Behavioural and Cognitive Psychotherapy, 2022, **50**, 590–603
doi:10.1017/S1352465822000303

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School-based victimization in children and adolescents presenting for cognitive behavioural treatment of anxiety disorders

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(Received 12 May 2021; revised 20 December 2021; accepted 15 June 2022; first published online 12 September 2022)

Abstract

Background: Peer victimization and anxiety frequently co-occur and result in adverse outcomes in youth. Cognitive behavioural treatment is effective for anxiety and may also decrease children's vulnerability to victimization.

Aims: This study aims to examine peer victimization in youth who have presented to clinical services seeking treatment for anxiety.

Method: Following a retrospective review of clinical research data collected within a specialized service, peer victimization was examined in 261 children and adolescents (55.6% male, mean age 10.6 years, $SD = 2.83$, range 6–17 years) with a diagnosed anxiety disorder who presented for cognitive behavioural treatment. Youth and their parents completed assessments of victimization, friendships, anxiety symptoms, and externalizing problems.

Results: High levels of victimization in this sample were reported. Children's positive perceptions of their friendships were related to lower risk of relational victimization, while conduct problems were related to an increased risk of verbal and physical victimization. A subsample of these participants ($n = 112$, 57.1% male, mean age 10.9 years, $SD = 2.89$, range 6–17 years) had completed group-based cognitive behavioural treatment for their anxiety disorder. Treatment was associated with reductions in both self-reported anxiety and victimization. Results confirm the role of friendships and externalizing symptoms as factors associated with increased risk of victimization in youth with an anxiety disorder in a treatment-seeking sample.

Conclusions: Treatment for anxiety, whether in a clinic or school setting, may provide one pathway to care for young people who are victimized, as well as playing a role in preventing or reducing victimization.

Keywords: anxiety; anxiety disorders; friendships; externalizing problems; peer victimization

Introduction

Peer victimization can take the form of direct verbal or direct physical victimization where the aggressor is known, or relational victimization, where the harm is directed at a young person's social relationships and where the aggressor may not be known (Menesini and Salmivalli, 2017). Consequences of victimization in young people include decreases in self-esteem and increases in depressive symptoms, suicidal ideation and behaviour, extending into adulthood (Hodges and Perry, 1999; Klomek *et al.*, 2007; Perren *et al.*, 2010).

Heightened anxiety has been shown to be both a trigger and a consequence of peer victimization (e.g. Christina *et al.*, 2021; Forbes *et al.*, 2019). Children are more likely to

experience victimization when they are shy, withdrawn and emotionally sensitive, which are all factors implicated in the development of anxiety disorders (e.g. Juvonen and Graham, 2014). Although shy and anxious behaviours are relatively accepted by peers early in life, anxious youth are less liked by their peers, more likely to be rejected, and are viewed as more likely targets of victimization as they move into early adolescence (Luchetti and Rapee, 2014; Rubin *et al.*, 2018). While all forms of anxiety are relevant to victimization, social anxiety has been found to be a stronger precursor to victimization in longitudinal studies of early adolescence (Tillfors *et al.*, 2012; van den Eijnden *et al.*, 2014). Furthermore, the relationship between anxiety and peer victimization appears to be stronger for indirect relational victimization as opposed to overt forms, particularly for older samples (Casper and Card, 2017). Although potential mechanisms are largely unexplored, it may be that bullies particularly target anxious youth, who are less self-assured in social situations and who engage in more safety behaviours. Indeed, experimental data suggest that young people report negative attitudes towards their peers who display behaviours characteristic of emotional symptoms, report they like these peers less, and more strongly believe they will be victimized (Luchetti and Rapee, 2014).

Factors that protect young people from victimization include coping defences and supportive friendships (e.g. Egan and Perry, 1998; Fitzpatrick and Bussey, 2011; Singh and Bussey, 2011), while externalizing behaviours provide additional risk (e.g. Egan and Perry, 1998; Schwartz *et al.*, 1999). Longitudinal studies have shown that children with strong social relationships are less victimized even when behavioural vulnerabilities are present (e.g. Egan and Perry, 1998). Having supportive friends, who are not themselves victims, appears to play a similar protective function (e.g. Hodges and Perry, 1999; Pellegrini *et al.*, 1999). On the other hand, behaviours such as aggression and disruptiveness, in addition to internalizing problems and poor social skills, predict peer-nominated victimization over time in primary school children (Egan and Perry, 1998). Furthermore, some children who experience victimization also engage in bullying behaviour towards their peers, which is associated with conduct problems (e.g. Pellegrini *et al.*, 1999). Clearly, factors that predict victimization are multifaceted and include a range of both internalizing and externalizing behaviours.

Although many of the interventions targeting victimization take a whole of school approach (e.g. Cross *et al.*, 2011; Karna *et al.*, 2011) there has only been a small number of studies showing that targeting internalizing problems has a significant impact on ongoing vulnerability to victimization (e.g. Berry and Hunt, 2009; Chu *et al.*, 2015; La Greca *et al.*, 2016). This lack of research focus may reflect youth's reluctance to seek help specifically for victimization as although there is some stigma associated with an anxiety diagnosis, anxiety might be a more acceptable pathway to care than victimization. Moreover, although parents may not be aware of the victimization experienced by their child (Stavrinides *et al.*, 2015), they often know about their child's anxiety (Rapee *et al.*, 1994). Therefore, if a significant proportion of anxious children are victimized, the child's anxiety may provide a pathway to care for children who are at high risk of victimization.

Aims

The current study aims to examine peer victimization in youth with an anxiety disorder who have presented to clinical services. A retrospective review of clinical research data identified all children and adolescents with a primary (most interfering) anxiety disorder diagnosis, excluding youth with conditions requiring urgent assistance (e.g. severe suicidal ideation) or conditions that might be disruptive to groups (e.g. severe oppositional defiant disorder across more than one setting). Knowing the characteristics of youth seeking treatment for an anxiety disorder who are also victimized may inform the development of novel approaches to cognitive behavioural interventions for anxiety disorders in young people.

https://doi.org/10.1017/S1352465822000303 Published online by Cambridge University Press

In line with anxious children from community samples, we hypothesize that children seeking treatment for anxiety disorders who report verbal, relational or physical victimization will differ from those who do not report victimization in the following ways: (i) higher levels of anxiety symptoms; (ii) higher levels of externalizing behaviours (conduct and hyperactivity/inattention problems); and (iii) poorer friendships. Furthermore, we predict that the association between perceived victimization and anxiety severity will be moderated by interpersonal relationships. We also expect that higher levels of self-reported victimization will be associated specifically with a diagnosis of an anxiety disorder.

In addition to the descriptive data above, the retrospective review included data on the cognitive behavioural group treatment outcomes of anxious children who were also victimized. Group cognitive behavioural treatment is an efficacious and effective treatment for children and adolescents with anxiety disorders (Hudson *et al.*, 2009; Kodal *et al.*, 2018; Sigurvinsdottir *et al.*, 2020). We have made no specific hypotheses with respect to treatment effects. However, we will assess whether youth who completed a group cognitive behavioural interventions for anxiety reported changes in victimization across pre- and post-treatment measurement occasions.

Method

Participants

Participants were identified from a review of clinical research data collected within a tertiary treatment clinic located in suburban Sydney, Australia. The sample consisted of 261 children and adolescents, together with their parents, who had sought treatment for their anxiety symptoms. Youth ages ranged from 6 to 17 years, with a mean age of 10.6 years ($SD = 2.83$). Of these, 55.6% were male, with grades in school ranging from Year 1 to Year 12. Most families who attended the treatment clinic were European-Australian, well educated, and upper middle class (e.g. Hudson *et al.*, 2015; Lyneham *et al.*, 2007).

A subsample of 112 youth (42.9%) who completed group-based cognitive behavioural treatment for their anxiety disorder and were re-assessed at post-treatment were identified in the review data. The remaining 149 children in the larger sample were either on the waiting list for allocation to treatment, had completed bibliotherapy, or did not take up the offer of treatment. The ages of this subsample of youth in treatment ranged from 6 to 17 years, with a mean age of 10.9 years ($SD = 2.89$). Of these, 57.1% were male, with grades in school ranging from Year 1 to Year 12. The treated ($n = 112$) and untreated ($n = 149$) participants made up the full sample of participants ($N = 261$).

Measures

Diagnosis and peer relationships

Anxiety diagnoses were assessed using a semi-structured diagnostic interview, the Anxiety Disorders Interview Schedule for *DSM-IV*, Parent and Child versions (ADIS-IV-PC) (Silverman and Albano, 1996). Previous research from this clinic has demonstrated inter-rater agreement of kappa = 1 for an overall diagnosis of anxiety disorder and ranging from .68 to .93 across the major anxiety disorders (Lyneham *et al.*, 2007). Given high levels of co-morbidity, six variables were created which indicated whether a diagnosis of generalized anxiety disorder, separation anxiety disorder, social anxiety disorder, specific phobia, obsessive compulsive disorder, or panic disorder were present anywhere in the child's diagnostic profile. The ADIS Interpersonal Relationship items used were: (1) 'Do you think you have more, less, or the same number of friends as other kids?' coded as 'more friends', 'the same number', or 'less friends'; (2) 'Would you like to have more friends?'; (3) 'Do you have a best friend?'; (4) 'Do you think you have trouble making friends?'; (5) 'Do you think you have trouble keeping them?', coded as 'yes' or 'no'; and (6) 'If you had a choice would you spend most of your

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time with other kids or alone?', coded as 'other kids' or 'alone'. Parents were asked parallel questions about their child's relationships, except for question 2.

Peer victimization

The Structured Interview for Victimization, an interview of the experience of victimization, was developed for use in this study with questions incorporated into the ADIS-IV-PC. Children were asked whether they had experienced four physical victimization behaviours (e.g. '*hit or kicked*'), two relational victimization behaviours (e.g. '*left out of things on purpose*'), and two verbal victimization behaviours (e.g. '*called hurtful names*'), and if so, how often this had happened over the previous 4 weeks in order to capture recent experience of victimization ('not in past 4 weeks', 'less than once a week', 'about once a week', 'most days or every day'). Participants were also asked to rate, on an 8-point scale, how much their experience of victimization has 'messed up things at home, in school, or with your friends' (interference rating, IR) and the clinician rated, on an 8-point scale (where 0 = 'absent', 8 = 'severe'), the severity of impairment attributed to victimization (Clinician Victimization SR). If no victimization was reported, interference and severity were rated zero. Parents were asked a series of parallel questions about their child's victimization during the parent interview with the ADIS.

Inter-rater reliability for the child interview was based on a sample of 37 children. Kappa statistics for agreement between raters ranged between .75 and 1 for the ratings of the occurrence of victimization and the kappa for agreement between the ratings on the severity of victimization (Clinician Victimization SR) was .68. Evidence for validity of this measure within the current sample, for example, was a significant positive relationship between the Clinician Victimization SR and the child-rated Strengths and Difficulties Questionnaire (SDQ) Peer Problems scale of $r = .57$ ($p<.01$), as well as the mother- and father-rated SDQ Peer Problems scale ($r = .44$, $r = .49$, $p<.01$, respectively). Furthermore, there was a significant positive relationship between the child-rated and parent-rated measures of victimization interference ($r = .64$, $p<.01$).

Anxiety symptoms

The Spence Children's Anxiety Scale (SCAS; Spence, 1998) provided an assessment of child-reported anxiety symptoms. The measure has been validated for use with youth aged from 6 to 18 years and has good reliability, and convergent and discriminant validity, being able to distinguish clinical and non-clinical populations (Nauta *et al.*, 2004; Spence, 1998). To reduce the risk of multicollinearity and limit the number of variables, the total anxiety symptom score (SCAS-tot) was used to represent anxiety symptoms. In the current sample, the internal reliability of this scale was Cronbach's alpha = .84.

Externalizing behaviours

The Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001) is a brief measure of behavioural and emotional problems in children, providing a parent-report of externalizing behaviours that have been specifically linked to victimization: conduct problems (5 items) and hyperactivity/inattention (5 items). The SDQ has demonstrated sound psychometric properties with an Australian sample and normative data are available (Hawes and Dadds, 2004). In the current sample, the internal reliability of the conduct problems scale was Cronbach's alpha = .57 and the hyperactivity/inattention scale was Cronbach's alpha = .80.

Procedure

Structured interviews assessing diagnosis and victimization were conducted by graduate students in clinical psychology or qualified clinical psychologists, all of whom were trained to criterion

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(perfect agreement on identifying the primary disorder) on this assessment. Children and their parent(s) were interviewed separately. Diagnoses were based on composite parent and child interviews – that is, they were assigned by the clinician based on information obtained from both the parent(s) and child. Both parents and children also completed the relevant symptom measures.

Young people were included in the current study if they met *DSM-IV* criteria for a diagnosis of any anxiety disorder as their primary (most interfering) disorder. Exclusions were kept to a minimum to maximize external validity and primarily reflected conditions requiring urgent assistance (such as severe suicidal ideation or chronic school refusal) or conditions that might be disruptive to groups (such as unmedicated ADHD, severe oppositional defiant disorder across more than one setting, or moderate intellectual disability).

Children who met the inclusion criteria and had agreed to research participation ($N = 261$) were offered a group-based cognitive behavioural treatment program at the time of their presentation to the treatment setting. A subsample of 112 participants had completed group-based treatment at the time of the data file review, with clinical interview and symptom measures data also available at post-treatment.

Treatment programme

The group-based cognitive behavioural treatment program conducted was Cool Kids, an efficacious manualized treatment that consists of ten 2-hour, weekly sessions over 12 weeks (Rapee *et al.*, 2006). Parents were included in all sessions for younger children and most sessions for teenagers. The core treatment components are psychoeducation, graded exposure, cognitive restructuring, social skills training, and assertiveness. While the treatment was aimed primarily at treating anxiety, the Cool Kids program at that time contained a brief focus on skills to deal with bullying (approximately 1 hour of the 20 hours of treatment) targeting those children for whom bullying is an issue. The section, titled 'Outsmarting bullies' covered strategies that children might find useful in dealing with bullies, including staying close to a sympathetic audience such as friendly peers or adults, doing something different in response to the bully, and talking about their experiences of victimization to people they trusted.

Analytic strategy

To examine correlates of victimization in the full sample ($N = 261$), a series of two-way ANOVAs assessed main effects for reported verbal, relational or physical victimization with age (primary school age; secondary school age) or gender (male; female), with SCAS total anxiety symptoms, parent-rated SDQ conduct problems, and parent-rated SDQ hyperactivity as the dependent variables. Given participants could report the experience (or not) of any form of victimization, the presence or absence of each form of victimization was compared as opposed to creating multiple groups based on different combinations of victimization experience, which would have created multiple groups with very small sample size. Chi square analyses assessed the association between perceived victimization and the presence of each of the specific anxiety disorders in the child's diagnostic profile.

To assess the influence of friendships and peer problems, a non-linear principal components analysis was conducted, specifically as a means of data reduction (Fabrigar *et al.*, 1999) across the 11 categorical ADIS relationship variables. The methods recommended by Linting and colleagues using the SPSS CATPCA program were followed (Linting *et al.*, 2007; Linting and van der Kooij, 2012). Saved component scores were used for subsequent analyses in which relationships between the social relationship variables and reported victimization were assessed. To determine which variables were reliably associated with the experience of victimization, and to test for interactions between anxiety symptoms and social relationship variables, three logistic regressions predicting

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Table 1. Proportion of child and parent reported victimization ($n = 261$)

	Child report				Parent report			
		In past 4 weeks				In past 4 weeks		
	Any	Less than once a week	About once a week	Most days or every day	Any	Less than once a week	About once a week	Most days or every day
Verbal (hurtful names or death stares)	($n = 163$) 62.5%	10.3%	10.3%	11.8%	61.3%	6.1%	8.4%	13.1%
Relational (left out, talked about, or ignored)	($n = 173$) 66.3%	15.7%	11.5%	15.3%	62.5%	6.9%	10.3%	18.0%
Physical (threatened, belongings stolen, tripped or pushed, or hit or kicked)	($n = 132$) 50.6%	10.7%	3.8%	8.8%	49.4%	7.7%	4.6%	3.8%
Overall (verbal, relational or physical)	($n = 210$) 80.5%	17.2%	13.4%	23.4%	79.7%	10.0%	10.7%	23.3%

the three types of victimization as rated by children were conducted including independent variables that were consistently associated with victimization at the bivariate level.

For the subsample of children who completed standard CBT group treatment ($n = 112$), paired sample *t*-tests were conducted to determine whether there were any significant differences in reported victimization and anxiety symptoms across treatment. Mixed model ANOVAs, using perceived victimization as the between-subjects' effects and pre- to post-treatment scores as the within-subjects' effect, were used to assess whether children who reported victimization differed from those who reported not being victimized. We also assessed whether there was a relationship between the presence of a specific anxiety disorder diagnosis and change in perceived victimization severity across treatment. Regression analyses in which post-treatment clinician-rated victimization severity rating for children was entered as the dependent variable, and pre-treatment clinician-rated victimization severity and whether an anxiety diagnosis featured in the diagnostic profile (dummy coded as 0 or 1) as the independent variables were run.

Results

The proportion of children and parents in the total sample ($N = 261$) who reported victimization of the child for each form of victimization are presented in Table 1 and the gender breakdown and mean ages are presented in Table 2. As there were no significant main effects for gender or age across the three victimization variables, these demographic variables were not assessed further.

Anxiety symptoms

Children who reported verbal victimization, relative to those who did not, also reported higher SCAS Total Anxiety Symptoms, $F_{257} = 9.25$, $p = .003$, Cohen's $d = 0.46$. Similarly, children who reported relational victimization reported higher SCAS Total Anxiety Symptoms, $F_{257} = 6.56$, $p = .011$, Cohen's $d = 0.40$. There was no difference in the SCAS Total Anxiety Score ($F_{257} = 2.14$, $p = .147$, Cohen's $d = 0.19$) for those who reported physical victimization compared with those who did not report it.

https://doi.org/10.1017/S1352465822000303 Published online by Cambridge University Press

Table 2. Mean age and gender percentage for children who were victimized or not ($n = 261$)

	Reported victimization		No reported victimization	
	% Male	Mean age (*SD*)	% Male	Mean age (*SD*)
Verbal (Hurtful names or death stares)	($n = 87$) 53.4%	10.7 years (2.9)	($n = 58$) 59.2%	10.4 years (2.7)
Relational (Left out, talked about, or ignored)	($n = 89$) 51.4%	10.5 years (2.8)	($n = 56$) 63.6%	10.8 years (2.8)
Physical (Threatened, belongings stolen, tripped or pushed, or hit or kicked)	($n = 76$) 57.6%	10.4 years (2.8)	($n = 69$) 53.5%	10.8 years (2.9)
Overall (verbal, relational or physical)	($n = 112$) 53.3%	10.6 years (2.9)	($n = 33$) 56.7%	10.8 years (2.8)

Table 3. Reports of victimization across specific anxiety disorder diagnoses (anywhere in the child's diagnostic profile) ($n = 261$)

	GAD ($n = 202$)	SAD ($n = 100$)	SA ($n = 150$)	SpP ($n = 152$)	OCD ($n = 29$)	PD ($n = 16$)
Verbal (hurtful names or death stares)	($n = 133$) 65.8%	($n = 64$) 64.0%	($n = 96$) 64.0%	($n = 104$) 68.4%	($n = 16$) 55.2%	($n = 12$) 75.0%
Relational (left out, talked about, or ignored)	($n = 138$) 68.3%	($n = 68$) 68.0%	($n = 106$) 70.7%	($n = 103$) 67.8%	($n = 18$) 62.1%	($n = 12$) 75.0%
Physical (threatened, belongings stolen, tripped or pushed, or hit or kicked)	($n = 102$) 50.5%	($n = 50$) 50.0%	($n = 77$) 51.3%	($n = 82$) 53.9%	($n = 14$) 48.3%	($n = 8$) 50.0%

GAD, generalized anxiety disorder; SAD, separation anxiety disorder; SA, social anxiety disorder; SpP, specific phobia; OCD, obsessive compulsive disorder; PD, panic disorder.

Externalizing symptoms

Children who reported verbal victimization, relative to those who did not, had higher parent rated SDQ Conduct Problems, $F_{257} = 9.26$, $p = .003$, Cohen's $d = 0.44$. Children who reported physical victimization also reported higher SDQ Conduct Problems, $F_{257} = 7.65$, $p = .006$, Cohen's $d = 0.37$. There was no significant difference regarding Conduct Problems between those children reporting and not reporting relational victimization, $F_{257} = 3.14$, $p = .078$, Cohen's $d = 0.29$. The only significant finding for parent-reported SDQ Hyperactivity was that participants who had reported physical victimization had higher hyperactivity symptoms relative to those who did not report physical victimization, $F_{257} = 4.03$, $p = .046$, Cohen's $d = 0.27$.

Specific anxiety disorder diagnoses

The primary diagnoses of the sample were generalized anxiety disorder 37.1%, separation anxiety disorder 14.8%, social anxiety disorder 15.2%, specific phobia 15.7%, obsessive-compulsive disorder 5.2%, and panic disorder 2.9%. Eighty-three per cent of the participants were diagnosed with more than one disorder, with more frequent co-morbid diagnoses being specific phobia, social anxiety disorder, generalized anxiety disorder, separation anxiety disorder, and externalizing disorders.

Table 3 shows the percentage of children reporting victimization for each of the specific anxiety disorder diagnoses. The presence of generalized anxiety disorder anywhere in the child's diagnostic profile was positively associated with verbal victimization $\chi^2(1, N = 261) = 4.37$, $p = .036$, OR = 1.86, 95% CI [1.04, 3.35], but not with relational or physical victimization. In

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Table 4. Varimax rotated component loadings from a four-dimensional CATPAC on 11 child and parent interpersonal relationship items from the ADIS (n=261)

ADIS item description	Components				
	1	2	3	4	
Label	Parent rated friendship	Child rated friendship	Prefer time with others	Best friend	h^2
Difficulty making friends (Pa)	.86	...	...	...	.79
Number of friends (Pa)	.81	...	...	...	.71
Difficulty keeping friends (Pa)	.65	...	...	...	.53
Number of friends (Ch)	...	.74	...	...	.69
Like to have more friends (Ch)	...	.64	...	...	.49
Difficulty keeping friends (Ch)	...	.63	...	...	.41
Difficulty making friends (Ch)	...	.61	...	...	.57
Prefer time with other children (Ch)	...	...	.86	...	.81
Prefer time with other children (Pa)	...	...	.78	...	.72
Have a best friend (Ch)	...	...	...	.80	.72
Have a best friend (Pa)	...	...	...	.83	.73
Percentage of variance	19.52	18.11	14.87	12.56	65.05

Ch, Child report; Pa, Parent report.

addition, the presence of social anxiety disorder in the child's diagnostic profile was positively associated with relational victimization $\chi^2(1, N = 261) = 3.85$, $p = .050$, OR = 1.68, 95% CI [0.99, 2.83], but not verbal or physical victimization. There were no further significant relationships between perceived victimization and the presence of any other specific anxiety disorder.

Friendship and peer problems

Following a non-linear principal components analysis across the 11 categorical ADIS relationship variables, four components were retained following an inspection of scree plots using eigenvalues from the correlation matrix of transformed variables for two-, three- and four-dimension solutions. All these dimensionalities placed the elbow at the fifth component. Given that five variables loaded highly on more than one variable, saved transformed (continuous) variables were submitted to a linear principal components analysis with varimax rotation.

Four components with eigenvalues greater than one were extracted, accounting for 65.05% of the variance. The component loadings, communalities (h^2), and percentages of variance explained after rotation are shown in Table 4. Variables loading on component 1 were concerned with parents' perception towards the quantity and quality of their children's friendships (labelled 'parent rated friendships'), while those loading on component 2 were concerned with children's view of their own friendships ('child rated friendships'). Variables loading on component 3 were related to children's own preference and their parent's view about their preference for spending time alone or with others ('prefer time with others'), while variables loading on component 4 were concerned with whether the child had a best friend ('best friend'). Four variables were created by saving component scores, and these scores were used for subsequent analysis.

Children who reported verbal victimization had fewer positive perceptions of their friendships ($t_{242} = 3.22$, $p = .001$, Cohen's $d = 0.41$), as did children who reported relational victimization ($t_{242} = 4.99$, $p<.001$, Cohen's $d = 0.65$), relative to those who did not report this form of victimization. Children who reported physical victimization were less positive about their friendships ($t_{242} = 2.78$, $p = .006$, Cohen's $d = 0.36$), as were their parents ($t_{242} = 2.00$, $p = .047$,

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Table 5. Logistic regression analyses of perceived victimization status as a function of symptom and friendship variables ($n = 261$)

Verbal victimization					
				95% confidence interval for odds ratio	
Variables	*B*	Wald test (*z*-ratio)	Odds ratio	Lower	Upper
ADIS component 2 – friendships (Ch)	−.300	0.53	0.74	0.32	1.66
SCAS total score (Ch)	.018	3.34	1.02	0.99	1.04
SDQ conduct problems (Pa)	.253	6.63	1.29	1.06	1.56
Anxiety × Friendships (Ch)	−.002	0.33	1.00	0.98	1.02
Relational victimization					
ADIS component 2 – friendships (Ch)	−.844	3.97	0.43	0.18	0.99
SCAS total anxiety (Ch)	.012	1.61	1.01	0.99	1.03
SDQ conduct problems (Pa)	.071	0.59	1.07	0.90	1.29
Anxiety × Friendships (Ch)	.007	0.53	1.01	0.99	1.03
Physical victimization					
ADIS component 2 – friendships (Ch)	.013	0.01	101	0.48	2.15
SCAS total anxiety (Ch)	.004	0.20	1.00	0.99	1.02
SDQ conduct problems (Pa)	.191	4.60	1.21	1.02	1.44
Anxiety × Friendships (Ch)	−.008	1.00	0.99	0.98	1.01

Ch, Child report; Pa, Parent report; ADIS, Anxiety Disorders Interview Schedule; SDQ, Strengths and Difficulties Questionnaire; SCAS, Spence Child Anxiety Scale.

Cohen's $d = 0.26$). There were no further significant differences in social relationship variables based on child-reported victimization status.

Logistic regressions

Logistic regressions are listed in Table 5. The full logistic regression models with all predictors were statistically reliable: verbal victimization $\chi^2(4, N = 189) = 20.45$, $p = .001$, relational victimization $\chi^2(4, N = 189) = 17.95$, $p = .001$ and physical victimization $\chi^2(4, N = 189) = 12.11$, $p = .017$. Regarding verbal victimization, only mother-rated conduct problems reliably predicted victimization (Table 5) *z*-ratio (1) = 6.63, $p = .010$. The odds ratio of 1.29 suggests that child-rated verbal victimization increased by 29% with each unit increase in mother-rated conduct problems. One variable reliably predicted relational victimization: child-rated perception of friendships *z*-ratio (1) = 3.97, $p = .046$. The odds ratio of 0.43 indicates that the odds of a child reporting significant relational victimization is decreased by a factor of 0.43 with each unit increase of the friendship score. In other words, child-rated perception of friendship decreased relational victimization by 57%. Regarding physical victimization, only mother-rated conduct problems reliably predicted victimization *z*-ratio (1) = 4.60, $p = .032$. The odds ratio of 1.21 indicated that child-rated physical victimization increased by 21% with each unit increase in mother-rated conduct problems.

Changes in reported victimization for the subsample of children who completed treatment ($n = 112$)

Significant pre–post differences were found using the SCAS total score as rated by children $M = 36.4$, $SD = 19.2$ to $M = 24.0$, $SD = 18.0$, $t_{80} = 6.72$, $p<.001$, Cohen's $d = 0.67$, and their parents $M = 36.4$, $SD = 15.6$ to $M = 22.2$, $SD = 13.7$, $t_{82} = 8.93$, $p<.001$, Cohen's $d = 0.96$. There were significant pre-treatment to post-treatment decreases in child-reported

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victimization interference ratings $M = 2.4$, $SD = 2.2$ to $M = 1.4$, $SD = 2.2$, $t_{70} = 2.90$, $p = .005$, Cohen's $d = 0.41$, and clinician severity ratings for both children $M = 2.4$, $SD = 2.6$ to $M = 1.2$, $SD = 2.0$, $t_{69} = 2.46$, $p = .001$, Cohen's $d = 0.50$, and parents $M = 2.4$, $SD = 2.4$ to $M = 1.7$, $SD = 2.3$, $t_{58} = 2.15$, $p = .036$, Cohen's $d = 0.32$,. No significant differences were found in parent-reported victimization interference ratings $M = 2.7$, $SD = 2.7$ to $M = 1.9$, $SD = 2.5$, $t_{57} = 1.84$, $p = .072$ Cohen's $d = 0.29$, from pre-treatment to post-treatment. The proportion of the children who completed treatment and who reported an experience of verbal victimization in the previous 4 weeks was 39.3% at pre-treatment and 10.7% post-treatment (McNemar test, $p<.001$). Child-reported relational victimization was 42.9% at pre-treatment and 19.6% at post-treatment (McNemar test, $p<.001$), and physical victimization 23.2% at pre- and 6.3% at post-treatment (McNemar test, $p<.001$).

Regarding perceived verbal victimization, victimized children showed significantly greater reductions in anxiety symptoms, as assessed by their total SCAS score, $F_{1,126} = 4.83$, $p = .030$, $h_p^2 = .04$. Similar differences were found for relational victimization, $F_{1,126} = 4.49$, $p = .036$, $h_p^2 = .03$, and physical victimization, $F_{1,126} = 4.17$, $p = .043$, $h_p^2 = .03$.

The primary diagnoses of the treatment subsample were generalized anxiety disorder 38.7%, separation anxiety disorder 16.2%, social anxiety disorder 16.2%, specific phobia 13.5%, obsessive-compulsive disorder 6.3%, and panic disorder 2.7%. Across the six anxiety diagnoses, only a primary diagnosis of social anxiety was significantly associated with changes on clinician victimization severity ratings for children ($\beta = 0.35$, $t = 3.16$, $p = .002$). That is, improvements in victimization severity ratings as reported by children following treatment for anxiety was only obtained for children who had a primary diagnosis of social anxiety disorder.

Discussion

The focus on a clinical population presenting for help with anxiety is a unique aspect of the current study. Children seeking help for clinical anxiety disorders reported a high prevalence of self-reported victimization, with 80% of the sample reporting prior experience of victimization, and one half reporting this experience in the previous 4 weeks. Parent reports were largely consistent with their children's reports, particularly for overall levels of victimization. These levels are clearly higher than is typically seen in community samples of youth (Jadambaa *et al.*, 2019). Higher levels of anxiety symptoms were associated with reports of verbal and relational victimization, but not physical victimization. Overall, the findings are consistent with previous research reporting significant relationships between victimization and anxiety in community and school populations (e.g. Tillfors *et al.*, 2012; van den Eijnden *et al.*, 2014).

A diagnosis of social anxiety was associated with reports of greater interference from perceived relational victimization, and a similar relationship was found for generalized anxiety and perceived verbal victimization. Of course, the cross-sectional design means that we cannot determine whether anxiety disorders triggered victimization or whether being victimized led to greater anxiety. However, it appears that it is the more 'social' forms of anxiety that are more clearly linked to victimization, especially verbal and relational.

Several symptom and friendship variables were related to perceived victimization at the bivariate level, although the logistic regression results suggest that other variables in the regression share overlapping variance. For example, it is plausible that children with both anxiety and externalizing problems are more likely to be victimized and that is partly related to their poor friendships. In other words, the relationship between friendships and victimization was mostly subsumed by the variance accounted for by externalizing problems. Children's perceptions of their friendships were uniquely associated only with relational victimization; difficulty in making and keeping friends was directly related to an increased risk

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of victimization. The reported severity of anxiety was not found to moderate the effect of friendships on the risk of perceived victimization, but our use of a clinical sample may have led to a restriction of range in anxiety symptoms, diluting the relationship between anxiety and reported victimization.

While causality cannot be established from these cross-sectional data, the findings are consistent with studies that show that friendships can protect children from victimization despite their vulnerability due to internalizing symptoms (Crawford and Manassis, 2011; Greco and Morris, 2005). Overall, the combined research findings point to the strength of a young person's friendships as being a critical protective factor against relational victimization for children with anxiety disorders, as they are for other children. Treatment of anxiety, specifically social anxiety, presumably through its impact on peer interactions, appears to have a significant relationship with severity of victimization following that treatment. Hence, it could be considered that social anxiety may be a more distal risk for victimization that has its influence through peer relationships.

When assessing bivariate relationships, co-morbid parent-reported externalizing symptoms, specifically conduct problems, appeared to be related to rates of perceived victimization across verbal, relational or physical victimization. However, the multivariate analyses indicated that only conduct problems, as rated by the child's mother, were uniquely associated with perceived verbal and physical victimization once friendships and anxiety symptoms were considered. It appears that anxious children who are also aggressive are more likely to be the targets of overt aggression from peers. As there were similar proportions of male and female children reporting verbal and physical victimization, and no main effects based on age and gender differences, the role of conduct problems cannot be explained by these demographic variables. Although we did not assess whether children in our sample reported victimizing others, these findings are consistent with literature on 'bully/victims' who are more likely to exhibit externalizing problems (e.g. Kelly *et al.*, 2015).

Several limitations require consideration. We used a semi-structured interview, assessing specific behaviours using a similar structure to the ADIS, to question children and their parents about victimization and presented evidence to support the reliability and validity of the data. However, the current findings rely on self-reported victimization, albeit victimization that is corroborated by parent report. Without peer or teacher reports of victimization, it is possible that anxiety does not increase victimization but rather increases the child's perceptual bias to misinterpret 'normal' interactions in terms of teasing and victimization (Calleja and Rapee, 2020). Furthermore, the interview did not assess the presence of power differential between a bully and victim, which is key characteristic of bullying behaviour and so the broader measure of peer victimization was assessed. There was also no information sought about the experience of the more recently recognized form, cybervictimization. Given the use of retrospective data, reported diagnoses are based on the ADIS-IV as the sample were assessed prior to the publication of the ADIS-5.

With respect to clinical practice, having an anxiety disorder may well increase risk for a range of social relationship difficulties, including reduced friendships and increased victimization. Health professionals who work with anxious youth should ensure that these difficulties are routinely assessed. While largely focused on the treatment of anxiety, the cognitive behavioural intervention included some social skills training and specifically addressed strategies to combat bullying, which may have had some impact on outcome. However, the findings suggest a plausible hypothesis that similar treatment programs for anxiety in youth who are victimized may either reduce victimization or reduce the perceptual bias and are, either way, valuable. Victimized children showed greater treatment gains in terms of child-reported anxiety symptoms, with the mean scores suggesting that this may be in part due to the victimized children having higher pre-treatment scores, and therefore having more scope to reduce their scores.

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Perhaps more importantly, the current findings that children who present for treatment for an anxiety disorder are likely to experience and be impaired by perceived victimization supports the idea that an anxiety presentation might be a gateway to identify and offer help to young people who have also been victimized, particularly given recent efforts to combat stigma and encourage young people to seek help for mental health problems (e.g. Rickwood *et al*., 2007). Therefore, it has been valuable to discover that the anxiety-focused treatment was beneficial to reduce perceived victimization. Although requiring confirmation from prospective, controlled research designs, given the substantive concurrence of the experience of victimization and high levels of anxiety, enhancing treatment for anxiety by adding a substantial treatment component that directly targets victimization may well be an important element of the armamentarium in tackling the prevalence and impact of peer victimization (Berry and Hunt, 2009; Rapee *et al*., 2020). Improving these children's peer friendships through treatment, and particularly through treatment of their social anxiety, as well as better managing their emotional response to provocation, may play an important prevention or intervention role against victimization.

Data availability statement. The data that support the findings of this study are available from the corresponding author, C.H. The data are not publicly available as this had not been approved in the original research ethics protocol.

Acknowledgements. None.

Author contributions. **Caroline Hunt:** Conceptualization (lead), Data curation (lead), Formal analysis (lead), Methodology (equal), Project administration (equal), Writing – original draft (lead), Writing – review & editing (equal); **Kay Bussey:** Conceptualization (equal), Formal analysis (equal), Investigation (equal), Methodology (equal), Writing – review & editing (equal); **Lorna Peters:** Conceptualization (equal), Investigation (equal), Methodology (equal), Writing – review & editing (equal); **Jonathan Gaston:** Conceptualization (equal), Investigation (equal), Methodology (equal), Writing – review & editing (equal); **Alice Lo:** Data curation (equal), Formal analysis (equal), Writing – review & editing (equal); **Ron Rapee:** Conceptualization (equal), Investigation (equal), Methodology (equal), Resources (equal), Writing – review & editing (equal).

Financial support. This research received no specific grant funding form any funding agency, commercial or not-for-profit sectors.

Conflicts of interest. The authors declare none.

Ethical standards. The research conformed with the Declaration of Helsinki and was approved by the Macquarie University Human Research Ethics Committee (approval reference HE22FEB2008 - R05667). Informed consent was obtained from all parent participants and children provided assent.

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Cite this article: Hunt C, Bussey K, Peters L, Gaston J, Lo A, and Rapee RM (2022). School-based victimization in children and adolescents presenting for cognitive behavioural treatment of anxiety disorders. *Behavioural and Cognitive Psychotherapy* **50**, 590–603. https://doi.org/10.1017/S1352465822000303