Bidirectional relations between internalizing symptoms and peer victimization in late childhood

Fanny Mlawer1 | Julie A. Hubbard1 | Megan K. Bookhout2 | Christina C. Moore1 | Marissa A. Docimo3 | Lauren E. Swift4 | Stevie N. Grassetti5

1Department of Psychological and Brain Sciences, University of Delaware, Newark, DE, USA
2Department of Social and Behavioral Sciences, Temple University, Philadelphia, PA, USA
3Clinical Practices of the University of Pennsylvania, Philadelphia, PA, USA
4Center for Sleep Medicine, Chicago, IL, USA
5Department of Psychology, West Chester University of Pennsylvania, West Chester, PA, USA

Correspondence
Fanny Mlawer, Department of Psychological and Brain Sciences, University of Delaware, 108 Wolf Hall, Newark, DE 19716. Email: fmlawer@psych.udel.edu

Funding information
This material is based upon work supported by the National Science Foundation Graduate Research Fellowship under Grant No. 1247394, the Fahs-Beck Fund for Research and Experimentation, the Delaware Bar Foundation, the Delaware Criminal Justice Council and the University of Delaware General University Research Grant.

Abstract
The present study investigated bidirectional relations between peer victimization and internalizing symptoms, with a focus on three forms of victimization (physical, verbal, relational) and two types of internalizing symptoms (depressive, anxious). In the fall and spring, children (N = 1,264–1,402 fourth and fifth graders depending on time point and data source) reported on their victimization, and teachers reported on children's depressive and anxious symptoms. In a model including the broad constructs of victimization and internalizing symptoms, bidirectional relations emerged, with earlier internalizing symptoms predicting increases in later physical, verbal, and relational (marginal) victimization, and the second model did not fit the data well. Findings are discussed in terms of implications of bidirectional relations between victimization and internalizing symptoms.

Keywords
bidirectional, internalizing, peer relations, peer victimization
Approximately 10%–20% of students experience peer victimization (Nansel et al., 2001; Vaillancourt et al., 2010), a construct traditionally divided into two forms, overt and relational. Overt victimization includes physical aggression, verbal threats, and name-calling, whereas relational victimization encompasses acts intended to damage social relationships, such as rumor-spreading or exclusion. Recent research, however, supports the distinctness of physical and verbal victimization (e.g., Marsh et al., 2011) within overt victimization.

These forms of victimization relate to negative outcomes in childhood and adolescence, including aggression (e.g., Casper, Card, Bauman, & Toomey, 2017; Lamarche et al., 2007) and academic difficulties (e.g., Nakamoto & Schwartz, 2010). Victimization is also linked to internalizing symptoms in youth, including depression, anxiety, loneliness, low self-esteem, and suicidal ideation. In the current article, we focused on depressive and anxious symptoms specifically because they are investigated most widely and are linked most closely to later adjustment.

Although research linking victimization to internalizing symptoms is considerable, much remains to be learned about the nature of this association. This is true both for the broader constructs of victimization and internalizing symptoms, and for specific forms of peer victimization (physical, verbal, relational) and types of internalizing symptoms (depressive, anxious). The goal of the current study was to investigate these questions using cross-lagged structural equation models in a large sample of fourth- and fifth-grade students.

In the following four sections, we provide a detailed literature review linking victimization and internalizing symptoms. We organized the review by research design: (a) concurrent designs, (b) longitudinal studies from earlier victimization to later internalizing symptoms, (c) longitudinal investigations from earlier internalizing symptoms to later victimization, and (d) longitudinal studies of bidirectional associations between these two constructs. Throughout the review, we highlight the specifics of the samples used (e.g., developmental period, gender, race/ethnicity) and the constructs measured (forms of victimization, types of internalizing symptom).

### 1.1 Concurrent associations between victimization and internalizing symptoms

A meta-analysis of cross-sectional studies revealed concurrent relations between victimization and both depressive and anxious symptoms, when these symptoms were investigated in separate studies or analyses (Hawker & Boulton, 2000). More recent research continues to support these relations for both children and adolescents (e.g., Crawford & Manassis, 2011; Klomek, Marracco, Kleinman, Schonfeld, & Gould, 2007).

However, far fewer cross-sectional studies have addressed whether depressive or anxious symptoms are differentially linked to victimization when both constructs are assessed in the same study and included in the same analysis. However, those that do reveal similar patterns for depressive and anxious symptoms. For example, in a sample of ethnically diverse overweight children and adolescents, both depressive and anxious symptoms were related to victimization (Storch et al., 2007). Similarly, in another study with a diverse adolescent sample, relational victimization was linked to both depressive and socially anxious symptoms (LaGreca & Harrison, 2005). Finally, yet another study revealed that overt victimization was related to depressive and anxious symptoms in male and female adolescents, whereas relational victimization was related to the same internalizing symptoms only in females (Storch, Nock, Masia-Warner, & Barlas, 2003).

In contrast, concurrent investigations assessing whether internalizing symptoms are more strongly linked to one form of victimization than others reveal more mixed findings. Some investigations suggest consistency across types of victimization; for example, in a study of ninth and tenth graders, overt and relational victimization were both linked to anxiety (Storch, Brassard, & Masia-Warner, 2003). In contrast, other studies suggest differential relations of internalizing symptoms to forms of victimization. In one study of Mexican-American third- through fifth-grade students, depressive symptoms were linked to relational but not overt victimization (Bauman, 2008). As another example, a study by Prinstein, Boergers, and Vernberg (2001) reported that the prediction of depressive...
symptoms improved when relational victimization was added as a predictor in addition to overt victimization, and adolescents who were both overtly and relationally victimized were more depressed than adolescents who only experienced one form of victimization.

1.2 Longitudinal associations from earlier victimization to later internalizing symptoms

Cross-sectional studies provide an important foundation for examining the relation between victimization and internalizing symptoms. However, they preclude inferences about directionality. Being victimized by peers may lead youth to develop internalizing problems, but youth who display internalizing symptoms may also be more likely targets of perpetrators. To untangle the directionality of this link, longitudinal designs are needed.

In fact, consistent research supports the link between earlier victimization and later depressive and anxious symptoms in children and adolescents, including two meta-analyses (Gini, Card, & Pozzoli, 2018; Reijntjes, Kamphuis, Prinzie, & Telch, 2010). As an example, in a study of first and fifth graders, earlier victimization predicted increases in internalizing symptoms over time (Goodman, Stormshak, & Dishion, 2001). Similar findings have emerged in adolescence (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Hodges & Perry, 1999), as well as studies that span childhood to adolescence (Schwartz, Lansford, Dodge, Pettit, & Bates, 2015). These studies highlight the negative impact that victimization has on youth’s mental health and suggest that peer mistreatment may play an important role in feelings of depression and anxiety.

Other studies have investigated the link between earlier victimization and later depressive symptoms specifically. For example, Boivin, Hymel, and Bukowski (1995) found that peer reports of victimization predicted self-reports of depressive symptoms one year later in fourth and fifth graders, and this finding was replicated by Dill, Vernberg, Fonagy, Twemlow, and Gamm (2004). In fact, in a 2011 meta-analysis of 29 studies, the likelihood of experiencing later depressive symptoms was almost twice as great for victimized as non-victimized youth (Ttofi, Farrington, Losel, & Loeber, 2011). Though studied less frequently, similar findings emerge for anxious symptoms. Schleider, Ginsburg, and Drake (2017) found that youth who reported more peer victimization at baseline were more likely to develop an anxiety disorder one year later. In another investigation, adolescents who were frequently victimized at age 13 were two to three times more likely to develop an anxiety disorder by age 18 than non-victimized adolescents (Stapinski et al., 2014).

Fewer studies have examined whether earlier victimization is differentially linked to later depressive versus anxious symptoms when both are assessed simultaneously. Although some studies find similar associations for depressive and anxious symptoms (Zwierzynska, Wolke, & Lereya, 2013), others reveal differential associations. For instance, relational victimization predicted increases in depressive but not anxious symptoms in a diverse community sample of adolescents (Hamilton et al., 2013). One possible explanation for these conflicting findings is that similar associations tend to emerge when different reporters are used to assess victimization and internalizing symptoms, but differential findings emerge when all data are collected through self-report. Although the measurement of all constructs through self-report raises issues of shared method variance, this approach may provide a more fine-grained assessment of internalizing symptoms that allows differential associations with victimization to emerge.

Some of the studies reviewed above assessed overt victimization (e.g., Boivin et al., 1995), others evaluated relational victimization (e.g., Hamilton et al., 2013), and still others measured a generalized form of victimization (e.g., Zwierzynska et al., 2013). However, to date, investigations have not addressed whether forms of earlier victimization are differentially related to later internalizing symptoms.

1.3 Longitudinal associations from earlier internalizing symptoms to later victimization

The literature examining links from earlier internalizing symptoms to later victimization is considerably smaller. This work is predicated on Hammen’s (1991) stress generation hypothesis, which posits that depressed individuals
may help to create the stress that characterizes their lives. Support for this hypothesis is found not only for depression (Hammen & Shih, 2008), but also for other internalizing disorders (e.g., Connolly, Eberhart, Hammen, & Brennan, 2010; Farmer & Kashdan, 2015). This effect is strongest for interpersonal events such as peer victimization, possibly through the maladaptive social-information-processing that often accompanies internalizing symptoms (e.g., Luebbe, Bell, Allwood, Swenson, & Early, 2010).

Two compelling examples of this work stand out. First, Gibb and Hanley (2010) assessed earlier depression and later overt and relational victimization among 8- to 12-year-old children using a six-month multiwave prospective design. Increases in earlier depressive symptoms predicted increases in later victimization; however, these findings were specific to girls and relational victimization. Second, Kochel, Ladd, and Rudolph (2012) examined the longitudinal relations between victimization and depressive symptoms, each assessed via multiple reporters and in the fourth, fifth, and sixth grades; their findings supported links from earlier depressive symptoms to later victimization but not vice versa. Some studies have focused on cognitive vulnerabilities underlying depression. For example, earlier negative cognitive style predicted later relational victimization in a study of 12- and 13-year-old adolescents (Hamilton et al., 2013). Similarly, earlier rumination predicted later relational victimization in an adolescent sample, and this effect was strongest for participants with depressive symptoms (Shapero, Hamilton, Liu, Abramson, & Alloy, 2013).

1.4 | Longitudinal bidirectional relations between victimization and internalizing symptoms

The work described above naturally has led to questions about the bidirectionality of relations between victimization and internalizing symptoms. Several investigations have supported the bidirectional nature of this link, with these studies most often using different sources of data to assess victimization versus internalizing symptoms. The first study was conducted by Hodges and Perry (1999) using a sample of third through seventh graders. Their findings were replicated for five- through seven-year-old boys with teacher-reported depressive symptoms and observations of peer victimization (Snyder et al., 2003). Recently, this finding has been extended to cyberbullying (Gámez-Guadix, Orue, Smith, & Calvete, 2013). However, other work suggests that this longitudinal link is specific to the pathway from earlier internalizing symptoms to later victimization and not the opposite pathway. Although not entirely consistent, this pattern emerges most often when all constructs are assessed through self-report. This finding has emerged for victimization and internalizing symptoms in a fifth- through eighth-grade sample (Vaillancourt, Brittain, McDougall, & Duku, 2013), for depressive symptoms and both physical and relational victimization in a third- through sixth-grade sample (Tran, Cole, & Weiss, 2012), and for depressive symptoms and relational victimization in a high school sample (Marsh et al., 2016). Of note, to date, no investigations of bidirectionality suggest that the link is specific to the pathway from earlier victimization to later internalizing symptoms.

One study has examined whether bidirectional relations vary by depressive versus anxious symptoms. In this investigation, children with either depressive or anxious symptoms at baseline were more likely than their peers to be newly-victimized six months later. However, victims had a greater likelihood of developing new depressive symptoms, but not new anxious symptoms, over the six months (Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vanhorick, 2006).

Finally, investigations of whether bidirectional relations between victimization and internalizing symptoms vary by form of victimization suggest that the strongest results emerge for relational victimization. Relational victimization may be especially implicated because of the damage it does to victims’ self-concept. As an example, in an adolescent sample, a reciprocal relation emerged between internalizing symptoms and relational but not overt victimization (McLaughlin, Hatzenbuehler, & Hilt, 2009). Siegel, La Greca, and Harrison (2009) found a similar bidirectional relation between social anxiety and victimization in adolescents, with the strongest results emerging for relational victimization. However, this pattern may not hold in younger samples, as both overt and relational
victimization displayed reciprocal relations with internalizing symptoms in an early elementary school sample (Leadbeater & Hoglund, 2009). This developmental pattern mirrors that described above for concurrent relations, with internalizing symptoms related equally to overt and relational victimization in childhood, but more strongly to relational than overt victimization in adolescence.

1.5 | The current study

Although considerable research has been conducted on links between victimization and internalizing symptoms, the research is marked by a number of methodological concerns. Much of the work is cross-sectional, and longitudinal studies often only assess temporal relations in one direction. Furthermore, the results of bidirectional studies are inconsistent, with some supporting bidirectionality, but others supporting only the pathway from earlier internalizing symptoms to later victimization. As described above, the most likely explanations for these mixed findings relate either to the age of the sample or to whether the same or different reporters were used to assess victimization and internalizing symptoms. Finally, few studies, especially bidirectional investigations, have addressed whether the link between victimization and internalizing symptoms varies by form of victimization or type of internalizing symptom.

The goal of the current study was to address these gaps by examining bidirectional relations between victimization and internalizing symptoms across one school year using cross-lagged structural equation models. We used a large diverse sample of fourth- and fifth-grade students, a developmental period chosen because it bridges earlier childhood and adolescence. We assessed the two constructs using well-validated measures collected from different sources to avoid shared method variance. In addition to investigating bidirectional relations between the broader constructs of victimization and internalizing symptoms, we also examined differential associations between three forms of victimization (physical, verbal, relational) and internalizing symptoms and between two types of internalizing symptoms (depressive and anxious) and victimization. Based on the literature reviewed above, we hypothesized that: a) the relation between victimization and internalizing symptoms would be bidirectional, b) links to internalizing symptoms would be stronger for relational than physical or verbal victimization, and c) links to victimization would be stronger for depressive than anxious symptoms.

2 | METHOD

2.1 | Overview

Participants included students from fourth- and fifth-grade classrooms in nine elementary schools in a mid-Atlantic state in the United States. At the beginning (September/October; Time 1 [T1]) and end (April/May; Time 2 [T2]) of the school year, children reported on three types of victimization, and teachers reported on children's internalizing symptoms.

2.2 | Participants

All procedures were in accordance with the ethical standards of the first author's Institutional Review Board and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Participants included fourth- and fifth-grade children ($N = 1,264–1,402$ depending on time point and data source) in 74 classrooms in all nine regular education elementary schools in one school district representative of the demographics of the larger region. We selected a fourth- and fifth-grade sample because internalizing symptoms become more stable by this developmental period (Schaeffer, Petras, Ialongo, Poduska, & Kellam, 2003). The school district was socioeconomically diverse, with the percentage of children identified as low income at each school ranging from 4% to 85%. The nine schools were located in both suburban and urban areas. The gender breakdown of students
was 50% male and 50% female, and their racial/ethnic breakdown was as follows: 51% European American, 18% African American, 16% Latino American, 8% Asian American, 6% Mixed Race, and 1% not reporting. At the time of consent, children ranged in age from 8.2 to 12.5 years (M = 10.1).

Only children with both parental permission and child assent completed data collection. English and Spanish parental permission forms were sent home with approximately 1,900 children, and 1,448 forms (76% of 1,900) were returned with parental permission. At T1, 101 children refused assent (7%), 17 were absent (1%), and 7 children had withdrawn (0.4%). At T2, 129 children refused assent (9%), 11 were absent (0.7%), and 37 had withdrawn (2%; percentages in this sentence and the next paragraph are for N of 1,448, because this number of children received parental permission). The resulting child-level self-report data sets included 1,323 children at T1 and 1,264 children at T2.

All participating teachers also completed a consent form. At T1, teacher-report data were not available for 38 children due to two teachers who never completed measures for any children in their classrooms (31 children; 2%), as well as seven children on whom data were not collected due to administrative error (0.4%). At T2, teacher-report data were not available for 41 children due to one teacher who never completed measures for any children in his classroom (9 children; 0.6%), 31 children who left the school between T1 and T2 (2%), and one child whose parent withdrew permission at T2 (0.07%). The resulting teacher-report data set included 1,402 students at T1 and 1,399 students at T2.

Children who refused assent were compared to those who granted assent on demographic variables, as well as teacher-reports of depression and anxiety. At T1, children who refused assent were more likely than those who did not to be male, $\chi^2(1) = 17.69, p < 0.0001$, and European American, $\chi^2(1) = 13.56, p < 0.0001$. At T2, children who refused assent were more likely than those who granted assent to be male, $\chi^2(1) = 20.76, p < 0.0001$, European American, $\chi^2(1) = 6.75, p < 0.01$, and to score higher on teacher-reported depressive symptoms, $F(1, 1397) = 5.07, p < 0.05$.

2.3 | Procedure

At each time point, a graduate student and three undergraduate research assistants visited each classroom for one hour. The graduate student group-administered paper-and-pencil measures including the victimization measure described below to participating children, while undergraduates circulated throughout the room to maintain privacy and assist children as needed. Following each classroom visit, teachers completed measures for each participating child, including the measures of depressive and anxious symptoms described below. Teachers were compensated with $100 in cash to use on classroom activities or supplies.

2.4 | Measures

2.4.1 | Victimization

Children completed the Physical, Verbal, and Social Manipulation subscales of the Comprehensive Scales of Traditional Peer Victimization (CSTPV; Morrow, Hubbard, & Swift, 2014); each subscale included four items. Sample items from the Physical, Verbal, and Social Manipulation subscales, respectively, are “A kid hit or pushed me,” “A kid called me mean names,” and “A kid made other people not talk to me.” Children responded on a scale of 1 = not at all, 2 = a little, 3 = sometimes, 4 = a lot, and 5 = a whole lot. In an evaluation of this scale in a similar sample, these three subscales were best represented as separate factors (Morrow, Hubbard, Barhight, & Thompson, 2014). Items were averaged across each subscale. Cronbach’s alphas at T1 and T2 respectively were 0.81 and 0.78 for Physical Victimization, 0.88 and 0.88 for Verbal Victimization, and 0.82 and 0.84 for Social Manipulation Victimization.
2.4.2 | Depressive and anxious symptoms

Teacher report was used to assess depressive and anxious symptoms to avoid shared method with the assessment of victimization and to emphasize the assessment of behavioral rather than cognitive aspects of internalizing symptoms; this emphasis was chosen because of theory suggesting that peers may use observable behaviors of internalizing symptoms to identify children to target for victimization. Teachers completed the 10-item Depression subscale and the seven-item Anxiety subscale of the Behavior Assessment System for Children 2 (BASC-2; Reynolds & Kamphaus, 2004). Sample item are "Is sad" and "Worries." Teachers responded on a scale from 1 = never to 4 = almost always. All BASC-2 subscales have demonstrated adequate psychometric properties across diverse samples. In particular, test-retest reliability has ranged from 0.73 to 0.90, interrater reliability has ranged from 0.23 to 0.60, and the subscales correlate 0.36 to 0.89 with similar subscales from the Achenbach System of Empirically Based Assessment Teacher’s Report Form for Ages 6–18 (ASEBA; Achenbach & Rescorla, 2001). Cronbach’s alphas at T1 and T2 respectively were 0.85 and 0.87 for Depressive Symptoms and 0.88 and 0.85 for Anxious Symptoms.

3 | RESULTS

3.1 | Data analytic strategy

Our goal was to test the three models depicted in Figures 1, 2, and 3. In Model 1, we evaluated the bidirectional associations from Time 1 to Time 2 between Victimization and Internalizing Symptoms using a second-order latent variable for Victimization with three indicators (the first-order latent variables Physical Victimization, Verbal Victimization, and Relational Victimization) and a second-order latent variable for Internalizing Symptoms with two indicators (the first-order latent variables Depressive Symptoms and Anxious Symptoms). In Model 2, we tested the bidirectional relations amongst the latent variables Physical Victimization, Verbal Victimization, Relational Victimization, and second-order Internalizing Symptoms. Finally, in Model 3, we assessed these linkages amongst the latent variables second-order Victimization, Depressive Symptoms, and Anxious Symptoms.

3.2 | Descriptive statistics

We began by calculating descriptive statistics for all variables at T1 and T2 (Table 1). Many variables were significantly skewed using a cutoff of ±2.00, and leptokurtosis was high. Thus, all subsequent analyses were conducted using full information maximum-likelihood estimation with robust standard errors to obtain parameter estimates, standard errors, and chi-square statistics that were robust to nonnormality and to handle missing data.

Next, we tested gender differences, grade differences, and race/ethnicity differences in all variables at both time points. Gender and grade differences are reported in Table 1. Except for T1 anxiety, effects for race/ethnicity emerged for all variables, $F(5, 1237–1375) = 2.46 – 14.89, p = 0.000–032$. In post-hoc pairwise comparisons, each significantly different pair included African American children, who experienced more victimization and more depressive symptoms than the group from which they differed. These higher rates of victimization and depressive symptoms for African American youth are in line with some previous investigations (e.g., Fitzpatrick, Dulin, & Piko, 2007; Kistner, David, & White, 2003; Low & Espelage, 2013), although they contradict others (Graham & Juvonen, 2002; Nansel et al., 2001; Saluja et al., 2004).

3.3 | Measurement models

Next, because the measures of depressive and anxious symptoms included 10 and 7 items, respectively, we built four parcels from the items of each measure at each time point. Parcels are formed by simply averaging two or more items together to reduce the number of indicators of a latent construct. The decision of which items to
average was made using the item-to-construct balance approach (Little, Cunningham, Shahar, & Widaman, 2002), which distributes items across parcels to equalize the degree to which each parcel’s items load onto the latent variable. When measures include many items, the use of parcels is recommended to increase parsimony, improve model fit, and reduce sampling error (Little et al., 2002).

We then tested the fit of the measurement model for each latent variable at each time point. All models were evaluated through structural equation modeling using Mplus Version 7 (Muthén & Muthén, 1998–2012). Model fit was assessed using the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA). Values 0.90 or greater on CFI and 0.06 or below on RMSEA were used to identify good-fitting models (Hu & Bentler, 1999). These and all subsequent models were multi-level, with student at level-1 and classrooms at level-2. All measurement models fit the data well with CFIs between 0.964 and 1.000, and RMSEAs between 0.000 and 0.061. All factor loadings were statistically significant and ranged between 0.60 and 0.97.

Next, we evaluated T1-T2 time invariance for each first-order latent variable. To do so, we compared a model in which factor loadings were free to vary to a model in which factor loadings were constrained to be equal across time. For each latent variable, these models were equivalent, suggesting time invariance [Physical Victimization, $\chi^2$ difference (3) = 0.84, $p = 0.84$; Verbal Victimization, $\chi^2$ difference (3) = 5.71, $p = 0.13$; Relational Victimization, $\chi^2$ difference (3) = 2.36, $p = 0.50$; Depressive Symptoms, $\chi^2$ difference (3) = 0.19, $p = 0.98$; Anxious Symptoms, $\chi^2$ difference (3) = 0.655, $p = 0.09$, marginally significant].

**FIGURE 1** Cross-lagged panel model of bidirectional longitudinal associations between second-order victimization and second-order internalizing symptoms
As a last step, at each time point, we compared the model fit of single-factor and multiple-factor models for both victimization and internalizing symptoms. At both T1 and T2, a model including three separate latent variables representing Physical Victimization, Verbal Victimization, and Relational Victimization fit the data better than a model in which all 12 victimization items loaded onto a single latent variable (T1: $\chi^2$ Difference = 397.50, $p < 0.0001$; T2: $\chi^2$ Difference = 263.86, $p < 0.0001$). Similarly, at both T1 and T2, a model including two separate latent variables representing Depressive Symptoms and Anxious Symptoms fit the data better than a model in which all eight internalizing parcels loaded onto a single latent variable (T1: $\chi^2$ Difference = 459.88, $p < 0.0001$; T2: $\chi^2$ Difference = 219.39, $p < 0.0001$). Finally, each multiple-factor model fit the data well without cross-loadings from one latent variable to another (CFIs between 0.962 and 0.989, RMSEAs between 0.026 and 0.047).

### 3.4 Cross-lagged panel models

Finally, we tested the three cross-lagged panel models described above. For each model, latent variables were standardized to aid interpretability. In addition, factor loadings were constrained to be equal across time points, and the residuals for latent variable indicators were allowed to correlate across time. Finally, standardized coefficients are reported to aid interpretability of effect sizes, and 95% confidence intervals are included in parentheses on figures for effects that are significant and address primary hypotheses.
First, we evaluated the longitudinal bidirectional associations between the second-order latent variables representing Victimization and Internalizing Symptoms (Model 1). This model fit the data well (CFI = 0.932, RMSEA = 0.033) and is depicted in Figure 1. Findings supported the bidirectionality of longitudinal relations between Victimization and Internalizing Symptoms, with significant associations between T1 Victimization and T2 Internalizing Symptoms, as well as T1 Internalizing Symptoms and T2 Victimization.

Second, we assessed the longitudinal bidirectional relations amongst Physical Victimization, Verbal Victimization, Relational Victimization, and second-order Internalizing Symptoms (Model 2). This model also fits the data well (CFI = 0.943, RMSEA = 0.030) and is shown in Figure 2. T1 Internalizing Symptoms predicted T2 Physical Victimization, Verbal Victimization, and Relational Victimization (marginal). However, none of the three forms of Victimization at T1 predicted T2 Internalizing Symptoms.

Third, we assessed the longitudinal bidirectional linkages amongst second-order Victimization, Depressive Symptoms, and Anxious Symptoms (Model 3). Model fit was good for RMSEA (0.044) but less strong for CFI (0.875); this model is depicted in Figure 3. T1 Victimization predicted T2 Depressive Symptoms (marginal), but not T2 Anxious Symptoms. In addition, T1 Anxious and Depressive Symptoms did not predict T2 Victimization. Given both the low value of the CFI for this model and the fact that only one pathway attained even marginal significance, it should not be interpreted further.
**TABLE 1** Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>Gender Effect</th>
<th>Grade Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Victimization (N = 1,322)</td>
<td>1.34</td>
<td>0.60</td>
<td>1.00</td>
<td>5.00</td>
<td>2.94</td>
<td>10.81</td>
<td>1.28</td>
<td>1.40</td>
</tr>
<tr>
<td>Verbal Victimization (N = 1,322)</td>
<td>1.68</td>
<td>0.92</td>
<td>1.00</td>
<td>5.00</td>
<td>1.77</td>
<td>2.80</td>
<td>1.67</td>
<td>1.69</td>
</tr>
<tr>
<td>Relational Victimization (N = 1,322)</td>
<td>1.61</td>
<td>0.84</td>
<td>1.00</td>
<td>5.00</td>
<td>1.82</td>
<td>3.09</td>
<td>1.60</td>
<td>1.61</td>
</tr>
<tr>
<td>Depressive Symptoms (N = 1,402)</td>
<td>1.15</td>
<td>0.29</td>
<td>1.00</td>
<td>3.50</td>
<td>2.96</td>
<td>11.36</td>
<td><strong>1.12</strong></td>
<td><strong>1.19</strong></td>
</tr>
<tr>
<td>Anxious Symptoms (N = 1,402)</td>
<td>1.18</td>
<td>0.35</td>
<td>1.00</td>
<td>3.57</td>
<td>0.267</td>
<td>8.22</td>
<td>1.18</td>
<td>1.18</td>
</tr>
<tr>
<td><strong>Time 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Victimization (N = 1,264)</td>
<td>1.30</td>
<td>0.53</td>
<td>1.00</td>
<td>5.00</td>
<td>2.77</td>
<td>9.48</td>
<td><strong>1.26</strong></td>
<td><strong>1.35</strong></td>
</tr>
<tr>
<td>Verbal Victimization (N = 1,263)</td>
<td>1.74</td>
<td>0.91</td>
<td>1.00</td>
<td>5.00</td>
<td>1.56</td>
<td>2.05</td>
<td>1.76</td>
<td>1.71</td>
</tr>
<tr>
<td>Relational Victimization (N = 1,263)</td>
<td>1.57</td>
<td>0.82</td>
<td>1.00</td>
<td>5.00</td>
<td>2.01</td>
<td>3.96</td>
<td><strong>1.64</strong></td>
<td><strong>1.49</strong></td>
</tr>
<tr>
<td>Depressive Symptoms (N = 1,398)</td>
<td>1.17</td>
<td>0.32</td>
<td>1.00</td>
<td>3.20</td>
<td>2.71</td>
<td>8.79</td>
<td><strong>1.14</strong></td>
<td><strong>1.21</strong></td>
</tr>
<tr>
<td>Anxious Symptoms (N = 1,398)</td>
<td>1.20</td>
<td>0.36</td>
<td>1.00</td>
<td>4.00</td>
<td>2.53</td>
<td>8.07</td>
<td>1.21</td>
<td>1.19</td>
</tr>
</tbody>
</table>

Note. For gender and grade effects, bolded means indicate a significant difference.
Finally, for all three models, we tested whether the paths of interest differed between fourth- and fifth-grade classrooms by comparing constrained and unconstrained models using a chi-square difference test. Grade moderation did not emerge for any of the three models, $\chi^2$ difference (2–6) = 0.13–1.18, $p = 0.57$–0.98.

4 | DISCUSSION

In this study, we investigated bidirectional relations between victimization and internalizing symptoms across one school year in a racially and socioeconomically diverse sample of fourth- and fifth graders using cross-lagged structural equation models. This investigation expanded on previous work by exploring whether differential relations emerged between three forms of victimization (physical, verbal, relational) and internalizing symptoms and between victimization and two types of internalizing symptoms (depressive, anxious).

4.1 | Peer victimization and internalizing symptoms

In a model including second-order constructs representing victimization and internalizing symptoms (Model 1), bidirectional associations emerged. Specifically, positive relations were found both between earlier victimization and later internalizing symptoms, and between earlier internalizing symptoms and later victimization. Although these findings replicate several previous studies (e.g., Gámez-Guadix et al., 2013; Hodges & Perry, 1999; Snyder et al., 2003), they are noteworthy because of our large and diverse sample, the assessment of victimization and internalizing symptoms by different reporters and through second-order latent constructs, and the rigorous statistical approach we employed. In particular, these bidirectional links emerged in a well-fitting SEM model after accounting for the concurrent links between victimization and internalizing symptoms at both time points and the across-time stability of each construct.

This finding highlights the negative consequences of victimization for children's mental health and emotional functioning. These harmful effects are wide-ranging and include poor academic performance (e.g., Nakamoto & Schwartz, 2010), externalizing problems (e.g., Casper et al., 2017; Lamarche et al., 2007), and a range of internalizing problems (Reijntjes et al., 2010). Our findings add to this body of literature and emphasize just how upsetting victimization is for children.

At the same time, these results suggest that children who appear sad or anxious may be especially likely or easy targets for victimization. Children who are depressed or anxious may present as fearful, submissive or withdrawn, behaviors not likely to be viewed positively by the peer group (Kennedy, Spence, & Hensley, 1989). Perpetrators may also perceive depressed or anxious children as lacking effective coping mechanisms (Kochendoerfer-Ladd & Skinner, 2002); these children may be easier to distress than peers, an outcome which may be satisfying to perpetrators. Perpetrators also may realize that depressed or anxious children lack a supportive peer group to compensate for victimization experiences (Hodges, Malone, & Perry, 1997; Tanigawa, Furlong, Felix, & Sharkey, 2011), making their victimization even more impactful. These findings and this thinking are in line with the stress-generation hypothesis (Hammen, 1991) and expand this theorizing to the domain of children's peer relations. An alternate explanation is that children with internalizing symptoms may be more sensitive to threat and more likely to attend to social information that is consistent with their negative self-perceptions, resulting in higher reports of victimization (Dodge, 1993). Of note, interventions have been developed that aim to make victimized children less targetable, for example, by increasing their social skills (Fox & Boulton, 2003). However, the results of such programs are mixed (Vreeman & Carroll, 2007), and interventionists have raised ethical questions about the advisability of programs that may cause victimized children to feel responsible for their own victimization.

Although our findings replicate several previous studies, they run counter to several other investigations favoring a symptom-driven pathway in which earlier internalizing symptoms lead to later victimization but not vice versa (e.g., Marsh et al., 2016; Tran et al., 2012; Vaillancourt et al., 2013). One potential explanation for these
discrepant findings is that these three studies used self-report measures to evaluate participants’ internalizing symptoms, while we relied on teacher reports. Teacher reports may be more germane to the topic at hand because they better represent observable behaviors linked to internalizing symptoms—what peers may see and use to identify children as targets—whereas self-reports additionally take into account children's negative cognitions. Furthermore, two of the studies (Marsh et al., 2016; Tran et al., 2012) only assessed depressive symptoms, and the third study simply averaged across anxious and depressive items rather than considering them separately.

4.2 | Physical, verbal, and relational victimization and internalizing symptoms

When bidirectional links between three forms of victimization (physical, verbal, relational) and internalizing symptoms were explored (Model 2), earlier internalizing symptoms predicted all three forms of victimization, although the prediction to relational victimization was only marginal. These results contradict several earlier studies suggesting that the association between victimization and internalizing symptoms is stronger for relational victimization than overt victimization (e.g., Marsh et al., 2016; McLaughlin et al., 2009; Siegel et al., 2009). However, these investigations utilized adolescent samples, whereas studies using younger samples (e.g., Gibb & Hanley, 2010; Tran et al., 2012) found similar longitudinal links to internalizing symptoms across forms of victimization. Relational victimization increases across development and peaks in the middle school years (Craig, Pepler, Connolly, & Henderson, 2001). Given this developmental trend, it is not surprising that internalizing symptoms would be a particularly strong predictor of relational victimization in adolescence, but that the links between internalizing symptoms and different forms of victimization would not vary at earlier developmental periods.

4.3 | Clinical implications

The current study suggests that both prevention programs that target victimization and those that address children's mental health are important aspects of school-based social and emotional curricula; recently, such programs increasingly have focused on primary prevention efforts (Little, Akin-Little, & Medley, 2011). These two types of prevention programs typically have been quite separate, but the literature reviewed here suggests that merging them should be considered. The bidirectional relations that emerged in our first model additionally suggest that one approach should not be given priority over the other in this developmental period. Finally, our findings did not single out clearly a particular form of victimization or type of internalizing symptom as most critical at this developmental period, suggesting that both a broad focus across these behaviors and symptoms as well as attention to each individually may be warranted.

4.4 | Limitations and future directions

The current study had a few significant limitations, each of which suggests directions for future research. First, our assessment of victimization would likely have been improved by the use of peer-report rather than self-report data, given that peer nominations are the gold standard for the measurement of peer relations constructs. Second, and relatedly, the use of teachers as reporters of children's internalizing symptoms meant that we assessed observable manifestations of depressive and anxious symptoms rather than internal cognitions and affective states. Although this approach mapped onto our interest in the phenomenon of children who appear outwardly sad or worried being likely targets of victimization, it is important to acknowledge that perpetrators target children for many reasons beyond the outward display of internalizing symptoms. Furthermore, this approach may have led to a less valid measurement of the full range of internalizing symptoms that children experience, especially given that the broader literature suggests that inter-rater reliability for our teacher-report measure of internalizing symptoms is only adequate. In this regard, it may have been preferable to use self-report data to assess internalizing symptoms. Future researchers should consider assessing youth's victimization through peer report
and internalizing symptoms through self-report, as this may be the most optimal combination of measurement approaches for these two constructs.

Third, although analyses were nested within classroom, we did not nest within school due to the small number of schools. Measurement of victimization and internalizing symptoms, and the relations among these constructs, may have varied at the school level, particularly given that our schools differed substantially in terms of SES and race/ethnicity makeup. Future researchers should strive for larger school-wise samples that permit nesting within school and modeling of between-school variation.

Fourth, our study included only two time points measured across one school year. More time points are needed to properly evaluate whether the relations revealed here perpetuate across multiple time points in a cyclical fashion. For this reason, future researchers should include more than two time points in investigations of the longitudinal links between victimization and internalizing symptoms if at all possible.

Fifth, our findings cannot be generalized beyond the fourth- and fifth-grade sample used here. This limitation is especially noteworthy given the varying result patterns that emerge when victimization and internalizing symptoms are investigated at different developmental periods. Future researchers may want to consider investigating developmental variation in the links between victimization and internalizing symptoms within the context of one study. Sixth, given that males and European American children were more likely to refuse assent than other children, findings may not generalize well to these two groups.

Finally, as can be seen in Table 1, rates of both victimization and internalizing symptoms were relatively low, as would be expected in a school-based sample. Thus, findings cannot be generalized to higher-risk samples of children who experience higher rates of victimization or internalizing symptoms. Future researchers should strive to investigate the links between victimization and internalizing symptoms in samples at higher levels of risk.

4.5 | Conclusions

In the current paper, bidirectional relations emerged between the broad constructs of victimization and internalizing symptoms. However, these bidirectional relations did not hold in two additional models, one of which included the three forms of victimization and internalizing symptoms (Model 2) and the other of which included victimization and the two types of internalizing symptoms (Model 3). Rather, results of Model 2 suggested that earlier internalizing symptoms predicted later physical, verbal, and relational (marginal) victimization, and Model 3 did not fit the data well. We are pleased to add to the growing understanding of the longitudinal relations between forms of victimization and types of internalizing symptoms and hope that future researchers pursue this line of work with continued analytic and methodological rigor.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

ORCID

Fanny Mlawer  
https://orcid.org/0000-0003-0652-3542

Stevie N. Grassetti  
https://orcid.org/0000-0002-5565-4082

REFERENCES


**How to cite this article:** Mlawer F, Hubbard JA, Bookhout MK, et al. Bidirectional relations between internalizing symptoms and peer victimization in late childhood. *Social Development*. 2019;00:1–18. https://doi.org/10.1111/sode.12371