

Peer Victimization Among Children and Adolescents with Anxiety Disorders

Jeremy S. Cohen · Philip C. Kendall

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Abstract This study examined peer victimization among a sample of youth who were seeking treatment at an outpatient anxiety disorders clinic. The study examined the association between peer victimization and internalizing symptoms and looked at whether frequent victimization was more common among youth with Social Phobia (SoP) as compared to youth with other anxiety disorders. The study also examined the relation between SoP and peer victimization dimensionally. Participants were 90 youth (47 boys; M age = 11.06 years) and their parents. Results showed that peer victimization was associated with social anxiety symptoms, and relational victimization, in particular, was associated with internalizing problems among youth with anxiety disorders. Negative beliefs about the peer group accounted for some of this relation. Victimization was associated with symptomatology rather than diagnosis. Peer victimization is important to assess and consider in the treatment of anxiety disorders in youth.

Keywords Peer victimization · Anxiety · Social anxiety

Introduction

Peer relationships are critical in youths' psychosocial development and adjustment. Healthy peer relationships

are associated with academic and social success [1]. Conversely, adverse peer experiences may have short- and long-term consequences such as school failure, psychopathology, and poor occupational achievement [2, 3]. Peer victimization is a particularly deleterious phenomenon that has gained the attention of researchers, mental health practitioners, school personnel, as well as legislators [4]. Findings have varied greatly regarding prevalence rates of peer victimization and studies tend to focus on rates among adolescents [5]. A more recent study of elementary-, middle-, and high-school students in a Maryland school district found that 23 % of students reported being victimized at least two times during the month prior [6]. The prevalence of peer victimization increases throughout elementary school, peaks during middle school, and declines in high school [7]. Peer victimization has been associated with a host of psychosocial consequences, particularly internalizing problems [8, 9].

“A student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more students” (p. 9) [7]. Definitions of peer victimization highlight the power differential between the bully and the victim [10]. A primary distinction has been made between overt and relational victimization. Overt victimization is direct and confrontational, and the victim is physically harmed, threatened, or verbally attacked [11]. Relational victimization consists of behaviors aimed at damaging friendships and peer relations, including exclusion, withdrawing friendship, and gossiping [12]. The bullying literature has largely used the construct of relational victimization, and is thus emphasized in the current study, but researchers have also examined the overlapping constructs of indirect and social aggression [13].

Investigators have also begun to examine cyber bullying, aggression that takes place online and through the use

J. S. Cohen · P. C. Kendall
Department of Psychology, Temple University, Philadelphia,
PA, USA

Present Address:
J. S. Cohen (✉)
Center for Counseling and Student Development, University of
Delaware, Newark, DE, USA
e-mail: jscohen@udel.edu

of electronic media [14]. Dempsey and colleagues suggested that cyber victimization may represent a related but distinct construct from other forms of victimization [15]. Social anxiety may be associated with greater reliance on computer-mediated communication (i.e., social networking sites, text messages) [16, 17], which suggests that youth with social anxiety may be particularly negatively affected by cyber victimization. Future investigations in this area are needed.

The type of victimization has been associated with differential predictions. Among elementary students, levels of relational victimization predict internalizing symptoms above and beyond overt victimization, including social anxiety, social avoidance, fear of negative evaluation, loneliness, and depression [11, 18, 19]. Among adolescents, relational victimization predicted social anxiety and loneliness above and beyond overt victimization [20, 21]. These associations are consistent with targeting youths' relationships and social connections. Overt victimization, above and beyond relational victimization, has been associated with poorer security and closeness with friends in elementary school [22] and increased suicidal ideation and attempts among adolescents [23].

Internalizing problems, including anxiety, may be a consequence of and risk factor for peer victimization [24]. Studies have examined variables that may account for the association between peer victimization and internalizing problems, including self-perception (i.e., self-worth) [25, 26], peer perceptions (i.e., beliefs about the peer group) [27], and emotion regulation [28]. Victimization experiences can cause substantial distress, resulting for some in hypervigilance, fear of future attacks [29], and/or self-blame [30]. Such reactions are thought to lead to social avoidance, increasing isolation, and loneliness. In addition, youth with anxiety frequently exhibit physiological symptoms [31] that may make them visible targets for bullies. In addition, they may present as emotionally labile [32] or lack peer support [33]. Thus, youth with an anxiety disorder may be more likely to have a history of peer victimization and may be at risk for future victimization.

Adults diagnosed with Social Phobia (SoP) demonstrate the greatest self-reported rates of peer victimization as children as compared to other internalizing disorders [34, 35]. McCabe et al. [34] found that 92 % of adults at an outpatient anxiety clinic with a principal diagnosis of SoP reported a history of being teased or bullied, compared to 50 % of adults with Obsessive Compulsive Disorder (OCD) and 35 % of adults with Panic Disorder. Social anxiety severity was associated with participants' reports of prior teasing in the domains of appearance, social characteristics, and performance. Associations were not found for teasing regarding family background or

academics. Research is needed among youth to examine the role that content of peer teasing plays on adverse outcomes. Examination of the content of teasing may help to clarify which features, if any, contribute to the targeting of these youths.

There is a dearth of research on peer victimization and anxiety diagnoses among youth. Storch and colleagues [36] examined prevalence rates of overt and relational victimization among youth with OCD, ages 8–17. Over 25 % of youth with OCD reported levels of peer victimization at least one standard deviation above the mean of healthy controls. Peer victimization partially mediated the relation between clinician-rated OCD severity and self-reported loneliness and the relation between severity and self-reported depressive symptoms. OCD, however, differs behaviorally from other anxiety disorders (e.g., the presence of compulsions). The bulk of the literature on peer victimization and anxiety used school-based samples [8].

Studies of peer victimization among youth seeking treatment for psychological disorders will improve upon findings from retrospective studies with adult samples by examining the concurrent relation between victimization and anxiety and by addressing some of the methodological limitations inherent in retrospective studies. Studies among youth with anxiety disorders will also complement and build upon research conducted among school-based samples by examining the role of peer victimization on psychosocial adjustment at functionally impairing levels of anxiety. As such, it will improve generalizability of findings to youth seeking treatment for anxiety disorders. The lack of research on peer victimization among youth with anxiety disorders is surprising given that youth with anxiety disorders are often characterized by poor social relations [37] and that fear of social situations and worry about interpersonal issues are hallmarks of these youths' psychopathology.

The current study examined the presence of characteristics of peer victimization among youth with anxiety disorders. We examined (a) levels of peer victimization; (b) the relation between peer victimization, both overt and relational victimization, and internalizing symptoms, including overall anxiety, social anxiety, depressive symptoms, and loneliness; (c) whether self-worth, emotional lability, or perceptions of peers accounted for the relation between peer victimization and internalizing symptoms; (d) whether peer victimization was greater among youth with a diagnosis of SoP as compared to other anxiety disorder diagnoses; and (e) whether peer victimization was associated with dimensional measures of SoP severity, taking into account the source of reporting SoP symptoms. Exploratory analyses examined (a) whether specific domains of teasing were associated with SoP

severity and (b) whether cyber victimization was associated with internalizing symptoms.

It was hypothesized that (a) a majority of youth with an anxiety disorder would endorse the presence of peer victimization and that levels would be greater than those previously reported in the original school-based sample that the SEQ-S was developed on [11]; (b) peer victimization, in particular relational victimization, would be significantly associated with symptoms of anxiety, depression, and loneliness; (c) the relation between peer victimization and internalizing symptoms would be partially accounted for by self-worth, emotional lability, and perceptions of peers; (d) peer victimization would occur significantly more frequently among youth with a diagnosis of SoP as compared to Generalized Anxiety Disorder (GAD) or Separation Anxiety Disorder (SAD); and (e) peer victimization would be most strongly associated with youth reports of SoP symptoms but also associated with parent and clinician reports of SoP. Specific hypotheses regarding exploratory analyses were not made given a lack of prior research among this population.

Method

Participants

Participants were youth ($n = 90$; 47 boys) and their parents seeking treatment at the Child and Adolescent Anxiety Disorders Clinic at Temple University and meeting diagnostic criteria for an anxiety disorder. Youth were referred for treatment from multiple resources (e.g., school counselors, physicians, parents). Participants' ages ranged from 6 to 17 years, with a mean of 11.06 years ($SD = 3.09$). The principal diagnoses were GAD ($n = 38$), SoP ($n = 28$), Specific Phobia ($n = 13$), and SAD ($n = 9$). Of the 90 youth, 19 (21.1 %) met criteria for at least one co-principal diagnosis. Five youth had a co-principal externalizing disorder. Two youth had a past mood disorder. The sample was predominantly White (83.3 %), followed by Hispanic (5.6 %), African American (3.3 %) and Asian (3.3 %) (missing $n = 4$). The majority of participants' families had an estimated annual household income greater than \$80,000 (40.0 %), followed by \$40,000–\$79,999 (34.5 %), and \$0–\$39,999 (17.8 %) (missing $n = 9$). The majority of youths' parents were married (72.2 %).

Taking into consideration moderate effect sizes in the literature (e.g., McCabe and colleagues [35]) and recommendations for adequate sample size using multiple regression [38], power analyses indicated that the current sample size yielded sufficient power for the proposed analyses.

Measures

Anxiety Disorders Interview Schedule for Children: Child and Parent Versions (ADIS-C/P)

The ADIS-C/P [39] is a semi-structured diagnostic interview to assess anxiety disorders in youth. It also assesses mood and externalizing disorders. A diagnostician administers the interview to youth and their parents and makes a Clinician Severity Rating (CSR). CSRs reflect the distress and interference attributable to a disorder. CSRs range from 0 to 8 (0 = *no symptoms*, 1–3 = *symptoms not meeting diagnostic levels*, and 4–8 = *symptoms meeting diagnostic criteria*). The disorder with the greater CSR rating (at or above 4) is principal. The ADIS-C/P has concurrent validity [40] and inter-rater reliability with kappas ranging from .59 to .82 [41]. Retest reliability for both parent and child interviews are very good with kappa coefficients ranging from .80 to .92 for GAD, SoP, SAD, and Specific Phobias [42]. Diagnostic training followed recommended guidelines, with all diagnosticians reaching and maintaining reliability (i.e., Cohen's Kappa > .85).

Asher Loneliness Scale

This 16-item scale [43] measures feelings of loneliness, social adequacy, and subjective estimations of peer status. Items are rated from 1 (*not true at all for me*) to 5 (*very true for me*). Factor analysis found one 16-item factor. The Loneliness Scale has demonstrated good psychometric properties, including convergent validity and internal consistency [43]. The scale has been shown to be inversely related to positive peer nominations. Cronbach's alpha in the current sample was .90.

Children's Depression Inventory (CDI)

The CDI [44, 45] is a 27-item self-report measure that assesses depressive symptoms in youth, ages 7–17. Internal consistency coefficients range from .71 to .89 and retest reliability ranges from .74 to .83 for a 2–3 week interval [45]. Predictive validity has been demonstrated and CDI scores have been shown to differentiate depressive disorders from other disorders [46]. Cronbach's alpha for the CDI in the present sample was .83.

Children's Global Assessment Scale (CGAS)

The CGAS [47] is a clinician-rated measure of youths' global functioning. Scores range from 1 to 100, (100 reflects extremely good adjustment). The scale includes anchor points with behavioral descriptions. The CGAS

demonstrates retest reliability ($ICC = .69-.95$) and interrater reliability ($ICC = .74-.87$), and has been shown to discriminate between inpatients and outpatients [47]. Interrater reliability for the CGAS among diagnosticians was .73 (intraclass correlation).

The Emotion Regulation Checklist (ERC)

The ERC [48] is a parent-rated measure of children's ability to control their emotions. The ERC includes 24 items rated on a 4-point scale (1 = *rarely/never* and 4 = *almost always*). Factor analysis yielded two factors: Lability/Negativity and Emotion Regulation. Lability/Negativity reflects emotion dysregulation, such as children's mood swings and negative affect. Items on this scale include "exhibits wide mood swings" and "is easily frustrated." Emotion Regulation reflects children's ability to react appropriately in situations and their emotional self-awareness. ERC Lability/Negativity was used in the present study and Cronbach's alpha in this sample was .79.

Harter's Self-perception Profile for Children (SPPC)

The SPPC [49] is a 36-item self-report measure of children's self-worth globally and in particular domains. The global self-worth scale (GSW) was used in the present study. This scale includes 6 items. Each item is presented as two opposing statements that the child chooses between and then selects whether it is "*really true*" or "*sort of true*". Total scores reflect greater self-worth. The SPPC has good psychometric properties with internal consistency coefficients for the GSW ranging from .74 to .84. Cronbach's alpha in this sample was .94.

Multidimensional Anxiety Scale for Children (MASC)

The MASC [50] is a 39-item self-report (and corresponding parent-report) measure of anxious symptoms in youth. Items are rated on a 4-point scale (0 = *never true about me* and 3 = *often true about me*). The MASC includes a total score and four subscales (physical symptoms, social anxiety, harm avoidance, and separation anxiety). Total scores and the social anxiety subscale were used in the current study. The social anxiety subscale has been shown to accurately discriminate between youth with and without SoP [51]. The MASC has good psychometric properties with internal consistencies of .90 for the total scores and coefficients ranging from .74 to .85 for the subscales [50, 52]. Convergent, concurrent, and discriminant validity have also been demonstrated [40, 50]. Cronbach's alpha for child-rated and parent-rated total and social anxiety were .91 and .89, and .86 and .89, respectively.

Peer Belief Inventory (PBI)

The PBI [53] is a 12-item self-report measure of children's perceptions of their peers' social characteristics, including prosocial and antisocial tendencies. Items are rated on a 5-point scale (1 = *not very true* and 5 = *very true*). The PBI psychometric properties include adequate internal consistency [27]. The Cronbach's alpha for the PBI in this sample was .92.

Social Experience Questionnaire- Self-Report (SEQ-S)

The original SEQ-S [11] is a 15-item, self-report measure that assesses youths' overt peer victimization, relational peer victimization, and reception of prosocial behaviors. The first two scales were used in the current study. The present study used an adapted version of the SEQ-S used by Storch and Masia-Warner [21] which added six additional items. Four items used by Dempsey and colleagues [15] were included to capture cyber victimization (e.g., "A student sent me a text message or instant message that was mean or that threatened me"). Youth are asked how often each item occurs at school; no time period (e.g., in the past 2 weeks) is specified. Items are rated on a 5-point scale (1 = *never* and 5 = *all the time*). The SEQ-S demonstrates good psychometric properties, with adequate internal consistency [11] and good retest reliability [54]. The Cronbach's alpha for the Overt, Relational, and Cyber Victimization scales in this sample were .81, .92, and .69, respectively.

Teasing Questionnaire-Revised (TQ-R)

The 29-item TQ-R [55] is a self-report measure of recalled childhood teasing experiences. Subscales include teasing in the following domains: performance, appearance, social, family, and academic excellence. Items are rated on a 5-point scale (0 = *I have never been teased about this* and 4 = *I have always been teased about this*). The TQ-R demonstrates good psychometric properties, with internal consistency ranging from .47 to .87 for the individual subscales. Retest reliabilities ranged from .66 to .89 for the individual subscales [56]. Internal consistency for total teasing in this sample was Cronbach's alpha .94. Internal consistency of subscales was comparable to previous findings with the following Cronbach's alpha: .59 for Performance, .88 for Academics, .79 for Social, .70 for Family Background, and .86 for Appearance.

Procedure

The study was conducted with full approval from the Institutional Review Board at Temple University. Youth

were asked to provide written assent and their parent(s) to provide written consent. At intake, youth and their parent(s) were administered the ADIS-IV C/P by a reliable diagnostician. Youth completed self-report measures and parent(s) completed questionnaires (all prior to treatment). Complete data was gathered on diagnostician-rated measures (i.e., ADIS C/P), whereas few participants did not complete questionnaires. Analyses accounted for missing data through pairwise deletion which requires data to be missing at random. Missingness was independent of gender. Comparisons between missing cases and complete cases showed no significant differences on age, social anxiety (diagnostician-, youth-, and parent-rated), global functioning, depressive symptoms, lability, peer beliefs, self-esteem, and total anxiety.

Results

Means and standard deviations are presented in Table 1. Correlations among primary variables are in Table 2. Overall, levels of overt and relational victimization in this sample on original SEQ-S items ($M_{\text{overt}} = 3.87$, $SD_{\text{overt}} = 1.63$; $M_{\text{relational}} = 7.61$, $SD_{\text{relational}} = 3.77$) were greater than those reported by Crick and Grotpeter [10] ($M_{\text{overt}} = 2.22$, $SD_{\text{overt}} = .95$; $M_{\text{relational}} = 2.27$, $SD_{\text{relational}} = .90$). A one-sample t test was conducted showing a significant difference for overt victimization, $t(83) = 9.25$, $p < .001$, and for relational victimization, $t(81) = 12.84$, $p < .001$. Only original SEQ-S items were used to calculate victimization scores for purposes of this comparison. Due to age differences between the current sample and the sample in Crick and Grotpeter [11], the same analyses were rerun limiting the present sample to youth between grades

3 and 6. Similar results were found. For overt victimization, $t(39) = 5.85$, $p < .001$; for relational victimization, $t(37) = 7.87$, $p < .001$. Current sample means of overt and relational victimization using all items from the adapted SEQ-S are in Table 1. To examine the question categorically, youth were classified as victims if they endorsed an SEQ-S victimization item as occurring at least “sometimes”. In the current sample, 51.9 % of youth were categorized as victims. A little more than a third of these youth reported being victimized on at least one item most or all of time.

Peer Victimization and Internalizing Symptoms

Pearson product-moment correlations were run between overt and relational victimization and self-report measures of total anxiety, depressive symptoms, and loneliness (see Table 3). Analyses examined whether relational victimization added unique information to overt victimization in the prediction of internalizing symptoms. In the first model, control variables (i.e., age and gender) were entered first, overt victimization was entered next, and relational victimization was entered third (see Table 4). Relational victimization and overt victimization variables were centered. To control for family-wise error rate a bonferroni correction was used and the criterion alpha was set at .006.

Results showed that overt victimization added significantly to the prediction of social anxiety, (R^2 change = .11, $F(1,76) = 9.63$, $p = .003$) and loneliness (R^2 change = .14, $F(1,73) = 12.28$, $p = .001$) controlling for age and gender. Overt victimization significantly predicted social anxiety ($\beta = .35$, $p = .003$) and loneliness ($\beta = .39$, $p = .001$). Results also showed that relational victimization added significantly to the prediction of social anxiety (R^2 change = .11, $F(1,75) = 10.75$, $p = .002$), depressive symptoms [R^2 change = .13, $F(1,72) = 12.08$, $p = .001$], and loneliness [R^2 change = .20, $F(1,72) = 21.70$, $p < .001$], with beta values of overt victimization becoming close to zero or switching to negative values. Multicollinearity diagnostics were acceptable and results may be indicative of possible net suppression effects.

In the second set of regression models, control variables were entered first, relational victimization second, and overt victimization third. Results showed that relational victimization added significantly to the prediction of social anxiety (R^2 change = .22, $F(1,76) = 21.86$, $p < .001$), total anxiety (R^2 change = .11, $F(1,69) = 9.07$, $p = .004$), depressive symptoms (R^2 change = .13, $F(1,73) = 11.29$, $p = .001$), and loneliness (R^2 change = .33, $F(1,73) = 36.25$, $p < .001$) controlling for age and gender. Overt victimization did not add significantly to predicting any of the internalizing symptoms. Overt victimization evidenced beta values near zero or with a negative value.

Table 1 Means and standard deviations of study variables

Dependent variable	Total sample (N = 90)			
	n	Range	Mean	SD
Overt victimization	84	5–19	6.73	2.71
Relational victimization	82	9–40	14.44	6.85
Diagnostician-rated SoP severity	90	0–7	3.04	2.31
Self-report social anxiety	86	0–26	11.80	7.12
Parent-rated social anxiety	81	2–27	16.17	6.68
Total anxiety	78	7–100	50.65	19.45
Global psychological functioning	90	38–70	54.33	6.74
Depressive symptoms	82	0–30	9.12	6.19
Loneliness	79	19–65	32.27	10.95
Global self-worth	72	1.50–3.17	2.50	.31
Peer beliefs	73	12–60	42.60	9.86
Emotional lability	80	17–43	27.79	5.58

Table 2 Correlation matrix of age and primary measures

	1	2	3	4	5	6	7	8	9
1. Age	–								
2. OV	–.14	–							
3. RV	–.08	.75***	–						
4. Teasing	.16	.38***	.54***	–					
5. Diagnostician-rated SoP	.24*	–.12	–.07	.02	–				
6. Self-report social anxiety	.14	.30**	.45***	.47***	.37***	–			
7. Parent-rated social anxiety	.20	–.06	–.06	.01	.61***	.34**	–		
8. Total anxiety	–.03	.32**	.37***	.40***	.23*	.77***	.13	–	
9. GPF	–.15	.02	.04	–.07	–.33**	–.16	–.20	–.15	–

OV overt victimization, RV relational victimization, GPF global psychological functioning

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

Table 3 Correlation matrix of variables included in secondary analyses

	1	2	3	4	5	6	7	8	9	10
1. Age	–									
2. Overt victimization	–.14	–								
3. Relational victimization	–.08	.75***	–							
4. Total anxiety (self-report)	–.03	.32**	.36***	–						
5. Social anxiety (self-report)	.14	.30**	.45***	.77***	–					
6. Depressive symptoms	.09	.20	.36***	.53***	.58***	–				
7. Loneliness	.05	.37***	.56***	.45***	.55***	.59***	–			
8. Emotional lability	–.16	.11	.18	.06	.10	.22	.23*	–		
9. Self-esteem	–.14	.14	.08	–.09	–.10	.04	–.12	–.12	–	
10. Peer beliefs	–.17	–.40***	–.54***	–.28*	–.35**	–.49***	–.55***	–.19	.04	–

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

Multicollinearity diagnostics were acceptable and results may be indicative of possible net suppression effects.

Victimization, Internalizing Symptoms, and Cognitive and Affective Factors

Hierarchical linear regressions examined whether emotional lability, self-esteem, and perception of peers were associated with internalizing symptoms after controlling for peer victimization. Victimization severity was entered into the first step and emotional lability, self-esteem, and perception of peers were entered into the second step of the model. To control for the family-wise error rate, the criterion for alpha was set at .0125.

The model predicting self-reported social anxiety was significant and results found that predictors accounted for 27.8 % of the variance ($R^2 = .28$, $F(5,51) = 3.93$, $p = .004$); see Table 5. Relational victimization significantly predicted social anxiety ($\beta = .54$, $p = .012$). Emotional lability, self-esteem, and perceptions of peers did not account for a significant portion of the variance

after accounting for peer victimization. The overall model predicting self-reported depressive symptoms was significant and predictors accounted for 37.1 % of the variance ($R^2 = .37$, $F(5, 52) = 6.14$, $p < .000$). Perception of peers significantly predicted depressive symptoms ($\beta = -.38$, $p = .007$). The predictive association of relational victimization decreased from step 1 ($\beta = .80$, $p < .001$) to the final model ($\beta = .56$, $p = .01$). Last, the overall model predicting self-reported loneliness was significant and predictors accounted for 35.4 % of the variance ($R^2 = .35$, $F(5,52) = 5.69$, $p < .001$). Emotional lability, self-esteem, and perceptions of peers did not account for a statistically significant portion of the variance after accounting for peer victimization. There was a trend for the association between perception of peers with loneliness ($\beta = -.28$, $p = .04$), but this was not statistically significant. The predictive association of relational victimization decreased from step 1 ($\beta = .58$, $p = .007$) to the final model ($\beta = .40$, $p = .07$). There were no significant findings for the model predicting self-reported total anxiety.

Table 4 Multiple regressions examining victimization as a concurrent predictor of internalizing symptoms

Predictor	Internalizing symptoms							
	Total anxiety		Social anxiety		Depressive symptoms		Loneliness	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
Model 1								
Step 1	.03		.02		.04		0	
Age		-.07		.13		.07		.04
Gender		-.16		-.02		-.2		-.01
Step 2	.08 [†]		.11*		.03		.14**	
OV		.30 [†]		.35*		.18		.39**
Step 3	.04		.11*		.13**		.20**	
RV		.28		.49*		.64**		.71**
Total R ²	.15		.24**		.21*		.34**	
n	73		80		77		77	
Model 2								
Step 1	.03		.02		.04		0	
Age		-.07		.13		.07		.04
Gender		-.16		-.02		-.2		-.01
Step 2	.11*		.22**		.13**		.33**	
RV		.34*		.47**		.36**		.59**
Step 3	0		0		.04		.01	
OV		.09		-.03		-.35		-.17
Total R ²	.15 [†]		.24**		.21*		.34**	
n	73		80		77		77	

OV overt victimization, RV relational victimization
[†] $p < .05$; * $p < .006$;
 ** $p < .001$

Table 5 Multiple regressions examining peer victimization and cognitive and affective factors as concurrent predictors of youths' social anxiety

Predictor	Internalizing symptoms							
	Total anxiety		Social anxiety		Depressive symptoms		Loneliness	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.14 [†]		.23**		.27**		.25**	
OV		-.05		-.24		-.41 [†]		-.10
RV		.41		.65**		.80**		.58*
Step 2	.04		.04		.11 [†]		.10 [†]	
OV		-.02		-.23		-.38		-.05
RV		.27		.54*		.56*		.40
Global self-worth		-.06		-.09		.01		-.19
Peer beliefs		-.21		-.22		-.38*		-.28 [†]
Emotion lability		-.10		-.03		.08		.05
Total R ²	.42		.28*		.37**		.35**	
N	53		57		58		58	

OV overt victimization, RV relational victimization
[†] $p < .05$; * $p < .0125$;
 ** $p < .001$

Peer Victimization and Principal Diagnosis

Analyses did not demonstrate a significant association between gender and whether or not youth were classified as a victim. Analyses did not find a significant difference in age between victims and non-victims. Analyses initially

included youth with a single principal diagnosis of SAD, SoP, and GAD (i.e., without a comorbid principal diagnosis of SAD, SoP, or GAD). However given cell counts less than 5, SAD was excluded from analyses. Given the possibility that principal diagnosis was less important than the mere presence or absence of SoP, analyses also examined

whether victim status was independent of the presence or absence of SoP. There was not a significant association between anxiety disorder diagnosis and whether or not the youth was classified as a victim. Analyses did not show a significant association between the presence or absence of SoP and whether or not the youth was classified as a victim. Additionally, independent sample t-tests examined whether there were any differences between those with and without a diagnosis of SoP on overt victimization, relational victimization, and teasing. There were no significant differences between those with or without a diagnosis of SoP on teasing and on overt or relational victimization.

Peer Victimization and Severity of Social Phobia Symptoms

Linear multiple regressions examined whether overt and relational victimization were associated with diagnostician-, parent-, and self-reported SoP symptoms. Separate regressions were run for overt and relational victimization (Table 6). Gender and age were entered first, global psychological functioning second, and peer victimization third. To control for family-wise error rate, a Bonferroni correction was used and the criterion alpha was .008.

The results of the model with overt victimization show that predictors explained 15.0 % of the variance in self-reported social anxiety ($R^2 = .15$, $F(4,77) = 3.39$, $p = .013$). Overt victimization accounted for a significant proportion of the variance after controlling for the other variables, R^2 change = .11, $F(1,77) = 10.16$, $p = .002$. Overt victimization significantly predicted self-reported social anxiety ($\beta = .35$, $p < .008$). The regression model predicting diagnostician-rated SoP severity was significant and explained 16.1 % of the variance ($R^2 = .16$, $F(4,79) = 3.80$, $p = .007$). Overt victimization was not a significant predictor in this model. The overall model predicting parent-rated social anxiety was not significant.

The model with relational victimization was significantly predictive of self-reported social anxiety and showed that all predictors explained 26.3 % of the variance ($R^2 = .26$, $F(4,75) = 6.68$, $p < .001$). Relational victimization accounted for a significant proportion of the variance after controlling for the other variables, R^2 change = .23, $F(1,75) = 23.11$, $p < .001$. Relational victimization significantly predicted self-reported social anxiety ($\beta = .48$, $p < .001$). The regression model predicting diagnostician-rated SoP severity was significant and explained 18.6 % of the variance ($R^2 = .19$, $F(4,77) = 4.54$, $p = .003$). Global psychological functioning significantly predicted diagnostician-rated Social Phobia severity ($\beta = -.31$, $p = .003$). Relational victimization was not a significant predictor in this model. The overall model predicting parent-rated social anxiety was not significant.

Table 6 Multiple regression examining overt and relational victimization as a concurrent predictor of youths' social anxiety

Predictor	Social anxiety severity					
	Clinician-rating		Parent-rating		Self-report	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Model 1						
Step 1	.09 [†]		.03		.02	
Age		.23 [†]		.16		.13
Gender		.15		.04		-.01
Step 2	.07 [†]		.02		.02	
CGAS		-.27 ^{††}		-.14		-.15
Step 3	.00		.00		.11*	
OV		-.06		-.01		.35*
Total R^2	.16*		.05		.15 [†]	
<i>n</i>	84		77		82	
Model 2						
Step 1	.09 [†]		.03		.02	
Age		.24 [†]		.16		.13
Gender		.15		.02		-.02
Step 2	.10*		.03		.02	
CGAS		-.32*		-.17		-.14
Step 3	.00		.00		.23**	
RV		-.03		-.04		.48**
Total R^2	.19*		.06		.26**	
<i>n</i>	82		75		80	

CGAS Children's Global Assessment Scale, OV overt victimization, RV Relational Victimization

[†] $p < .05$; ^{††} $p < .01$; * $p < .008$; ** $p < .001$

Exploratory Analyses

A linear multiple regression examined whether the five domains of teasing were associated with severity of diagnostician-, parent-, and self-reported SoP symptoms. Separate regressions examined the relation between the domains of teasing and diagnostician-, parent-, and youth-rated SoP symptoms (see Table 7). To control for the family-wise error rate, the criterion for alpha was set at .017. Analyses controlled for age and gender.

The results support the association between the domains of teasing and self-reported social anxiety after controlling for age and gender. The final model was significantly predictive of self-reported social anxiety and showed that all predictors accounted for 26.7 % of the variance ($R^2 = .27$, $F(7,67) = 3.49$, $p = .003$). The domains of teasing accounted for a significant proportion of the variance after controlling for age and gender, R^2 change = .25, $F(5,67) = 4.54$, $p = .001$. The other models predicting diagnostician-rated SoP severity and parent-rated social anxiety were not significant.

Table 7 Multiple regression examining domains of teasing as concurrent predictors of youths’ social anxiety

Predictor	Social anxiety severity					
	Diagnostician-rating		Parent-rating		Self-report	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.08		.04		.02	
Age		.24 [†]		.20		.14
Gender		.13		-.01		-.03
Step 2	.03		.07		.25**	
Performance		.04		-.20		.09
Academics		-.25		-.26		-.15
Social		.19		.21		.40
Family		-.04		.43		.02
Appearance		.06		-.21		.20
Total R ²	.11		.12		.27*	
N	76		70		75	

[†] $p < .05$; * $p < .008$; ** $p < .001$

Exploratory analyses also examined whether cyber victimization ($M = 4.48$; $SD = 1.38$) showed similar associations as overt and relational victimization with primary outcomes. Linear multiple regression analyses examined whether cyber victimization was associated with diagnostician-, parent-, and self-reported SoP symptoms. To control for family-wise error rate, a bonferroni correction was used and the criterion alpha was .008. There were no significant associations between cyber victimization and SoP symptoms (see Table 8).

Discussion

Results indicate that approximately half of youth in a sample of youth with an anxiety disorder reported peer victimization at least some of the time. That is, many, but not all, youth presenting to an outpatient anxiety disorders clinic evidenced regular relational and overt victimization from peers. Levels of both overt and relational victimization were higher than those reported in the original school-based sample [11]. Examination of teasing indicated the presence of teasing across multiple domains.

A goal of this study was to provide data on the association between peer victimization and internalizing problems within a sample of youth seeking treatment for anxiety. Findings suggested that overt victimization had a medium positive association with self-reported anxiety and loneliness. Relational victimization had a medium to large positive association with self-reported depressive symptoms, anxiety, and loneliness. Peer beliefs (i.e., the perception that peers can be

Table 8 Multiple regressions examining cyber victimization as a concurrent predictor of youths’ social anxiety

Predictor	Social anxiety severity					
	Diagnostician-rating		Parent-rating		Self-report	
	ΔR^2	β	ΔR^2	B	ΔR^2	β
Step 1	.08 [†]		.02		.03	
Age		.22 [†]		.13		.15
Gender		.15		.03		-.07
Step 2	.07 [†]		.02		.03	
CGAS		-.26 [†]		-.13		-.17
Step 3	.01		.00		.06 [†]	
CV		-.11		.02		.25 [†]
Total R ²	.16 ^{††}		.03		.12	
n	81		74		79	

CGAS Children’s Global Assessment Scale, CV cyber victimization

[†] $p < .05$; ^{††} $p < .01$; * $p < .008$; ** $p < .001$

characterized by prosocial rather than hostile and untrustworthy tendencies) were negatively associated with depressive symptoms and loneliness even after accounting for peer victimization. Findings suggest that peer beliefs partially explain the association between relational victimization and depressive symptoms and between relational victimization and loneliness, although a full test of mediation is not possible in the present sample due to the cross-sectional nature of the data. Previous research demonstrated that declines in positive peer perceptions were associated with internalizing symptoms and increases in peer victimization [27]. The present findings suggest that victims of relational aggression who generalize hostile intent to the peer group are likely to feel a greater sense of sadness and isolation. Such findings suggest potential targets for intervention. Future research should also examine cognitive factors that may account for the relation between victimization and anxiety, such as sense of safety and fear of future victimization.

Findings from the present study also suggest that relational victimization has a stronger association with self-reported internalizing symptoms than overt victimization. Relational victimization was associated with total anxiety, social anxiety, depressive symptoms, and loneliness even when controlling for overt victimization. Overt victimization was not found to significantly add to the prediction of internalizing symptoms above and beyond relational victimization. Findings from these analyses may evidence a net suppression effect such that relational victimization has a stronger relationship with internalizing symptoms controlling for overt victimization than was true before doing so. In spite of the high correlation between the two forms of victimization, there was not support for multicollinearity. Prior studies found that relational victimization, as

compared to overt victimization, accounted for the association with internalizing symptoms such as depression [18]. Relational victimization targets youths' interpersonal relationships and friendships, and internalization of such aggression may lead to greater anxiety, depression, and loneliness [20]. This internalization may be more central to youth's perceived social competence, peer status, and self-worth than overt victimization given the nature of the aggression. It is also likely that relational victimization triggers concern and rumination about peers' evaluations. This association may be perpetuated by social avoidance and lack of positive peer relationships [57], and may be particularly important to consider when treating youth with anxiety disorders.

Is peer victimization between youth with a diagnosis of SoP greater than youth with other anxiety disorders? Findings from adult retrospective reports suggested such a relationship [34], but the present findings did not indicate that youth with a diagnosis of SoP exhibited higher rates of being victims than those without. High rates of recalled victimization in prior studies may reflect a recall bias. Youth with SoP who are seeking treatment may be different from adults seeking treatment for SoP. Storch and colleagues [36] similarly found lower rates of peer victimization among youth with OCD as compared to previous findings with adult populations. Findings from this study of youth seeking treatment for anxiety suggest that the specific anxiety diagnosis may be less important than symptomatology. However, it is important to acknowledge the current sample consisted of youth primarily with SoP, GAD, and SAD, and not other disorders. A dimensional approach may be richer, though, both in terms of research and clinical practice [58]. As comorbidity is the rule rather than the exception [59], particularly among youth, diagnostic categories may be less relevant to peer victimization than specific symptoms.

Although the current study found significant associations between peer victimization and self-reported social anxiety on a dimensional scale, results did not show significant associations between victimization and diagnostician- or parent-rated social anxiety. This raises the question of whether peer victimization is associated with "objective" measures of Social Phobia. It has been established, however, that children's reports are not highly correlated with others' reports, particularly when considering mental health diagnoses, including anxiety [60, 61]. Multiple informants provide unique contributions and provide important information [62], and self-reports are still critical in determining diagnosis. Parents have limited access to youths' internal symptoms. It is worth noting that some studies have found that perceived victimization, even if unconfirmed by collateral report, is associated with greater levels of distress and poorer psychosocial functioning [11, 63].

Regarding self-report data from the present study, results indicate that both overt and relational victimization were associated with social anxiety after controlling for age, gender, and global psychological functioning. Greater levels of overt and relational victimization were associated with greater levels of self-reported social anxiety. This finding is consistent with previous research [8, 21]. This study was also the first to examine youths' reports of teasing using the TQ-R. Although overall teasing was associated with self-reported social anxiety, this did not hold for specific domains of teasing. Prior studies using this measure were conducted with adults and it is possible that this may account for the different findings in this study. These analyses were exploratory and it is also possible that more specific analyses would yield different results. For example, future research should investigate whether youth with social anxiety report more incidents of being teased about social issues versus other domains.

Exploratory findings also showed that cyber victimization may exhibit a similar but attenuated pattern of association with diagnostician-, parent-, and self-reported social anxiety as compared to relational and overt victimization. Cyber victimization, however, was not found to be significantly associated with social anxiety after controlling for age, gender, and global psychological functioning. Findings may have been limited by the measure used, which relied on four items with fair internal consistency. Studies show that social anxiety may be associated with greater reliance on electronic communication [16, 17], which suggests that youth with social anxiety may be particularly at risk for cyber victimization. Future investigations in this area are needed.

Some study hypotheses were not confirmed. Self-esteem and emotional lability were not significantly associated with internalizing problems after accounting for peer victimization. This finding is discrepant from research showing that self-esteem mediated the relation between peer victimization and internalizing problems [26] and that emotion dysregulation mediated the relation between relational victimization and internalizing symptoms [28]. Previous studies, however, focused on youth in middle school or high school, whereas the present study also included youth in elementary school. Self-appraisals may be more salient as a cognitive mediator for older youth. The present study may have also been limited by the restricted range in the sample (i.e., that all participants had significantly elevated levels of anxiety as opposed to a more representative, school-based sample). Conclusions from the present study should also be interpreted with caution given the use of parent ratings of lability; Examination of other facets of emotion regulation (e.g., dysregulation of sadness, worry, and anger) and different reporters or assessment methods may yield different results.

Study limitations merit mention. First, data were cross-sectional; questions regarding stability, and causality were not examined. Results do not speak to the temporal relation between constructs. Second, the measure used to assess self-perceived rates of victimization does not include a restricted time period (i.e., in the last 2 weeks), and more specific measures of victimization may be helpful to use in future studies. Third, although mean levels of overt and relational victimization were both higher than found in the original sample that the SEQ-S was developed on [11], a nonanxious group was not examined. Fourth, results in the current study demonstrating a relation between peer victimization and self-reported social anxiety may be due in part to shared-method variance and future research might use a multi-method approach. Multiple informants assessed social anxiety, but the study relied on self-report for peer victimization data. Although obtaining peer reports may be difficult, future research should explore such an option. Fifth, the measure of loneliness includes items regarding social adequacy and peer status, which may have contributed to significant associations with other study variables. However, factor analysis has shown that the loneliness scale has a single factor and has shown to have discriminant and convergent validity [43]. Sixth, although the present study focused on cognitive and affective variables, additional factors (e.g., quality of friendships [64], diversity [65], and parental support [66]) merit further consideration. Seventh, although power analyses indicated sufficient power, analysis of principal diagnoses was affected by low cell counts. Additionally, although age was examined and controlled for in the analyses, the sample size was not large enough to fully explore developmental considerations. Last, the sample was predominantly White and middle class. Generalizability of study results is also limited to youth seeking treatment for anxiety disorders in a clinic setting.

Summary

Prior studies have examined the association between peer victimization and anxiety among school-based samples. Samples of individuals with diagnosed anxiety disorders have primarily been drawn from adult clinics. This study examined peer victimization among a sample of treatment-seeking youth who met criteria for an anxiety disorder. The study examined the association between peer victimization and internalizing symptoms and looked at whether frequent victimization was more common among youth with SoP as compared to youth with other anxiety disorders. The study also examined the relation between SoP and peer victimization dimensionally, taking into account the source of reporting for SoP symptoms. Participants were 90 youth

(47 boys; M age = 11.06 years) and their parents. Results showed that peer victimization was associated with social anxiety symptoms, and that relational victimization, in particular, was associated with internalizing problems among youth with anxiety disorders. Negative beliefs about the peer group accounted for some of this relation. Victimization was associated with symptomatology rather than diagnosis; Peer victimization was not found to be greater among youth with SoP as compared to other anxiety disorder unlike findings from adult samples. However, victimization was associated with severity of self-reported SoP symptoms. It was not associated with parent- or diagnostician ratings. Given the prevalence and associations of peer victimization in this sample, it is important to assess for and consider it in the treatment of anxiety disorders in youth.

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