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Peer Victimization and Prospective Changes in Children's Inferential Styles

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There is evidence that the cognitive vulnerabilities featured in the hopelessness theory of depression—inferential styles for the causes, consequences, and self-worth implications of negative events—increase risk for depression. Given this, it is important to understand how these inferential styles develop. In this study, we examined the impact of overt and relational peer victimization in a multiwave prospective study of 100 children (8–12 years of age) with peer victimization and inferential styles assessed every 2 months for 6 months (4 assessments total). Overt victimization uniquely predicted prospective changes in children's inferential styles for consequences and relational victimization uniquely predicted changes in inferential styles for self-characteristics. It is important to note that these relations were maintained even after controlling for the impact of concurrent depressive symptoms. These results add to a growing body of research suggesting that peer victimization may increase risk for the development of cognitive vulnerability to depression in children.

According to the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989), individuals' characteristic ways of interpreting the causes, consequences, and self-implications of negative events may contribute vulnerability to depression. Specifically, cognitive vulnerability is defined in the hopelessness theory as the tendency to attribute negative events to stable, global causes and to infer negative consequences and infer negative self-characteristics from these events. There is considerable evidence to support the hopelessness theory's vulnerability hypothesis in predicting prospective changes in depressive symptoms as well as the onset of major depression (for reviews, see Abela & Hankin, 2008; Haeffel et al., 2008). However, less is known about how these negative inferential styles actually develop. Theorists and researchers have suggested

that inferential styles may develop and stabilize throughout the course of childhood (Cole & Turner, 1993; Gibb & Coles, 2005; Rose & Abramson, 1992). Supporting this hypothesis, recent prospective studies of attributional styles (inferential style for the causes of negative events) indicate that these styles increase in stability with age and become more traitlike in late childhood (ages 9–12; Cole et al., 2008). Indeed, all three inferential styles (causes, consequences, and self-characteristics) appear to be relatively stable in adolescence (Hankin, 2008). Therefore, childhood appears to be a critical period for examining factors contributing to the development of cognitive vulnerability to depression.

Providing an etiological extension to the hopelessness theory, Rose and Abramson (1992) proposed a developmental model whereby exposure to negative events in childhood contributes to the development of a cognitive vulnerability to depression. Specifically, they proposed that when negative events occur, a child will initially make hopefulness-maintaining attributions for the events' occurrence, but with repeated exposure to negative events, these hopeful attributions will give way to more hopelessness-inducing cognitions. Supporting Rose and Abramson's model, a number of studies have

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demonstrated that negative events in children's lives predict prospective changes in their inferential styles (e.g., Garber & Flynn, 2001; Nolen-Hoeksema, Girgus, & Seligman, 1992). More recently, there has been increased emphasis on the specific role of negative peer events (i.e., peer victimization), given the significant role of peer relations among youth. This research suggests that verbal victimization from peers predicts prospective changes in children's inferential styles (Gibb & Abela, 2008; Gibb et al., 2006). What remains unclear, however, is whether different forms of peer victimization have differential effects on the development of cognitive vulnerability to depression in children. This type of investigation is important because it could help direct prevention and early intervention efforts to the specific peer influences that may be most detrimental to children.

There is a large literature documenting the negative effects of overt victimization, which includes hitting and kicking (for a review, see Hawker & Boulton, 2000). More recently, theorists and researchers have begun to focus on relational forms of victimization. Relational victimization involves acts done to negatively impact someone's social status or relationships with other peers (Crick, Casas, & Nelson, 2002). Examples include threatening to withdraw friendship, social exclusion from activities, and spreading lies or rumors with the intention of damaging a peer's group status. There is considerable evidence that various forms of peer victimization are cross-sectionally related to levels of depression (for a review, see Hawker & Boulton, 2000) and growing evidence that peer victimization predicts prospective changes in children's internalizing problems including depression (see Heilbron & Prinstein, 2008; Reijntjes, Kamphuis, Prinzie, & Telch, 2010). To date, however, only one previously published study of which we are aware has examined the relations of overt and relational victimization with levels of cognitive vulnerability to depression in children (Cole, Maxwell, Dukwich, & Yosick, 2010). In this cross-sectional study, Cole and colleagues found that levels of relational victimization were related to children's negative self-cognitions and that this relation was maintained even after statistically controlling for the influence of overt victimization. In contrast, although there was some evidence for a relation between overt victimization and children's negative self-cognitions, it was not significant once the effects of relational victimization were statistically controlled. These results are consistent with the hypothesis that experiences of relational victimization may be more likely to contribute to the development of cognitive vulnerability to depression among children than overt victimization; however, any type of directional or causal conclusion is limited by the study's cross-sectional design.

Our goal in the current study, therefore, was to examine the potential impact of both overt and relational victimization on prospective changes in children's inferential styles (causes, consequences, and self-characteristics) using a multiwave longitudinal design. Building from Cole and colleagues' (2010) findings, we predicted that both forms of peer victimization would predict negative changes in children's inferential styles but that only relational victimization would uniquely predict change in inferential styles, statistically controlling for the overlap between the two forms of victimization. To provide a more stringent test for identifying predictors of cognitive vulnerability in children, we also sought to account for the role of ongoing depressive symptoms. Specifically, we know from previous research that victimized children often exhibit elevated depressive symptom levels (for a review, see Hawker & Boulton, 2000) and that depressive symptoms predict prospective changes in children's inferential styles (e.g., Gibb et al., 2006; Nolen-Hoeksema, Girgus, & Seligman, 1986, 1992). Therefore, to ensure that the predicted effects of victimization were not due simply to co-occurring depression, we also examined whether any effects observed would be maintained after controlling for concurrent levels of depressive symptom. We predicted that the impact of peer victimization, particularly relational victimization, on prospective changes in children's inferential styles would be maintained even after statistically controlling for concurrent depressive symptom levels.

METHOD

Participants

Participants in this study were 100 children between the ages of 8 and 12 who were participating in a larger study of the intergenerational transmission of depression with their mothers (Gibb, Uhrlass, Grassia, Benas, & McGeary, 2009). Mother–child pairs were selected based on the mothers' history of mood disorders. Approximately half of the children had mothers with no lifetime diagnosis of any *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. [*DSM-IV*]; American Psychiatric Association, 1994) mood disorder ("nondepressed" group, $n = 48$). The remaining children had mothers who met criteria for a major depressive disorder (MDD) at some point during the child's lifetime ("depressed" group, $n = 52$) according to the *DSM–IV*. Exclusion criteria for both groups included the mother exhibiting symptoms of schizophrenia, organic mental disorder, alcohol or substance abuse within the last 6 months, or history of bipolar I disorder. Children's participation was limited such that no more than one child per mother

could participate and all children were between the ages of 8 and 12 years. If more than one child was available within this age range, one child was chosen at random for participation. The average age of children participating in the study was 9.97 years ($SD = 1.32$) and 59% were girls. In terms of children's race/ethnicity 82% were Caucasian, 5% were African American, 2% were Asian American, 1% was Hispanic, and 10% were biracial. Maternal history of MDD was not significantly related to children's age, sex, or race (Caucasian vs. non-Caucasian). Mothers in our sample had an average age of 38.56 years ($SD = 6.66$, range $= 26–53$) and 88% were Caucasian. The median family income was $50,000 to $55,000 and, in terms of education level, 45% of the mothers had graduated from college.

Measures

Children's levels of peer victimization were assessed at each time point using the Social Experiences Questionnaire (SEQ; Crick & Grotpeter, 1996). The SEQ is a self-report measure used to assess for experiences of overt (SEQ-OV) and relational (SEQ-RV) victimization. Examples of overt victimization include "How often do you get hit by another kid at school?" and "How often does another kid kick you or pull your hair?" Examples of relational victimization include "How often does a kid who is mad at you try to get back at you by not letting you be their group anymore?" and "How often does a classmate tell lies about you to make other kids not like you anymore?" Levels of victimization are calculated by averaging participants' responses to each of the five items for each subscale (range $= 1–5$), with higher scores indicating higher levels of victimization. The SEQ has exhibited good psychometric properties in previous research. Specifically, levels of victimization assessed with the SEQ exhibit good internal consistency, are significantly related to peer-report ratings of overt and relational victimization and sociometric status (rejected), and are significantly correlated with measures of psychosocial adjustment including depressive symptoms (e.g., Crick & Bigbee, 1998; Crick & Grotpeter, 1996). In the current study, both subscales exhibited good internal consistency across all time points (SEQ-OV: αs $= .71–.83$; SEQ-RV: αs $= .70–.85$).

Children's inferential styles were assessed at each time point using the Children's Attributional Style Questionnaire (CASQ; Seligman et al., 1984) and the Children's Cognitive Style Questionnaire (CCSQ; Abela, 2001). The CASQ was used to assess children's inferential styles for the causes of negative events and the CCSQ was used to assess children's inferential styles for consequences and self-characteristics. The CASQ is a 48-item forced choice questionnaire, and for each item, a hypothetical event is presented and the child must pick one of two attributional explanations for the event. In each pair of attributional explanations, one of the attributional dimensions varies (internality, stability, or globality), whereas the other two are held constant. Consistent with the hopelessness theory, we focused on the 16 items assessing stable and global attributions for negative events and we created a composite score by summing responses to these 16 items. Scores on this composite can range from 0 to 16, with higher scores indicating a more negative inferential style for the causes of events. A number of studies have supported the reliability and validity of the CASQ (e.g., Abela, 2001; Abela & Payne, 2003; Nolen-Hoeksema et al., 1986, 1992; Seligman et al., 1984). In the current study, the internal consistency (α) for the CASQ was .47 to .60 across all time points, which is similar to that obtained in previous research (e.g., Abela, 2001; Abela & Payne, 2003). The CCSQ is a two-part questionnaire. Part 1 assesses children's tendency to infer negative consequences following negative events (CCSQ-Consequences), and Part 2 assesses children's tendency to infer negative self-characteristics following the occurrence of negative events (CCSQ-Self). Both parts contain 12 items presenting hypothetical negative events involving the child. As with the CASQ, participants are instructed to imagine that the event happened to them and then choose the response that would best describe the way they would think. Scores on the CCSQ-Consequences can range from 0 to 36 and scores on the CCSQ-Self can range from 0 to 24, with higher scores on both scales indicating more negative inferential styles. Studies have supported the reliability and validity of the CCSQ (e.g., Abela, 2001; Abela & Payne, 2003). In the current study, the CCSQ-Consequences and CCSQ-Self subscales exhibited adequate internal consistencies (αs $= .75–.84$ and $.76–.84$, respectively), across all time points.

Children's symptoms of depression were assessed at each assessment point using the Children's Depression Inventory (CDI; Kovacs, 1981). Numerous studies have supported the reliability and validity of the CDI (e.g., Kovacs, 1981, 1985; Smucker, Craighead, Craighead, & Green, 1986). In the current study, the CDI exhibited good internal consistency across all time points (αs $= .77–.86$).

The Schedule for Affective Disorders and Schizophrenia-Lifetime Version (SADS-L; Endicott & Spitzer, 1978) was used to assess for mothers' lifetime histories of *DSM–IV* Axis I disorders in mothers at the initial assessment. As previously noted, 52 mothers met criteria for MDD during their child's life; 8 mothers met criteria for current MDD. A subset of 20 SADS-L interviews from this project were coded by a second interviewer and kappa coefficients for diagnoses of MDD in mothers was excellent ($\kappa = 1.00$).

Procedure

Potential participants were recruited from the community through a variety of means (e.g., newspaper and bus ads, flyers). Mothers responding to the recruitment advertisements were initially screened over the phone to determine potential eligibility. As part of this screening, mothers were assessed for lifetime history of major depression using the SADS-L. Those reporting either a history of major depression during the child's life or no lifetime depressive disorder were invited to participate in the study. Upon arrival at the laboratory, mothers were asked to provide informed consent and children were asked to provide assent to be in the study. Next, mothers completed the SADS-L and children completed the questionnaires, including the SEQ, CASQ, CCSQ, and CDI, in a separate room. Participation in this initial assessment took approximately 3 hr, which included frequent breaks for children to minimize fatigue effects. Follow-up assessments occurred 2, 4, and 6 months after the initial assessment, during which children were administered the SEQ, CASQ, CCSQ, and CDI over the phone. Families were compensated $100 for their participation. The study procedures were approved by our university's Human Subjects Research Review Committee.

RESULTS

Of the 100 mother–child pairs, 90, 89, and 90 participated at the 2-, 4-, and 6-month follow-ups, respectively (10% attrition). Given the presence of missing data, we examined whether the data were missing at random, thereby justifying the use of data imputation methods for estimating missing values (cf. Schafer & Graham, 2002). As a first step in examining the pattern of missing data, a series of t tests was conducted to determine if families who completed all of the assessments differed from those with missing data on any Time 1 variables. None of these analyses was significant. In addition, Little's missing completely at random (MCAR) test, for which the null hypothesis is that the data are MCAR (Little & Rubin, 1987) was nonsignificant, $\chi^2(769) = 748.47$, $p = .70$, providing further support for the imputation of missing values. Given these results, maximum likelihood estimates of missing data were created and used in all subsequent analyses (see Schafer & Graham, 2002). Correlations among the study variables are presented in Table 1.

Next, a series of multilevel models (linear mixed models) was used to examine the effects of peer victimization on prospective changes in children's inferential styles. Because waves of data collection were nested within participants, we modeled an autoregressive (lag 1)

covariance structure to account for the effects of the previous wave on the current wave (e.g., relation between inferential styles at time T-1 on inferential styles at Time T). The dependent variable in all analyses was level of negative inferential style (causes, consequences, or self-characteristics) at Time T. Levels of negative inferential style at Time T-1 were included as a covariate in all analyses and the primary predictor was level of victimization (overt or relational) occurring between Time T-1 and Time T. The primary analyses focused on within-subject relations between levels of peer victimization (overt or relational) reported as occurring during a given follow-up period and prospective changes in children's inferential styles (causes, consequences, or self-characteristics) during that same follow-up period. Because children were selected for this study based on their mothers' history of MDD, all analyses were conducted statistically controlling for the influence of mother MDD history (yes vs. no).

Focusing first on the role of overt victimization, we found that it predicted prospective changes in children's inferential styles for consequences, $t(133.66) = 3.43$, $p < .001$, $r_{effect\ size} = .28$, and self-characteristics, $t(149.68) = 2.97$, $p = .003$, $r_{effect\ size} = .24$, but not causes, $t(146.32) = 1.13$, $p = .26$, $r_{effect\ size} = .09$. Focusing next on the impact of relational victimization, we found that it predicted prospective changes in children's inferential style for self-characteristics, $t(203.55) = 3.57$, $p < .001$, $r_{effect\ size} = .24$, but not causes, $t(204.68) = 0.65$, $p = .52$, $r_{effect\ size} = .05$, or consequences, $t(157.47) = 1.52$, $p = .13$, $r_{effect\ size} = .12$.

We then examined the extent to which the influence of peer victimization on inferential style change was independent of concurrent depressive symptoms. Therefore, the multilevel models were run again, with children's depressive symptoms at Time T now included as a time-varying covariate. Even after statistically controlling for the influence of concurrent depressive symptoms, reports of overt victimization continued to predict prospective changes in children's inferential styles for consequences, $t(129.65) = 2.39$, $p = .02$, $r_{effect\ size} = .21$. In addition, reports of relational victimization continued to predict prospective changes in children's inferential styles for self-characteristics, $t(280.91) = 2.83$, $p = .005$, $r_{effect\ size} = .17$. In contrast, statistically controlling for the influence of concurrent depressive symptoms, the impact of overt victimization on prospective changes in children's inferential style for self-characteristics was reduced to a nonsignificant trend, $t(195.78) = 1.90$, $p = .06$, $r_{effect\ size} = .13$.

Because both overt and relational victimization predicted changes in children's inferential styles for self-characteristics (though, as just noted, the effect for overt victimization was reduced to a nonsignificant trend with depressive symptoms controlled), an additional analysis

TABLE 1
Intercorrelations Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. Mom MDD	—																									
2. Child Gender	-.07	—																								
3. T1 SEQ-OV	.02	.07	—																							
4. T2 SEQ-OV	.05	.01	.45	—																						
5. T3 SEQ-OV	.14	-.13	.50	.63	—																					
6. T4 SEQ-OV	.12	-.15	.45	.57	.74	—																				
7. T1 SEQ-RV	.08	.09	.71	.29	.44	.38	—																			
8. T2 SEQ-RV	.12	.07	.36	.49	.53	.31	.42	—																		
9. T3 SEQ-RV	.16	.05	.56	.44	.71	.47	.63	.60	—																	
10. T4 SEQ-RV	.15	.01	.42	.27	.55	.52	.39	.58	.56	—																
11. T1 CASQ	.19	.02	.32	.04	.19	.11	.33	.26	.27	.23	—															
12. T2 CASQ	.28	-.05	.33	.12	.15	.20	.30	.14	.17	.31	.55	—														
13. T3 CASQ	.19	-.07	.36	.09	.17	.24	.25	.03	.25	.25	.39	.47	—													
14. T4 CASQ	.17	-.16	.19	.08	.09	.10	.10	-.04	.27	.06	.15	.28	.62	—												
15. T1 Cons	-.05	-.20	.27	.17	.17	.30	.18	.12	.23	.13	.33	.28	.28	.33	—											
16. T2 Cons	-.08	-.10	.42	.27	.16	.31	.34	.05	.27	.01	.28	.28	.25	.31	.71	—										
17. T3 Cons	-.08	-.13	.39	.37	.32	.39	.31	.16	.39	.12	.21	.18	.31	.27	.72	.82	—									
18. T4 Cons	-.05	-.05	.40	.25	.21	.33	.35	.06	.32	.10	.15	.15	.21	.33	.73	.77	.81	—								
19. T1 Self	.01	.15	.26	.07	.14	.20	.30	.10	.30	.20	.31	.25	.25	.14	.41	.29	.30	.38	—							
20. T2 Self	.01	-.06	.40	.30	.28	.42	.39	.16	.32	.17	.28	.25	.23	.17	.54	.71	.57	.64	.58	—						
21. T3 Self	.02	-.05	.35	.14	.24	.35	.38	.10	.45	.21	.20	.21	.29	.35	.49	.53	.53	.63	.54	.72	—					
22. T4 Self	.01	-.04	.24	.18	.17	.28	.19	.13	.27	.19	-.02	.09	.22	.30	.35	.42	.41	.58	.45	.62	.75	—				
23. T1 CDI	.20	.03	.54	.32	.27	.31	.52	.25	.33	.28	.53	.59	.36	.19	.38	.43	.34	.36	.48	.50	.37	.21	—			
24. T2 CDI	.30	-.06	.41	.34	.37	.35	.45	.33	.51	.38	.45	.58	.41	.33	.40	.43	.38	.42	.35	.48	.37	.28	.71	—		
25. T3 CDI	.29	-.12	.50	.34	.47	.40	.44	.24	.49	.41	.40	.48	.44	.34	.40	.46	.43	.44	.27	.42	.34	.21	.55	.76	—	
26. T4 CDI	.19	-.02	.56	.37	.44	.42	.47	.16	.45	.35	.31	.43	.42	.39	.41	.50	.50	.55	.39	.48	.43	.40	.55	.66	.78	—
M	—	—	8.60	7.86	7.74	7.61	9.92	9.06	8.45	8.28	3.90	2.58	2.44	2.51	12.6	10	9.56	9.34	9.57	7.12	6.51	6.93	6.73	4.36	3.26	3.03
SD	—	—	3.58	2.83	3.23	2.80	4.09	3.74	3.15	3.62	2.35	1.72	1.63	1.87	4.71	4.78	4.86	4.81	4.25	3.94	4.16	4.26	6.22	4.16	3.68	3.52

Note: Mother MDD = mother history of major depressive disorder (yes = 1, no = 0); child gender (girl = 1; 0 = boy); SEQ-OV = Social Experiences Questionnaire–Overt Victimization subscale; SEQ-RV = Social Experiences Questionnaire–Relational Victimization subscale; CASQ = Children's Attributional Style Questionnaire; Cons = Children's Cognitive Style Questionnaire–Consequences; Self = Children's Cognitive Style Questionnaire–Self-Characteristics; CDI = Children's Depression Inventory.
Correlations ≥ .20 significant at $p < .05$, correlations ≥ .26 significant at $p < .01$, and correlations ≥ .33 significant at $p < .001$.

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was conducted to examine the unique influence of each form of victimization, statistically controlling for any variance shared between them. Entering both overt and relational victimization as predictors in the same multilevel model, we found that reports of relational, $t(286.49) = 2.42$, $p = .02$, $r_{effect\ size} = .14$, but not overt, $t(235.52) = 1.46$, $p = .15$, $r_{effect\ size} = .09$, victimization uniquely predicted changes in children's inferential styles for self-characteristics. The unique effect of relational victimization was maintained even after statistically controlling for children's concurrent depressive symptom levels in addition to concurrent levels of overt victimization, $t(288.08) = 2.23$, $p = .03$, $r_{effect\ size} = .13$ (see Table 2).

To provide a stronger test of our hypothesized direction of effect—the impact of victimization on prospective changes in inferential styles—we also test the opposite direction of effect: whether any of the three inferential styles predicted prospective change in either type victimization. None of these analyses was significant (lowest $p = .12$). Finally, we conducted exploratory analyses to determine whether the impact of overt or relational victimization on prospective changes in children's inferential styles was moderated by children's age or sex, or their mothers' histories of MDD. We also examined whether levels of reported overt and relational victimization would interact to predict changes in any of the three inferential styles. Given the number of tests conducted, we adjusted our critical alpha level to reduce the likelihood of Type I errors. However, to also reduce the risk of Type II errors, we calculated our adjusted alpha level based on the number of families of tests ($n = 4$) rather than the total number of tests conducted ($n = 21$). Our critical alpha level for these analyses, therefore, was .0125 (.05/4). None of the tests of moderation was significant.[1]

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[1] For interested readers, we should note that the Child Gender × Relational Victimization interaction was significant at the traditional .05 level predicting changes in children's inferential styles for consequences, $t(147.81) = 2.05$, $p = .04$, $r_{effect\ size} = .17$. Examining the impact of relational victimization separately in boys and girls, we found that it predicted changes in inferential styles for consequences among boys, $t(58.20) = 3.10$, $p = .003$, $r_{effect\ size} = .38$, but not girls, $t(99.30) = -0.32$, $p = .75$, $r_{effect\ size} = -.03$. Among boys, this effect was maintained when statistically controlling for concurrent levels of overt victimization and depressive symptoms, $t(64.91) = 1.98$, $p = .05$, $r_{effect\ size} = .24$. In addition, the Child Age × Relational Victimization interaction was significant at $p < .05$ in predicting changes in children's inferential styles for causes, $t(179.04) = 2.04$, $p = .04$, $r_{effect\ size} = .15$. Examining the impact of relational victimization separately in younger (8–9-year-olds) versus older (10–12-year-olds) children, we found that it predicted changes in inferential styles for causes among older, $t(111.57) = 2.04$, $p = .03$, $r_{effect\ size} = .19$, but not younger, $t(74.16) = -0.76$, $p = .45$, $r_{effect\ size} = -.09$, children. However, this effect was reduced to nonsignificant when we statistically controlled for concurrent levels of overt victimization, $t(131.13) = 1.36$, $p = .18$, $r_{effect\ size} = .12$, or depressive symptoms, $t(142.27) = 0.41$, $p = .68$, $r_{effect\ size} = .03$.

TABLE 2
Summary of Linear Mixed Model Predicting Change in Children's Inferential Styles for Self-Characteristics

Predictor	t	df	P	$r_{effect\ size}$
Mom MDD	0.76	34.84	.45	.13
Self $_{T-1}$	5.93	220.24	<.001	.37
SEQ-RV	2.23	288.08	.03	.13
SEQ-OV	0.87	275.69	.39	.05
CDI	3.09	193.44	.002	.22

Note: The DV in this analysis is Children's Inferential Style for Self-Characteristics at Time T. Mother MDD = mother history of major depressive disorder (yes = 1, no = 0); SEQ-RV = Social Experiences Questionnaire–Relational Victimization subscale; SEQ-OV = Social Experiences Questionnaire–Overt Victimization subscale; Self$_{T-1}$ = Children's Cognitive Style Questionnaire–Self-Characteristics at Time T-1; CDI = Children's Depression Inventory.

DISCUSSION

The goal of this study was to determine whether specific forms of peer victimization—relational and overt victimization—may contribute to the development of cognitive vulnerability in children. In doing so, we focused on cognitive vulnerability as defined in the hopelessness theory of depression (Abramson et al., 1989)—inferential styles for the causes, consequences, and self-characteristics implications of negative events. Although neither form of peer victimization predicted prospective changes in children's inferential styles for the causes of negative events, overt victimization uniquely predicted prospective changes in children's inferential styles for consequences and relational victimization uniquely predicted prospective changes in inferential styles for self-characteristics. It is important to note that these relations were maintained even after statistically controlling for the impact of concurrent depressive symptoms, suggesting that the effects were not due simply to the influence of co-occurring depression. In addition, consistent with previous research (Gibb & Alloy, 2006), these effects were unidirectional in than none of the inferential styles predicted prospective changes in either type of peer victimization. These findings add to a growing body of research suggesting that peer victimization contributes to the development of negative inferential styles in children (see also Gibb & Abela, 2008; Gibb et al., 2006).

An intriguing implication of the current results is that different forms of peer victimization may have differential roles in the development of specific forms of cognitive vulnerability to depression in children. Specifically, whereas relational victimization uniquely predicted prospective changes in children's negative inferential styles for their self-characteristics, only overt victimization

predicted prospective changes in children's inferential styles for consequences. The precise reasons for this pattern of findings cannot be determined in the current study, and conclusions must remain tentative pending replication. This said, however, it seems reasonable that overt victimization, which includes being hit and kicked, would over time lead one to expect negative consequences, whereas relational victimization, which may be a more poignant form of interpersonal rejection and manipulation, would lead one to start inferring negative characteristics about oneself. In this regard, we should highlight that the only other study of which we are aware to examine the associations of overt and relational victimization with cognitive vulnerability to depression (Cole et al., 2010) focused specifically on cognitions about oneself and found significant relations with relational, but not overt, victimization. To provide a more definitive test of this hypothesis, and to more fully test Rose and Abramson's (1992) developmental model, studies are needed that follow children over time and assess their inferences for specific instances of peer victimization to determine whether experiences of overt versus relational victimization are more likely to be inferred as reflecting negative consequences versus self-characteristics, respectively, and whether these event-specific inferences mediate the link between experiences of each form of peer victimization and the development of both forms of negative inferential style.

We should also note that the current study did not find support for gender moderation in the impact of relational or overt victimization on changes in children's negative inferential styles. Although there is some evidence to suggest that relational victimization is a stronger predictor of overall psychosocial adjustment in girls (Crick & Nelson, 2002), results for a sex-specific link between either overt or relational victimization and youth depression are mixed (e.g., Crick & Nelson, 2002; Prinstein, Boergers, & Vernberg, 2001; Storch, Nock, Masia-Warner, & Barlas, 2003). Our results are consistent with Cole and colleagues' (2010) finding that the association between relational victimization and concurrent cognitive vulnerability was significant in both genders. Therefore, although replication is needed, findings to date indicate that overt and relational victimization may contribute to the development of cognitive vulnerability to depression in both boys and girls.

The current study exhibited a number of strengths including the prospective, multiwave design, the focus on both overt and relational victimization, and the inclusion of all three inferential styles featured in the hopelessness theory of depression (causes, consequences, and self-characteristics). This said, the study's limitations should also be noted as they highlight important areas for future research. First, we relied upon children's self-reports for the assessment of victimization and inferential styles, which may be subject to response or recall bias. However, the fact that the relations were maintained even after we statistically controlled for the potential influence of concurrent depressive symptoms suggests that the relations were not due simply to mood-dependent response bias. To more fully address the potential for response bias in children's reports of victimization, researchers have focused on peer nominations of both relational and overt victimization (e.g., Cole et al., 2010; Crick & Bigbee, 1998). However, we believe that self-report assessments of victimization have their place because (a) many incidences of peer victimization may occur outside of school and therefore not be reported by the child's classmates and (b) they allow an investigation of children's perceptions of treatment by their peers (Crick & Grotpeter, 1996). Ideally, therefore, researchers would include both self-report and peer-report measures in a multimethod assessment of victimization so that its effects can be more precisely delineated (cf. Cole et al., 2010; Crick & Bigbee, 1998). In terms of cognition, researchers may wish to supplement self-reported cognitions with computer-based measures of information-processing biases. For example, to the extent that victimization contributes to the development of experience-specific information-processing biases, one would expect victimized children to exhibit attentional biases specifically for angry faces as well as increased sensitivity in detecting facial displays of anger (cf. Gibb et al., in press; Gibb, Schofield, & Coles, 2009; Pollak, 2003). Incorporating these types of information-processing measures would allow researchers to determine how broadly negative peer experiences may affect children's processing of information in their environment. Another limitation is that the measure of children's inferential styles for the causes of negative events used in this study (CASQ) exhibited relatively low reliability, which may have contributed to the nonsignificant findings for this dimension of children's inferential styles. Although the internal consistency of the CASQ in this study is similar to that observed in other studies (e.g., Abela, 2001; Conley, Haines, Hilt, & Metalsky, 2001; Nolen-Hoeksema et al., 1992), future research should consider using alternate measures with stronger internal consistency such as the Children's Attributional Style Interview (Conley et al., 2001) or the Adolescent Cognitive Style Questionnaire (Hankin & Abramson, 2002), both of which have exhibited stronger internal consistency than the CASQ. Finally, we should note that our sample was predominantly Caucasian, which may limit the generalizability of our findings to more diverse samples. This said, however, previous research has suggested that the impact of peer victimization on prospective changes in children's inferential styles is equivalent across Caucasian, African American, and Hispanic children (Gibb et al., 2006).

Implications for Research, Policy, and Practice

The current results have a number of potentially important implications. First, the results add to a growing body of research suggesting that children's experiences of peer victimization increase their risk for developing negative inferential styles. Notably, the results indicate that various forms of victimization may have differential effects, such that the impact of overt victimization is specific to children's inferences for the consequences of negative events, whereas the impact of relational victimization is specific to inferences for self characteristics. These finding were not attributable to children's ongoing depression, indicating that the influence of peer victimization is indeed detrimental to the development of children's cognitive vulnerability. Given the accumulating evidence for the impact of peer victimization on the development of cognitive vulnerability to depression in children, it may be important to directly target children's inferences for experiences of peer victimization whether these interventions are specifically designed to reduce risk for depression (e.g., Brunwasser, Gillham, & Kim, 2009) or reduce peer victimization more generally (e.g., Olweus & Limber, 2010).

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