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Parental and Peer Predictors of Social Anxiety in Youth

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Abstract

The aim of the current study was to extend etiological models of social anxiety in youth by examining the relative importance of parental (i.e., parental anxiety, rejection, and overcontrol) and peer factors (i.e., social acceptance, social support, and friendship quality). Sixty-three youth (ages 7–12; 52% male) and their parents participated in the study. Using multiple informants of these factors, results generally indicated that higher levels of parental anxiety, rejection, and overcontrol were related to higher levels of social anxiety. Higher levels of social support, acceptance, and validation were associated with lower levels social anxiety. The strongest predictors of social anxiety symptoms (as rated by an independent evaluator) were parental anxiety and friendship quality (i.e., validation from a peer). The strongest predictors of child rated social anxiety symptoms were parental overcontrol and perceived social acceptance. Findings are discussed in the context of current etiological models and suggest that interventions aimed at lowering social anxiety in youth address both parental anxiety and peer relationships.

Keywords

Social anxiety; Children; Parental anxiety; Parenting style; Peer relationships

Introduction

Symptoms of social anxiety are common during childhood and adolescence. However, when elevated, these symptoms are associated with significant impairment in social, emotional, and academic functioning [1–5] and predict the development of social phobia [6]. Consequently, research aimed at identifying etiological factors of social anxiety is critical. To date, a number of etiological factors of child social anxiety have been identified including genetic factors, behavioral inhibition, parent–child attachment, parenting styles, peer relationships, social skills deficits, and traumatic experiences [7]. However, few studies have examined the relative importance of these factors. The current study addresses this question, focusing on the role of parental and peer factors in children “at risk” due to parental anxiety disorder and/or who have subclinical levels of social anxiety. Identifying factors predictive of social anxiety at subclinical levels of severity would contribute to the literature on risk and protective factors that could be examined in future prospective studies.

With respect to parental factors, high levels of parental anxiety, parental overcontrol/overprotection, and parental rejection have been specifically noted as being associated with

high levels of social anxiety symptoms and disorders in youth. The link between parental and offspring anxiety has been established through twin and family studies [8–11]. For instance, Lieb et al. [12] found that adolescent offspring of parents with anxiety disorders had higher rates of social phobia (OR = 3.5) than offspring of parents without an anxiety disorder.

Parental overcontrol (also referred to as overprotection) is a specific parenting behavior associated with elevated levels of social anxiety in youth. Parental overcontrol is hypothesized to diminish a child's opportunity to explore new situations and acquire new skills, including social skills, and thus may result in lower social competence and higher social anxiety and avoidance [13]. Bogels et al. [14] found that children's perceived parental overcontrol was associated with higher levels of self-reported social anxiety within both a clinical outpatient sample of youth with various psychiatric disorders and a healthy control group. Similarly, Greco and Morris [15] found that higher levels of self-rated child social anxiety were related to higher ratings of paternal overcontrol.

Parental rejection has also been linked with higher social anxiety such that higher levels of rejection foster insecure attachments which increase social anxiety [16]. However, only two studies have examined this relationship in youth. Lieb et al. [12] found that adolescents' ratings of parental rejection significantly predicted diagnoses of social phobia in a large community sample. In contrast, Bogels et al. [14] found that children's perceived parental rejection did not predict self-reported levels of social anxiety. Thus, the link between parental rejection and child social anxiety remains unclear and needs replication.

Taken together, results from studies that examined parental factors provide evidence for parental anxiety, parental overcontrol, and to a lesser extent parental rejection as predictors of child social anxiety. However, there is a lack of research comparing the relative importance of these three parental variables. In the only study known to examine the relative contribution of parenting behaviors and parental anxiety, Whaley et al. [17] found that parenting behaviors (i.e., granting of autonomy, warmth, and positivity) were more salient predictors of child anxiety (though not specifically social anxiety) than either maternal anxiety or parental strain ($N = 36$). Thus, additional research is needed to examine the relative importance of parental predictors of child social anxiety.

With respect to peer factors, social acceptance, social support, and friendship quality have each been linked to social anxiety. Lack of social acceptance from peers has been theorized to contribute to children's perceptions of social incompetence [18]. Furthermore, low perceived social acceptance may directly contribute to feelings of anxiety due to the failure to make desired impressions on others [19]. In samples of both clinically anxious and community children, higher levels of social anxiety were consistently linked with lower levels of social acceptance [20–22].

Perceived social support has also been theorized to relate to an individual's well-being such that the less social support one has available the greater their risk for psychological maladjustment [23]. Furthermore, low social support has been associated with higher levels of anxiety and depression in children and adolescents [24–26]. Only one study has examined the direct association of social support and social anxiety in youth. La Greca and Lopez [21] found that higher levels of perceived social support from classmates were related to lower levels of social anxiety in an adolescent community sample. Unfortunately, no studies to date have tested this relation with children.

Finally, specific friendship qualities such as validation and intimacy have been shown to influence children's and adolescents' emotional and psychological adjustment [27–29]. For instance, high friendship quality has been found to correlate with lower levels of general

anxiety in children [30]. Similarly, La Greca and Harrison [31] also found that more positive interactions in best friendships (e.g. approval) were associated with a lower level of social anxiety in a community sample of adolescents. Furthermore, La Greca and Lopez [21] found that adolescents with higher social anxiety reported having fewer friendships.

Taken together, there is a growing body of research indicating that various peer factors (acceptance, support, friendship quality) are associated with social anxiety in children. However, the studies are few in number, have not compared the relative importance of these peer factors, and have focused on adolescent populations. Although the typical onset of social anxiety disorder occurs between adolescence and young adulthood [5, 32] children as young as 8 years old have been diagnosed with this disorder [33]. Therefore, it is essential to understand how peer relations relate to social anxiety in children. Bolstering the friendship quality of youth may reduce the risk conferred by high levels of social anxiety.

Despite the evidence linking parent and peer factors with social anxiety, no study has examined the relative contributions of these broad domains to levels of social anxiety in children. Moreover, most studies have relied exclusively on self-report measures, which may have inflated results due to shared method variance. The present study addressed these issues by examining: (1) the relative importance of parental variables (i.e., parental anxiety, parental overcontrol, and parental rejection) and child social anxiety; (2) the relative importance of peer variables (i.e., social acceptance, social support, and friendship quality) and child social anxiety; and (3) the relative importance of parental and peer variables in the prediction of child social anxiety. The present study utilized a multi-informant approach and incorporated child and independent evaluator (IE) ratings of child social anxiety, independent observer (IO) and child ratings of parental overprotection, and child and parent ratings of child peer difficulty. Based on the literature, it was hypothesized that (1) parental anxiety, parental overprotection, and parental rejection would be correlated positively with children's level of social anxiety and that parenting behaviors (e.g., overcontrol and parental rejection) would be more salient predictors of child social anxiety compared to parental anxiety; (2) social acceptance, social support, and friendship quality would be correlated negatively with children's level of social anxiety. No predictions were made about the relative importance of peer factors, as well as parental versus peer factors given that no evidence exists to guide hypotheses.

Method

Participants

Participants consisted of 63 children 7–12 years old (mean age = 9.62; SD = 1.54) and their biological parents. Child participants were 52% male ($n = 33$) and none of the children had a psychiatric illness (based on the Anxiety Disorders Interview Schedule for Children; ADIS-C) [34]. Children were primarily of Caucasian ($n = 49$; 78%) ethnicity, followed by African American ($n = 8$; 13%), Asian ($n = 4$; 6%), and other ($n = 2$; 3%). Of the 63 parent participants, 26 parents had an anxiety disorder (generalized anxiety disorder = 18; panic disorder with agoraphobia = 3; social phobia = 2; specific phobia = 2; and panic disorder without agoraphobia = 1) and 37 parents had no psychiatric diagnosis. Parental diagnoses were determined via the Anxiety Disorders Interview Schedule for DSM-IV [35]. The parents' age ranged from 28 to 58 years old (mean age = 40.67; SD = 6.36). The parent participants were primarily female (92%; $n = 58$), currently married ($n = 53$; 84%), and had an annual household income of \$80,000 or higher ($n = 36$; 57%). There were no baseline differences between offspring of anxious as compared to non-anxious parents on age, gender, marital status, and household income. However, offspring of anxious parents exhibited higher social anxiety symptoms as compared to offspring of non-anxious parents (as measured by the ADIS-C severity/impairment ratings). Furthermore, there were

significantly more European American off-spring of anxious, compared to non-anxious, parents.

Procedure

Parents with anxiety disorders were recruited to participate in a study examining the impact of an anxiety prevention program on their non-anxious offspring, and parents without any psychiatric diagnosis were recruited as healthy controls and were not included in the anxiety prevention program. Data presented for this paper were collected at the baseline assessment before involvement in the prevention study. Families completed an in-person evaluation, during which all measures for the present study were collected. All participants provided written informed consent to the study procedures prior to completing the evaluation.

Measures of Anxiety Symptoms

Anxiety Disorders Interview Schedule for DSM-IV Child Version (ADIS-C) [34]

—Composite ratings of social anxiety (based on child and parent interviews as recommended by the author's manual) were obtained using the ADIS-C, which assesses a broad range of anxiety, mood, and externalizing disorders. Trained Masters or doctoral level clinicians conducted both interviews. Clinician severity/impairment ratings were generated for the social phobia section (range = 0–8; a 4 is required to make a diagnosis) even if the child did not meet diagnostic criteria for this disorder. The interview has good test–retest reliability ($r = 0.94$ for the parent and $r = 0.92$ for the child interviews) [36] and is sensitive to treatment effects in studies of youth with anxiety disorders [37, 38]. Based on a random selection of 20% of the interviews, 100% inter-rater agreement on diagnosis and CSRs was obtained for the current sample. The definition of agreement used to determine inter-rater reliability for diagnosis and CSR was (1) agreement on presence or absence of diagnosis and (2) CSR rating of within one point.

Screen for Child Anxiety-Related Emotional Disorders-Child Version (SCARED-C) [39, 40]

—Child rated social anxiety symptoms were assessed using the SCARED-C, a 41-item questionnaire measure of pediatric anxiety that has been demonstrated to differentiate between clinically anxious and nonanxious youth [40]. Children responded to items using a 3-point Likert-type scale describing the degree to which statements are true about them (not true or hardly ever true, somewhat true or sometimes true, very true or often true). A sample item on the social anxiety subscale is: “I worry about being as good as other kids.” Internal consistency for the current sample was .83.

State-Trait Anxiety Inventory (STAI; Trait Version) [41]—Parental anxiety was assessed using the STAI, which is a self-report measure of stable, enduring symptoms of anxiety, including the propensity to attribute threat to stressful situations. The Trait scale consists of 20 items ($\alpha = .94$ in the current sample), with a response scale that ranges from 1 (Almost Never) to 4 (Almost Always). The STAI yields a Total Score (ranging from 20 to 80) with higher scores reflecting higher levels of anxiety. The STAI has shown excellent test–retest reliability ($r_s = 0.73$ – 0.86) and correlates highly with other measures of adult anxiety symptoms ($r_s = 0.73$ – 0.85) [41].

Measures of Parenting Variables

Egna Minnen Beträffande Uppfostran (“My memories of upbringing;” EMBU-C) [42]—Children's perceptions of parental overcontrol and rejection were obtained using the EMBU-C. The measure has adequate internal consistency, test–retest reliability, and construct validity [42–44]. The overcontrol subscale ($\alpha = .65$ for the current sample) consisted of 10 items that assessed parental overcontrol/protection (e.g., “Your parents think

that they have to decide everything for you”). The rejection subscale ($\alpha = .76$ for the current sample) consisted of 10 items that assessed parental rejection and criticism (e.g., “Your parents treat you unfairly”). Children responded to items using a 4-point Likert-type scale, with scores ranging from 10 to 40 for each scale. Higher scores reflect greater perception of a particular parenting domain.

The *Five Minute Speech Task and Coding Manual* (FMST) [45] assessed parental overcontrol during parent–child interactions. Parents and children were told to “prepare a speech about yourself.” Five minutes were allotted for the preparation time and parent–child dyads were videotaped in a room alone. This 5 minute segment was coded using a standardized coding procedure [45] by an independent observer (IO). After the 5 minutes of preparation, the interviewer returned and asked the child to deliver the speech into the camera. Parent–child interactions were coded by undergraduate and graduate level research assistants (IOs) for presence of overcontrol and lack of granting of autonomy (e.g., parent attempts to control task). This parent behavior was rated at 1-minute intervals on a 5-point Likert scale that incorporated both frequency and severity of the behavior, ranging from 0 (no presence of the behavior) to 4 (presence of the behavior for most of the minute or several instances of severe examples of the behavior). Scores from both variables were combined to create a new variable: Overcontrol/Granting autonomy. Inter-rater reliability was assessed using intraclass correlation coefficients (ICC). ICCs have been found to be adequate for these parenting domains: Overcontrol (.90) and Granting Autonomy (.96) [46]. Higher scores on the combined variable reflect greater frequency and severity of overcontrol.

Measures of Peer Variables

Self-Perception Profile for Children (SPPC) [47]—Children’s perceptions of social acceptance were obtained using the SPPC, which is a 36-item measure that taps into six domains of self-perception. This measure has high internal consistency and confirmatory factor analysis supporting the construct validity of the six subscales [47]. For the purpose of the present study, only the social acceptance subscale, which consisted of six items ($\alpha = .69$ for the current sample), was used. Children chose from one of two statements that best described them and then decided whether it was “Really True for Me” or “Sort of True for Me” (e.g., Some kids find it *hard* to make friends BUT other kids find it’s pretty *easy* to make friends). A mean score was calculated for this subscale (which ranges from 1 to 4), where higher scores reflect more adequate self-judgment of social acceptance.

Social Support Scale for Children (SSSC) [48]—Children’s ratings of perceived social support were obtained using the SSSC, which is a 24-item, child-report measure that assesses the degree to which youth perceive support coming from four sources: parent, classmate, teacher, and a close friend. For each item, children chose one of two statements that best described them and then decided whether it was “Really True for Me” or “Sort of True for Me” (e.g., “Some kids have class-mates who like them the way they are” BUT “Other kids have classmates who wish they were *different*”). This measure has high internal reliability and confirmatory factor analysis supporting the construct validity of the four subscales [48]. For the purpose of the present study, the classmate and peer support subscales were combined and averaged (12 items; $\alpha = .81$ for the current sample), where the total score ranged from 12 to 48. Higher scores reflect more perceived social support.

Friendship Quality Questionnaire—Revised [49]—Children’s ratings of friendship quality were obtained by using a shortened (18 item) version of the Friendship Quality Questionnaire-Revised. In the present study, the validation ($\alpha = .82$) and intimacy ($\alpha = .72$) subscales were utilized which consisted of three items each that were scored on a 1 (not at

all true) to 5 (really true) scale. Sample items for each measure are “(friend) makes me feel good about my ideas” for validation; and “(friend) and I always tell each other our problems” for intimacy. Higher scores indicate higher levels of each friendship quality. The validation and intimacy subscales were included in the study because research has shown that these friendship qualities are linked with social anxiety in youth [27–29].

Interpersonal Relationship Items from the ADIS-C Parent Interview [34]—In order to incorporate parental report of child friendship difficulty, the 5 items from the ADIS-C were used. These included: “Does your child have more friends than most kids, fewer, or the same?”; “Does your child have a best friend?”; “Does your child have difficulty making friends?”; “Does your child have difficulty keeping friends?”; “Is your child involved in sports or activities?” A total score was calculated ($\alpha = .50$), the range of scores were 0–5 with higher scores indicating more negative peer experiences. Due to the low alpha, we removed items in order to improve reliability. The strongest alpha obtained was .72 with 2 items (“Does your child have difficulty making friends?”; “Does your child have difficulty keeping friends?”); this variable was included in the analyses.

Results

The means and standard deviations of all variables are presented in Table 1. All variables of interest were normally distributed and within the appropriate range of skew and kurtosis.

Aim 1: To Examine the Relative Importance of Parental Variables and Child Social Anxiety

To evaluate this aim, zero-order correlations were conducted (see Table 2). Parental anxiety and parental rejection correlated positively and significantly with the IE ratings of child social anxiety. Child ratings of overprotection were correlated positively and significantly with child ratings of social anxiety. In order to examine the relative importance of these parental variables, a hierarchical regression analysis was conducted with only parental anxiety and parental rejection entered into the model. Results indicated that both parental anxiety and parental rejection were significant predictors of IE ratings of child social anxiety, accounting for 15% of the variance in this model, $F(2, 60) = 5.47, p < .01$ (see Table 3).

Aim 2: To Examine the Relative Importance of Peer Variables with Child Social Anxiety

To evaluate this aim, zero-order correlations were conducted (see Table 2). Social acceptance, social support, and validation from a friend correlated negatively and significantly with IE ratings child social anxiety. Only child ratings of social acceptance correlated positively and significantly with child reported symptoms of social anxiety.

In order to evaluate the relative importance of these peer variables, a regression analysis was conducted only with social acceptance, social support, and friend validation as predictors. Results indicated that this model accounted for 22% of the variance in IE ratings of social anxiety symptoms; however, validation ($\beta = -.25$) was the only significant peer predictor of IE ratings of child social anxiety, $F(3, 59) = 5.49, p < .01$ (see Table 4).

Aim 3: To Compare the Relative Importance of Parental and Peer Variables in the Prediction of Child Social Anxiety

To evaluate the third aim, only the parental and peer variables that were significantly correlated with ratings of child social anxiety were entered into additional regressions. In the first model, parental anxiety and peer validation were the only significant predictors of IE ratings of child anxiety symptoms, $F(3, 59) = 6.41, p < .001$ (see Table 5) accounting for 25% of the variance in IE ratings of social anxiety symptoms. For the second model, child

ratings of overprotection and social acceptance were entered into a final regression as predictors of the child ratings of social anxiety. Results indicated that both variables were significant predictors and this model accounted for 25% of the variance in child ratings of social anxiety symptoms, $F(2,59) = 9.84, p < .001$, see Table 6

Discussion

The current study extends the literature by examining the relative importance of both parental and peer predictors of social anxiety symptoms among children using multiple informants. Overall, results revealed that parental anxiety and validation from a friend were the strongest predictors of child social anxiety based on IE ratings; and perceived parental overprotection and social acceptance were the strongest predictors of child-reported social anxiety symptoms. Specific findings related to each aim are discussed below.

Relation Between Parental Variables and Child Social Anxiety

The present study examined parental anxiety, parental overprotection, and rejection as predictors of social anxiety. All three variables were associated with symptoms of social anxiety in children, though findings differed based on reporter. Specifically, based on IE reports of anxiety only, children whose parents had higher levels of anxiety were rated as having higher levels of social anxiety. These results are consistent with family studies [12]. While the mechanism of transmission was not tested, genetic and environmental factors likely contribute. Behaviorally, anxious parents tend to avoid social and recreational activities [50, 51] and are more likely to catastrophize the outcomes of social interactions in front of their children (e.g., “I am not going to give that speech because I will embarrass myself in front of those people”), which may lead to higher levels of social anxiety in their offspring. Parental rejection was the second parental factor related to IE ratings of social anxiety. As noted, only two studies have examined this relation, with inconsistent results. Results from the current study suggest that children who report that their parents blame them unfairly for whatever goes wrong, criticize them in front of others, and/or wish they were like someone else, experience higher levels of social anxiety, which supports some past research [12]. Parental rejection may negatively affect children’s self-perceptions, by communicating that something is wrong with them, that they are flawed, or that they are not good enough. This type of criticism and humiliation may increase children’s negative self-evaluations and lead them to believe that peers will also reject them, increasing their avoidance of social interactions and maintain or enhance levels of social anxiety.

In contrast to parental anxiety and rejection, children’s perception and independent observer (IO) ratings of parental overcontrol/overprotection were not related to IE ratings of child social anxiety. However, they were related to child-reported symptoms of social anxiety. Indeed, a previous study also found that children’s perceived parental overcontrol was associated with higher levels of self-reported social anxiety in youth [14]. The shared method variance associated with using solely self-report measures may have inflated findings. Alternatively, the IO measure of overcontrol/protection used in this study may have been inadequate as there was a low frequency of overcontrolling behavior during the parent–child interaction task. This may have restricted the range and associated correlation. Finally, it is possible that overcontrol/protection may be more strongly related to general rather than social anxiety as found in other studies [52, 53]. Regardless, in light of the relation between children’s perceptions of overcontrol and social anxiety, routinely assessing child perceptions seems warranted. Among these parenting variables, parental anxiety and rejection were equally important and explained 15% of the variance in IE ratings of child social anxiety symptoms. This finding extends current etiological models of anxiety and suggests that both parental anxiety and rejection are relevant pathways to the development of social anxiety symptoms in children.

Relation Between Peer Variables and Child Social Anxiety

The current study examined social acceptance, social support, intimacy and validation from a friend, and parental ratings of child friendship difficulty. Of the peer variables, perceived social acceptance, support, and validation were associated with IE ratings of child social anxiety symptoms, whereas, social acceptance was the only peer variable associated with child ratings of social anxiety. Consistent with previous studies, children who perceived themselves as more socially accepted (e.g., have classmates who like them and spend time with them) reported lower levels of social anxiety [20, 22]. High perceived social acceptance is likely to enhance children's feelings of competence in social situations, increase self-worth, and buffer against excessive fears of negative peer evaluation. Furthermore, high perceived social acceptance may lessen feelings of anxiety due to one's success in making desired impressions on others. Perceived social acceptance appears to be a robust correlate of social anxiety as it was associated with both IE and child reported social anxiety symptoms.

With respect to social support, our results revealed that children who feel supported by friends and classmates (e.g., have a friend to talk to when having problems) experience less social anxiety as rated by IE, which is consistent with past findings in adolescent samples [21] and extends the peer social support literature to children. It appears that children who have friends and classmates who talk with them about problems, understand their problems, enjoy spending time with them, and care about their feelings worry less about criticism and humiliation in social interactions.

Friendship quality, specifically validation, but not intimacy, was associated with lower social anxiety (as rated by IE). Children who have friends that make them feel good about their ideas, tell them they are good at things, and make them feel important and special are less likely to experience social anxiety symptoms. Findings related to intimacy were divergent from those of Vernberg et al. [29] who found that adolescents who reported more intimacy also reported less social anxiety symptoms. One reason for these divergent results may be that intimacy is more relevant for peer relationships among adolescents than children.

Finally, parental ratings of their child's friendship difficulty were not significantly related to IE or child ratings of social anxiety symptoms. While we attempted to capture a broader range of parental perceptions of peer relations, only a 2-item measure was found to be reliable. Consequently, the construct of peer difficulty was not fully captured using parental reports. Moreover, other aspects of peer relations (not just difficulty making/keeping friends) may be more closely linked to children's social anxiety. Additional research, using alternative measures of parental reports of peer relations is needed.

Taken together, the model of peer variables (social acceptance, social support, and validation) explained 22% of the variance in IE rated child social anxiety symptoms. When investigating the relative importance of these peer variables, results showed that validation from a friend was the only significant predictor of IE rated child social anxiety symptoms suggesting that the opinion of a good friend is more influential than social support from classmates and friends, intimacy from a friend, or general social acceptance. Furthermore, while having an available friend or classmate to listen to your problems may be important, receiving active validation may lower (or protect against higher) social anxiety.

Relative Importance of Parental and Peer Variables in the Prediction of Social Anxiety

When looking at the magnitude of the parent and peer models separately, peer factors accounted for 7–8% more variance in IE ratings of child social anxiety symptoms than parental factors, suggesting that peer experiences may be more robust predictors of child

social anxiety symptoms. One potential explanation is that peer experiences (or perceptions of peer interactions) have a direct influence on social anxiety whereas parental factors may have an indirect impact. Thus, it is possible that positive peer experiences (or perceptions of positive peer experiences) may buffer the impact of parental factors.

Among the parent and peer variables, parental anxiety and friend validation were the strongest predictors of IE rated social anxiety and the combined parental and peer model (parental anxiety, parental rejection, and validation from a friend) explained 25% of the variance in social anxiety symptoms. Similarly, 25% of the variance in child-reported social anxiety symptoms was explained by perceived social acceptance and parental overprotection. While this is a relatively large and significant contribution, the majority of the variance remains unknown. Identification and comparison of other salient predictors such as children's social skills and peer rejection and neglect experiences should be examined in future studies.

There are several limitations to the current study. First, because the sample was relatively small and consisted of children who were not clinically anxious, the range of children's social anxiety severity/impairment was restricted, which may have reduced the possibility of detecting significant relations among variables. Future research should examine these relations with a clinically anxious population to determine whether a similar pattern of findings exist and the relevance of these factors for clinical populations. Second, since the current study relied on cross-sectional data, no conclusions can be drawn about the causal relations among these variables. Future research is needed to examine the role of parental and peer predictors of social anxiety prospectively. Third, because the study utilized self-reported measures of social acceptance, social support, and friendship quality, there was the possibility of socially desirable responding, where participants may have reported themselves in a more favorable light. Thus, utilizing peer nominations and friend's ratings of friendship quality in order to get a better representation of peer relations is needed. Finally, the sample in this study was fairly homogenous (i.e., primarily, European American, college educated, married, and middle-class) which limited the generalizability of our findings.

Findings from this study help to clarify etiological models of child social anxiety by suggesting the existence of multiple pathways of vulnerability. Specifically, parental anxiety, rejection and child perceptions of overcontrol are all associated with higher levels of social anxiety. Validation from a best friend and the child's perception of social acceptance likely protects children from developing feelings of social anxiety and fears of humiliation.

Implications of these findings, particularly in a sample of children who are not clinically socially anxious, suggest that early interventions aimed at reducing child symptoms of social anxiety should be multifaceted and address both family and peer factors. Specifically, this study identified specific potential protective factors that may be targeted in prevention programs including: lowering parental anxiety (and related parental behaviors that are linked to higher anxiety), evaluating children's cognitions about their parents overcontrol and social acceptance, and encouraging peer interactions and friendships that involve active validation.

Summary

The aim of the current study was to extend etiological models of social anxiety in children by testing the relative importance of parental (i.e., parental anxiety, rejection, and overcontrol) and peer factors (i.e., social acceptance, social support, and friendship quality). Past research has shown that both peer and parental factors are important predictors of social anxiety in youth; however, there is a lack of research investigating the relative importance of

these factors. Findings generally revealed that higher levels of parental anxiety, overcontrol, and rejection were associated with higher levels of social anxiety. Social support, acceptance and peer validation were all associated with lower social anxiety. Parental anxiety and validation from a peer were the strongest predictors of independent ratings of child social anxiety. Parental overcontrol and perceived social acceptance were the strongest predictors of child ratings of social anxiety. These findings extend current etiological models by highlighting several potential pathways to elevated social anxiety and suggest that interventions aimed at lowering social anxiety in youth should assess for and address both parental anxiety and peer relationships.

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Table 1

Means and standard deviations for child social anxiety, parental, and peer variables

Variables (measures)	Total sample (N = 63) M (SD) range	Children of anxious parents (n = 26) M (SD) range	Children of non-anxious parents (n = 37) M (SD) range
Child social anxiety (ADIS-C IE rating)	.54 (.84) 0–3.00	1.04 (1.04) 0–3.00	.19 (.40) 0–1.00
Child social anxiety (SCARED Child rating)	5.37 (3.42) 0–13.00	5.94 (3.16) 2.00–12.00	4.97 (3.59) 0–13.00
Parental anxiety	36.06 (10.15) 21.00–61.00	43.50 (9.24) 26.00–61.00	30.84 (7.07) 21.00–53.00
Parental overcontrol/Granting autonomy (FMST)	1.86 (1.22) 0–4.00	1.96 (1.46) 0–4.00	1.80 (1.03) 0–4.00
Parental rejection	13.92 (4.00) 9.00–31.00	14.83 (4.80) 9.00–31.00	13.29 (3.26) 9.00–22.00
Parental overprotection (EMBU-C)	26.04 (4.31) 18.00–36.00	25.94 (4.40) 18.00–36.00	26.11 (4.31) 18.00–36.00
Social acceptance	3.05 (.63) 1.50–4.00	2.89 (.70) 1.50–3.38	3.17 (.56) 1.67–4.00
Social support	3.47 (.45) 1.92–4.00	3.43 (.45) 1.92–4.00	3.49 (.45) 1.92–4.00
Friendship quality			
Intimacy	3.17 (1.06) 1.00–5.00	2.91 (.99) 1.00–4.67	3.36 (1.08) 1.33–5.00
Validation	3.99 (.90) 1.67–5.00	3.76 (.97) 1.67–5.00	4.15 (.81) 2.67–5.00
Child Interpersonal relationships (ADIS-C Parent rating)	2.17 (.49) 2.00–4.00	2.15 (.54) 2.00–4.00	2.18 (.46) 2.00–4.00

Table 2

Intercorrelations of all variables ($N = 63$)

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Child social anxiety (ADIS-C)	-	.30*	.30*	0.08	.31*	-.02	-.38**	-.34**	-.10	-.35**	.10
2. Child social anxiety (SCARED-C)		-	.06	.07	.21	.32*	-.43**	-.018	-.12	-.21	-.12
3. Parental anxiety			-	0.12	.19	-.14	-.30*	-.17	-.19	-.05	.16
4. Parental overprotection/Granting autonomy (FMST)				-	.01	.12	-.016	-.17	-.33**	-.11	.18
5. Parental rejection					-	0.18	-.40**	-.21	.20	-.14	.09
6. Parental Overprotection (EMBU)						-	-.016	-.10	.12	.13	-.10
7. Social Acceptance							-	.59***	.22	.27*	-.12
8. Social Support								-	.11	.28*	-.06
9. Intimacy									-	.48***	-.32*
10. Validation										-	-.08
11. Child Interpersonal (ADIS-C)											-

Some variable names have been shortened; Child social anxiety (ADIS-C) = Child social anxiety (ADIS-C IE rating); Child interpersonal relationships (ADIS-C Parent rating)

* $p < .05$;

** $p < .01$;

*** $p < .001$

Table 3

Hierarchical regression analysis of parental factors on child social anxiety (IE rating)

Variables	Step 1 β^a	R^2
		.15
Parental anxiety	.25 *	
Parental rejection	.26 *	

Standardized beta weight values are shown under each step

* $p < .05$ ^a Degrees of freedom at this step were 2, 60

Table 4

Hierarchical regression analysis of peer factors on child social anxiety (IE rating)

Variables	Step 1 β^a	R^2
		.22
Social acceptance	-.24	
Social support	-.13	
Validation	-.25*	

Standardized beta weight values are shown under each step

*
 $p < .05$ ^aDegrees of freedom at this step were 3, 59

Table 5

Hierarchical regression analysis of parental and peer factors on child social anxiety (IE rating)

Variables	Step 1 β^a	R^2
		.25
Parental anxiety	.24 *	
Parental rejection	.22	
Validation	-.31 **	

Standardized beta weight values are shown under each step

* $p < .05$;** $p < .01$ ^a Degrees of freedom at this step were 5, 57

Table 6

Hierarchical regression analysis of parental and peer factors on child social anxiety (Child rating)

Variables	Step 1 β^a	R^2
		.25
Parental overprotection (EMBU)	.26*	
Social acceptance	-.39**	

Standardized beta weight values are shown under each step

*
 $p < .05$;**
 $p < .01$ ^aDegrees of freedom at this step were 5, 57