and time.................................................................52

4. Bootstrapping indirect effects and confidence intervals for mediation and moderated mediation results .................................................................53
LIST OF FIGURES

1. Hypothesis 1: Exposure to bullying would moderate treatment effects (i.e., youth- and parent-reported anxiety and mood symptoms) such that bullied anxious youth would experience worse treatment outcomes than non-bullied anxious youth………………54

2. Hypothesis 2: Exposure to bullying would only moderate treatment effects for youth with fewer friends at treatment intake (i.e., moderated moderation)…………………………55

3. Hypothesis 3: Bullying-related impairment would moderate treatment effects (i.e., youth- and parent-reported anxiety and mood symptoms) such that bullied youth who report high levels of social and total impairment would experience worse treatment outcomes than those who report low levels of impairment……………………………………56

4. Hypothesis 4: In a multiple mediator model, improvements in social competence and social self-efficacy (residualized change scores from pre- to post-treatment) would mediate the relationship between pre- and post-treatment anxiety and mood symptoms. ……………………………57

5. Hypothesis 5: Improvements in social competence (residualized change scores from pre-to post-treatment) would be a moderated mediator of treatment effects, such that the mediating effects of social competence in explaining treatment gains would be stronger for bullied anxious youth than for non-bullied anxious youth. …………………58

6. CONSORT diagram depicting recruitment efforts and sample selection………59

7. Rates of bullying reported by children, teens, and the total sample…………………60

8. Percent of youth who experienced each type of bullying behavior at least two or three times per month across children, teens, and the total sample……………………61

9. Bullying as a moderator of total anxiety symptoms from pre- to posttreatment……62

10. Bullying-related social impairment as a moderator of total anxiety symptoms from pre- to posttreatment……………………………………………………………………………………………………63

11. Social competence, social self-efficacy, and hostile intent: A multiple mediator model………………………………………………………………………………………………64
Introduction

Anxiety disorders, such as Generalized Anxiety Disorder (GAD), Social Anxiety Disorder (SOC), Separation Anxiety Disorder (SAD), Obsessive Compulsive Disorder (OCD), and Panic Disorder (PD) affect approximately 12% of children and adolescents (hereafter referred to as youth; Costello, Egger, Copeland, Erkanli, & Angold, 2011). Anxiety disorders are associated with significant cognitive, physiological, and emotional distress and predict high rates of mood disturbances, substance abuse problems, and suicidal behavior (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Essau, Conradt, & Petermann, 2000; Woodward & Fergusson, 2001). Further, anxious youth experience impairment in academic functioning (e.g., poor performance), social adjustment (e.g., limited social networks), and family relationships (e.g., sibling/parental conflict; Langley, Berman, McCracken, & Piacentini, 2004; Roblek & Piacentini, 2005). Thus, identification and treatment of anxious youth is a critical health issue that warrants continued research attention.

Anxiety in youth has also been associated with peer bullying (Hawker & Boulton, 2000; Reijntjes, Kamphuis, Prinzie, & Teich, 2010), defined as, “exposure, repeatedly and over time, to negative or aggressive acts on the part of one or more other students” (Olweus, 2010, p.11). Victims of bullying are three times more likely than non-victims to experience an anxiety disorder directly following the incident (Hawker & Boulton, 2000; Kumpulanien Rasanen, & Purra, 2001) and are at heightened risk to develop anxiety disorders later in adolescence and adulthood (Gladstone, Parker, & Malhi, 2006; Hanish & Guerra, 2002; Schwartz, Lansford, Dodge, Pettit, & Bates, 2015; Sourander et al., 2007). Furthermore, between 35% and 92% of adults diagnosed with anxiety disorders report that they were victims of bullying as children (McCabe, Antony, Summerfeldt, Liss, & Swinson, 2003). In truth, the relationship between
bullying and emotional distress is likely reciprocal in nature (Crawford & Manassis, 2011; Cluver, Bowes, & Gardner, 2010; Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vanhorick, 2006; Nishina, Juvonen, & Witkow, 2005; Reijnjtes, Kamphuis, Prinzie, & Telch, 2010). Youth with primary anxiety problems are typically inhibited, withdrawn, and sensitive and tend to respond to stressors in an avoidant and/or submissive manner (Gomez & McLaren, 2006; Hodges, Boivin, Vitaro, & Bukowski, 1999; Taylor & Stanton, 2007). Unfortunately, those temperamental and behavioral factors place anxious youth at particular risk to be bullied by aggressive youth, particularly by those who may view the anxious youth as unlikely or unable to defend themselves. In turn, as victimization often leads to increases in fear and avoidance (Hawker & Boulton, 2000), the youth’s anxiety disorder and risk for continued victimization are maintained. Thus, anxiety problems appear to be both a consistent consequence of bullying as well as a significant predictor for future victimization. Given the increased presence of bullying in anxious populations, it is important to understand how anxiety-focused psychological interventions address instances of bullying and how treatment outcomes are affected by bullying.

**CBT for Anxiety**

Research supports the use of cognitive-behavioral therapy (CBT) to treat youth anxiety (e.g., Barrett, Dadds, & Rapee, 1996; Kendall et al., 1997; Manassis et al., 2002; Silverman, Pina, & Viswesvaran, 2008). CBT approaches assume that both cognitive and behavioral processes maintain particular problems and that changes in these mechanisms (e.g., changing negative thinking, increasing approach-oriented coping) underlie symptom change (Brewin, 1996). Well-established CBT interventions for youth anxiety, such as the Coping Cat (Kendall & Hedtke, 2006), aim to reduce distress and change maladaptive behavioral patterns by employing the following core techniques: affective education, behavioral relaxation, cognitive restructuring,
problem solving, and imaginal and in vivo exposure (Kendall, Chu, Pimentel, & Choudhury, 2000). Additional CBT techniques that are utilized throughout treatment include modeling, role-play, contingency management, and behavioral parent training (Kendall, Chu, Pimentel, & Choudhury, 2000). CBT interventions for anxiety are empirically supported (Kendall et al., 1997; James, James, Cowdrey, Soler, & Choke, 2013) and gains have been maintained up to 7.4 years following treatment (Kendall, Flannery-Schroeder, Safford, & Webb, 2004). However, despite our knowledge of the co-occurrence of anxiety and bullying, there is limited research that examines the impact of bullying in altering clinical presentations, treatment outcomes, or treatment processes for anxious youth.

**How Bullying May Complicate Clinical Presentations**

Peer victimization can impact clinical presentations of anxious youth in multiple ways. Bullied anxious youth may present with greater symptom severity, more intractable problems, or more complex social histories than non-bullied anxious youth. One longitudinal study (Fisher et al., 2012) revealed that exposure to frequent bullying predicted higher rates of self-harm, even after controlling for preexisting emotional and behavioral problems, lower IQ, and family environmental risk factors (e.g., poverty, parental psychopathology, domestic violence). In addition, Arseneault (2006) assessed a nationally representative birth cohort of 2,232 youth and reported that victims of bullying showed more internalizing problems and unhappiness at school at age seven, even after controlling for preexisting adjustment problems at age five. Further, Copeland’s (2013) Finish cohort study assessed youth between age 9 and age 26. This study revealed that female victims of bullying were at higher risk for psychopathology and suicidality, even after controlling for childhood emotional and behavioral problems and family hardships. Taken together, these studies suggest that bullying is a particular risk factor for emotional
BULLYING AS A MODERATOR OF TREATMENT EFFECTS

maladjustment. Although prior research has not focused exclusively on anxious populations, the evidence suggests that exposure to bullying may complicate a youth’s initial clinical presentation and potentially add challenges in the treatment process. Research is mixed regarding the predictive impact of comorbidity and initial symptom severity on treatment response (Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008; Ollendick, Jarrett, Grills-Taquechel, Hovey, & Wolff, 2008). Still, it is feasible that the additional complications associated with being bullied may lead to worse treatment outcomes following a standard course of CBT for anxiety.

Treatment may also be impacted by the functional impairment and behavioral responses that arise secondary to being bullied. In addition to increased anxiety, being bullied is also associated with subsequent school avoidance (Buhs, Ladd, & Herald, 2006), lower academic achievement (Glew, Fan, Katon, Rivara, & Kernic, 2005), poorer friendship quality (Nansel et al, 2001), and increased family conflict (Holt, Kaufman Kantor, & Finkelhor, 2008). Indeed, one recent study (Johns, 2015) found that the frequency of bullying was strongly associated with impairment in family relations, social relations, school performance, and psychological functioning domains. Thus, in addition to exposure to bullying in and of itself, high levels of bullying-related functional impairment may also predict clinical characteristics and response to treatment.

However, important protective factors have been identified that may attenuate the impact of victimization. For example, the presence of a reciprocal and supportive friend has been found to buffer the psychological consequences of bullying. Hodges and colleagues (1999) conducted a longitudinal study of almost 400 4th and 5th graders. These authors found that being bullied did indeed predict increases in internalizing problems, but only for youth without at least one
reciprocal friendship. In fact, having a best friend completely eliminated the effects of being bullied on predicting internalizing difficulties (Hodges, Boivin, Vitaro, & Bukowski, 1999). It is hypothesized the protective effect derives from the added companionship, intimacy, and emotional support a best friend provides (Bukowski, Hoza, & Boivin, 1994), in addition to the opportunities friendships provide to enhance social skills and self-esteem (Crawford & Manassis, 2011). Thus, the presence of a supportive best friend may protect bullied youth from the isolation and rejection that contributes to increased risk for more severe psychopathology, maladjustment, and potential treatment challenges. As a result, it may be important to assess for certain protective factors when evaluating treatment-seeking youth and making projections about prognosis.

**Potential Mediators of Treatment for Anxious Youth**

Recent research has emphasized the importance and utility of identifying mediators and mechanisms of change in evidence-based treatments (Chu & Harrison, 2007; Kazdin & Nock, 2003; Weersing & Weisz, 2002). An evidence base is emerging that supports behavioral, physiological, cognitive, and coping variables as potential mediators of treatment gains (Chu & Harrison, 2007). However, while several studies assess for and report outcomes for process variables (e.g., social skills, self-esteem, anxious self-statements), very few studies have formally tested for mediation in order to clarify the mechanisms through which CBT exerts its effects (Chu & Harrison, 2007; Prins & Ollendick, 2003). Even less attention has focused on specific change mediators for sub-populations of clinical groups. CBT for anxiety may work through different mechanisms when youth have been exposed to frequent bullying.

**Social self-efficacy as a mediator of treatment for all anxious youth.** Social self-efficacy is a process variable that is of particular interest to the current study. Increasing one’s
self-efficacy, that is, one’s sense of competence in mastering a feared situation, is considered among the most robust results of successful treatment for anxiety (Muris, 2001). Thus, improvements in self-efficacy may be seen as an important treatment process for all anxious youth, regardless of exposure to bullying. Social self-efficacy in particular is defined as one’s perceptions about his or her ability to initiate and maintain interpersonal relationships (Smith & Betz, 2000). Specifically, social self-efficacy encompasses one’s confidence in his or her ability to effectively develop friendships, assert oneself, negotiate interpersonal conflict, and interact in groups (Muris, 2001). While social self-efficacy has not yet been studied as a treatment process for anxious youth, previous research supports other cognitive variables (e.g., negative self-statements, anxious cognitions) as important treatment mediators (Kendall & Treadwell, 2007; Treadwell & Kendall, 1996). In addition, low social self-efficacy has consistently been associated with high levels of anxiety in youth (Kashdan & Roberts, 2004; Matsuo & Arai, 1998).

Further, there is empirical support linking exposure to bullying and lack of social self-efficacy (Egan & Perry, 1998; Erath, Flanagan, Bierman, & Tu, 2010; Kokkinos & Kipritsi, 2012). Specifically, Muris (2001) found that victimization was negatively correlated with overall self-efficacy as well as specific academic, social, and emotional self-efficacy. Further, Egan & Perry (1998) found that low self-efficacy for assertion, an aspect of social self-efficacy, predicted future bullying over time. In addition, Singh & Bussey (2011) found that self-efficacy for proactive social behavior (e.g., support seeking, assertiveness) partially explained the relationship between victimization and social anxiety. Thus, increasing social self-efficacy may be an important treatment process for all anxious youth, including those who have been bullied.
Potential Mediators of Treatment for Bullied Youth

Specific mediators of treatment for bullied youth have not yet been formally tested. However, targeted interventions for victims of bullying have been developed that highlight potentially important treatment processes. For instance, DeRosier’s (2004) Social Skills Group Intervention was designed for third graders experiencing peer dislike, bullying, or social anxiety. This treatment focused on building basic behavioral and cognitive skills, reinforcing prosocial attitudes and behavior, promoting adaptive coping strategies for social problems, and social responsibility training. Results revealed increased peer liking, enhanced self-esteem, improved social self-efficacy, and decreased social anxiety compared to controls. Fox and Boulton’s (2003) Social Skills Training program for victims of bullying targeted similar mechanisms and taught youth skills related to social problem solving, relaxation, and assertiveness. Their findings suggested increases in global self worth compared to the control group, though no other significant improvements in social skills or victim status were reported. Lastly, Berry and Hunt (2009) developed an intervention for anxious adolescent boys who were also bullied at school. This 8-session treatment included anxiety management strategies such as psychoeducation, cognitive restructuring, and exposure, in addition to providing education about bullying and targeting social skills. Results suggested that this treatment was effective in reducing bullying experiences and decreasing anxiety, depression, and distress associated with being bullied. However, no effects were found for changing aggressive or avoidant responses to bullying situations.

Overall, targeted interventions for bullied youth exist and have successfully impacted important outcomes. These interventions target cognitive and behavioral mediators that are similar to well established CBT interventions for anxiety (e.g., the Coping Cat). However, the
strong emphasis on social relationships suggests that improvement in this area may be a vital treatment process for bullied youth.

**Social competence as a stronger mediator of treatment for bullied anxious youth.**

Research is mixed regarding the relationship between youth anxiety disorders and social competence. Some studies that considered all anxiety disorders together reported that children with anxiety disorders were less liked by peers, had fewer friendships, and were rated by parents and teachers as more socially impaired than youth without anxiety disorders (Chansky & Kendall, 1997; La Greca & Lopez, 1998; Strauss, Lease, Kazdin, Dulcan, & Last, 1989). In addition, Beidel and colleagues (1999) found that youth with SOP were less socially skilled and lonelier than their non-anxious peers. However, more recent studies that compared interpersonal functioning across distinct anxiety disorders suggest that peer difficulties may not be a common feature of all youth anxiety disorders. For instance, Verduin and Kendall (2008) found that lower scores of peer liking were only significantly associated with a SOP diagnosis; youth diagnosed with GAD or SAD were not significantly less liked than non-anxiety disordered youth. Further, Scharfstein and colleagues (2011) compared the peer relationships of youth with GAD, SOP, and healthy controls. These authors found no significant differences between the three groups for likelihood of having a best friend, difficulty keeping friends, participation in groups or clubs, or overall social problems (e.g., being dependent, lonely, jealous). Thus, it appears that peer difficulties may not be a universal feature of all youth anxiety disorders.

In contrast, one of the most robust findings in recent literature is that bullied youth experience significant social skills weaknesses and social difficulties. According to peer-, teacher-, and self-report, victims of bullying are more likely than non-victims to “hover” rather than enter peer groups directly (Pierce, 1990), to engage in withdrawn and solitary behaviors
(Schwartz, Dodge, and Coie, 1993), and to display provocative behaviors (Fox & Boulton, 2003). In addition, bullied youth are less likely to have friends than non-bullied youth (Bukowski, Hoza, & Boivin, 1994; Hodges, Boivin, Vitaro, & Bukowski, 1999; Smith, Talamelli, Cowie, Naylor, & Chauhan, 2004) and are more likely to experience peer rejection and dislike (Hanish & Guerra, 2002; Scholte, Engels, Overbeek, de Kemp, & Haselager, 2007). Bullied youth are also more likely than non-bullied youth to be rated within the deviant range on measures of social competence (Sourander et al., 2000). Importantly, individual and social risk factors appear to interact in predicting victimization and the resultant emotional distress. Indeed, anxious youth who are disliked by their peers, have fewer friends, or have friends who are incapable of protecting or defending them are at particular risk for being bullied and for experiencing subsequent emotional problems (Crawford & Manassis, 2011; Hodges et al., 1997; Hodges, Boivin, Vitaro, & Bukowski, 1999).

Few studies have examined the impact of CBT for anxiety on improving social competence (i.e., number of friends, time spent with friends, engagement in extracurricular activities, behavior with other children). Still, one can conceive that a treatment that increases time spent with peers and/or extracurricular participation may provide youth with opportunities to learn about social norms, practice appropriate social skills, showcase skills that may be less obvious in an academic setting, and form friendships outside of the classroom configuration (Leadbeater, 2008; Sandstorm & Coie, 1999). Thus, while improvements in social competence are likely important for all anxious youth, such improvements seem to be especially essential for bullied anxious youth, who are more likely to be socially isolated, withdrawn, and lonely. In addition, due to the reciprocal nature of bullying and internalizing symptoms, social difficulties
are more likely to be implicated in bullied youth’s anxious presentations than those of non-bullied anxious youth.

**Next Steps: Moderation, Mediation, and Moderated Mediation Analyses**

Despite our knowledge of the ways in which bullying may complicate the clinical picture and respond to unique treatment processes, there is little research that examines the impact of bullying on treatment outcomes and treatment mediators. To address these questions, the current study employed moderation and moderated mediation analyses in a sample of youth who received CBT for anxiety. Treatment moderators, which specify for whom or under what conditions the treatment works, suggest to clinicians which of their patients might be most responsive to treatment and which of their patients might benefit from other, more appropriate treatments (Kraemer, Wilson, Fairburn, & Agras, 2002). Moderators may also identify subpopulations that present with different causal mechanisms and/or courses of illness. Thus, moderators provide valuable information to guide treatment planning and clinical decision making (Kraemer, Wilson, Fairburn, & Agras, 2002).

Treatment mediators specify the mechanisms through which given effects occur (Baron & Kenny, 1986; Holmbeck, 1997; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). It is essential to identify mediators in order to refine treatment development to maximize the potency, efficacy, and efficiency of psychotherapies (Kazdin & Nock, 2003; Kraemer, Wilson, Fairburn, & Agras, 2002; Weersing & Weisz, 2002). Further, identifying mediators may also improve our understanding of the nature of clinical problems and the important processes that are implicated in the maintenance of such problems. To date, research on CBT for youth anxiety has revealed behavioral, physiological, cognitive, and coping mediators of change (Chu & Harrison, 2007; Prins & Ollendick, 2003; Weersing & Weisz, 2002). However, research is limited
regarding the conditions under which such mediation occurs. Thus, it is important to investigate moderated mediation models (James & Brett, 1984), which specify whether the strength of a given mediator varies depending on circumstances (Preacher, Rucker, & Hayes, 2007).

**Current Study**

The current study explored the impact of bullying on treatment effects for youth who received CBT for anxiety. A special focus was on the moderating impact of bullying and related impairment, in addition to the specific mediators that explain treatment effects. Several hypotheses were examined:

1. Exposure to bullying was hypothesized to moderate treatment effects (i.e., youth- and parent-reported anxiety and mood symptoms) such that bullied anxious youth would experience worse treatment outcomes than non-bullied anxious youth (Figure 1).

2. The above moderation would be further moderated by number of friends, such that only bullied anxious youth who had fewer friends at treatment intake would experience worse treatment outcomes (i.e., moderated moderation; Figure 2).

3. Bullying-related total and social impairment would moderate treatment effects (i.e., youth- and parent-reported anxiety and mood symptoms), such that bullied youth who reported high levels of impairment would experience worse treatment outcomes than those who reported low levels of impairment (Figure 3).

4. In a multiple mediator model, improvements in social competence and social self-efficacy would mediate the relationship between pre- and post-treatment anxiety and mood symptoms, but hostile intent (a variable entered as a comparison mediator) would not mediate this relationship (Figure 4).
5. Improvements in social competence would be a moderated mediator of treatment effects, such that the mediating effect of social competence in explaining CBT outcomes (i.e., improvement in anxiety symptoms from pre- to post-treatment) would be stronger for bullied anxious youth than for non-bullied anxious youth (Figure 5).

Method

Participants

Participants were 52 individuals who sought cognitive behavioral therapy as children at a specialty anxiety research clinic. At the time of clinic intake, mean age was 11.25 years ($SD = 2.62$; range $= 7-16$). The majority of the sample attended public school (90.4%), 5.8% attended private school, 1.9% attended parochial school, and 1.9% self-described their school type as “other.” The sample was 59.6% female ($n = 31$); 80.8% Caucasian, 9.6% multiracial, 5.8% Asian American, 1.9% African American, and 1.9% self-identified as “other.” The Hollingshead’s Four Factor Index (1975), which assesses educational level, occupation, sex, and marital status, ranged from 16 to 66, with a mean of 45.05 ($SD = 12.09$), corresponding to medium business owners and minor professionals or technical workers. Assessments of bullying experiences were conducted retrospectively after participants had completed treatment at the clinic (see procedures). At the time of the bullying assessment, mean age of participants was 15.29 ($SD = 4.19$, range: $8 – 25$). The time between treatment completion and study participation ranged from seven months to eight years and eight months ($M = 4.06$ years, $SD = 2.5$ years).

At clinic intake, eligible youth met Diagnostic and Statistical Manual of Mental Disorders (4th ed.; DSM-IV-TR; American Psychological Association, 2000) criteria for a principal anxiety disorder, including generalized anxiety disorder (GAD; 34.6%), separation anxiety disorder (SAD; 17.3%), social anxiety disorder (SOC; 15.4%), panic disorder (PD;
13.5%), specific phobia (SP; 11.5%), selective mutism (SM; 5.8%), and obsessive-compulsive disorder (OCD; 1.9%). Rates of comorbidity were high; the mean number of diagnoses in this sample was 3.38 (SD = 1.65). Comorbid disorders and clinical problems included additional anxiety disorders (67.3%), school refusal (32.7%), externalizing disorders (30.8%), and mood disorders (23.1%). Youth diagnosed with mental retardation, autism spectrum disorder, psychotic disorder, and/or bipolar disorder were excluded from this study.

**Measures**

**Prospectively Collected Data.** *Anxiety Disorders Interview Schedule for Children-Child/Parent versions* (ADIS-IV; Silverman & Albano, 1996). Principal and comorbid diagnoses were assessed using the ADIS-IV, a semi-structured interview with good interviewer reliability (e.g., interviewer $k = .93$; Silverman & Nelles 1988), test-retest reliability ($r = .76$; Silverman & Eisen, 1992), and sensitivity to treatment effects (e.g., Kendall et al., 1997). Interviewers, psychology doctoral students who had been trained to reliability (Cohen’s $k > .80$ for all diagnoses), determined diagnostic profiles from parent and youth interviews. Clinician Severity Ratings (CSR) range from 0 (no impairment) to 8 (disabling impairment); a rating of 4 represents clinical threshold.

**Child Automatic Thoughts Scale** (CATS; Schniering & Rapee, 2002). The CATS is a 40-item child-report measure designed to assess frequency of negative self-statements in children and adolescents. The CATS was developed and validated on a wide age range of youth (7 – 16 years old) and found to effectively discriminate between non-clinical youth and those with clinical anxiety, depression, and behavior disorders. Confirmatory factor analyses supported four distinct but strongly correlated factors relating to automatic thoughts regarding physical threat, social threat, personal failure, and hostility. Response options include a 5-point likert scale from...
0 = “not at all” to 5 = “all the time.” The CATS has demonstrated high internal consistency for the total score and subscales ($\alpha > .85$), in addition to acceptable test–retest reliability at 1 and 3 months ($r = .91$). For this study, only total scores for the hostility subscale (10 items; e.g., “Bad people deserve to get punished”) were used. Internal consistency for the hostility subscale in this sample was high (mean $\alpha = .84$; range $.82 - .85$).

**Child Behavior Checklist (CBCL; Achenbach, 2001).** The CBCL is a 118-item parent-report scale that assesses behavioral problems and social competencies. The CBCL has broadband internalizing and externalizing factors, eight disorder specific scales (e.g., anxiety-depression), and three competencies scales (i.e., school, activities, and social). The current study examined the social competence subscale (6 items), which measures a child’s general social functioning. Previous literature has linked low social competence scores to increased bullying (e.g., Sourander et al., 2000). On that subscale, parents were asked to rate the child’s number of friends (range: “none” to “four or more”) and number of times per week the child has contact with his or her friends (range: “less than 1” to “3 or more”). Parents were also asked to rate how well the child plays and works alone and with other children (range: “worse than other children” to “better than other children”). Lastly, parents rated how active the child is in organizations, clubs, teams, or groups by listing the number of activities and rating how active the child is in each activity (range: “less active than other children” to “more active than other children”). The social competence scale can be used in a number of ways. For hypothesis 2, only the item measuring number of friends was examined. For hypothesis 3, the total social competence t-score was used. Normative data are available for the social competence scale and each item has discriminated between referred and nonreferred children. In addition, the social competence scale has high test-retest reliability ($r = .93$), interparent agreement, and internal consistency.
Revised Children’s Anxiety and Depression Scale-Child and Parent Form (RCADS-C/P; Chorpita, Yim, Moffitt, Umemo, & Francis, 2000). The RCADS-C/P is a 47-item scale whose items correspond closely to DSM-IV anxiety and major depressive disorders. Parallel parent and child versions were used. Factor analysis has yielded subscales associated with the diagnoses of interest (e.g., Separation Anxiety Disorder, Social Phobia, Generalized Anxiety Disorder, Major Depressive Disorder). The subscales have demonstrated good factorial validity, internal consistency, one-week test-retest reliability, in addition to reasonable convergent validity with other leading anxiety and depression measures (e.g., Revised Children’s Manifest Anxiety Scale, Children’s Depression Inventory; Chorpita et al., 2000). The current study examined the total anxiety score and the total depression score, which both demonstrated excellent internal consistency in this sample (mean $\alpha = .94$; range: .91 - .97).

Self-Efficacy Questionnaire for Children (SEQ-C; Muris, 2001). The SEQ-C is a 24-item self-report measure of youth self-efficacy. Factor analysis of the SEQ-C has revealed three factors: social self-efficacy, academic self-efficacy, and emotional self-efficacy. The SEQ-C asks participants to indicate how well they believe they can perform a variety of activities. Response options include a 5-point likert scale from 1=“not at all” to 5=“very well”. The SEQ-C has good reliability and internal consistency and correlates meaningfully with measures of depression and anxiety. For the current study, only total scores for the social self-efficacy subscale (8 items; e.g., “How well can you become friends with other children?”) were analyzed. Internal consistency for that subscale was adequate in this sample (mean $\alpha = .81$; range = .7 - .92).

Retrospectively Collected Measures. Olweus Bully/Victim Questionnaire (OBVQ; Solberg & Olweus, 2003)-Modified Version. Participants were interviewed using a modified
version of the OBVQ, during which they were asked about their past (oriented around their time of treatment intake) experiences with bullying (i.e., frequency and type of bullying). A shortened and revised version of this measure was used that included global assessment of being bullied, as well as nine items that assessed specific forms of bullying, including, teasing, exclusion or ignoring, rumor spreading, threatening, hitting and kicking, damaging or stealing belongings, cyberbullying, bullying of a sexual nature, and bullying related to one’s sexual minority status, race, religion, or ethnicity. Frequency of being bullied was assessed by asking respondents to indicate how often an incident occurred: (0=it did not occur; 1=occurred once or twice; 2=occurred two or three times a month; 3= occurred about once a week; 4=occurred several times a week). The OBVQ has demonstrated adequate internal consistency ($\alpha > .80$), construct validity, and criterion-related validity (Solberg & Olweus, 2003). High internal consistency was noted in this sample ($\alpha = .82$).

_Multidimensional Bullying Impairment Scale_ (MBIS, Chu, Hoffman, & Johns, Reyes-Portillo, & Hansford, 2014). Participants who endorsed any level of being bullied across any of the nine types of bullying were also interviewed using the MBIS, a measure that assesses functional impairment and behavioral responses related to bullying experiences. The MBIS is a 20-item measure, rated 0 (“not at all”) to 3 (“most of the time;” total range: 0-60). Items begin with the clause, “When you were bullied in X grade, how often did you…” and assess the frequency with which bullying negatively impacted the following four domains: family relations (e.g., parents, siblings), social relations (e.g., extracurricular participation, friendship quality), school performance (e.g., grades, attendance), and psychological functioning (e.g., self-esteem, mood). Total scores for each domain can be obtained, in addition to an overall impairment score that sums responses from all items. The current study used the total impairment score and social
impairment subscale score. The MBIS total score demonstrated strong predictive validity in a recent study, which found total functional impairment to be correlated with frequency of bullying and anxiety and mood symptoms (Johns & Chu, 2015). Strong internal consistency was noted for both the MBIS total score ($\alpha = .94$) and the social subscale ($\alpha = .8$). In addition, factor analysis provided strongest support for a single construct of functional impairment using the MBIS total score (Johns & Chu, 2015). Internal consistency for the MBIS was excellent in this sample ($\alpha > .8$ for both total score and social subscale).

**Procedures**

Youth were referred from natural community sources to a university outpatient clinic in a mid-Atlantic state for treatment related to anxiety. Youth who met criteria for a principal anxiety disorder (GAD, SOC, SAD, SP, SM, PD, OCD) then participated in an evidence-based cognitive-behavioral intervention for anxiety (i.e., Coping Cat; Kendall & Hedtke, 2006). Participants completed a comprehensive assessment battery at clinic intake and at treatment termination, including, diagnostic interviews (ADIS-IV; parent- and youth- report), RCADS-C/P (parent- and youth- report), CBCL (parent-report only), CATS (youth-report only), and SEQ-C (youth-report only).

Assessments examining participants’ experiences with bullying were conducted retrospectively after youth had completed treatment. All youth who had sought CBT between 2004 and 2014 were contacted via phone and email, provided with study information, and assessed for interest and eligibility. CONSORT Figure 6 depicts recruitment efforts and sample selection, where 188 were initially eligible and 52 comprised the final sample. Consent and assent forms were emailed to interested participants. Upon receipt of consent and assent forms, the OBVQ and MBIS were completed (as part of a larger assessment battery) via phone
BULLYING AS A MODERATOR OF TREATMENT EFFECTS

interview with the youth or young adult. At the start of the interview, participants were provided with Olweus’ definition of bullying in order to develop a consistent and standardized understanding of the term “bullying” across all participants. Participants were assessed for understanding of the definition and provided with opportunities to ask clarifying questions. Participants were then oriented to the appropriate time frame (i.e., the school year of treatment initiation) and were prompted to recall important details (e.g., names of teachers and friends, extracurricular activities) to enhance memories of that particular school year. Reminders of the appropriate time frame were also provided throughout the interview to ensure localization of the bullying assessment. The interview took between 20 – 45 minutes, including measures beyond the OBVQ and MBIS that varied depending on respondent answers. Participants were compensated with a $20 gift card. Retrospective bullying assessments and prospective clinic data (pre- and post-treatment) were then aggregated.

**Analytic Overview**

First, to examine the nature and extent of bullying in an outpatient anxiety clinic, demographic (sex, age, income, Hollingshead) and clinical (principal diagnosis, comorbidity, anxiety symptoms, depression symptoms) characteristics were computed. Means, standard deviations, ranges, and internal consistency were computed for all dimensional measures to identify outliers, skewed or kurtotic distributions, and reliability of measures.

The sample was dichotomized into “non-bullied” and “bullied” groups (non-bullied = 0, bullied = 1), where a youth was considered “bullied” if he or she experienced any of the nine specific types of bullying at least two or three times per month during the school year of clinic intake, consistent with the most commonly used definitions (Olweus, 2003; Solberg & Olweus,
T-tests and chi-square analyses were conducted to examine pre-treatment clinical and demographic differences across bullied and non-bullied youth. Moderation, mediation, and moderated mediation models were tested using a regression-based framework and bootstrapping procedures described by Preacher and Hayes (2008), along with the PROCESS macro for SPSS (Hayes & Preacher, 2013). Bootstrapping (Preacher & Hayes, 2008) is a resampling procedure that allows researchers to test moderation and mediation hypotheses in samples that are not normally distributed. Bootstrapping involves repeatedly sampling from the dataset in order to construct an approximation of the sampling distribution. Thus, bootstrapping maintains control of Type I error rate while increasing power to detect effects. Statistical significance for all models was determined by bootstrapping using 5000 resamples.

Briefly, in a simple moderation model (i.e., Figure 1; hypothesis 1), the effects of an independent variable (X) on a dependent variable (Y) depend on the value of a moderator variable (W). For example, the current study hypothesized that the effects of CBT treatment (X) on reducing anxiety symptoms (Y) [measured as the effect of time on anxiety symptoms from pre- to post-treatment] would vary depending on exposure to bullying (W), such that youth who were bullied would experience worse treatment outcomes than youth who were not bullied. This relationship was hypothesized to be further moderated by number of friends, such that bullying would only be associated with worse treatment outcomes for youth with fewer friends at treatment intake (Figure 2; hypothesis 2). In addition, total and social bullying impairment was hypothesized to moderate the impact of treatment on anxiety symptoms (Figure 3, hypothesis 3), such that youth who endorsed higher levels of bullying impairment would have worse treatment outcomes than those who reported low levels of impairment. In a simple mediation model, an
independent variable (X) exerts its effect on a dependent variable (Y) indirectly through a mediator variable (M). For instance, the current study hypothesized that CBT treatment (X) would decrease anxiety symptoms (Y) indirectly through increasing social self-efficacy and social competence (M), but that hostile intent would not mediate this relationship. To assess the relative strength of social competence, social self-efficacy, and hostile intent in mediating the impact of treatment on anxiety symptoms, all three putative mediators were entered into the same analysis (Figure 4; hypothesis 4). Moderation and mediation analyses can be combined in a moderated mediation model, which examines conditional indirect effects. Moderated mediation occurs when the strength of a given indirect effect (M) is conditional on the level of another variable (W). For instance (Figure 5; hypothesis 5), the current study hypothesized that the indirect effects of social competence (M) would vary depending on exposure to bullying (W), such that the indirect effects of social competence would be stronger for bullied youth than non-bullied youth. Detailed models and anticipated effects for each hypothesis are illustrated in Figures 1-5.

**Results**

Prior to conducting analyses, variables were inspected for outliers, skewness, and kurtosis. Variables were also examined for missing values. Across all outcome variables, missing data ranged from 9.6% to 25%. Replacements for missing data were imputed using Expectation Maximization procedures in SPSS, which uses an iterative process to determine the maximum likelihood estimate for each data point (Dempster, Laird, & Rubin, 1977).

**Frequency and Type of Bullying Reported**

Figure 7 presents the frequency of bullying experienced in the total sample and across two age groups, 7-11 years old and 12-17 years old. As noted, Olweus’ widely used definition of
bullying defines a youth as “bullied” if he or she has been bullied at least two or three times per month. For the total sample, 38.5% (n = 20) of youth were classified as “bullied” and 61.5% (n = 32) were classified as “non-bullied.” Chi square analysis revealed no significant differences in bullied/non-bullied status across age groups ($X^2(1) = 2.14, p = .16$).

Figure 8 depicts percent of youth who experienced each type of bullying behavior at least two or three times per month across children, teens, and the total sample. Being teased in a hurtful way was reported most frequently, with one quarter of the sample endorsing this type of bullying in the year of clinic intake. Being purposefully ignored or excluded was reported with the next highest frequency (23%), followed by being the subject of false rumors or lies (21.1%). Fewer youth reported being threatened or forced to do things (7.7%), bullying of a racial or sexual nature (7.6% for both), having personal belongings stolen or damaged (5.7%), and being physically bullied (5.7%). Cyberbullying was reported least frequently (3.6%). Chi square analyses revealed no significant differences across age groups in any bullying type (all $p$’s > .05). Thus, further analyses considered the entire sample together.

**Relationship Between Bullying and Pre-Treatment Clinical and Demographic Variables**

Table 1 depicts bivariate correlations among symptom, mediator, and impairment variables. An inspection of the correlations revealed that youth-reported anxiety was positively related to youth-reported depression. Youth-reported anxiety and depression symptoms were both negatively related to social self-efficacy and positively related to hostile intent and bullying-related total and social impairment. Parent-reported anxiety and mood symptoms were positively associated with each other and were positively related to youth-reported depression symptoms, but not youth-reported anxiety symptoms. Parent-reported anxiety and depression were also positively associated with bullying-related total impairment, but not social impairment. Results
indicated a lack of association between social competence and youth- or parent-reported symptoms. Putative mediator variables, social competence, social self-efficacy, and hostile intent were not significantly related to each other. The majority of significant relations were medium in magnitude, where $r$'s of 0.2, 0.5, and 0.8 equates to small, medium, and large effects (Cohen, 1988).

Table 2 presents means and standard deviations for symptoms, putative mediators, and demographic and clinical variables across bullied and non-bullied youth. While clinical cut-offs for symptoms vary according to age, in general, mean anxiety and depression scores fell below clinical thresholds (Chorpita et al., 2000). Average primary diagnosis CSR was approximately 5.7 for both bullied and non-bullied youth. Approximately 30% of bullied youth were rated in the borderline or clinical range for social competence, compared to roughly 15% of non-bullied youth. In addition, mean social self-efficacy scores for bullied and non-bullied youth were comparable to a non-clinical sample of adolescents (Muris, 2002).

T-tests and chi-square analyses were conducted to examine pre-treatment differences across groups (Table 2). Bullied youth were rated by their parents to be significantly less socially competent than non-bullied youth ($t(49) = 2.06$, $p = .05$). Further, a non-significant trend was observed such that bullied youth reported slightly higher pre-treatment anxiety symptoms than did non-bullied youth ($t(50) = -1.73$, $p = .09$). Bullied and non-bullied youth did not differ across other reports of pre-treatment anxiety or depression or across levels of putative mediators (all $p$'s > .05). Further, no significant differences were observed regarding age, gender, Hollingshead Index, number of diagnoses, primary diagnosis severity, or number of friends (all $p$'s > .05).

Among those who were bullied at least once ($n = 37$), those who were bullied more frequently (i.e. at least two or three times per month; $n = 20$) experienced significantly more bullying-
related social impairment ($t(34) = -2.51, p = .02$) and total impairment ($t(34) = -2.88, p = .007$) than those who were bullied less frequently (i.e., only once or twice; Table 2).

**Bullying as a Moderator of Treatment Outcome**

Table 3 depicts raw scores for symptom and mediator variables across non-bullied youth, bullied youth, and time. “Bullied” status was tested as a moderator of the path from pre- to post-treatment anxiety and mood symptoms (Figure 2). Multiple regression and bootstrapping procedures revealed no significant conditional effects across youth- or parent-rated anxiety (youth: $b = -.09, p = .62$; parent: $b = -.09, p = .62$) or mood (youth: $b = -.06, p = .77$; parent $b = .03, p = .89$) symptoms (e.g., Figure 9).

**Number of Friends as Moderated Moderator of Treatment Outcome**

The overwhelming majority of the sample (88.5%) reported having at least one friend at treatment intake. Specifically, per parent report, 11.5% had one friend, 55.8% had two or three friends, and 19.2% had four or more friends. Only 11.5% had zero friends. Number of friends did not significantly moderate the conditional effect of bullying on treatment outcome in a bootstrapped moderated moderator analysis (Figure 3; $b = .09, p = .6$).

**Bullying-Related Impairment as a Moderator of Treatment Outcome**

Multiple regression and bootstrapping procedures indicated that bullying-related social impairment significantly moderated the path from pre- to post-treatment youth-reported anxiety symptoms (Figure 4; $b = .06, p = .03$). Specifically, youth who presented with low levels of pre-treatment anxiety improved in CBT regardless of their bullying-related social impairment. However, of the youth who presented with high levels of pre-treatment anxiety, those with low levels of bullying-related social impairment improved much more than those with high levels of impairment (Figure 10). Demonstrating the same pattern, bullying-related total impairment
moderated the path from pre- to post-treatment youth-reported anxiety symptoms at the trend level ($b = .01$, $p = .06$). Change in parent-reported anxiety symptoms was not significantly moderated by bullying-related social ($b = .03$, $p = .24$) or total ($b = .006$, $p = .29$) impairment. In addition, bullying-related impairment did not significantly moderate change in depression symptoms per youth (social impairment: $b = .02$, $p = .49$; total impairment: $b = .006$, $p = .37$) or parent report (social impairment: $b = .02$, $p = .49$; total impairment: $b = .002$, $p = .81$).

**Social Competence, Social Self-Efficacy, and Hostile Intent as Mediators**

Multiple mediator models, which simultaneously test multiple mediators while accounting for collinearity among the variables, were used to determine if change in social competence, social self-efficacy, and/or hostile intent mediated the relationship between pre- and post-treatment anxiety and mood symptoms (Figure 4). Multiple regression and bootstrapping procedures were used via the PROCESS macro (Hayes & Preacher, 2013). For youth-reported anxiety symptoms, the overall multiple mediator model was non-significant (bootstrapped total indirect effect = -.05; 95% CI = -.17 - .02). As depicted in Figure 11, only change in hostile intent emerged as a significant and unique mediator of pre – to post- treatment youth-reported anxiety symptoms (bootstrapped indirect effect = .05; 95% CI = 0.142 - .004). There was no significant indirect effect of social competence or social self-efficacy on youth-reported anxiety symptom change. For youth-reported depression symptoms, the overall multiple mediator model was also non-significant (bootstrapped total indirect effect = -.02; 95% CI = -.15 - .05) and no significant indirect effects were found. In addition, none of the three variables significantly mediated the path from pre- to post-treatment parent-reported anxiety or depression symptoms. Mediation results are summarized in Table 4. All results remained the same when all three mediators were examined in separate models.
Conditional Indirect Effects of Social Competence

The conditional indirect effects of social competence were examined using multiple regression and bootstrapping procedures via the PROCESS macro (Hayes & Preacher, 2013; Figure 5). Moderated mediation models indicated that the indirect effects of social competence were not significantly moderated by bullied status (all p’s > .05 for youth- and parent-reported anxiety and mood symptoms). Results for mediation and moderated mediation models are depicted in Table 4.

Discussion

Overview

The current study examined a sample of youth who received CBT for anxiety at an outpatient specialty research clinic. The study retrospectively assessed participants’ experiences of being bullied around the time of treatment initiation. The overall aim of the study was to determine the impact of bullying and related impairment on treatment outcome (i.e., anxiety and mood symptom reduction). A special focus was on examining unique mediators that explain treatment effects, particularly for youth who had been bullied. Results confirmed that being bullied is common among youth who experience clinically significant anxiety. Results further indicated that significant bullying experiences can have considerable impact on response to CBT, depending upon the level of functional impairment associated with being bullied and severity of initial anxiety symptoms. Contrary to expectations, change in hostile cognitions emerged as the only significant mediator of symptom change and change in social competence was not a stronger mediator for bullied compared to non-bullied youth.

Frequency and Type of Bullying Reported
Almost 40% of the sample was classified as “bullied” (i.e., bullied at least two or three times per month in the school year of treatment initiation). One quarter of the sample reported being teased in a hurtful way, followed by 23% indicating being purposefully excluded or ignored, and 21% endorsing being the subject of false rumors or lies. Other types of bullying (e.g., physical bullying, cyberbullying, personal belongings stolen, etc.) were reported less frequently, but were endorsed by some participants (range: 3.6% - 7.7%). Results generally suggested that bullying in a treatment-seeking sample was pervasive and diverse in nature, confirming previous research documenting the co-occurrence of bullying and anxiety in youth (Hawker & Boulton, 2000).

It is notable that relational forms of aggression, defined as behaviors that intend to cause harm by damaging or manipulating a relationship (Crick & Bigbee, 1998), were reported more frequently among anxious youth than overt forms of aggression, such as hitting, pushing, and damaging belongings. These more covert behaviors, including rumor spreading, excluding a peer from activities, and threatening to withdraw one’s friendship, have received increased attention in recent years. Victims of relational aggression appear to be particularly vulnerable to experience loneliness, depression, and social anxiety, even after controlling for the effects of overt victimization (Prinstein, Boergers, & Venerg, 2001; Siegel, La Greca, & Harrison, 2009). Thus, it is not particularly surprising that our sample of clinically anxious youth reported relatively high rates of relational forms of bullying. These findings underscore the need for clinicians, parents, and school personnel to be cognizant of bullying behaviors that can be discrete, yet common and impactful.

On the other hand, somewhat surprisingly, very few youth (3.6%) endorsed significant cyberbullying. This finding may be related to the mean age of study participants (i.e., 11.25
years), as preteens may not yet be active on social media platforms and their cell phone and Internet use may be subject to close parental monitoring. However, it should also be noted that rates of cyberbullying vary widely in the literature, largely due to variations in the definition, sampling procedures, and measures used (Tokunaga, 2010). Indeed, a review of thirty-five research studies published as of 2011 cited rates of cyberbullying that ranged from 5.5% to 72% of youth (Patchin & Hinduja, 2012). Thus, while some media outlets portray cyberbullying as “a growing epidemic,” more research using carefully designed studies is needed to fully appreciate the nature and occurrence of cyberbullying in clinical and non-clinical populations (Sabella, Patchin, & Hinduja, 2013).

**Relationship Between Bullying and Pre-treatment Characteristics**

One primary aim of the current study was to determine the impact of bullying on pre-treatment clinical characteristics. Prior to receiving treatment, bullied anxious youth were rated by parents as significantly less socially competent than non-bullied anxious youth. This is consistent with previous literature that suggests that bullied youth tend to have fewer friends and to be less socially engaged than non-bullied youth (Sourander et al., 2000). It also highlights the unique role that bullying plays in the development of social competence, over and beyond the impact of anxiety. However, bullied and non-bullied youth did not differ on other clinical characteristics, including anxiety and mood symptoms, number of diagnoses, and primary diagnosis severity. These findings are contrary to a robust literature base that documents the significant mental health correlates of bullying (Gladstone, Parker, & Malhi, 2006; Hawker & Boulton, 2000; Sourander et al., 2007). While the lack of association between bullying and symptom and diagnostic variables in the current study may be related to the relatively low sample size, it may also be reflective of a potential ceiling effect. Given that the entire sample
was comprised of youth who met criteria for clinical anxiety disorders, it is possible that bullying is just one of many possible stressors (e.g., family difficulties, academic struggles, health problems, etc.) that can contribute to an increase in symptoms in a clinical, treatment-seeking sample.

**Bullying and Treatment Outcome**

Another primary goal of the study was to examine the impact of bullying on response to treatment. Contrary to expectations, results suggested that anxious youth who were bullied did not experience worse treatment outcomes than anxious youth who were not bullied. This finding is generally encouraging, as it suggests that bullied youth are just as likely to benefit from a standard course of CBT as non-bullied youth. However, our study lacked sufficient power to detect effects, which limits our ability to truly interpret this non-significant finding.

Nevertheless, among those who were bullied, treatment response was significantly impacted by level of bullying-related social impairment and severity of initial anxiety symptoms. Specifically, bullied youth who presented with lower anxiety symptoms improved in CBT regardless of their bullying-related social impairment. However, of the bullied youth who presented with high anxiety symptoms, those who also reported high levels of bullying-related social impairment had significantly poorer response to treatment than those who reported low levels of impairment. Taken together, these findings suggest that the way in which highly anxious youth respond to bullying may be more predictive of treatment response than the presence of bullying in and of itself. In particular, poor treatment response was seen for highly anxious youth who endorsed that they preferred to be alone, felt that they couldn’t talk with their friends, and avoided social activities following a bullying incident. This finding emphasizes the importance of friendships for bullied youth, particularly the value of seeking out and relying on
one’s friends during times of need. While much of the research on bullying and peer relationships focuses on the importance of concrete number of friends (Bukowski, Hoza, & Boivin, 1994; Hodges, Boivin, Vitaro, & Bukowski, 1999), this finding highlights the need to also examine youth’s ability to reach out to and depend upon their friends following a bullying incident.

More generally, the importance of functional impairment in predicting treatment response emphasizes the need for improving and expanding upon current bullying assessment tools. While there are several methods for assessing the frequency and severity of bullying (Hamburger, Basile, & Vivolo, 2011), there is a notable gap in the literature regarding the evaluation of the day-to-day impairment that occurs secondary to being bullied. Assessment of such functional impairment in school, social, and family domains provides us with a more comprehensive understanding of how youth are responding to stressful events in tangible, concrete ways. Not only can such knowledge have meaningful predictive value regarding response to treatment, but it can also reveal important goals and clinical targets for therapy.

Alternatively, the relationship between high pre-treatment anxiety, high bullying-related social impairment, and poorer treatment response may also be related to the consequences of avoidant coping styles in general. It may be that highly anxious youth who respond to stressors in more passive, isolative ways (e.g., avoiding friends) are at greater risk for poorer treatment outcomes than highly anxious youth who use more active coping skills, such as seeking support, using assertiveness skills, or distracting with activities (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Gomez & McLaren, 2006; Taylor & Stanton, 2007). It is also possible that youth who simultaneously reported high levels of anxiety and high levels of social impairment were victims of more severe bullying than youth who reported lower levels of either
BULLYING AS A MODERATOR OF TREATMENT EFFECTS

construct. More information regarding general coping strategies and the severity and intensity of bullying incidents is needed to fully understand this finding.

Social Competence, Social Self-Efficacy, and Hostile Intent as Mediators

The current study also aimed to better understand mediators of treatment for anxious youth. Contrary to expectations, there were no indirect effects of social competence or social self-efficacy on youth- or parent-reported anxiety or mood symptom change. This may have been due to our relatively low sample size. It is also important to note the potential impact of a floor effect; mean scores for pre-treatment social competence and social self-efficacy were both comparable to non-clinical samples, thus limiting the amount of clinically meaningful change that was possible. Indeed, when change in clinical/non-clinical status was interpreted, the overwhelming majority of youth (78.8%, n = 41) demonstrated stable non-clinical social competence from pre- to post-treatment assessment. The small number of participants that showed clinically meaningful change likely made it difficult to detect meditational effects. A similar pattern was seen for social self-efficacy. Over half of the sample (55.7%, n = 29) demonstrated consistently high social self-efficacy from pre- to post-treatment. Future research should include larger samples, with more variable baseline social functioning, in order to further investigate the meditational effect of social improvements on CBT outcomes.

Surprisingly, change in cognitions related to hostile intent emerged as the only significant and unique mediator of change in youth-reported anxiety symptoms. Over one-quarter of the sample (28.8%, n = 15) showed substantial decreases in hostility from pre- to post-treatment assessment. Hostile intent was initially chosen as a comparison mediator because, compared with other types of cognitions, it is more strongly related to externalizing symptoms than internalizing symptoms (Schniering & Lyneham, 2007; Schniering & Rapee, 2002). Indeed, psychometric
evidence suggests that the hostile intent subscale of the CATS is closely related to anger and aggression, while the other subscales (i.e., personal failure, physical threat, social threat) are more closely associated with anxiety and sadness (Micco & Ehrenreich, 2009; Schniering & Lyneham, 2007). However, a closer look at the psychometric evidence indicates that all four types of negative cognitions are highly correlated with each other. In addition, though the four subscales do differentiate from one another, confirmatory factor analysis demonstrated strongest support for a model in which all four factors were related to a single, higher order factor (Schniering & Rapee, 2004). Thus, the hostility subscale may be capturing general cognitive distress or negative affectivity that can be comprised of multiple emotional states, including fear, sadness, guilt, and hostility (Schniering & Rapee, 2004; Watson & Clark, 1992). Therefore, it is possible that treatment helped youth to have less distressing thoughts overall, which contributed to a reduction in anxious symptoms. At the same time, as hostile cognitions can be reliability distinguished from other negative thoughts, anger and aggression may be important processes for therapists to attend to during treatment, even for anxious youth who may not appear particularly hostile at first glance.

Lastly, contrary to expectations, the indirect effect of social competence was not significantly moderated by bullying. While CBT for anxiety may exert its effects through similar processes for both bullied and non-bullied anxious youth, low sample size, inadequate power, and the floor effect mentioned above limit our ability to meaningfully interpret this finding.

**Limitations and Future Directions**

The current study had several methodological limitations that warrant consideration. One of the primary challenges was the relatively small sample size, particularly for testing moderation and mediation models. Indeed, prospective power analysis suggested that 71
participants were necessary to detect medium effects (Fritz & MacKinnon, 2007) and our sample only included 52 participants. Although many attempts were made to recruit all eligible individuals \((N = 188)\), almost 20% were unreachable due to outdated contact information and almost 20% declined to participate due to lack of time, general disinterest in the topic, and/or negative clinic experiences. Another 16% expressed initial interest in participating but were subsequently unable to follow through with interviews due to scheduling conflicts, forgetfulness, and/or difficulty coordinating parent and youth schedules.

Several other sampling issues should be considered, particularly as the study used a non-random sample of service-users. It is possible that the rates of bullying reported in the sample are a reflection of skewed sampling, as those who had meaningful experiences with bullying may have felt more inclined to participate than those who had never been bullied. In addition, the sample was quite homogenous in terms of school setting (90.4% attended public school) and race/ethnicity (80.8% Caucasian), which may have influenced the kinds of bullying experiences participants were exposed to. Further, participants ranged in age from 7-16 years old at the time of treatment initiation. Thus, our sample was comprised of elementary, middle, and high school students who likely experienced very different rates and kinds of bullying. While our initial analyses suggested no differences in bullying experiences of children and adolescents, larger samples are needed to in order to better understand how bullying differs across age groups and grade levels. Future research should aim to include larger, more diverse samples of youth in order to increase power and the overall generalizability of findings.

Our assessment of bullying experiences was also limited by our reliance on solely self-report. In using a definition-based self-report strategy to assess whether or not a youth was “bullied,” participants had to judge for themselves whether or not their personal experiences met
the general criteria of bullying that was provided. It is possible that some subjects exaggerated or minimized their experiences due to social desirability effects, perceived stigma associated with being a victim of bullying, or mood at the time of the interview. It is also plausible that some participants lacked a sufficient understanding of the definition provided and were reluctant to ask for clarification. In order to provide convergent validity for self-reports of bullying incidents, future studies should collect information from multiple informants, including parents, teachers, school personnel, and/or peers.

In addition, it is important to consider our use of retrospective reports. Much of the bullying research to date has involved retrospective recall to some extent (Masia, 2003; Renk, Roberts, Klein, Rojas-Vilches, & Sieger, 2005). While some have questioned the reliability of retrospective reports (Offer et al., 2000), many researchers have found good test-retest reliability in self-reports of the nature, location, and timing of bullying experiences (Olweus, 1993; Rivers, 2001; Rivers, 2004). Thus, while concerns are common, there is reason to believe that retrospective recall of bullying can be accurate and reliable. A more complicating factor for the current study may be the variability in the length of retrospective recall. As the study asked participants to reflect back on the school year of treatment initiation, length of recall varied significantly (i.e., seven months to eight years), depending upon when participants sought services at the clinic. Additionally, at the time of the bullying interview, participants ranged in age from 8 to 25 years old. Such a wide range in length of recall and age at time of interview may have influenced ease of recollection, interpretations about past experiences, and level of maturity in understanding the complexities of bullying. These issues may have impacted the validity of the data obtained and make it difficult to compare results across studies. Future
research should target more specific age groups and use assessments that require an established length of retrospective recall.

Conclusion

Overall, findings from this study indicate that bullying is common among anxious, treatment-seeking youth. Mental health professionals who treat youth with anxiety and/or mood problems should conduct a thorough assessment of past and current bullying experiences, including frequency and type of bullying, in addition to impairment associated with being bullied. Practitioners are encouraged to consider bullying and its resultant consequences as a contributing factor to their clients’ presenting problems. In addition, this study suggests that youth who are bullied more frequently experience higher levels of impairment across social, family, and school domains. Further, greater impairment, particularly in the social realm, is associated with worse treatment outcome for highly anxious youth. Thus, it is essential to assess for bullying-related social impairment at clinic intake and to actively target social isolation and social support seeking skills during treatment. In addition, results highlighted that anger and hostility can play an important role in the treatment of anxious youth. Clinicians are encouraged to assess for and target thoughts, feelings, and behaviors associated with anger and aggression throughout treatment. While future studies with larger, more diverse samples are certainly needed, we believe that this study provides an important first step at examining how bullying impacts treatment outcome and treatment processes for anxious youth.
References


BULLYING AS A MODERATOR OF TREATMENT EFFECTS


Footnotes

1 We also examined anxiety and mood symptoms across varying definitions of bullying found in the literature (e.g., bullied only once or twice, bullying as a continuous variable). Olweus’ definition (bullied 2-3 times per month) was found to be associated with the greatest ability to distinguish youth with either high or low anxiety symptoms. This supported the use of Olweus’ definition in the current sample.
Table 1

*Bivariate Correlations Among Pre-Treatment Symptoms, Hypothesized Mediators, and Bullying-Related Impairment*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth Anx</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Youth MDD</td>
<td>.80**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent-reported Anx</td>
<td>.27</td>
<td>.34*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent-reported MDD</td>
<td>.17</td>
<td>.45**</td>
<td>.63**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Competence</td>
<td>-.16</td>
<td>-.15</td>
<td>-.12</td>
<td>-.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Self-Efficacy</td>
<td>-.52**</td>
<td>-.50**</td>
<td>-.05</td>
<td>-.08</td>
<td>-.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostile Intent</td>
<td>.44**</td>
<td>.30*</td>
<td>.03</td>
<td>.01</td>
<td>-.13</td>
<td>-.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Impair.</td>
<td>.37*</td>
<td>.44**</td>
<td>.29</td>
<td>.20</td>
<td>-.12</td>
<td>-.20</td>
<td>-.02</td>
<td>-</td>
</tr>
<tr>
<td>Total Impair.</td>
<td>.39*</td>
<td>.60**</td>
<td>.35*</td>
<td>.47**</td>
<td>-.20</td>
<td>-.44</td>
<td>-.09</td>
<td>.78**</td>
</tr>
</tbody>
</table>

*Note. Anx = RCADS Total Anxiety; MDD = RCADS Total Depression; Hostile Intent = CATS Hostile Intent; Social Self-Efficacy = SEQ Social Self-Efficacy; Social Competence = CBCL Social Competence; Social Impairment = MBIS Total and Social Impairment*

**p < .01
* p < .05
Table 2

Pre-Treatment Clinical and Demographic Characteristics Across Bullied and Non-Bullied Youth

<table>
<thead>
<tr>
<th></th>
<th>Non-Bullied</th>
<th>Bullied</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n = 32</td>
<td>n = 20</td>
<td></td>
</tr>
</tbody>
</table>

**Symptoms**
- Youth Anx: 29.16 (20.79) vs. 39.95 (23.35) *p* = .09+
- Youth MDD: 6.84 (4.32) vs. 8.80 (6.16) NS
- Parent-reported Anx: 38.19 (16.52) vs. 39.3 (13.64) NS
- Parent-reported MDD: 8.60 (4.72) vs. 8.4 (3.94) NS

**Putative Mediators**
- Hostile Intent: 8.81 (6.73) vs. 10.94 (8.23) NS
- Social Self-Efficacy: 23.06 (4.84) vs. 23.47 (5.14) NS
- Social Competence: 45.30 (8.67) vs. 40.40 (8.73) *p* = .05*

**Demographics/Clinical**
- Age: 10.97 (2.53) vs. 11.70 (2.76) NS
- Gender: 46.9% male vs. 30.00% male NS
- Hollingshead: 44.23 (12.05) vs. 46.35 (12.36) NS
- Number of Diagnoses: 3.41 (1.58) vs. 3.35 (1.79) NS
- Primary Dx Severity: 5.72 (.92) vs. 5.75 (1.07) NS
- Number of Friends: 1.84 (.78) vs. 1.85 (1.04) NS

**Bullying Impairment**
- Bullied 1-2x: 2.31 (3.00) vs. 5.25 (4.03) *p* = .02*
- Bullied >/2-3x/month: 11.44 (12.75) vs. 24.35 (12.83) *p* = .007**

*Note.* Non-bullied youth included all youth who reported no instances of bullying or bullying that occurred only once or twice. Bullied youth included all youth who reported bullying that occurred at least two or three times per month. Anx = RCADS Total Anxiety; MDD = RCADS Total Depression; Hostile Intent = CATS Hostile Intent; Social Self-Efficacy = SEQ Social Self-Efficacy; Social Competence = CBCL Social Competence; Social and Total Impairment = MBIS Total and Social Impairment

+ *p* < .1
* *p* < .05
** *p* < .01
Table 3

Raw Scores for Symptoms and Mediator Variables Across Non-Bullied Youth, Bullied Youth, and Time

<table>
<thead>
<tr>
<th></th>
<th>Pre-Tx</th>
<th>Post-Tx</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-Bullied</td>
<td>Bullied</td>
</tr>
<tr>
<td></td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
</tr>
<tr>
<td></td>
<td>$n = 32$</td>
<td>$n = 20$</td>
</tr>
<tr>
<td>Symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Youth Anx</td>
<td>29.16 (20.79)</td>
<td>39.95 (23.35)</td>
</tr>
<tr>
<td>Youth MDD</td>
<td>6.84 (4.32)</td>
<td>8.80 (6.16)</td>
</tr>
<tr>
<td>Parent-reported Anx</td>
<td>38.19 (16.52)</td>
<td>39.30 (13.64)</td>
</tr>
<tr>
<td>Parent-reported MDD</td>
<td>8.60 (4.72)</td>
<td>8.40 (3.94)</td>
</tr>
<tr>
<td>Putative Mediators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostile Intent</td>
<td>8.81 (6.73)</td>
<td>10.94 (8.23)</td>
</tr>
<tr>
<td>Social Self Efficacy</td>
<td>23.06 (4.84)</td>
<td>23.47 (5.14)</td>
</tr>
<tr>
<td>Social Competence</td>
<td>45.30 (8.67)</td>
<td>40.40 (8.73)</td>
</tr>
<tr>
<td>% Borderline/Clinical</td>
<td>15.60%</td>
<td>30.00%</td>
</tr>
</tbody>
</table>

*Note. Non-bullied youth included all youth who reported no instances of bullying or bullying that occurred only once or twice. Bullied youth included all youth who reported bullying that occurred at least two or three times per month. Anx = RCADS Total Anxiety; MDD = RCADS Total Depression; Hostile Intent = CATS Hostile Intent; Social Self-Efficacy = SEQ Social Self-Efficacy; Social Competence = CBCL Social Competence.*
### Table 4

*Bootstrapping Indirect Effects and Confidence Intervals for Mediation and Moderated Mediation Results*

<table>
<thead>
<tr>
<th></th>
<th>Social Competence (SC) BCa 95% CI</th>
<th>Social Self-Efficacy (SSE) BCa 95% CI</th>
<th>Hostile Intent (HI) BCa 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Point Estimate Lower Upper</td>
<td>Point Estimate Lower Upper</td>
<td>Point Estimate Lower Upper</td>
</tr>
<tr>
<td>Youth Anx</td>
<td>-.0003 -.05 .05</td>
<td>-.009 -.07 .01</td>
<td>-.05 -.142 -.004*</td>
</tr>
<tr>
<td>Youth MDD</td>
<td>-.003 -.08 .03</td>
<td>.007 -.03 .12</td>
<td>-.03 -.14 .008</td>
</tr>
<tr>
<td>Parent Anx</td>
<td>-.004 -.06 .01</td>
<td>-.003 -.05 .01</td>
<td>-.005 -.05 .01</td>
</tr>
<tr>
<td>Parent MDD</td>
<td>-.011 -.08 .02</td>
<td>-.007 -.07 .01</td>
<td>-.003 .06 .02</td>
</tr>
</tbody>
</table>

*Youth Anx x Bullying p = .94, SC x Bullying p = .94, Hostile Intent x Bullying p = .69, Hostile Intent x SC p = .32, Hostile Intent x SSE p = .71.*

Note. Mediators were analyzed in a single multiple mediator model. Moderated mediation analyses were conducted for each mediator separately. BCa = bias corrected and accelerated bootstrapping confidence intervals that include corrections for both median bias and skew. Confidence intervals containing zero are interpreted as not significant indirect effects. Change in hostile intent emerged as a significant and unique mediator of pre– to post-treatment youth-reported anxiety symptoms. All other indirect effects were nonsignificant. Bullying did not significantly moderate the indirect effect of social competence (all p's > .05).

* p < .05
Hypothesis 1: Exposure to bullying would moderate treatment effects (i.e., youth- and parent-reported anxiety and mood symptoms) such that bullied anxious youth would experience worse treatment outcomes than non-bullied anxious youth.
Figure 2. Hypothesis 2: Exposure to bullying would only moderate treatment effects for youth with fewer friends at treatment intake (i.e., moderated moderation).
Figure 3. Hypothesis 3: Bullying-related impairment would moderate treatment effects (i.e., youth- and parent-reported anxiety and mood symptoms) such that bullied youth who report high levels of social and total impairment would experience worse treatment outcomes than those who report low levels of impairment.
Figure 4. Hypothesis 4: In a multiple mediator model, improvements in social competence and social self-efficacy (residualized change scores from pre- to post-treatment) would mediate the relationship between pre- and post-treatment anxiety and mood symptoms.

Hypothesized to be a significant effect
Hypothesized to be a nonsignificant effect
Figure 5. Hypothesis 5: Improvements in social competence (residualized change scores from pre- to post-treatment) would be a moderated mediator of treatment effects, such that the mediating effects of social competence in explaining treatment gains would be stronger for bullied anxious youth than for non-bullied anxious youth.
Figure 6. CONSORT diagram depicting recruitment efforts and sample selection.
BULLYING AS A MODERATOR OF TREATMENT EFFECTS

Figure 7. Rates of bullying reported by children, teens, and the total sample.

*Note.* Percentages are reported for the total sample. Consistent with Olweus’ definition of bullying, non-bullied (61.5%) youth included all youth who reported no instances of bullying or bullying that occurred only once or twice, amongst nine types of bullying. Bullied youth (38.5%) included all youth who reported being bullied at least “two or three times per month.” Chi-square analysis revealed no significant differences in bullied/non-bullied status across age groups ($\chi^2(1)= 2.14, p = .16$).
Figure 8. Percent of youth who experienced each type of bullying behavior at least two or three times per month across children, teens, and the total sample.

Note. Percentages are reported for the total sample. Chi square analyses revealed no significant differences across age groups in any bullying type (all $p’s > .05$).
Figure 9. Bullying as a moderator of total anxiety symptoms from pre- to posttreatment.

Note. No significant conditional effect was found ($b = -.09, p > .05$).
Figure 10. Bullying-related social impairment as a moderator of total anxiety symptoms from pre- to posttreatment.

Note. Bullying-related social impairment significantly moderated the path from pre- to posttreatment youth-reported anxiety symptoms ($b = .06, p < .05$).
Figure 11. Social competence, social self-efficacy, and hostile intent: A multiple mediator model.

Note. Standardized coefficients are provided. The overall multiple mediator model was non-significant (bootstrapped total indirect effect = -.05; 95% CI = -.17 - .02). Only change in hostile intent emerged as a significant and unique mediator of pre – to post- treatment youth-reported anxiety symptoms.

* p < .05
** p < .001

---