RELATIONS BETWEEN EMOTIONAL AND SOCIAL FUNCTIONING IN YOUTH WITH ANXIETY DISORDERS

By

MARNI L. JACOB

(Under the Direction of Cynthia Suveg)

ABSTRACT

The current study investigated relations between emotional and social functioning in youth with anxiety disorders. Thirty-five youth with a primary diagnosis of Generalized Anxiety Disorder, Social Phobia, or Separation Anxiety Disorder, and a parent participated. Specifically, the study examined whether emotion understanding, emotion regulation, positive affect, and negative affect predict children's positive and negative treatment by peers, perceptions of loneliness, and social problems, and the moderational role of emotion regulation in the relationship between anxiety disorder severity and children's positive or negative treatment by peers, loneliness, and social problems. Results of this study suggest that both positive and negative affective displays are notably related to social functioning in youth with anxiety disorders. This research will contribute to our understanding of the interplay of social and emotional variables in youth with anxiety disorders and has potential to inform prevention and treatment efforts.

INDEX WORDS: Anxiety disorders, Children, Emotional Functioning, Social Functioning

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MARNI L. JACOB

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MARNI L. JACOB

Major Professor:	Cynthia Suveg
Committee:	Ronald L. Blount
	Karen Smith

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
July 2010

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CHAPTER 1

INTRODUCTION

Emotional functioning is a critical aspect of youth development, and research is increasingly focused on identifying emotion-related constructs that are thought to contribute to both adaptive and maladaptive outcomes in youth. More specifically, numerous researchers have found that emotion-related deficits are associated with maladaptive social functioning (Eisenberg, Fabes, Guthrie, & Reiser, 2000; Eisenberg et al., 1995; Hubbard & Coie, 1994; Izard et al., 2001; Schultz, Izard, Ackerman, & Youngstrom, 2001). Though relations have been identified between emotional and social functioning, scarce research has examined these relationships in youth with anxiety disorders. Given the presence of emotion-related deficits and social difficulties that are often associated with youth anxiety disorders (Suveg & Zeman, 2004; Verduin & Kendall, 2008); the study of emotional and social functioning utilizing an anxiety disorder sample is particularly relevant. For example, the interpersonal difficulties that one experiences due to emotion dysregulation may contribute to elevated levels of anxiety. Similarly, anxious avoidant behavior may serve to maintain arousal and negative affect when faced with emotion-provoking scenarios, potentially provoking ridicule if witnessed by peers. Thus, the functional impairment associated with youth anxiety disorders may interfere with the successful completion and mastery of important developmental milestones. Given the high rates of anxiety disorders in youth and the numerous interpersonal difficulties and long-term consequences that may occur, examination of factors that may influence the development and expression of anxiety is imperative (Grills & Ollendick, 2002).

In a clinical sample of anxious youth, the current study will examine: 1) whether emotion understanding, emotion regulation, positive affect, and negative affect predict children's positive

and negative treatment by peers, perceptions of loneliness, and social problems, and 2) the moderational role of emotion regulation in the relationship between anxiety disorder severity and children's positive or negative treatment by peers, loneliness, and social problems. This research will contribute to our understanding of the interplay of social and emotional variables in youth with anxiety disorders and has potential to inform prevention and treatment efforts.

Links between Emotional and Social Functioning

Emotions serve important communicative and social functions, conveying information about people's thoughts, feelings, and objectives, and guiding social interactions (Keltner & Kring, 1998). Halberstadt, Denham, and Dunsmore (2001) describe the importance of considering emotion in social functioning in their model for affective social competence, which they define as "the efficacious communication of one's own affect, one's successful interpretation and response to others' affective communication, and the awareness, acceptance, and management of one's own affect" (p. 80). There is likely a bidirectional influence between emotional and social functioning, as children who experience positive social interactions are likely to experience positive emotions, while children who frequently display negative emotions are likely to be rejected by peers (Dougherty, 2006). Research has identified a relationship between several emotion-related variables and indicators of social functioning (Hubbard & Coie, 1994; Kingery, Erdley, Marshall, Whitaker, & Reuter, 2010) which are discussed below.

Emotion Understanding. Emotion understanding is the ability to recognize emotional experience in both the self and others, to understand the causes and consequences of emotion, and to understand appropriate emotional responses to one's own emotional experience and reactions to others' expression of emotions (Cassidy, Parke, Butkovsky, & Braungart, 1992; Parke et al., 1992; Southam-Gerow & Kendall, 2002). Extensive research shows a positive

relationship between emotion understanding and social competence, popularity, and empathic and prosocial behaviors with peers (Cassidy et al., 1992; Denham, 1986; Denham, Bouril, & Belouad, 1994; Denham & Couchoud, 1991; Denham, McKinley, Couchoud, & Holt, 1990; Denham, Renwick-DeBardi, & Hewes, 1994; Garner, 1996; Garner, Jones, & Miner, 1994; Garner, Jones, & Palmer, 1994; Walden & Field, 1990). For example, one study using kindergarten and first grade schoolchildren found that youth's emotion understanding across a broad range of areas (e.g., such as the identification, experience, and expression of emotion, circumstances leading up to the emotion, and action and feeling responses to the display of emotions) was associated with successful peer relationships and peer acceptance (Cassidy et al., 1992). Additionally, Gnepp (1989) found that understanding related to the use of personal information to make inferences about other peoples' emotional responses and appraisals was related to peer ratings of social status.

Not only is the ability to recognize emotions in oneself and others important, but the ability to detect and label emotional cues facilitates positive social relationships. For example, in elementary-aged youth, the ability to recognize and label emotion expressions predicted lower teacher-reported social problems and social withdrawal (Schultz et al., 2001) as well as greater social skills (Izard et al., 2001) after controlling for verbal ability. Similar results have also been reported in ethnic minority youth; emotion recognition skills and emotion naming (i.e., the ability to spontaneously generate common emotion words) were positively related to more effective social functioning (assessed via sociometric status ratings) and inversely related to self-reported negative peer experiences at school (specifically peer victimization and rejection) (Miller et al., 2005). These studies suggest that emotion understanding is a core component for adaptive youth social functioning. Youth who are able to recognize their own emotional states

may be more likely to recognize similar emotional states in others, which will allow them to respond appropriately, such as by consoling a distressed peer. Conversely, poor emotion understanding reduces the chance that the child will recognize another child's feelings simply because he does not identify with them (Schultz et al., 2001), which may increase the likelihood that the child will choose to act in ways that are insensitive to peers.

Another component of emotion understanding is the concept of display rules (Saarni, 1984), or "children's recognition that there are times when it is not appropriate or adaptive to express the emotions one is feeling; that is, there are rules for what emotion should be displayed under particular social circumstances" (p. 10). The concept of display rules is fundamentally interpersonal in nature, as the goal of the child is to alter the expression of emotion to serve social purposes. Garner (1996) found that children's knowledge of prosocial display rule use (i.e., children's expression of a different emotion than their true feelings in order to protect the feelings of another) was related to teacher ratings of prosocial behavior. Thus, greater social competence appears to be associated with greater use of display rules, as display rules limit the expression of unwanted emotions that could otherwise lead to interpersonal difficulties in social contexts. Though at times it may be adaptive to mask one's emotions, in other contexts it may be more adaptive to give these emotions full expression. For example, one may alter the expression of emotion to spare another person's feelings or to avoid embarrassment by displaying an emotion that others might view as inappropriate to the situation (Hubbard & Coie, 1994).

Collectively, emotion understanding appears to be central in navigating a youth's social environment. It allows a youth to make sense of their own and peers' emotional experiences, and it may facilitate action tendencies (Greenberg, 2002), such as self-regulation efforts or the conveyance of empathy towards peers. These relationships are also likely reciprocal. Youth who

exhibit emotion understanding experience more positive social interactions, which provide them with more opportunities for emotion learning. Conversely, youth with poor emotion understanding may be ignored or excluded from social interactions, which then precludes opportunities for further emotion learning. Further, emotion understanding appears to be a fundamental building block of adaptive emotion regulation, as children who have difficulty recognizing emotional states have difficulty effectively managing the state (Penza-Clyve & Zeman, 2002).

Emotion regulation. Emotion regulation is defined as "the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals" (Thompson, 1994, p. 27-28). Emotion understanding is a critical component of emotion regulation, as one must have an accurate awareness of their emotional experience and the context surrounding it in order to appropriately regulate their emotional expression to social context demands. In children, studies have shown that better social functioning is predicted by high levels of emotion regulation (Eisenberg et al., 2000; Eisenberg et al., 1996; Eisenberg et al., 1995), and researchers acknowledge that emotion regulation is critical for young children to engage in successful peer interactions (Eisenberg, Fabes, Bernzweig, Karbon, Poulin, & Hanish, 1993). Kochenderfer-Ladd and Skinner (2002) found relationships between children's maladaptive emotion regulation strategies [cognitive distancing (e.g., refusing to think about the experience), internalizing (e.g., getting mad at oneself), or externalizing strategies (e.g., dealing with negative emotions by taking them out on others)], and various maladaptive outcomes (e.g., peer victimization, loneliness, peer preference, social problems). Internalizing, externalizing, and cognitive distancing regulation strategies were associated with increased loneliness, while internalizing

and externalizing strategies were also associated with peer victimization. In girls, distancing and externalizing strategies were related to higher social problems ratings, and externalizing was also inversely related to peer preference ratings (measured by sociometric status nominations). Thus, maladaptive attempts at emotion-regulation appear to be perceived in some manner by peers; youth who externalize their emotions may be deemed as "hot-heads" who overreact to problems, while youth who attempt to ignore peer problems will likely be lonelier, maintain conflict, and have more social problems (Kochenderfer-Ladd & Skinner, 2002).

Affective displays might provide an observable appraisal of a youth's emotion regulatory abilities. Positive affect generally refers to feelings, emotions, or moods that are expressed in a positive nature, while negative affect refers to those expressed in a negative nature. Expressions of affect allow others to interpret the meaning of one's socially directed acts, and also the meaning of others' responses to those acts (Sroufe et al., 1985). Several studies have examined the relationship between affect and social functioning. One study found that direct observations, teacher ratings, and child-based data together suggested that positive affective exchanges were strongly related to popularity and social competence (Sroufe et al., 1985). Jones et al. (2002) found a significant correlation between teacher-rated social competence and teacher-rated affective balance. Positive affect may serve to maintain social relationships with peers, as it may increase their positive feelings toward the child and the likelihood that peers will initiate interactions with them (Sroufe et al., 1985). Positive affect also communicates satisfaction with the social relationship and may lead to relationship growth. However, affective balance (i.e., a balance of both *positive* and *negative* emotions) also seems to provide for favorable social relationships. The expression of some negative emotions may be necessary to communicate and help resolve peer conflicts that may have otherwise persisted, and may also allow peers to

validate each other regarding a mutually distressing experience. However, a preponderance of negative affect is related to poorer social competence (Sallquist et al., 2009). For example, Eisenberg et al. (1993) found that school ratings of negative affect were inversely related to social competence (social skills and sociometric status) in preschool boys. Other research has also shown that intense, moody, or emotionally negative children experience poorer peer relationships and are less popular with peers then are other children (for a meta-analysis see Dougherty, 2006; Isley, O'Neil, Clatfelter, & Parke, 1999). Thus, the peer relations literature suggests that there are mood differences between children of different levels of social status, with children who typically display more positive affect as being more well-liked by their peers (Dougherty, 2006; Hubbard & Coie, 1994). A child who conveys enthusiasm to others is likely to be well-liked and sought out by others, whereas a child who exhibits negativity is more likely to be excluded (Sroufe et al., 1985).

Emotional and Social Functioning in Youth with Anxiety Disorders

Research examining emotional functioning in youth with anxiety disorders remains limited, yet it is fervently emerging. Youth with anxiety have demonstrated deficits in emotion understanding (Penza-Clyve & Zeman, 2002; Simonian, Beidel, Turner, Berkes, & Long, 2001; Southam-Gerow & Kendall, 2000) and emotion regulation (Suveg & Zeman, 2004). One study using a community sample found that poor emotion awareness and reluctance to express negative emotions were significantly related to anxiety symptoms in youth (Penza-Clyve & Zeman, 2002). Another study demonstrated that emotion awareness was related to social anxiety and ruminative worry thoughts (Rieffe, Oosterveld, Miers, Terwogt, & Ly, 2008).

Regarding clinical populations, Southam-Gerow and Kendall (2000) examined emotion understanding in youth diagnosed with an anxiety disorder (i.e., Separation Anxiety Disorder,

Generalized Anxiety Disorder, or Social Phobia) and non-referred youths. Results indicated that anxiety-disordered youth had poorer understanding of hiding emotions and using emotion regulation strategies to change their emotions, which may have meaningful implications for social functioning. An anxious youth who lacks knowledge of display rules may insult a fellow peer upon receipt of a disappointing birthday gift. Similarly, an anxious youth may be teased by peers after an excessive crying episode, as peers may not relate and will perceive the anxious youth to be childish.

The ability to recognize others' emotional expressions has been described as a fundamental aspect of emotion understanding and is considered necessary for effective interpersonal communication. However, it appears that anxiety-disordered youth may evidence deficits in this ability compared to non-anxious youth. Simonian et al. (2001) found that socially-phobic youth have significantly poorer affect recognition skills when compared with non-clinical youth. Specifically, children were asked to identify six emotional expressions (i.e., happiness, sadness, anger, fear, surprise, and disgust) depicted in pictures of faces, and they also rated their anxiety before and after completion of the facial recognition task. Socially-phobic youth evidenced a greater number of errors (especially in happiness, sadness, and disgust) and reported greater post-test anxiety for this task when compared with non-clinical youth. This deficient ability to label facial expressions may have vast consequences in terms of social functioning because it is critical for effective communication (Simonian et al., 2001). Youth must be able to accurately perceive peers' emotional displays in order to respond appropriately to them. Therefore, this deficient ability evidenced in anxious youth puts them at even greater risk for negative peer interactions compared to non-anxious youth.

Based on the deficits in emotion understanding that have been noted in youth with anxiety disorders, and theory that emotion understanding is necessary for adaptive emotion regulation, Suveg and Zeman (2004) examined emotion regulation in youth with anxiety disorders (ADs) and those with no form of psychopathology (non-ADs). Findings indicated that the AD group reported more dysregulated emotion expression (i.e., culturally inappropriate emotional expression), reported experiencing emotions (worry, anger) with greater intensity, and displayed more maladaptive emotion regulation coping across worry, anger, and sadness scenarios than non-AD youth. Mothers of AD youth also perceived their children to be more emotionally negative/labile and dysregulated than mothers of non-AD youth. Other research has found that when compared with non-AD youth, children with an AD engage in fewer problem-solving emotion regulation strategies and display less positive affect when discussing emotional experiences (Suveg et al., 2008). Collectively, preliminary findings support the salience of emotion-related deficits in youth anxiety disorders. Given that emotion-related deficits are associated with social difficulties in non-clinical populations, it is likely that a higher-risk sample, such as anxiety-disordered youth, will experience even *greater* social difficulties than non-clinical youth due to their excessive emotion-related deficits.

When reviewing the research on social functioning in youth with anxiety, research using clinical and non-clinical youth generally suggests that youth with anxiety have poorer social functioning than non-clinical youth. Using a sample of elementary school students, Strauss, Frame, and Forehand (1987) compared children rated as highly anxious and non-anxious by teachers. Peer likability ratings were measured via peer nomination procedures. Anxious children had lower ratings of likability, were not preferred as playmates, and were viewed as more shy and socially withdrawn when compared with non-anxious children. In another study, researchers

found that social withdrawal in early childhood predicted internalizing difficulties in later childhood (Rubin, Hymel, & Mills, 1989), while other research suggests that appearing anxious, withdrawn, or depressed may be related to negative evaluations and rejection by peers (Waas & Graczyk, 1999). These studies suggest that interactions with anxious youth are generally less enjoyable, which in part may be due to the anxious youth's own nervousness. It also seems likely that youths' anxious displays are perceived and ill-received by peers.

Less research has examined social functioning in clinical youth with anxiety disorders. One study examined peer perceptions and liking of children with anxiety disorders (Verduin & Kendall, 2008). Peer raters watched videotaped speech samples of target children with anxiety disorders (Generalized Anxiety Disorder, Social Phobia, or Separation Anxiety Disorder) and those without an anxiety disorder diagnosis (recruited through the community) discussing their likes, dislikes, and personality characteristics. Peer raters then responded to a measure which assessed peer liking (e.g., "How much did you like the child on the videotape?" If you had the chance, would you like to play with the child on the videotape?"). Overall, AD children were liked less than non-AD children, but when considering individual diagnoses, this finding was wholly attributable to children with Social Phobia. This study also utilized self and peer reports of anxiety, and results showed that peers preferred children whom they had rated as less anxious and who had self-reported lower anxiety, suggesting that youth who report feeling anxious were perceived to be anxious by their peers. Strauss, Lahey, Frick, Frame, and Hynd (1988) also examined peer likability in children with anxiety disorders. Results demonstrated that anxiety-disordered children were less well-liked by peers when compared to controls, and their ratings did not significantly differ from a group of conduct-disordered children. Additionally, the anxious youth received the lowest social impact scores (comprised of total like-most and like-

least nominations) of either group and were the most likely to fit into a socially neglected category of peer status. These studies suggest that anxiety is perceived by peers and aspects of its presentation are considered aversive, such as dysregulated or anxious behaviors (e.g., sweating, fidgeting). Anxious youth may also be less assertive and hesitant to initiate social activities than non-anxious youth (Ginsburg, La Greca, & Silverman, 1998), thus reducing their opportunities for social interactions. Another interpretation is that peers who detect anxiety in the target children may like them less due to associating them with a stigma. Peers may think they don't relate to anxious youth, so anxious youth may simply be ignored or neglected and may not even be given the chance to befriend a peer. This lack of social engagement will only serve to maintain the youth's anxiety and will prevent them from practicing and subsequently improving their social skills.

Therefore, when considering the lack of positive social engagement often present in anxious youth, a child's own perception of loneliness is particularly relevant. Loneliness is a form of social functioning in which a child is particularly dissatisfied with his or her social interactions, lack of social support, and feels poorly accepted by peers (Asher, Hymel, & Renshaw, 1984; Asher & Wheeler, 1985). Another important component is children's treatment by peers, as youth may be treated positively or poorly depending on whether they exhibit various characteristics. For example, peers may tease an anxious youth who exhibits uncontrollable crying episodes. One form of negative peer treatment that has been linked with anxiety is whether or not a child experiences peer victimization, "a specific form of peer maltreatment in which a child is targeted by a peer or group of peers" (Storch et al., 2006, p. 447). Overt victimization (i.e., physical forms of victimization and aggression such as hitting) is often the primary focus of attention and prevention efforts, yet relational victimization (e.g., interpersonal

attacks such as spreading rumors, excluding a child from peer activities) is a less studied problem (Dempsey & Storch, 2008; Storch, Masia-Warner, Crisp, & Klein, 2005). Peer victimization has been linked with generalized and social anxiety, depression, loneliness, low self-esteem, low self-worth, poorer social self-concept (i.e., a measure of the extent to which they see themselves as socially competent, well-accepted by peers, or having good social relationships), and social avoidance (Crick & Grotpeter, 1996; Grills & Ollendick, 2002; Hawker & Boulton, 2000). Peer victimization experiences may serve to maintain anxiety symptoms, because they may reinforce the self-doubt and low self-esteem that is often characteristic of youth with anxiety.

Research on peer victimization in youth with anxiety disorders is very limited, as a review of the extant literature revealed only one study using a sample of youth with obsessive-compulsive disorder (OCD). Storch and colleagues (2006) found higher rates of peer victimization in youth diagnosed with OCD when compared with healthy controls and a sample of youth with diabetes, suggesting that the behaviors exhibited by youth with OCD (e.g., rituals) were likely considered even more bizarre than behaviors exhibited by diabetic children (e.g., taking insulin shots frequently). Peer victimization was also found to mediate the relations between OCD severity and depression, externalizing behaviors, and loneliness. It is understandable why youth with anxiety disorders may experience peer victimization and loneliness. Anxious children may be disliked and stigmatized due to peers' negative perceptions of mental illness (Storch et al., 2006). Anxious youth who have difficulty perceiving others' emotions may appear insensitive and offensive to peers. Anxious youth who exhibit dysregulated emotions (e.g., crying episodes) or anxious behaviors (e.g., embarrassing physical symptoms) could be teased or excluded when these behaviors are observable to peers, thus resulting in poorer social functioning. Anxious children may also exhibit avoidant behavior and act as

"scaredy cats" because they do not have the emotion regulation skills to cope with new situations. Consequently, they may be teased by peers due to their cowardice or simply experience reduced opportunities for social networks (Storch et al., 2006). Unsuccessful social encounters may also contribute to anxiety in youth, as they may cause future avoidant behaviors and self-doubt that may maintain anxiety.

Though many researchers focus on examining negative peer treatment (e.g., peer victimization), there is also a need to study positive peer treatment, as well as the factors that may influence positive interactions. One form of positive peer treatment is the receipt of prosocial behavior, which consists of the frequency with which a peer tries to give a child help when he needs it, tries to cheer him up when he is sad or upset, tries to make him happy, says something nice to him, or shows him that he cares in some way (Crick & Grotpeter, 1996). One study found that the receipt of prosocial behaviors by peers partially moderated the relationship between peer victimization and loneliness in adolescence (Storch, Brassard, & Masia-Warner, 2003). Thus, children who experienced greater prosocial behavior (e.g., received help from peers when they needed it) experienced reduced feelings of loneliness. Crick and Grotpeter (1996) also found support for the importance of prosocial behaviors by peers. In particular, they found that a lack of prosocial treatment by peers significantly predicted social-psychological adjustment difficulties beyond what was accounted for by victimization.

In sum, the literature on emotional and social functioning suggests that the two constructs are largely interrelated. Anxious youth who have difficulties in emotional functioning are likely to evidence deficits in social functioning, and this relationship is likely bidirectional. However, as most research has examined relationships between these two constructs in non-clinical samples, the generalizability of past research studies to clinical samples is largely unknown.

Given previous research stating that anxiety-disordered youth experience emotion-related deficits, that emotion-related deficits have implications for social functioning, as well as links between anxiety disorders and social functioning, this research seems particularly relevant.

The goal of this study is to examine whether emotion understanding, emotion regulation, positive affect, and negative affect predict children's positive and negative treatment by peers, perceptions of loneliness and social dissatisfaction, and social problems in youth with anxiety disorders. This study will expand upon previous research by considering emotional and social variables simultaneously using a clinical sample. Additionally, it will consider several less-studied variables (i.e., relational peer victimization, receipt of prosocial behavior) that theory suggests may be important. These constructs are specifically chosen based on theory that anxious youth will experience negative peer treatment, loneliness, and social problems as a result of poor emotion understanding and poor emotion regulation. Conversely, anxiety-disordered youth who exhibit adaptive emotion understanding and emotion regulation will experience positive treatment by peers. This examination of both positive and negative peer treatment will achieve a more thorough and balanced evaluation of youths' social experiences (Crick & Grotpeter, 1996).

The study will also examine the moderational role of emotion regulation in the relationship between anxiety disorder severity and social functioning (i.e., relational peer victimization, loneliness and social dissatisfaction, receipt of prosocial behavior, social problems). Given past research linking emotion regulation with both anxiety disorders and social functioning, there is reason to suggest that emotion regulation serves a moderational role in this relationship. It is hypothesized that anxiety-disordered children who exhibit better emotion regulation will have better social functioning outcomes, whereas children who exhibit poorer emotion regulation will evidence poorer social functioning outcomes. Four sets of moderation

analyses will be conducted to assess the moderating role of emotion regulation in the relationship between anxiety disorder severity (i.e., clinician severity rating) and four separate social functioning outcomes: negative treatment by peers (i.e., relational peer victimization), positive treatment by peers (i.e., receipt of prosocial behavior), loneliness and social dissatisfaction, and social problems.

Study Hypotheses

Based on theory and the empirical evidence discussed previously, the following hypotheses are set forth:

1. Poor emotion understanding poor emotion regulation, low positive affect, and high negative affect will positively predict poorer social functioning (e.g., greater levels of relational victimization, loneliness and social dissatisfaction, social problems). Emotion understanding, emotion regulation, positive affect, and low negative affect will predict adaptive social functioning outcomes (e.g., receipt of prosocial behavior).
2. Emotion regulation will moderate the relationship between anxiety disorder severity (i.e., clinician severity rating) and social functioning (i.e., relational peer victimization, loneliness and social dissatisfaction, receipt of prosocial behavior, and social problems).
    a. It is hypothesized that there will be a stronger link between anxiety disorder severity and negative social functioning outcomes (i.e., relational victimization, loneliness and social dissatisfaction, social problems) for children with low emotion regulation abilities compared to children high in emotion regulation.
    b. An inverse relationship will exist for positive social functioning outcomes (i.e., receipt of prosocial behavior). For youth low in emotion regulation, it is hypothesized that there will be a stronger inverse relationship between anxiety

disorder severity and positive social functioning outcome (i.e., receipt of prosocial behavior) compared to those high in emotion regulation.

CHAPTER 2

METHOD

Procedure

Participants and their parents/caregivers were recruited from community schools, doctors' offices, and flyers that were posted throughout the community. When parents called in, participants first completed a phone screener to assess anxiety disorder symptomology and inclusion/exclusion criteria. Exclusion criteria consisted of the following: IQ below 80, psychotic symptoms, use of psychotropic medication other than stimulant medication, current participation in psychological treatment, parent/caregiver not living with children for at least six months, or suicidal ideation. Participants who were eligible based on the screener were scheduled for a comprehensive assessment. During the assessment, parents/caregivers provided their written consent and children provided their assent to participate in the study. Diagnostic interviews were then conducted by trained clinical psychology graduate students. Participants were eligible if they had a primary diagnosis of either Generalized Anxiety Disorder (GAD), Social Phobia (SoP), or Separation Anxiety Disorder (SAD) based on the diagnostic interview. After eligibility was determined, children and their parent/caregiver completed study questionnaires with the help of a research assistant as needed.

Participants

The current study was part of a larger treatment outcome study for youth with anxiety disorders. Participants consisted of 35 youth between the ages of 7 and 12 (i.e., 84 to 144 months), except for two six-year-old participants who were included in the study given that they were one month shy of their seventh birthday (i.e., both were 83 months old). The sample included 21 (60%) males and 14 (40%) females with a mean age of 8.89 (*SD* = 1.66) or 112.17

months (*SD* = 19.22). A parent/guardian also participated and was required to have lived with the child for at least six months prior to study entry. In regard to the diversity of the sample, 29 youth (82.9 %) were Caucasian, 2 (5.7%) were African American, 2 (5.7%) were Hispanic, and 2 (5.7%) were considered "other." Household income ranged from less than $19,999 to over $80,000 with 2.9% of the sample earning between $10,000 and $19,999, 2.9% between $20,000 and $29,999, 17.1% between $30,000 and $39,000, 8.6% between $40,000 and $49,999, 8.6% between $50,000 and $59,999, 11.4% between $60,000 and $69,999, 2.9% between $70,000 and $79,999, and 45.7% of the sample earning over $80,000.

Measures

Demographics Measure. The Demographics measures is a questionnaire which includes descriptive information about age, sex, race/ethnicity, parent occupation and income, parent education level, marital status of family members, and previous family mental and health history.

Anxiety Disorder Diagnoses. The Anxiety Disorder Interview Schedule (ADIS-IV-C/P; Silverman & Albano, 1996) is a semi-structured clinician-administered interview based on DSM-IV criteria that assesses for the presence of anxiety and related disorders. The child and parent interviews are completed separately and diagnoses are given based upon the fulfillment of diagnostic criteria and a clinician severity rating (CSR) greater than or equal to 4 on a scale from 0-8. Parent and child data are then integrated to form composite diagnoses, and final diagnoses are assigned if a diagnosis was obtained from either the parent or child interview. The ADIS-IV-C and ADIS-IV-P have demonstrated excellent psychometric properties (Silverman, Saavedra, & Pina, 2001) and are considered the "gold standard" for the assessment of anxiety disorders. Psychometric studies of the ADIS-IV-C have shown test-retest reliability Kappa coefficients

ranging from k =.63-.80 using the ADIS-IV-C, and k =.65-.88 using the ADIS-IV-P (Silverman et al., 2001).

Of the 35 participants who participated in this study, 24 (68.6%) had a primary diagnosis of GAD, 8 (22.9%) had a primary diagnosis of SoP, and 3 (8.6%) had a primary diagnosis of SAD. Of the 24 youth diagnosed with a primary diagnosis of GAD, 18 had a comorbid diagnosis of Specific Phobia (SP), 14 had comorbid Social Phobia (SoP), 10 had comorbid Separation Anxiety Disorder (SAD), 8 had comorbid Attention Deficit Hyperactivity Disorder (ADHD), 3 had comorbid Obsessive-Compulsive Disorder (OCD), 3 had comorbid Oppositional Defiant Disorder (ODD), 2 had comorbid Enuresis, 1 had comorbid Post-Traumatic-Stress Disorder (PTSD), 1 had comorbid Major Depressive Disorder (MDD), and 1 had comorbid Dysthymia. Of the 8 youth diagnosed with a primary diagnosis of SoP, 7 had comorbid GAD, 6 had comorbid SP, 4 had comorbid ADHD, 2 had comorbid SAD, 1 had comorbid OCD, 1 had comorbid MDD, and 2 had comorbid ODD. Of the 3 youth diagnosed with a primary diagnosis of SAD, 3 had comorbid SP, 2 had comorbid GAD, 1 had comorbid SoP, and 1 had comorbid ADHD. See table 1 for descriptive information regarding participant diagnoses and comorbidity.

Measures of Emotional Functioning

Emotion Understanding. The Kusche Affective Interview – Revised (KAI-R; Kusche, Greenberg, & Beilke, 1999) is a clinician-administered interview that assesses several components of emotion understanding in youth. Responses to open-ended questions are recorded verbatim and coded for developmental level of response. Children are also prompted to respond to each question with as many answers as they are able to brainstorm. For purposes of this study, the following aspects of emotional understanding were assessed: 1) the ability to discuss emotion-related experiences (e.g., "*Tell me about a time when you felt sad."),* 2) recognition of

emotional cues in self and others (e.g., "*How do you know when other people are feeling jealous?*"), and 3) display rule knowledge (e.g., "*How do you hide your feelings from others? How do others hide their feelings from you?*"). Interrater agreement is good (.76-1.0; Cook, Greenberg, & Kusche, 1994), the measure has demonstrated adequate internal consistency (α=.74; Seja & Russ, 1999), and internal validity has been established as well (Cook et al., 1994; Greenberg, Kusche, Cook, & Quamma, 1995). Internal consistency for this study was .68, .66, and .47 for discussion of emotion-related experiences, recognition of emotional cues in self and others, and display rule knowledge, respectively. To assess interrater reliability, 25% of the KAI-R interviews were randomly selected using a random number generator and re-rated by a graduate student for interrater reliability. Interrater reliability, using the interclass correlation coefficient (ICC) was α = .87 for the ability to discuss emotion related experiences, α = .66 for the ability to recognize emotions in self and others, and α = .86 for display rules knowledge.

Measures of Emotion Regulation

Parent Report of Emotion Regulation. The Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997) is a 24-item report of children's emotion regulatory abilities. This measure yields two subscales. The Emotion Regulation subscale was used for the current study and is comprised of items measuring appropriate emotional and affective expression, empathy, and emotional self-awareness (e.g. "*Can recover quickly from episodes of upset or distress*," and "*Can say when s/he is feeling sad, angry, or mad, fearful, or afraid*"). Higher scores indicate better emotion regulation. This measure has demonstrated good internal consistency, (i.e., .83 for the Emotion Regulation subscale; Shields & Cicchetti, 1997). For this study, the ERC Emotion Regulation subscale had an internal consistency of α = .79.

Child Report of Positive Affect and *Negative Affect.* The Positive and Negative Affectivity Scale for Children (PANAS-C; Laurent et al., 1999) is a 30-item child self-report that measures how often children experienced a variety of emotions over the past few weeks. The PANAS-C is comprised of two subscales: Positive Affect (PA), which examines the frequency of positively-valenced emotions, and Negative Affect (NA) that assesses the frequency of negatively-valenced emotions. The PANAS-C has demonstrated good psychometric properties (e.g., α=.89-90 for PA scale; α=.92-94 for NA scale) and convergent and discriminant validity (Laurent et al., 1999). For this study, the PA scale had internal consistency of α =.87, and the NA subscale had internal consistency of α =.87.

Measures of Social Functioning

Child Report of Positive and Negative Treatment by Peers. The Social Experience Questionnaire (SEQ-SR; Crick & Grotpeter, 1996) is a 13-item child self-report measure of children's treatment by peers. The measure is comprised of three subscales, two of which were used for the current study. The relational victimization subscale assesses the frequency with which peers attempt to harm children's relationships with others, and the receipt of prosocial behavior subscale assesses the frequency with which peers direct caring behaviors towards the child. Youth are asked to report the frequency with which they experience the described behaviors by peers. Items are rated on a 5-point Likert scale ranging from 1 *(not at all)* to 5 *(all the time)*. Higher scores on each subscale are indicative of greater experiences of each construct (e.g., relational victimization, receipt of prosocial behavior). This scale has demonstrated good psychometric properties (e.g., α=.77-.80 for all three subscales; Crick & Grotpeter, 1996). The relational victimization subscale was used to assess negative treatment by peers, whereas the receipt of prosocial behavior subscale was used to assess positive treatment by peers. For this

study, the relational victimization subscale had internal consistency of α =.79, and the receipt of prosocial behavior subscale had internal consistency of α =.77.

Child Report of Loneliness and Social Dissatisfaction. The Asher Loneliness Scale (ALS; Asher et al., 1984) is a 16-item scale that assesses feelings of loneliness and social dissatisfaction in youth (e.g., ‘‘*I have nobody to talk to*,” ‘‘*It’s easy for me to make new friends at school*;’’ reverse coded). Responses to the 16-items are summed to create a total loneliness and social dissatisfaction score. The original scale consists of 24-items, eight of which are filler items that inquire about the child’s hobbies; these items were removed from the scale for the current study given the already lengthy assessment battery. Higher ALS total score ratings are indicative of greater loneliness and social dissatisfaction. The ALS total loneliness score is positively related to negative peer nominations and negatively associated with positive peer nominations and play ratings, supporting the convergent and divergent validity of this measure (Asher et al., 1984; Asher & Wheeler, 1985). The 16-item scale demonstrates good psychometric properties (α=.90; Asher et al., 1984; Storch et al., 2006). This scale had internal consistency of α =.89 in the current study.

Teacher Report of Child Social Problems. The Teacher Report Form (TRF; Achenbach & Rescorla, 2001) is a 118-item measure completed by a teacher to provide a measure of children’s internalizing and externalizing problems and social and academic competencies. Items are rated on a 3-point Likert scale, consisting of “*not true*, “*sometimes true*,” and “*very true or often true*.” The TRF consists of eight subscales and three composite scales. The social problems subscale (i.e., t-score) was used for this study and consists of 13 items relating to children’s feelings of rejection by peers, feelings of social isolation and inferiority, and age-appropriateness of their social behaviors. The TRF is used extensively and the social problems subscale has shown good

reliability (α = .81; Schultz et al., 2001). The social problems subscale had internal consistency of .79 in the current study.

CHAPTER 3

RESULTS

Preliminary Data Analyses

Prior to the conduction of statistical analyses, reliability analyses were conducted on all measures and the assumptions underlying each analysis were explored. For example, prior to the regression analysis, multicollearity was examined through inspection of the VIF and Tolerance, and all values were within acceptable ranges (i.e., all VIF values were less than 10, Myers, 1990; all Tolerance statistics were greater than .2; Menard, 1995). Homoscedasticity was examined by reviewing the variance of the residuals of each predictor variable. Independence of errors was tested through inspection of the Durbin-Watson statistic, which should typically fall between 1 and 3 for independence (Field, 2005). The Durbin-Watson statistic for the regression analysis was 1.58. To examine the assumption of linearity, the data was plotted using scatterplots. The plots, as well as Mahalanobis distance were used to examine the presence and potential impact of outliers. All Mahalanobis's values were below the cutoff of 11 for small sample sizes (Barnett & Lewis, 1978).

To use a composite measure of emotion understanding, the correlations among the three facets of emotion understanding (i.e., ability to discuss emotion-related experiences, recognition of emotion in self and others, display rule knowledge) were first examined to justify aggregation. Based on theory and previous research, high correlations were expected, which would justify the combination of the three emotion facets into one composite measure of emotion understanding. Upon examination of these correlations, the ability to discuss emotion-related experiences was significantly correlated with the ability to recognize emotional cues ($r = .46$, $p < .01$) and display rules knowledge ($r = .60$, $p < .001$). However, display rules knowledge was not significantly

correlated with the ability to recognize emotions in self and others (r =.21, p =.23), so we were not able to justify aggregation. Given that we were unable to enter each emotion understanding subscale individually into the model due to the small sample size and corresponding decrease in power, a correlation matrix (see Table 2) guided which variables were subsequently entered. Table 3 provides a description of the mean, standard deviation, and range for each study variable.

Primary Analyses

Emotion Variables Related to Relational Victimization

For the first analysis (1), negative affect was the only emotion variable that was significantly correlated with relational victimization (r = .53, p < .001).

Emotion Variables Predicting Loneliness and Social Dissatisfaction

For the second analysis (2), positive and negative affect were significantly correlated with loneliness. Thus, positive and negative affect were entered into simultaneously into a regression model as predictors, and loneliness was entered as the dependent variable. The overall model was significant [F (2, 34) = 16.66 p < .001] and accounted for 51% of the variance; both positive affect [B = -.58, p <.001] and negative affect [B = .33, p <.05] significantly predicted loneliness.

Emotion Variables Related to Receipt of Prosocial Behavior

For the third analysis (3), positive affect was the only emotion variable that was significantly correlated with receipt of prosocial behavior (r = .43, p < .05).

Emotion Variables Related to Teacher-Reported Social Problems

For the fourth analysis (4), positive affect was the only emotion variable that was significantly correlated with teacher-reported social problems (r = -.47, p < .01).

Moderation Analyses

To assess the role of emotion regulation as a moderator of the relationship between anxiety disorder severity (i.e., clinician severity rating) and the four social functioning outcomes (i.e., relational peer victimization, loneliness, receipt of prosocial behavior, social problems), four moderation analyses were conducted based on the procedures set out by Baron and Kenny (1986). In each of the four moderation analyses, the dependent variable (i.e., relational peer victimization, loneliness, receipt of prosocial behavior, social problems) was regressed onto the independent variable (anxiety disorder severity), the moderator (emotion regulation), and the interaction of anxiety disorder severity X emotion regulation. Moderator effects would be indicated by the significant effects of the interaction term when both the independent variable and the moderator are controlled (Baron & Kenny, 1986). It was hypothesized that for those low in emotion regulation, there would be a stronger link between anxiety disorder severity and negative social functioning outcomes (i.e., relational victimization, loneliness, social problems). For those high in emotion regulation, there would be a weaker link between anxiety disorder severity and negative social functioning outcomes. An inverse relationship would exist for positive social functioning outcomes (i.e., receipt of prosocial behavior). Specifically, for those low in emotion regulation, there would be a strong inverse relationship between anxiety disorder severity and the positive social functioning outcome (i.e., receipt of prosocial behavior). For those high in emotion regulation, there would be a weaker inverse relationship between anxiety disorder severity and the positive social functioning outcome (i.e., receipt of prosocial behavior).

In the first moderation analysis (1), the following variables were entered into the model predicting relational victimization: anxiety disorder severity, emotion regulation, and the interaction of anxiety disorder severity X emotion regulation. Both anxiety disorder severity [B = -2.77, p<.05] and emotion regulation [B = -1.82, p<.05] significantly predicted relational

victimization, and the overall interaction was significant [$B = 3.85$, $p < .01$]. To clarify this interaction, emotion regulation was dichotomized into two groups of high and low emotion regulation based on a mean split, and correlations were conducted between anxiety disorder severity and relational victimization. Anxiety disorder severity was not significantly related to relational victimization for either the group characterized by high emotion regulation (r=.41, p = .091) or by low emotion regulation (r = -.27, p =.298].

In the second moderation analysis (2), the following variables were entered into the model predicting loneliness: anxiety disorder severity, emotion regulation, and the interaction of anxiety disorder severity X emotion regulation. Neither anxiety disorder severity [$B = -.06$, p =.959] nor emotion regulation [$B = -.23$, p =.781] significantly predicted loneliness, and the interaction was not significant [$B = .43$, p =.782].

In the third moderation analysis (3), the following variables were entered into the model predicting receipt of prosocial behavior: anxiety disorder severity, emotion regulation, and the interaction of the anxiety disorder severity X emotion regulation. Neither anxiety disorder severity [$B = -.98$, p =.414] nor emotion regulation [$B = -.46$, p =.571] significantly predicted receipt of prosocial behavior, and the interaction was not significant [$B = 1.34$, p =.388].

In the fourth moderation analysis (4), the following variables were entered into the model predicting social problems: anxiety disorder severity, emotion regulation, and the interaction of anxiety disorder severity X emotion regulation. Neither anxiety disorder severity [$B = 1.41$, p =.301] nor emotion regulation [$B = .49$, p =.592] significantly predicted social problems, and the interaction was not significant [$B = -1.62$; p =.378].

CHAPTER 4

DISCUSSION

The goal of the current study was to examine links between emotional and social functioning in youth with anxiety disorders. Though youth with anxiety disorders have demonstrated emotion-related deficits (Suveg & Zeman, 2004) and difficulties in social functioning (Verduin & Kendall, 2008), there is an absence of research examining emotional and social functioning concurrently in an anxiety-disordered sample. Thus, this research extended previous findings by examining these variables simultaneously. This study examined whether emotion understanding, emotion regulation, positive affect, and negative affect were related to children's positive and negative treatment by peers, perceptions of loneliness and social dissatisfaction, and social problems in youth with anxiety disorders. It was hypothesized that anxiety-disordered youth who demonstrated adaptive emotional functioning would evidence better social functioning, and youth with poor emotional functioning would exhibit greater difficulties with social functioning. Additionally, it was hypothesized that emotion regulation would moderate the relationship between anxiety disorder severity and social functioning outcomes. Overall, results provided partial support for study hypotheses. Positive and negative affect were significantly related to various aspects of social functioning. No evidence was found for the significance of emotion regulation as a moderator of the link between anxiety disorder severity and social functioning outcomes.

Regarding the hypothesis that emotion understanding, emotion regulation, positive affect, and negative affect would predict negative treatment by peers, negative affect was the only variable that was significantly related to relational victimization. It is interesting that negative affect was significantly related to relational victimization whereas low positive affect was not,

though this can be understood by considering the nature of these emotions in anxious youth Negative affect is generally more difficult to regulate than positive affect due to the more aversive nature and greater arousal associated with such emotions (Bradley, 2000; Cacioppo, Berntson, Larsen, Poehlmann, & Ito, 2000). Further, given that anxious youth often experience a great intensity of negative emotionality (Laurent et al., 1999; Lonigan Carey, Finch, 1994; Suveg & Zeman, 2004), increased physiological hyperarousal (Clark & Watson, 1991), and use less constructive ways to manage their negative emotions (i.e., worry, sadness, anger; Suveg & Zeman, 2004), these youth may have a more difficult time regulating their negative emotions. This, in turn, may result in the expression of negative emotions in dysregulated ways. Thus, the presence of frequent negative emotions may be perceived as aversive and would likely elicit more negative attention from peers due to the irritating and unwelcoming nature of such displays. For instance, exhibitions of tantrums, crying, or anger may result in a youth being made fun of by peers or excluded from activities given the undesirable nature of witnessing or tolerating such behavior in one's peer group. When considering items that make up the relational victimization subscale (e.g., "*often left out on purpose when it's time to play,*" *"peers try to stop other kids from liking you by saying mean things about you*"), such behavior seems comprehendible due to the typical nature of social interactions at this age level (i.e., 7-12).

The finding that neither emotion understanding or emotion regulation was significantly related to relational victimization suggests that these facets may not be aversive enough to elicit overt targeting by peers. Instead, it is possible that poor emotion understanding and regulation may simply be linked with other aspects of social functioning, though not necessarily this particular form of victimization by peers. Overall, it seems that displays of negative affect are viewed particularly unfavorably and may result in negative peer treatment. These findings are

consistent with research that children who frequently display negative emotions are more likely to be rejected by peers and experience reduced popularity and poorer peer relationships (Dougherty, 2006; Eisenberg et al., 1993; Isley et al., 1999).

Regarding the hypothesis that emotion understanding, emotion regulation, positive affect, and negative affect would predict loneliness and social dissatisfaction, both positive and negative affect were significant predictors of child loneliness and social dissatisfaction in the expected directions. Specifically, youth who displayed high positive affect were less likely to experience loneliness and social dissatisfaction, and those who exhibited frequent negative affect reported experiencing a higher degree of loneliness and social dissatisfaction. This is consistent with research that emotionally positive children are likely to experience more positive social interactions, and emotionally negative children are more likely to experience poorer social functioning (see Dougherty, 2006; Eisenberg et al., 1993; Isley et al., 1999; Sroufe et al., 1985). The concept of emotion contagion can be used to understand these findings. Emotion contagion refers to the tendency for one person's emotional expressions to generate a like emotional state in the person who perceives the expression (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Hatfield, Cacioppo, & Rapson, 1993; Saarni, Mumme, Campos, Damon, & Eisenberg, 1998). It refers to the "catching" of an emotion (Morris, Silk, Steinberg, Myers, & Robinson, 2007), and occurs when an emotional gesture (e.g., facial, vocal gesture) generates a similar response in another. For example, a peer's "contagious" laugh might have the tendency to peak another peer's curiosity and then consequently, elicit laughter, from that same peer. Thus, the original display of positive affect by the youth cultivates a shared, enjoyable interaction for both peers, which will increase the likelihood of future social interactions. Contrastingly, youth

who display frequent negative emotions are less likely to be sought out by peers, resulting in greater feelings of loneliness due to the lack of social engagement.

Again, the lack of significant findings for the emotion understanding and regulation variables suggests that these variables may not be as important for social functioning in a clinical sample of youth with anxiety disorders. In their review, Hubbard and Coie (1994) discuss that although it is plausible to think that socially competent children will be better able to identify their own emotions than are other children, there is little empirical support for this assumption. For example, when Southam-Gerow and Kendall (2000) compared anxious and non-anxious youth on facets of emotion understanding using the KAI-R, they found group differences for understanding relating to the ability to hide and mask emotions, as well as the ability to change emotions (both of which are related to emotion regulation). Further, these facets were significantly related to internalizing symptoms subscales on the Child Behavior Checklist (CBCL). However, in the same study, no group differences were found regarding knowledge of emotional cues in the self and others and in understanding that one can experience multiple emotions simultaneously, and these facets were not significantly related to anxiety subscales. Therefore, Southam-Gerow and Kendall's (2000) research suggests that the emotion understanding deficits in youth with anxiety disorders may be limited to display rule knowledge and the ability to change emotions. Given that the current study did not find significant relations between anxiety disorder severity and display rule knowledge, these findings are somewhat discrepant. However, given the limited research in this area, continued research will be necessary to clarify which emotion understanding deficits are present in anxiety-disordered youth and which facets, if any, are linked with social functioning.

Regarding the hypothesis that emotion understanding, emotion regulation, positive affect, and negative affect would predict positive treatment by peers, positive affect was the only variable that was significantly related to receipt of prosocial behavior by peers. This is consistent with research that positive affective exchanges are strongly related to popularity, positive adjustment, and social competence (Isley et al., 1999; Sroufe et al., 1985). Youth who display positive emotions (e.g., smiling, excitement) are likely to be sought out by peers given the enjoyable nature of such displays and the desirable nature of being surrounded by positive peers. This is also in line with the research previously mentioned on emotion contagion (Denham et al., 1997; Saarni et al., 1998). Therefore, positive affect seems to be well-received by peers and may increase the likelihood that peers will initiate social interactions and engage in prosocial behavior, such as saying something nice or doing something that makes the peer feel happy. The lack of significant findings for emotion understanding, emotion regulation, and negative affect suggests that these variables may not be as vital to motivate positive treatment by peers. Specifically, given that prosocial behavior by peers involves effort on the part of a peer, peers may not be inclined to engage with another peer unless there is a clear incentive to interact. In this case, the witnessing of positive affect along with the desire to share that positive affect may be the primary incentive.

Regarding the hypothesis that emotion understanding, emotion regulation, positive affect, and negative affect would predict social problems, positive affect was the only variable that was significantly related to social problems. Specifically, anxiety-disordered youth who exhibited greater displays of positive affect had fewer social problems. Although research shows that anxiety-disordered youth experience poorer social functioning overall (Verduin & Kendall, 2008), it is possible that displays of positive affect serve as a buffer to decrease the extent of

social problems. It is possible that the presence of positive affect may simply decrease the overall severity of symptoms in a sample of anxious youth. Nevertheless, findings from the current study suggest that positive affect may serve as a protective factor against social problems in youth with anxiety disorders.

It is notable that neither the ability to discuss emotion-related experiences, recognition of emotional cues in self and others, display rule knowledge, or emotion regulation were significantly related to any of the social functioning outcomes for this sample of anxious youth. However, since the avoidant behavior common in anxious youth may minimize their social engagement in general, it is possible that there were fewer opportunities for these youth to communicate emotion understanding and emotion regulation to peers, resulting in decreased impact upon social functioning. Further, it may be that emotion understanding and emotion regulation may be too subtle to be perceived or are simply not valued as much by peers at this relatively young age. Instead, it is possible that visible displays of affect are of distinct importance for anxiety-disordered youth in this age group given the frequency that affect is displayed and the ease with which it is observed. Another possibility is that the significant findings were affected by reporter bias given that the measures of positive and negative affect, along with measures of positive and negative treatment by peers and loneliness, were all completed based on child-report. Conversely, the emotion understanding interview was clinician-administered, and parents provided the measure of emotion regulation. Some research shows that children regulate their emotions or constrain their emotional expression more with peers than parents or adults because they expect negative interpersonal consequences such as embarrassment (Karniol & Heiman, 1987; Zeman & Garber, 1996; Zeman & Shipman, 1997). Due to fear of criticism, the child may be more likely to inhibit their feelings or bottle them up

until they are in the presence of their parents. Thus, it is possible that parents perceive their youths' emotion regulation abilities differently than what is exhibited when in the presence of peers. If children are acting differently in the presence of peers versus their home, it follows that they may have different outcomes associated with the varying displays of emotion regulation.

It is uncertain why there was no evidence of moderation in the current study. It is possible that the relationships simply do not exist in the manner proposed in the current study. Another possibility is that the small sample size limited the ability to detect a significant interaction, and the groups broken down into groups characterized by high and low emotion regulation were not large enough to detect differences due to the reduction in power. Inspection of moderate-sized, yet non-significant correlations supports this possibility. Moderation effects are difficult to detect and more prone to Type II error (McClelland & Judd, 1993), particularly with small sample sizes. Future research with a larger sample could more clearly examine these relationships.

Clinical Implications

Given that this research consisted of a clinical sample of youth with anxiety disorders, several clinical implications are noted. First, results showed that anxiety-disordered youth who frequently reported negative affect were more likely to experience loneliness and relational victimization by peers. Since peer victimization is associated with maladaptive outcomes (Bagwell, Newcomb, & Bukowski, 1998; Buhs & Ladd, 2001; Buhs, Ladd, & Herald, 2006; Roth, Coles, & Heimberg, 2002; Storch et al., 2006), this suggests the importance of interventions to reduce this perpetual cycle of maladaptive behavior. In a review, Kingery et al. (2010) emphasizes the importance of identifying "specific issues that should be targeted in interventions aimed at decreasing the incidence of peer victimization among anxious youth" (p.

120). Thus, interventions that teach anxiety-disordered youth skills to regulate negative emotions may prove helpful in reducing their experience of relational victimization by peers. For instance, emotion-focused cognitive behavioral therapy (EBCT) is an intervention which combines the traditional components of cognitive-behavioral therapy (e.g., psychoeducation, relaxation, exposures) with skills to manage and regulate a variety of negative emotions (e.g., guilt, sadness, anger) and could prove to be helpful for these youth (Suveg, Kendall, Comer, and Robin, 2006). It is also noteworthy that anxiety-disordered youth who reported high levels of positive affect experienced fewer symptoms of loneliness and social dissatisfaction, more prosocial behavior by peers, and fewer social problems. This alludes to the importance of teaching anxiety-disordered youth skills to increase displays of positive affect. Although low positive affect is not typically considered a core feature of anxiety disorders (Clark & Watson, 1991), strategies to increase positive affect, such as increased involvement in pleasurable activities may be helpful in treatment to improve social functioning.

Study Limitations and Future Directions

Several limitations to the study are noted. First, the cross-sectional nature of this study limits our ability to make causal assumptions. For example, it is unclear from the current study whether experiences of affect impact the child's social interactions or vice-versa, as it is also possible that the child's positive or negative social interactions might result in varying experiences of affect. Longitudinal research would be necessary to better understand the direction of these relationships, though it is likely that these influences are also bidirectional. Additionally, studies should continue to examine mediators and moderators of the relationship between anxiety and social functioning in youth. Further, this study would have benefitted from inclusion of a non-clinical control group. This would have allowed for comparison of links

between emotional and social functioning in both non-clinical and clinical youth to determine if these relationships vary between populations. Since this study focused exclusively on youth with a primary anxiety disorder diagnosis, this research does not permit conclusions about the specificity of the findings to anxiety disorders or the generalizability of the findings to other psychological disorders. This research could be broadened by comparison to other psychological groups. Additionally, future research would benefit from a more comprehensive assessment of the variables used in the current study. Other reports (e.g., peer ratings, behavioral observations) could be used to validate child and teacher report of social difficulties or to provide a better measure of youth emotion regulation abilities when in the presence of peers. Additionally, our sample size was relatively small, and it is possible that expected patterns of relationships would emerge with a greater number of participants. Future research should extend this research to larger samples to allow for examination of variables not included in the study (e.g., child sex). The majority of the sample was Caucasian and representative of only a small region, so future research should examine these relationships with a diverse group of participants. This would be notable given that emotion-related functioning and social behavior is likely to vary among different cultures. This study included youth of a relatively defined age group. Future research would benefit from examining relations between emotional and social functioning in anxiety-disordered youth across a broader developmental span. Lastly, this research only began to understand the social functioning of youth with anxiety disorders, and numerous more social functioning variables could be examined in future research (e.g., peer acceptance, friendship, popularity, intimacy of peer relationships).

Conclusions

In conclusion, the results of this study suggest that both positive and negative affective experiences are notably related to social functioning in youth with anxiety disorders. Several strengths of this study are noted. First, these findings are important because of the limited research on emotional functioning and social functioning in youth with anxiety disorders. Further, almost no studies have examined relationships between emotional and social functioning concurrently in a sample of youth with anxiety disorders, and this study is a preliminary step towards better understanding of these relationships. Additionally, this study used child, parent, and teacher report which allowed for multi-informant assessment. Further, this study adds to the current literature by examining both positive and negative treatment by peers. As indicated in a review by Kingery et al. (2010), little is known about the peer experiences of anxiety-disordered youth, though the extant research to date indicates that these youth experience poorer social functioning. Kingery et al. (2010) emphasizes the need for future studies to identify factors that explain why these youth experience poorer social functioning. The above findings suggest that affective experiences are markedly important due to their association with social functioning for youth, aged 7-12, with anxiety disorders. This is in line with research by Verduin and Kendall (2008) which found that peers notice visible signs of anxiety displayed by anxiety-disordered youth, and consequently rate them lower in peer likability. Overall, this study contributes to the literature on emotional and social functioning in youth with anxiety disorders.

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Table 1: Participant Diagnoses and Comorbidity

	Generalized Anxiety Disorder (*n*=24)	Social Phobia (*n*=8)	Separation Anxiety Disorder (*n*=3)
Generalized Anxiety Disorder	--	7	2
Social Phobia	14	--	1
Separation Anxiety Disorder	10	2	--
Specific Phobia	18	6	3
ADHD	8	4	0
Obsessive-Compulsive Disorder	3	1	0
Oppositional Defiant Disorder	3	2	0
Enuresis	2	0	0
Post-Traumatic Stress Disorder	1	0	0
Major Depressive Disorder	1	1	0
Dysthymia	1	0	0

Table 2: Intercorrelations between Measures

	1	2	3	4	5	6	7	8	9	10	11
1. Clinician Global Severity	1.0										
2. Ability to Talk about Emotions	-.08	1.0									
3. Recognition of Emotions	-.07	.46**	1.0								
4. Display Rule Knowledge	-.27	.60***	.21	1.0							
5. Emotion Regulation	.18	.13	.11	-.05	1.0						
6. Positive Affect	.17	-.07	.09	-.16	.16	1.0					
7. Negative Affect	.44**	-.10	-.21	-.15	.17	-.17	1.0				
8. Relational Victimization	.18	.07	.03	-.01	.18	-.09	.53***	1.0			
9. Loneliness	.27	.06	-.10	-.12	.04	-.64***	.43*	.28	1.0		
10. Receipt of Prosocial Behavior	.09	-.01	.14	.12	.24	.43*	.17	.37*	-.38*	1.0	
11. Social Problems	.13	.30	.05	.22	-.23	-.47**	.17	.17	.30	-.11	1.0

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

Table 3: Means, Standard Deviations, and Ranges for Study Variables

	Mean	Standard Deviation	Range
Clinician Global Severity Rating	5.43	1.09	4-7
Ability to Talk about Emotions	8.8	1.64	3-10
Recognition of Emotions	6.71	2.31	2-14
Display Rule Knowledge	1.95	.56	0-2.67
Emotion Regulation	24.2	3.37	18-31
Positive Affect	52.46	11.82	21-68
Negative Affect	35.83	12.27	16-64
Relational Victimization	10.03	4.55	5-25
Loneliness and Social Dissatisfaction	34.89	12.48	16-62
Receipt of Prosocial Behavior	18.74	4.04	7-25
Social Problems	54.23	5.69	50-67

Table 4: Emotion Variables Predicting Loneliness and Social Dissatisfaction

Predictor Variables	Loneliness and Social Dissatisfaction			
	β	*SE* B	R^2	F_{Model}
			.51	16.66***
Positive Affect	-.58	.13		
Negative Affect	.33	.13		

Note. Positive and Negative Affect measured by the Positive and Negative Affectivity Scale for Children; Loneliness and Social Dissatisfaction measured by the Asher Loneliness Scale.

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